



# CONSOLIDATED REPORTS

AY 2015-2016 & AY 2016-2017

# RESEARCH

@ De La Salle University

**RESEARCH @ DE LA SALLE UNIVERSITY**  
**Consolidated Reports for Academic Years**  
**2015-2016 and 2016-2017**



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# Research @ De La Salle University

## Consolidated Reports for Academic Years 2015-2016 and 2016-2017

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# Message from the President

This consolidated report summarizes the research highlights of De La Salle University (DLSU) in AY 2015-2016 and AY 2016-2017. The two-year period was, to say the least, an interesting and challenging phase in the recent history of the University.

At the start of AY 2015-2016, we reaffirmed our commitment to knowledge generation as an integral part of higher education by using the phrase "*leading learner-centered and research university*" in our revised mission-vision. The subtle change emphasized the need to strengthen our research in light of its role in educating millennials.

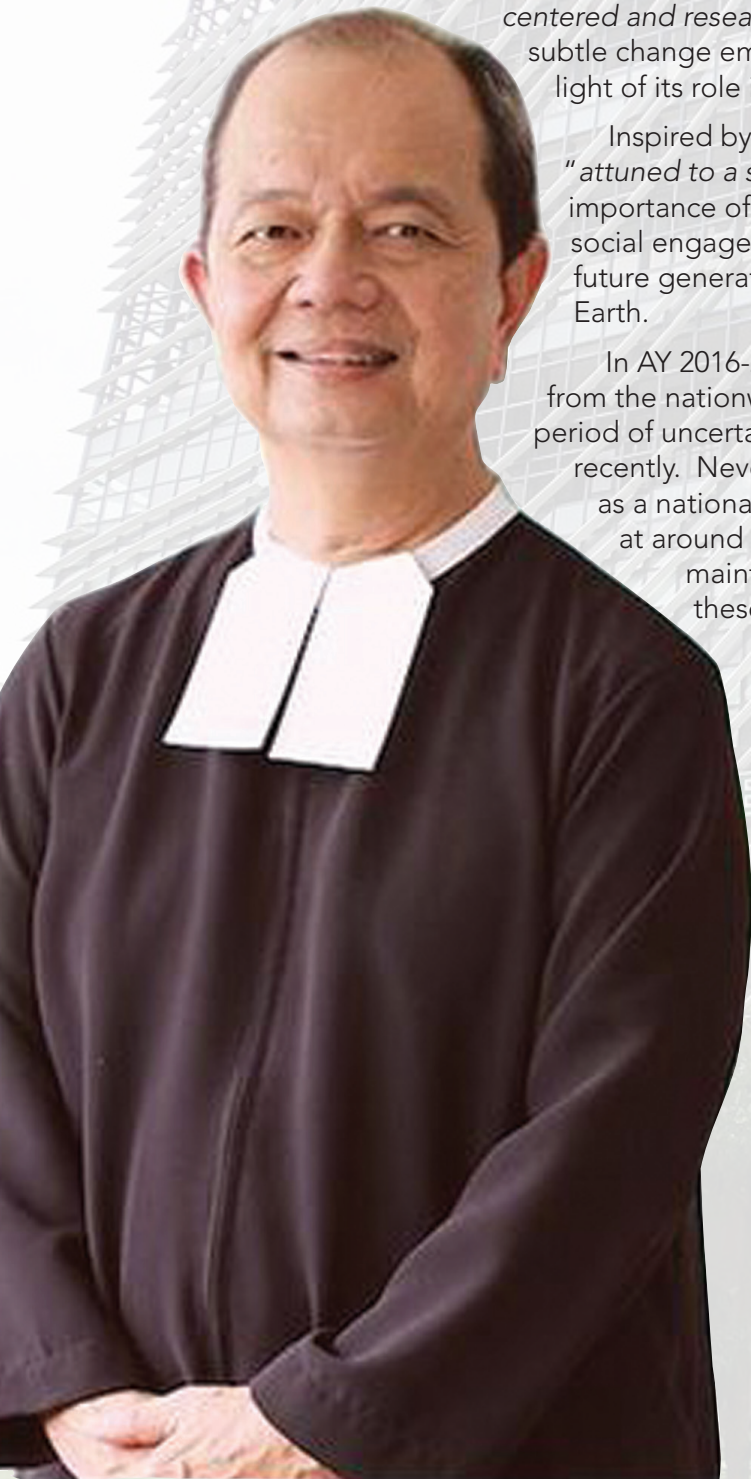
Inspired by Pope Francis' *Laudato si'* encyclical, the phrase "*attuned to a sustainable Earth*" was also added to highlight the importance of directing our efforts in education, research and social engagement towards balancing the good of present and future generations with the sustainable resources of Mother Earth.

In AY 2016-2017, DLSU entered the lean years resulting from the nationwide basic education reform. We, thus, entered a period of uncertainty, from which we have started to recover only recently. Nevertheless, I am happy to note that our emergence as a nationally significant research university in the Philippines at around this time served as a strategic rallying point to maintain morale and institutional pride in the face of these challenges.

A few years on, we look back at that critical period and find DLSU a firmly established research institution – clearly the best among private universities in the Philippines and arguably the best in terms of efficiency even among all higher education institutions. This success attests to the talent, competence, and hard work of our researchers, coupled with our Lasallian tradition of innovative and effective management of our institutional resources.

I congratulate all the researchers featured in this report and wish us all more success in the future. Animo La Salle!

**Br. Raymundo B. Suplido FSC**





# Message from the Chancellor

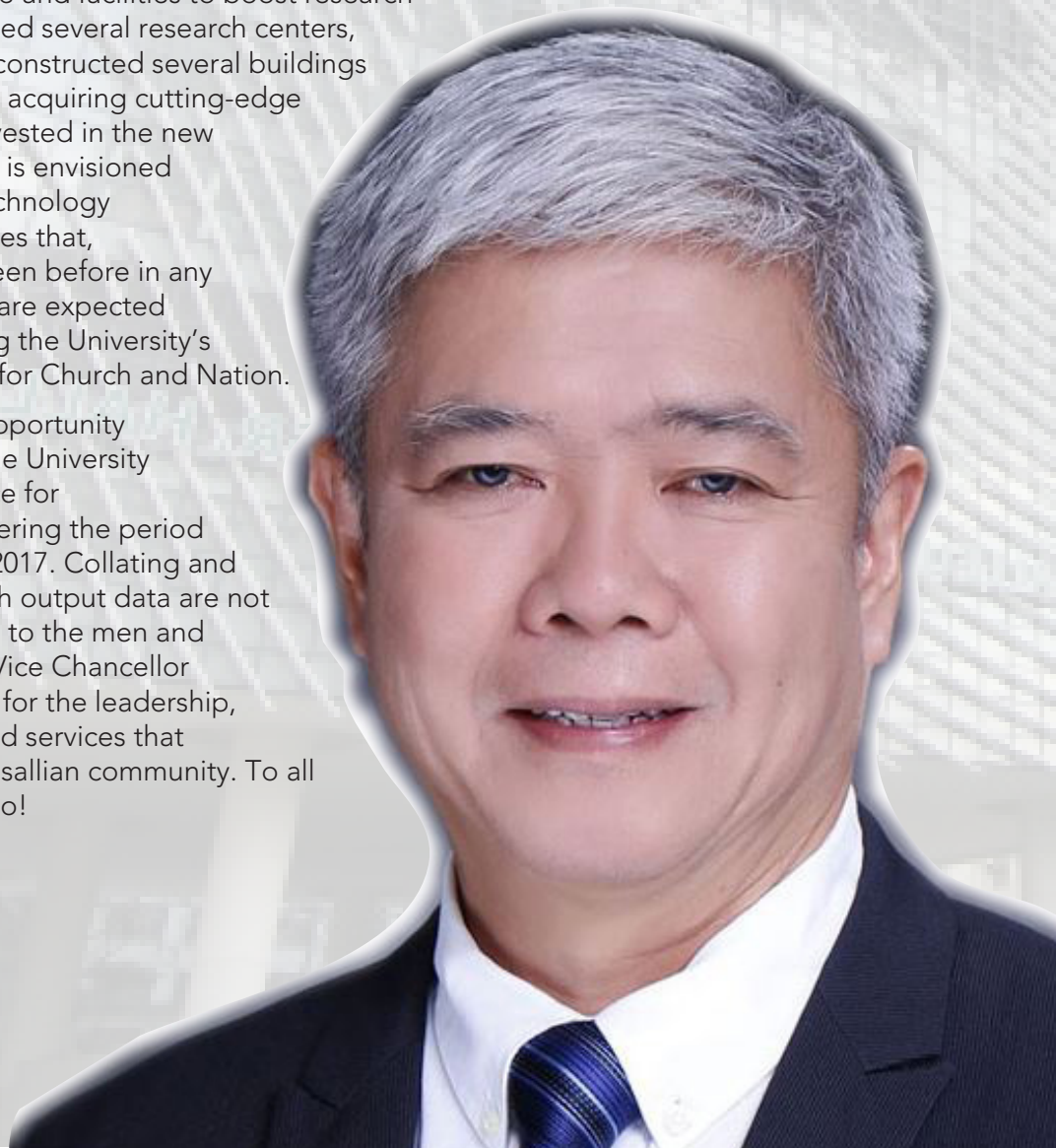
For the past several years, research activities at De La Salle University have become increasingly vibrant and more productive. No less than the University's vision-mission fully supports and integrates research undertakings of faculty members and students into the curriculum. Research has become an inherent part of the academic life and culture of the Lasallian community. The ever-growing number of research activities comes in various forms such as scholarly publications, externally- and internally-funded projects, and paper presentations, and participation of faculty members and students in local and international conferences, which are clear indicators that DLSU has gained wide recognition and reputation for its research endeavors and outputs.

In the decades prior to the 1970s, the research productivity of the University was not as vibrant as it is today. The revisited vision-mission, the conducive and nurturing research environment, the able leadership of research administrators, and the overwhelmingly positive response of faculty members and students—all of these have paved the way for DLSU to become a top-ranking university in the Philippines and in the Southeast Asian region.

The future looks even more dynamic and brighter for DLSU! It has laid down more infrastructure and facilities to boost research productivity. It has established several research centers, laboratories, and institutes; constructed several buildings and other structures; started acquiring cutting-edge research equipment; and invested in the new DLSU Laguna campus which is envisioned to become a science and technology hub. These determined moves that, perhaps, have never been seen before in any Philippine private university are expected to contribute toward fulfilling the University's mission of being a resource for Church and Nation.

Lastly, let me take this opportunity to thank and congratulate the University Research Coordination Office for this consolidated report covering the period AY 2015-2016 and AY 2016-2017. Collating and consolidating all the research output data are not easy tasks. I am also grateful to the men and women of the Office of the Vice Chancellor for Research and Innovation for the leadership, support, and research-related services that they provide to the entire Lasallian community. To all of you, maraming salamat po!

**Dr. Gerardo C. Janairo**





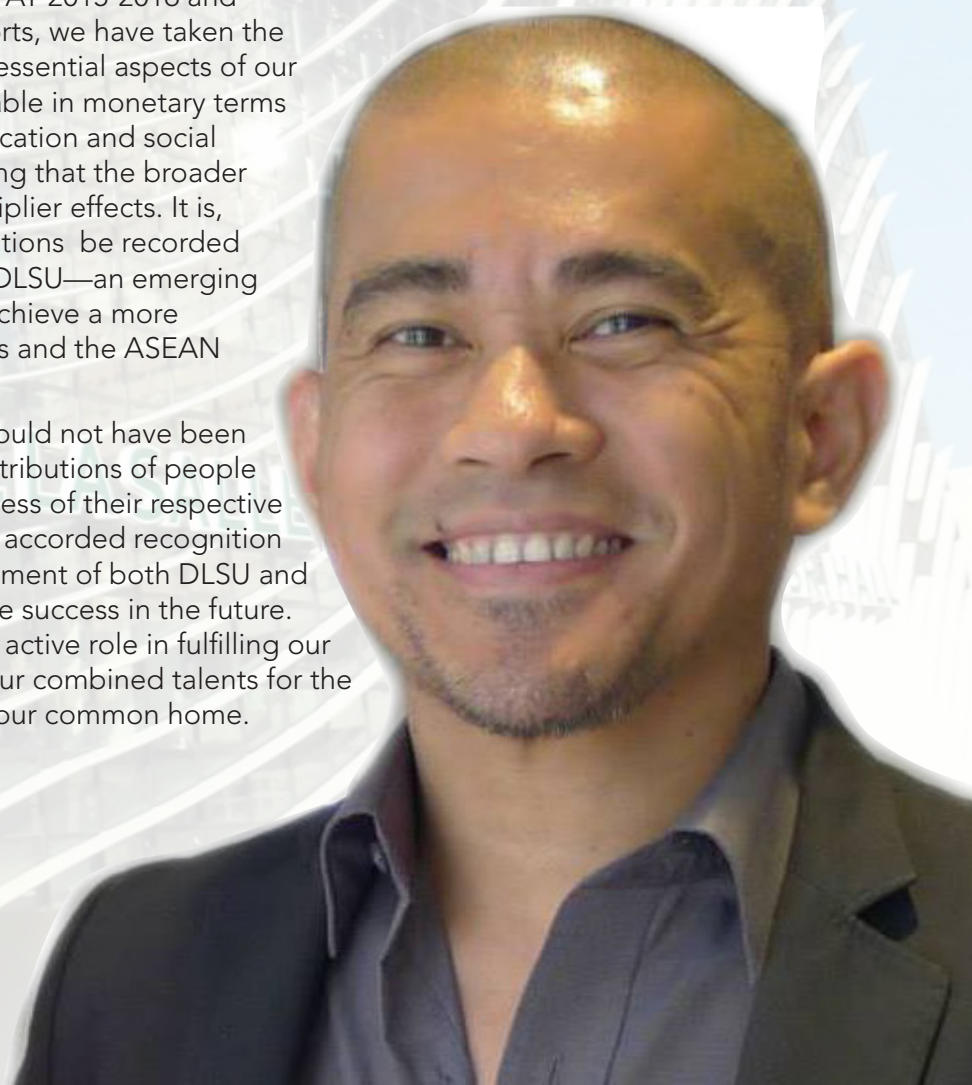
# Message from the Vice Chancellor for Research and Innovation

Academic Years 2015-2016 and 2016-2017 were years of very significant milestones in the history of De La Salle University's emergence as one of the Philippines' strongest research institutions. It was during this period that internal policy reforms and investments in human resources, dating back to the 1990s, had started to yield returns. These developments, coupled with a much-improved national research ecosystem, led to dramatic increases in the levels of inputs into (i.e., funding) and outputs of (e.g., publications and graduate degrees granted) university research. Not surprisingly, it was during this period that the level of research awareness became more deeply entrenched into the institutional culture at the grassroots, and into the institutional identity, via our revisited vision-mission in 2015.

This consolidated research report highlights the key research projects, outputs, and milestones of AY 2015-2016 and AY 2016-2017. As with previous reports, we have taken the time to document in narrative form essential aspects of our activities that are not easily quantifiable in monetary terms and publications. These links to education and social engagement are vital keys to ensuring that the broader impact of our work would have multiplier effects. It is, thus, imperative that these contributions be recorded as significant parts of the history of DLSU—an emerging research university determined to achieve a more reputable standing in the Philippines and the ASEAN region.

These institutional milestones would not have been achieved without the combined contributions of people who worked hard to ensure the success of their respective projects. It is important that they be accorded recognition for their contribution to the development of both DLSU and the Philippines. I wish everyone more success in the future. I invite young researchers to play an active role in fulfilling our institutional commitment by using our combined talents for the good of humanity and this planet—our common home.

**Raymond R. Tan Ph.D.**



# Formative Research for Behavioral Change Communication (BCC) Using Mass Media to Increase the Adoption of Family Planning Practices and Reduce the Use of Plastics in the Philippines

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## INTRODUCTION

This qualitative-formative research, which was commissioned by the Population Media Center, a United-States-based organization, aims to use soap opera storylines to achieve positive behavior modification among a target group of young audiences, particularly relative to reproductive health and responsible parenthood (RHRP), mass media consumption, and the use of plastics and its effects on the marine and non-marine environment. It sought to understand better the needs, desires, and behaviors of young people with the end in view of

developing high quality and culturally-appropriate characters and reader-friendly story-lines for soap operas and eventually, replicate the lifestyles of the target audience—young Filipino males and females aged 18 to 29 years old living in urban and rural areas.

The research report contains four major sections. The first section explores the health services infrastructure in the Philippines insofar as RHRP is concerned. It looks into the attitudes, policies, and practices of health care providers regarding the provision of family planning (FP) and reproductive health services for married and unmarried men and women

The **Social Development Research Center (SDRC)** is the research arm of the College of Liberal Arts. It seeks to fulfill the two-fold mission of serving as a hub in the Philippines and the Asia-Pacific region, for research and advocacy; and of forming a bridge between the academic community and the society and community it serves. Its vision is for Filipinos and the people of the Asia-Pacific to enjoy an improved way of life and to live under decent conditions in an environment that accords them human dignity and respect. SDRC's programs and endeavors have resulted in policies and projects that address identified needs. The Center has helped put up schools, generate income, organize communities, and promote better service provisions in various aspects of health, governance, and social service. By encouraging the participation of beneficiaries through capacity-building and training, among others, SDRC has earned the trust of donor agencies and increased their faith in people's capabilities.



of reproductive age. It likewise examines the perception of the target sectors with regard to the accessibility, affordability, and acceptability (including “user-friendliness”) of such services.

The second section, which is on media and communication analysis, explores the target audiences’ access to the different information, communication and technology (ICT) platforms: Internet, Television (TV), radio, mobile phones, and computers; and the barriers or inhibiting factors that prevent them from viewing or listening to the different mass media. It also aims to: determine the relative popularity among the audiences of various TV and radio stations and online media platforms; identify the audiences’ favorite characters from existing programs on TV, radio, and the Internet; and determine the popular TV programs that are widely patronized by the target population.

The third section is the ethnographic audience research component that looks into the norms and values of the Filipino audience. The aim of this component is to understand the knowledge, habits, beliefs, views, perceptions, attitudes, responses, and behaviors of Filipinos with regard to the pressing health issues and concerns of the target sector, namely, (1) married and unmarried adolescent males and females (18 to 29 years old), (2) married and unmarried young adult females and males (including parents), and (3) middle age females and males.

The last section deals with issues relating to waste and the environment by determining the views and experiences of urban and rural residents regarding plastics and their impact on the non-marine and marine environment.

## DATA COLLECTION ACTIVITIES

The study utilized key informant interviews (KIIs), focus group discussions (FGDs), and household observation method (audience ethnography) for the RHRP component.

Key informants were selected through purposive sampling. A total of 12 KIIs were conducted to elicit more in-depth responses from community leaders, village officials, zone leaders, and other stakeholders regarding the different issues relating to RHRP, the use of plastics, and its effects on the environment (marine and non-marine environment), and media communication consumption. Sixteen (16) other KIIs were conducted with different stakeholders, including personnel of the city environment and natural resources office, heads of community-based and people’s organizations, barangay officials, NGO leaders/advocates, and most importantly, the sea patrols who are more popularly known as the *bantay dagat*.

The FGD participants were selected through respondent-driven sampling. In this technique, the initial list of participants was prepared following a set of criteria. The participants on the initial list were then asked to identify other persons or individuals with the same demographic characteristics as theirs. Random sampling was used to identify the final list of FGD participants. Prior to the conduct of the FGDs, the participants were asked to accomplish an online survey to determine their access to RH services, access to the different information technology (IT) platforms, and media consumption. Of the 77 FGD participants, only 53 were able to accomplish the survey. The results of the



► **Focus group discussion with community leaders coming from the different barangays of the City of Manila (July 25, 2016)**

survey were immediately shown to the 77 FGD participants for validation. The results served as a take-off point for the FGDs, which were conducted in English, Filipino, or Bicolano, depending on the participants' language preference. Each FGD ran for an average of two hours. Four (4) FGDs each were held in Manila, and in Calapan, Oriental Mindoro. Two (2) FGDs were conducted for younger participants (18-34 years old), while two (2) other FGDs were conducted for older participants (35-60 years old). A total of 16 participants attended the FGDs in Manila, while a total of 11 participants attended the FGDs in Calapan, Oriental Mindoro. Most of the FGDs for the RH components were conducted in August of 2016.

The household observation method (audience ethnography) examined media usage, and documented the household members' practices and rituals in relation to TV viewing and their reactions as they watch soap operas.

Thematic data analysis through coding was undertaken using the NVivo

software. The coding process allowed the researchers to come up with emerging themes. The first stage of the analysis was open coding. Line-by-line content analysis was done. Thereafter, the analysis proceeded to axial coding, which allowed the researchers to recode some items and merge similar, or related codes.

## RESULTS

For purposes of this report, the results of the study are presented in terms of the three (3) major areas: RHRP, social or mass media consumption, and the use of plastics and its impact on the environment (marine and non-marine).

### Reproductive Health and Responsible Parenthood

Both the KI respondents and the FGD participants associated FP with birth spacing, number of children, responsible parenthood, and population awareness. They expressed the belief that FP is necessary, especially for those who are

economically challenged. They are of the opinion that by controlling fertility, families may be able to provide enough resources to their children, despite their poverty.

The study found that there remains much to be desired as regards male involvement in FP efforts. It was noted that more women than men access FP services from the health centers and that oral contraceptive pills and injectables were the most popular FP methods availed of at these health centers.

In both the rural and urban areas, there were mixed results as to the point person for decision-making on the use of FP among the clients of health service providers (HSPs). It is reportedly common for HSPs to encounter clients, mostly females, who avail of FP goods and services from the health facility without the consent of their partners. One married female FGD participant shared, "I am taking pills, my husband does not want me to, but of course I am the one who gets pregnant and not him. That is why I am keeping it a secret. He cannot do anything anymore."

Some FGD participants remarked that the wife should be the one to decide if the method to be used is for females. If the FP method is for the males, then the husband or male partner should decide. The other FGD participants and KI respondents were of the belief that both partners should decide on the FP method. However, they admitted that there are cases where a wife had to give in to her husband's wishes, or vice versa.

The study also found that labor migration and employment are regarded as 'natural ways' of controlling fertility. The FGD participants believe that aside from providing FP services, employment

opportunities must also be generated to enable couples to direct their attention to productive work instead of being idle. They feel that poverty is related to having many children.

Some personal, familial, and structural barriers to the use of FP methods also surfaced during the study. At the personal level, the barriers include fear of side effects, stigma, lacking sensation, masculinity issues, and fear of condom breakage. At the familial level, the barriers include failure to use contraceptives may be due to the husband's disapproval, preference to have several children, and older family members' influence. At the structural level, deterrents include the influence of the Church, less involvement of men in the government's FP programs, the distance of the health facility to the residence, and the inability of young people to access condoms.

The FGD participants highlighted the crucial role of schools in promoting the RHRP law, considering that the incidence of teenage pregnancy is increasing. The participants attributed the increasing rate of teenage pregnancy in the Philippines to exposure to pornography, lack of parental guidance, poor parent-child communication, drugs, and vices. They believe that young people tend to be promiscuous due to early sexual debuts and their inability to access contraceptives from health centers.

### **Audience Ethnography and Media Consumption**

A total of 12 households were visited for the audience ethnographic research. Using the participant observation technique, the researchers

visited a few selected families in Manila and in Garchitorena to have informal conversations with family members and to observe them as they watch soap operas. For ethical reasons, however, the researchers made use of an overt observation method, where family members were made aware that the researchers were basically observing them.

The TV and the mobile phone are popular ICT platforms among the households observed. Internet signal was found to be more accessible in the urban than in the rural areas. Access to the Internet was associated with the capacity to pay. In the rural areas, the local folk depended on their smartphones to have access to the Internet. They paid through their mobile network service providers.

It was noted that in the rural areas where not all households have TV sets, watching soap operas has become a community affair. Also, the choice of what soap opera to watch greatly depends on channel preference. This means that if one prefers a particular channel, he/she would most likely end up regularly watching the soap opera of this channel. The study found that TV watching and eating dinner come as a package and are an evening family affair. The other activities that family members engage in while watching TV include having a chat, browsing the Internet using their smartphones, and eating chips or finger foods.

The ethnographic research participants believe that a good soap opera touches on the realities on the ground (social reality) so that audiences can relate to it. It should provide lessons and impart moral values. The scenes should be familiar, and the situations should be ones that the

audience can easily relate to because of the similarity to their everyday life experiences. It should inject humor and romance.

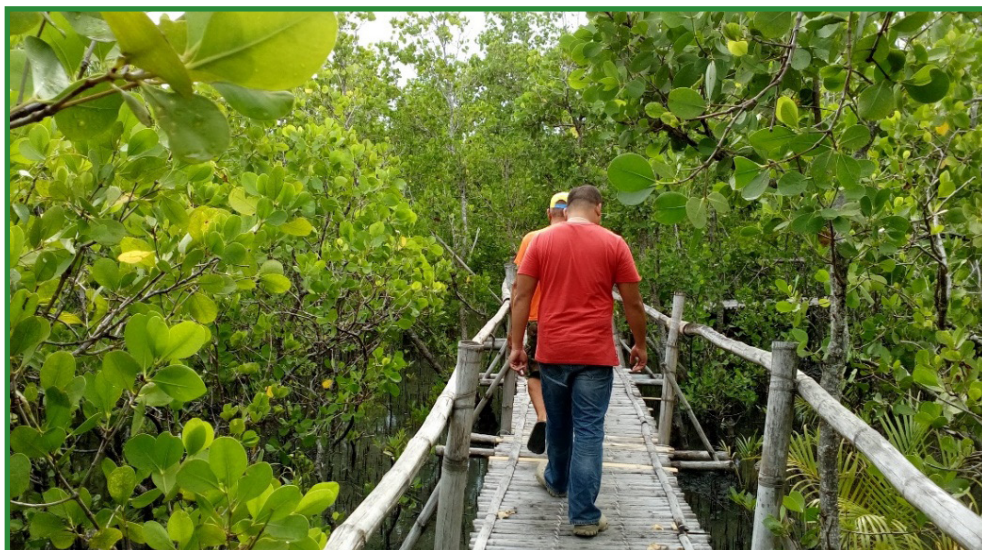
### **The Use of Plastics and Its Impact on the Non-Marine and Marine Environment**

The FGD participants were asked about the first thing that comes to their mind when they hear the words “plastics” and “environment.” Their responses somewhat reflect a negative view. One participant, for instance, felt that it is the use of plastic that is responsible for polluting the environment. The participant commented that “The environment and the surroundings should be beautiful. However, because of the plastics scattered all over, the surroundings are not good to look at. They destroy the beauty of nature.”

The waste problem is generally viewed by the participants as stemming from the attitude of people. They believe that people are generally stubborn, lazy, and they throw their garbage anywhere at their convenience. A general observation is that people lack the concern for the environment. The participants also underscored that poor implementation of environmental policies seems to encourage more people to adopt practices and engage in activities that are harmful to the ecosystem. The FGD participants believe that poverty, apart from being related to having many children, is also related to the significant amount of extraction of marine resources. They likewise claim that young people are also partly to blame for the accumulation of waste in their communities. An FGD participant explained that young people tend to indiscriminately dispose of their



**Principal investigator's  
visit to the Mangrove  
Reforestation Project  
in Barangay Silonay,  
Calapan, Oriental  
Mindoro**



trash anywhere, even if their attention is called. Another FGD participant said that “Plastics are just there, people simply leave their garbage anywhere, but it’s basically the young people who are responsible.”

One FGD participant, however, noted that there are school-aged children who collect garbage from households, particularly plastic or PET (polyethylene terephthalate) bottles, to earn extra income for their school pocket money.

It was mentioned during the FGD that some village residents comply with the prescribed schedule for taking out their garbage to designated spaces for the government dump truck to collect. However, since they do not observe proper segregation, their garbage is not collected as a way to force them to comply with the material waste segregation regulation of their locality. As a result, the uncollected garbage emits a foul smell and become unsightly. The participants further mentioned that some households even dump their garbage in vacant or open

spaces at dawn, so that their neighbors would not catch them.

Although the garbage problem is shared by both the urban and rural residents covered in the study, in the urban areas, it is blamed for the flooding and urban pollution, while in the rural areas, plastic waste is blamed for the pollution of the marine environment. The FGD participants recognized the transborder nature of the garbage problem. One participant, for instance, complained about the garbage in their community that emanates from a barangay situated in a higher area. This garbage is carried through the river down to the lower grounds.

The rapidly increasing population was also seen by the KI respondents as one factor causing the current environmental problems of the country. Five KI respondents believed so. This allegation was best described in the response of one sea patrol KI respondent who asserted that “*Maganda ang kalikasan noon dahil kakaunti ang mga tao, kakaunti ang mangingisda at wala pa silang alam sa mga ilegal na gawain*” (Back then,



the natural environment was beautiful, because there were fewer people; there were only a few fishermen back then, and they were not aware of illegal fishing practices). Participants asserted that solving environmental problems requires changing the attitude of people to become environmentally conscious, and it should begin at home. For example, one FGD participant expressed that changing a mindset should start at home, with the parents themselves. The FGD participants expressed that parents should be responsible for instilling in their children the importance of the environment; they should teach their children environmental values. Parents must be able to walk the talk and set environmental exemplars that children can emulate.

Despite the importance and value of the marine ecosystem, many people continue to adhere to behaviors and lifestyles that are destructive to it. One problem identified relative to the marine environment is the proliferation of garbage floating on the sea surface and buried below the seabed. Some participants noted that fishes and marine life ingest the garbage dumped into the ocean. This practice is not only harmful to marine life but also to humans who consume food drawn from the country's marine resources.

## CONCLUSION

The KI respondents and FGD participants generally point to poverty as the underlying reason for the difficulty in controlling family size, as well as for the lack of care for the environment. Poverty is regarded as a perennial problem in the country. It should be considered when

talking about FP, as well as the care for the environment. FP is a major concern in the country, given the high rate of unmet needs and the increasing incidence of teenage pregnancy, which is the highest in Asia.

## Proposed Storylines

From the recommendations of the KI respondents and FGD participants, the study came up with a set of general considerations in the production of the storylines for a soap opera on RHRP and a soap opera on the environment.

The soap opera on RHRP should a) show a comparison of two families—one rich and one poor, with the rich family having fewer children than the poor family; b) describe the economic and social impact of not practicing FP on the family, as well as the effects of teenage pregnancy on the life, and future of the teenage mother, and her family; c) have light and comedy moments, and a happy ending; d) pressure the government, both at the executive and at the judiciary levels, to push through with the implementation of the RHRP Law; e) tackle RH and highlight male involvement in FP; f) consider including real life love teams in the cast; and g) emphasize love for family.

For the soap opera on the environment, the younger and older respondents offered different sets of recommendations. In the urban areas, the younger FGD participants recommended a) combining comedy and drama in a soap opera—highlighting family and community issues related to the marine environment and b) describing how environmental problems impact the family economically. Meanwhile, the older FGD participants asserted that the soap opera should send

a message regarding the importance of water resources to life.

Participants from the rural areas believe that the soap opera storyline a) should center on the lives of sea patrols, NGO workers, and people living in informal settlements; b) can feature a particular family that improved its living condition through fishing, without resorting to illegal methods; and c) can focus on the life of informal settlements, considering informal settlers are the ones perceived to be more difficult to educate on the value of marine resources.

In summary, FP is a major concern, given the high rate of unmet needs. In

addition, the teenage pregnancy rate in the country—the highest in Asia—is still increasing. Thus, highlighting these matters in a soap opera is necessary, but should not be the focus. As can be gleaned from the responses of the FGD and KI interviews, the underlying reason why people have difficulties controlling their family size and in responding to the environment with care is poverty. Poverty is a perennial problem in the country. It is an important factor that should be considered when talking about family planning and caring for the environment.

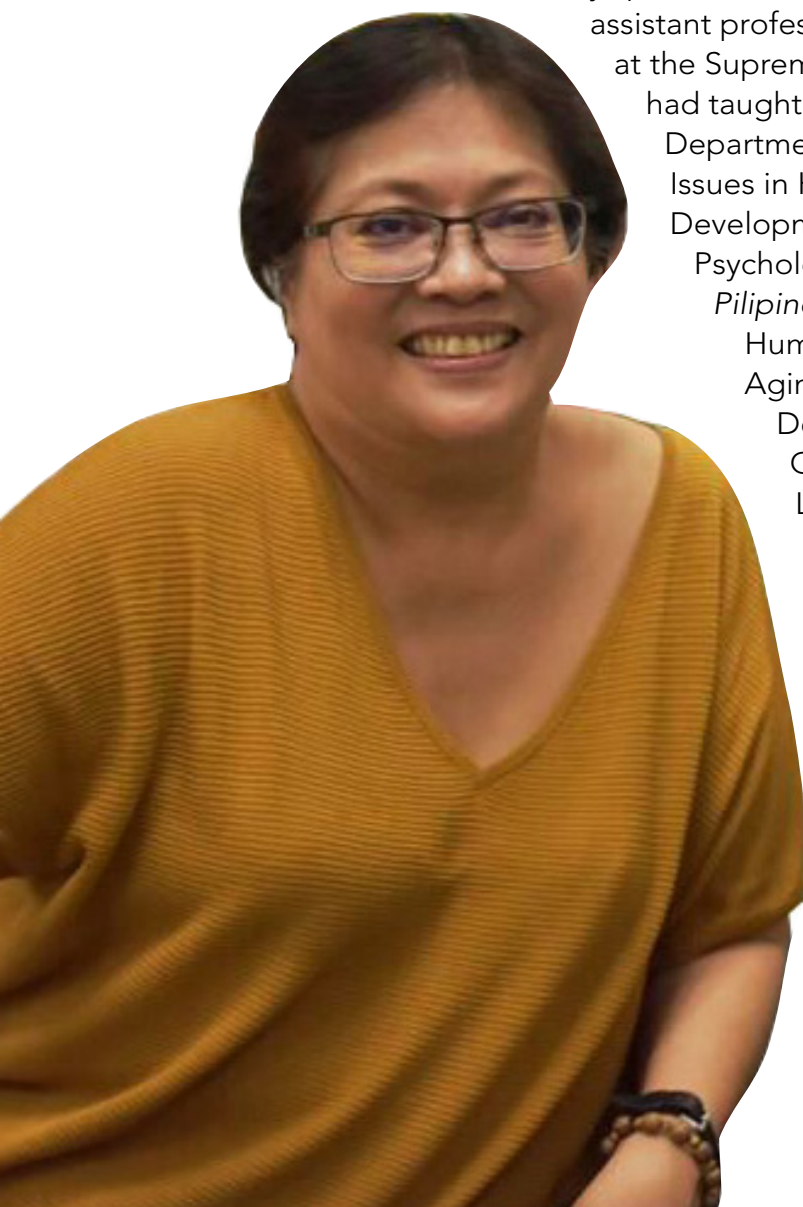
## FEATURED RESEARCHER

### *Dr. Madelene A. Sta. Maria*

**D**r. Marie Madelene Avila Sta. Maria, or “Made” to colleagues and friends, is a renowned expert in the field of Social and Human Development Psychology. Her research interests are conflict and peace-making/building, human development in the areas of culture and psychology, and adolescent development.

She joined the DLSU’s College of Liberal Arts (or the CLA) which was newly spun off from the College of Arts and Sciences) in 1982 as an assistant professor, after her short stint as a research assistant at the Supreme Court. Since joining the University, Made had taught the following courses under the Psychology Department: Child Development, Research Methods and Issues in Human Development, Experimental Psychology, Development Psychology, Social Psychology, Abnormal Psychology, Theories of Personality, *Sikolohiyang Pilipino*, Psychological Research, Foundations of Human Development, Adult Development and Aging, Adolescent Development, Socioemotional Development, Approaches and Methods in Qualitative Research, Positive Psychology in the Life Span, Culture and Human Development, Research Methods and Issues in Human Development, and Action Research.

She also served as director of the DLSU Research Ethics Office (2015 to 2018), and the University Research Coordination Office (2008 to 2014). She has been a member of the DLSU Research Ethics Review Committee since Term 1, AY 2018-2019, and is a research fellow of the CLA Social Development Research Center.



She retired with the rank of full professor in December 2017, but continues to teach as a senior lecturer in the Psychology Department of CLA.

She was a visiting fellow at the Faculty of Social Sciences and Humanities, Mahidol University, from August 1 to September 30, 2014. Made was also a holder of the Lorenzo Tañada Professorial Chair in Nationalism Studies (1997-2005) and the Philippine Amusement and Gaming Corporation (PAGCOR) Professorial Chair in Human Development (2006, 2008, 2009, and 2010).

Highly visible and esteemed in the professional and academic circles, Made is a fellow of the Psychological Association of the Philippines; a lifetime member of the Pambansang Samahan sa Sikolohiyang Pilipino (National Association of Filipino Psychology); vice president of the Pi Gamma Mu, International Society in Social Sciences–Philippines Beta Chapter (AY 2011–2012 up to the present); fellow (2001 up to the present ) and member of the Board of Directors (2001-2007) of the Psychological Association of the Philippines (PAP); member of the scientific committee of the International Psychological Applications Conference and Trends (2018-2019); national coordinator of the Southeast Asian Conflict Studies Network (2000-2017); regional coordinator of the International Society for the Study of Behavioral Development (2013); member of the International Association for the Study in Behavioral Development (2008-2010); and a consultant of the Asian Development Bank (ADB), Manila (April 2005 to December 2006, November 2007 to November 2012). As ADB Manila consultant, she designed and conducted training on communication effectiveness for work productivity and

transcultural communication for the bank's local and international professional staff.

Unknown to many, it was Made who initiated the development of the DLSU Code of Research Ethics upon the advice of Dr. Wyona C. Patalinghug who was then the Vice Chancellor for Research, and later, with the support and guidance of Dr. Jesusa Marco who was then Associate Vice Chancellor for Research and Learning. She then supervised the production of the Code which was co-written by Dr. Robert Roleda, Dr. Vince Groyon, Dr. Marco, and other faculty members from the history department and the different research centers/institutes. The University recognizes her invaluable contribution in laying the groundwork for the formal establishment of the Research Ethics Office, the creation of the Research Ethics Review Committee, and the introduction of mechanisms for the conduct of a research ethics review.

A prolific researcher herself, Made produced numerous solo and co-authored works that were published as articles in highly reputable journals, which include the *Southeast Asian Journal of Tropical Medicine and Public Health*, *Public Library of Science (PLoS One)*, *Journal of Multimodal User Interfaces*, *Youth and Society*, *Psychological Studies*, *Philippine Journal of Psychology*, *International Journal of Dialogical Science*, *International Society for the Study of Behavioral Development Newsletter*, and the DLSU journals: *Malay, Asia-Pacific Social Science Review*, and *Layag*. Her significant contributions in her field can be gleaned from her works on the dimensions of Filipino negative emotions published in *Psychological Studies* (2010); the typologies of risk and protection in the lives of Filipino street

children in Manila, which appeared in *Youth and Society* (2011); Ang kaisipang Enriquez at Salazar sa Sikolohiya ng Pilipino that was published in *Malay* (2013) and a multivariate analysis of suicide ideation among university students in the Philippines that appeared in the *Asia-Pacific Social Science Review* (2015). Her works on the Philippine psychological development also appeared in *Adolescent Psychology Around the World*, published by the Psychology Press in New York (2012) and in the *International Encyclopedia of Adolescence*, published by Routledge in New York: (2007).

Several of her solo and co-authored works also appear as chapters in books that were printed in the Philippines and abroad. These books include *The Paradox of Philippine Education and Education Reform: Social Science Perspectives*, published by the Philippine Social Science Council (Quezon City); *Adolescent Psychology Around the World*, published by Psychology Press (New York); *International Perspectives on Youth Conflict and Development*, published by the Oxford University Press (New York); *The Handbook of Spiritual Development in Childhood and Adolescence*, published by Sage Publications, Inc. (Thousand Oaks, CA); *The World's Youth: Adolescence in Eight Regions of the Globe*, published by Cambridge University Press (New York); and *International Perspectives on Youth Conflict and Development*, published by Oxford Scholarship Online. She is also listed in the *International Encyclopedia of Adolescence* published by Routledge (New York).

Due to her recognized expertise, she had been invited to present papers in various scientific meetings both in the local and international milieus. In September 2017, she co-presented a paper

on "The Moderating Effect of Spirituality on the Influence of Multigenerational Family Structure on the Mental Health of Children Left Behind," and organized a symposium entitled "Is the OFW Family a Risky Family?" during the 54<sup>th</sup> Psychological Association of the Philippines Annual Convention held in Bacolod, Negros Occidental. She also presented the papers on "The Relation between Filipino Adolescents' Sense of School Belongingness and Autonomy: Mediation through Perception of Role Fulfillment," at the International Psychological Applications Conference and Trends in Lisbon, Portugal from April 30 to May 2, 2016; "Peacebuilding in the Philippines: Actors and Action Domains," at the International Conference on Governance and Insider Peacebuilders in War to Peace Transition Experiences in South and Southeast Asia that was held at the Universiti Sains Malaysia, Panang (Pulau Pinang), Malaysia on March 30 to 31, 2016; and "Socio-psychological Perspectives and Approaches to Territorial Disputes," at the International Workshop on Resolution and Reconciliation of Territorial Issues in East and Southeast Asia, held at Kota Kinabalu, Sabah, Malaysia in December 2015. Some of her solo and co-authored papers had seen publication in several conference proceedings including the International Conference on Language Resources and Evaluation (LREC) organized biennially by the European Language Resources Association in Luxembourg; and the 1<sup>st</sup> National Workshop, and the 3<sup>rd</sup> Regional Workshop on Public Policy Conflicts that were organized by the Southeast Asian Conflict Studies Network–Philippines in separate occasions.



The heavy demands of teaching and administrative work had not dampened Made's passion for scholarly pursuits. She not only found time, but actually made time, to undertake research projects for which she received support from the University and some external funding agencies. Two of her latest co-authored papers that are lined up for publication are "Addressing the Mental Health Needs of Filipinos: Case Studies of Community Mental Health Programs," and "The Relationship Between Agency and Sense of School Belonging: Mediation by Perception of School Roles and Tasks." She recently completed a project that looked into the meanings of originality among Filipino social and natural scientists with funding from URCO. She is currently undertaking projects that analyze the sense of school belonging and the role of fulfillment; community mental health in the Philippines; transnational family structures and youth mental health and risk behaviors; and the nature of and issues in interdisciplinary research collaborations.

Made serves as a research consultant in some La Salle-supervised schools, where she mentors grade school, high school, and college teachers in their action research projects. Driven by an earnest desire to share her knowledge and research expertise widely, she helped start the "Research Program on Migration and the Filipino Family" at the San Pablo Colleges (SPC) in Laguna. Now on its third year, the program had enabled the development of research capacities and partnerships among teachers and graduate students of DLSU and SPC. Papers developed under

the program had been presented in various national and international conferences.

Made earned her bachelor's degree in Psychology *cum laude*, and Master of Arts in Psychology from the University of the Philippines the Diliman, in 1980 and 1985, respectively. She pursued doctoral studies as a Konrad Adenauer scholar at the University of Cologne in Germany, where she earned her Ph.D. in Psychology *magna cum laude* in 1993. She is recognized as the first ever scholar to undertake a critique of the intellectual movement, *Sikolohiyang Pilipino*, which she thoroughly examined in her dissertation.

Behind her successful career is a very supportive and loving family. Made is happily married to Basil Sta. Maria, and is the mother of Monika and Frank Sta. Maria.

Despite her achievements, Made has remained humble. No amount of workload or hectic schedule would stand in the way of her doing research. She is known as a nurturing mentor who always gets excited to discuss new concepts and ideas for research that are advanced by her students and up-and-coming researchers. Never threatened by excellence, she encourages her mentees and colleagues to become and perform their best.

# Madé: A Midwife of Research Dreams

by Seann Tan Mansukhani

**M**adé is a fount of research ideas. If you have a glimmer of interest in research, all you have to do is ask her a simple question about research, and before you know it, she'll be hatching research plans with you. I know this for a fact because I have been privileged to be under her mentorship for over two decades. My love for research was born not only from our numerous collaborations but also from our animated discussions while riding a cab caught in heavy traffic or waiting at the airport en route to a convention. But I am only one of many others whose research lives she has so skillfully nurtured.

One such research project that Madé had dreamed of and breathed into life was the positive youth development research project of 2004. We had no funds when we started the project but this did not prevent her from pursuing the research. Madé had a clear vision and a road map where she wanted to lead us, step by step, holding the research-inexperienced hands of psychology faculty members and graduate students all the way. Eventually, she was able to source enough funds to enable us to conduct our focus group discussions (FGDs) and complete the data analysis. Then, off we went to Davao City in 2008 to present our research papers at the 45th Annual Convention of the Psychological Association of the Philippines. Thus, one good thing subsequently gave birth to many more: the publication of our positive youth development papers in a special issue of the *Philippine Journal of Psychology* in 2009; the funding of the youth and poverty research project by the Office of the Brother President that enabled psychology faculty members and graduate students to contribute to the development of an instrument called Multi-context Assessment Battery for Youth Development (MAB-YD); the creation of a database from the administration of this instrument in various parts of the country; and the publication of youth and poverty research papers in international journals.

Like a true midwife, Madé has assisted numerous researchers 'give birth' to their projects. She did it without expecting anything in return. But I can vividly imagine her eyes widening and twinkling with delight and satisfaction when she sees all the researchers she has midwived: full-grown and giving birth to their own research work with lucidity, integrity, and relevance.

## Writing the Philippines: *The Cirilo F. Bautista Prize for the Novel*

In honor of our National Artist for Literature, who was also a Professor Emeritus and University Fellow of De La Salle University, the Bienvenido N. Santos Creative Writing Center established *The Cirilo F. Bautista Prize for the Novel* in 2014. The prize was PHP100,000 (one hundred thousand pesos), probably the largest amount ever given for a novel winner in the history of Philippine literature.

The competition sought to encourage greater production in the novel genre in the country and ensure its high-quality standard with the provision of a monetary reward to the best of the writing. It was co-sponsored by the DLSU Angelo King Institute for Economics and Business Studies (AKI) and the Office of the Vice Chancellor for Research and Innovation (OVCRI). It received the endorsement of the

Established in 1991, the **Bienvenido N. Santos Creative Writing Center (BNSCWC)** continues to be at the helm of De La Salle University's effort to preserve the tradition of excellent creative writing and research in the country. It is one with DLSU in the belief that quality writing is best cultivated in the spirit of vital engagement with tradition and innovation—decisive moments in the making of a nation's literary and cultural heritage.

Founded in honor of the late Filipino-American writer Bienvenido N. Santos, the Center provides programs that serve as venues for the academic community to critically and creatively explore the writing process. At the forefront of this exchange are highly respected and award-winning writers who are invited both from within and outside of DLSU to share the techniques of their craft in workshops, lectures, conferences, and literary readings.

The Center keeps abreast with the interplay of the national and international literary environment as it sees itself playing an important role not only in enriching the Lasallian community's cultural life but the larger community as well. It has actively participated in literary festivals and hosted foreign writers in the interest of learning more about other cultures' literary traditions and developments. It is also committed to serving the local community's cultural life through programs and activities that contribute to the dynamic production of Philippine writing.

National Committee on the Literary Arts of the National Commission for Culture and the Arts, (NCCA).

The competition was open for submissions between the dawn of 22 October 2014 and midnight of 15 May 2015. Filipino citizens, published or yet-to-be published writers, could submit an entry: one unpublished novel, an original work, in English or Filipino. The total word count of the novel should not go beyond 125,000 words.

The distinguished Board of Judges was chaired by the National Artist himself, Dr. Cirilo F. Bautista. The core was composed of BNSCWC Associate Directors Katrina Tavera and Rolando B. Tolentino. Dean Francis Alfar and Joselito de los Reyes served as guest judges. All the judges were award-winning fictionists and writers, and recipients of the National Book Awards given by the Manila Critics Circle and the National Book Development Board.

A rigorous screening process was undertaken by the Board. Following international standards, particularly as to a novel's length, manuscripts with less than 40,000 words did not pass the first screening. The second screening drew up a short list, and the selected finalists' titles received another careful reading before the judges met to choose the winner.

Out of 73 qualified entries, eight titles made the short list. They were: "Dead Priest in the Creek" by Cecilia Manguerra Brainard; "Isang Pelikula Tungkol sa mga Larawan ng mga Lumang Bulalakaw, mga Sirang Ferris Wheel, mga Nakalutang na Rooftop, mga Putol na Overpass at mga Wasak na Time Machine" by Rick Jay T. Cabillo; "Uberman" by Zeno Antonio Denolo; "The Lady in Blue Armani" by Maria L. M. Fres-Felix; "When Will This War End?" by Raymundo T. Pandan, Jr.; "Sa (Loob at Labas ng Kagila-gilalas na) Daigdig ni Atô" by Frank G. Rivera; "The Disappearance of the Rose" by Patria





Rivera; and “Mga Bulong ng Anino at Tahimik” by Eric John Betita Villena.

In mid-October 2015, the Center announced the winner of the *Cirilo F. Bautista Prize for the Novel*: Raymundo T. Pandan, Jr., for his novel manuscript “When Will This War End?” (word count: 123,642). In a spirit of generosity, the Board of Jury recommended a Special Jury Prize for Zeno Antonio Denolo and his distinctive work “Uberman” (word count: 80,357).

On the winning novel, the Board of Judges declared: “Set in an alternative Philippines just emerging from Spanish rule, the novel is more than a chronicle of war, but ultimately a look at how myth, memory, and history mingle to render what is heroic.”

On the Special Jury Prize novel, the Board remarked: “The spectacular

and the ludicrous are in ‘Uberman,’ a novel about a has-yet-to-be superhero. The novel’s success lies on several factors: a painful but pleasing critique of society; readable and contemporary; and its ability to let the public read, be entertained, while pondering the follies of being a hero.”

Pandan hails from Bacolod, Negros Occidental. He has practiced law for 25 years. He served as dean of the College of Law of the University of St. La Salle (1998-2010), and continues to teach in the law school. He was the research director of the Supreme Court’s JURIS Project on mediation (2004-2008). His poetry collection, *Illuminations and Sonorities* (2006) and children’s poetry collection, *The Ocelot and Other Poems* (2012) won the Don Carlos Palanca Memorial Awards for Literature.

Denolo was born in Manila in 1990. He received his B.S. in Clinical Psychology (2010) from Polytechnic University of the Philippines. He called himself a “struggling writer,” having no academic and professional background in writing. His first modest literary recognition was being part of the short story compilation contest of UngazPress, an independent publisher. With his social network friends, he started an online literary magazine [YouKnowPH.wordpress.com](http://YouKnowPH.wordpress.com).

The awards ceremony was held on 14 November 2015 at Victorino’s Restaurant in Quezon City. Brother President Raymundo Suplido FSC and University Fellows Marjorie Evasco and Clodualdo del Mundo Jr. graced the joyful event. Distinguished guests from the literary community included National Artist F.



Sionil Jose and his wife Tessie; Karina Bolasco, publisher of Anvil Publishing; Graciela Mendoza, executive director of the National Book Development Board; Gemino Abad, Professor Emeritus of the University of the Philippines; and Alfred Yuson, columnist of *Philippine Star*.

In this country where good, praiseworthy full-length novels are sporadically produced each year, where writers continue to grapple with the national imagining, the birth of a novel—or novels at that—is truly a delightful occasion to toast and celebrate.



# Reliving Heritage: Fora and Workshop on Philippine Art and Local Cultures

In *Laudato Si'*, His Eminence Pope Francis has declared, "It is not a matter of tearing down and building new cities, supposedly more respectful of the environment yet not always more attractive to live in. Rather, there is a need to incorporate the history, culture and architecture of each place, thus preserving its original identity" (Chapter IV, II, 143).

In line with the above, the Bienvenido N. Santos Creative Writing Center implemented *Reliving Heritage: Fora and Workshop on Philippine Art and Local Cultures in 2016-2017*, on a grant from the United Board for Christian Higher Education in Asia. The team of organizers was composed of Shirley O. Lua (BNSCWC; Literature), Dominador F. Bombongan, Jr. (Theology and Religious Studies), Feorillo Petronilo A. Demeterio III (Filipino; also Director, University Research Coordination Office), and Jose Victor Z. Torres (History). The external partners were Saint Louis University (SLU) in Baguio and the University of San Agustin (USA) in Iloilo, West Visayas.

The project's modest aim of was to lay a small cornerstone in our own locality to promote a sustained, critical forum on Philippine art traditions and cultural heritage. On the basic level, it sought to instill in the academic community, particularly the students, an awareness of and appreciation for our country's legacy in arts and cultures. On a deeper level, it encouraged the re-assessment of current paradigms and the adoption of new mindsets in approaching art and heritage including the incorporation of transformative pedagogies in the classroom. The critical praxes would be enriched with the creative integration of concepts and modes from various disciplines, including the integration of "history, culture and architecture of each place." This would hopefully lead to the rethinking of issues and concerns of city living and provide the challenge to make our city a better place to dwell in.

This project conducted a forum series and a workshop on Philippine art and cultural heritage. There were two main



chapters, held in two different regions of the archipelago—Metro Manila and Iloilo.

The First Chapter, Heritage Manila, Heritage Cities Forum Series, was held on 8-9 February 2017, at the Verdure, Henry Sy Sr. Hall, De La Salle University, Manila. This was part of the 10th DLSU Arts Congress and in celebration of Philippine Arts Month.

Forum I focused on Designing Manila, Designing Cities. Subtopics covered issues related to the design of Manila (Spanish colonial and Burnham designs), adaptive re-uses of heritage structures, beautification of the environment, and conservation efforts. The provocation was delivered by Dr. Dennis Cremin, professor of history at Lewis University, Illinois and Director of the Lewis University History Center. The speakers for the forum on Designing Manila, Designing Cities were: Feorillo Petronilo Demeterio III (DLSU, panel chair), Trixie Cruz-Angeles (heritage laws), Emmanuel Calairo (Philippine Historical Association, local heritage conservation), and Jose Victor Torres (DLSU, cultural history of Manila).

Forum II focused on Heritage Education Institutions in Manila, covering concerns such as Manila's heritage schools, Catholic formation of higher education, colonial aesthetics of an ecclesiastical complex and sacredness of spaces and rituals. The main provocation was delivered by Archt. Augusto Villalon, Principal Architect and Heritage Conservation Specialist of A Villalón Architects and ICOMOS Honorary Member Award for lifetime achievement in global heritage conservation, awarded by International Council for Monuments and Sites (ICOMOS). The forum speakers were: Fernando Santiago, Jr. (DLSU, panel chair), Carmen Bettina Bulaong (Escuela Taller, heritage conservation education), Michael Charleston Chua (DLSU, De La Salle history and heritage), Tina Paterno (San Sebastian Basilica Conservation and Development Foundation, Inc.), Br. Michael Valenzuela FSC (DLS College of St. Benilde, Catholic formation of education and heritage), and Eric Zerrudo (University of Santo Tomas Graduate School Center for Conservation



of Cultural Property and Environment in the Tropics, cultural mapping and heritage places).

The fora allowed the audience to interact with the speakers and with each other and build relationships and form networks. The experts came from diverse disciplines and backgrounds: local history, art, architecture, education, theology and philosophy, cultural studies, environmental studies, and heritage conservation, among others. Aside from the Lasallian community of teachers and students, researchers and students from different higher education institutions in Metro Manila and heritage enthusiasts participated.

For the first day of the Heritage Manila Forum, 238 participants comprising DLSU faculty and students, attended, and 112 participants from various schools in Metro Manila came. The total number of participants for the first day was 350. For the second day, there were 428 participants from DLSU, and 82 visitors, making it a total of 510 participants for the second day.

This forum spawned a supplemental event, in partnership with Saint Louis University (SLU), Baguio, on a lecture-forum on history and heritage, held on February 11, 2017 at SLU Center for Culture and the Arts (CCA), Saint Louis University, Baguio City. Dr. Dennis Cremin delivered a lecture on history and place, and responses were given by SLU faculty and Baguio-based heritage enthusiasts.

The Second Chapter featured a one-week workshop in the criticism of Philippine art and cultures. Carrying the name of KRITIKA: National Workshop on Art and Cultural Criticism, this workshop covered various arts and cultural practices, including urban design, literature, visual arts, cinema, music, multi-media, and heritage conservation. Established art critics and talented young scholars gathered to form an intellectual community, using interdisciplinary and multidisciplinary ways of approaching art and cultural forms as texts.

The workshop was co-hosted by the University of San Agustin Center of Resources for Innovation and Development and the Fray Luis de Leon Institute for Creative Writing. It was held at the President's Conference Room, University of San Agustin, Iloilo, West Visayas, on May 3-6, 2017.

The experts were: BNSCWC Associate Director and cultural critic Rolando B. Tolentino (who also served as workshop director); literature and cultural studies scholar Isidoro M. Cruz; Philippine studies and philosophy scholar Feorillo Petronilo Demeterio III; music scholar and artist Raul C. Navarro; visual art critic and artist Cid Reyes; architect and heritage advocate Manuel Tingzon, Jr.; cultural historian Jose Victor Torres; film critic and Philippine



Daily Inquirer's arts editor Lito B. Zulueta; and local architect and heritage advocate Wilfredo Sy, Jr.

The fellows, selected from various higher education institutions, were: Marren Adan (urban design and cultural studies), Mars Edwenson Jo Briones (visual arts), Lawdenmarc Decamora (music), Edmond Julian Dela Cerna (literature), Joan Macapagal Dizon (media studies), Laya Gonzales (visual arts and heritage conservation), Jhames Labrador (music), Adrian Mendizabal (film), Carlos Quijon, Jr. (visual arts) and Katrina Ross Tan (film).

Their manuscripts were: "Film Stars as Overseas Workers in Filipino Commercial Films," "The Emergence of Lav Diaz's Long Form Style: Early Periods," "Paot," "The Necessary Bagobo-Other in Three Davao- Settler Fictions," "Morphing Forms and Modes of Memory Disaster Symbolism in Dante Enage's Works on Yolanda," "Sino ang 'people' sa 'People's Park'? Mga Kabalintunaan ng People's Park," "Characterizing Adorno's 'Negative Dialectics' in Pinoy Heavy Metal Music," "Usapin ng Nasyonalismo sa Edukasyong Pangmusika sa Batayang Edukasyon noong Panahon ng Commonwealth (1935-1945)," "From Monument to Object: Revisions on the History of Philippine Sculpture," and "Dolled-up Damsels: Representations of the Filipina in Local Fashion Brands' Ads."

The manuscripts underwent intensive evaluation by the experts who provided commentary to help the authors improve their writing of Philippine art and cultural heritage. Issues and concerns related to the practice of art criticism and cultural studies or the development of art and cultural practice were raised in the course of discussions. The overarching framework

of the workshop was interdisciplinary and multi-disciplinary, drawing from such areas as art history, cultural studies, sociology, anthropology, theology, media studies, local history, folklore studies, and urban studies.

Supplementing the workshop were interface activities, such as Heritage Iloilo, Heritage Cities Forum; Film Screening and Forum with Ilonggo Filmmakers (featuring the films *Buang-Bulawan* by T. M. Malones and *Lumay* by Marcelo Tolentino); and an Iloilo heritage tour. The Heritage Iloilo, Heritage Cities Forum featured former Intramuros administrator and historian Jose Victor Torres and local architecture and urban design experts Manuel Tingzon, Jr. and Wilfredo Sy, Jr. Students and teachers from neighboring schools were in attendance.

The Iloilo heritage tour covered excursions and walks to view the gems of West Visayas heritage (e.g., Calle Real and the heritage streets of Iloilo, Iloilo City Hall, Jaro plaza and church, Rosendo Mejica Museum and Makinaungalingon Press, Miag-ao church) and a gastronomic tour of Ilonggo cuisine (e.g., La Paz Public Market, Molo district, Camiña Balay na Bato and Lola Heritage House in Arevalo).

On the basic level, the goals of this project have been achieved, i.e., engage in critical dialogues on Philippine art traditions and cultural heritage; instill an awareness of and appreciation for Philippine art and heritage; and deploy a variety of critical perspectives in approaching Philippine art and local cultural traditions. Hopefully and eventually, teachers of higher education institutions will integrate the appreciation and understanding of cultural heritage, especially local heritage, in the



art appreciation course (New General Education Curriculum, Tertiary Level). The students will then develop appreciation for Philippine art and cultures. They will in turn conduct specific actions and concrete ways to show concern for heritage conservation. Scholars and researchers will also conduct research work on local art and heritage.

The cornerstone has modestly begun in our own locality, in our own milieu. DLSU

will consider holding more of heritage forums and art and cultural criticism workshops to encourage more critical conversations across the communities. Hopefully, this kind of critical forum can be replicated in other localities and regions of the country. Likewise, the art criticism and heritage workshop would also be replicated in other localities and regions.

# Research, Community Engagement, and Knowledge Activities

## INTRODUCTION

For the period AY 2015-2016 to AY 2016-2017, the JRIG was engaged in various activities aligned with its vision and mandate and in support of the University's vision of "a leading learner-centered and

research University bridging faith and scholarship, attuned to a sustainable Earth, and in the service of Church and society, especially the poor and marginalized." It had undertaken research and capacity-building, community engagement, and knowledge and education activities.

The **Jesse M. Robredo Institute of Governance (JRIG)** is a research and training institute based in DLSU. Established in 2001 as the La Salle Institute of Governance, the Institute was renamed in honor of the late Department of the Interior and Local Government (DILG) Secretary Jesse M. Robredo in October 2012.

The Institute aims to be a center of excellence in implementing governance research and training in partnership with local and international institutions. It undertakes programs, projects, and activities that are innovative and effective in creating knowledge products and in developing stakeholder capacity. It is committed as well to improve the integrity, performance, and inclusiveness of governance systems. Lastly, it provides knowledge support to policy and governance stakeholders in attaining the Sustainable Development Goals (SDGs).

The JRIG head is a member of the board of directors of the Local Governance Training and Research Institutes-Philippine Network. The Institute head sits in the steering committee of the Open Government Partnership Philippines representing the academe. The JRIG is a member of the Knowledge for Development Community (KDC) Network institutions in partnership with the World Bank. It also serves as the Philippine Secretariat of the International Academy of Chief Information Officers.

The JRIG provides knowledge support and policy advice to the various programs of the DILG, the Department of Budget and Management, and local government units such as those of Naga City, Iloilo City (Iloilo Province), Misamis Oriental (Cagayan de Oro City), and the Alyansa ng mga Baybaying Bayan ng Bulacan at Pampanga.

It serves as a knowledge resource in legislative committees such as the Committee on Local Government and the Committee on Constitutional Amendments of the Philippine Senate and the Committee on People's Participation of the House of Representatives. The JRIG supports civil society organizations to foster citizen's participation in governance. The JRIG was the former Secretariat of the Task Force Participatory Local Governance

## RESEARCH AND CAPACITY DEVELOPMENT

### Institutionalizing Civil Society Participation in Local Planning and Budgeting

This initiative was undertaken in partnership with the SEOIL Foundation Incorporated from January 1 to May 31, 2016. The JRIG capacitated Xavier University and Central Philippine University to train local civil society organizations (CSOs) and selected local government units (LGUs) in Iloilo City, Cagayan de Oro City, Alibujid in Misamis Oriental, and Tobias Fornier in Antique in the conduct of joint-monitoring of Bottom-up Budgeting (BuB) projects of the DILG. Applying a multi-stakeholder partnership model anchored on the role of local universities as knowledge hubs, the JRIG enabled regional governance research centers to produce case studies that document the experiences of local CSOs in monitoring the implementation of BuB projects. Four (4) case studies were produced. These

were used by CSOs as training materials during the period of BuB implementation and by universities in their public management classes and courses. The project improved the communication and relationship between universities and CSOs relative to good local governance.

### *Payapa at Masaganang Pamayanan (PAMANA)*

In partnership with the Office of the Presidential Adviser on the Peace Process (OPAPP), the JRIG has been conducting a technical program review of the implementation of the PAMANA program since February 1, 2016. As an OPAPP flagship peace and development project, PAMANA has sought to empower communities in conflict-sensitive and conflict-vulnerable areas in the country by providing beneficiaries with access to public resources that will enable them to implement local development projects. The JRIG documented and analyzed the effectiveness, efficiency, relevance, and sustainability of the program.



► Knowledge Workshop in Tobias Fornier, Antique (left) and Cagayan de Oro City (right)



It also provided policy recommendations to address the gaps in program implementation and sustain the gains and innovations of PAMANA. The recommendations were used as inputs by OPAPP in strategizing the implementation of the program under the current Duterte administration.

### **Assessment of the International Volunteers Service Program and the National Service Program**

This assessment was undertaken from July 1 to December 26, 2016. In partnership with the Philippine National Volunteers Services Coordinating Agency (PNVSCA), the JRIG assessed the international and national volunteer service programs implemented by the PNVSCA. The assessment included a review, documentation, analysis of processes, outputs, and outcomes of the two programs. The assessment led to the formulation of recommendations to improve program development and implementation. The PNVSCA and the JRIG had identified future areas for collaboration to harness volunteerism and citizen community engagement in the Philippines.

### **Universities and Knowledge Partnerships for Open Government**

With support from the global program Making All Voices Count (MAVC),<sup>1</sup> the

JRIG enabled regional university-based research centers to help local stakeholders in using open local government data. For the period October 16, 2016 to October 31, 2017, the Institute partnered with three (3) local research centers that are based in regional universities: the Center for Local Governance (CLG) of Ateneo de Naga University, the Center for Local Governance and Indigenous Peoples Studies (CLGIPS) of the Central Philippine University, and the Governance and Leadership Institute (GLI) of Xavier University. The knowledge partnership between the JRIG and the regional universities resulted in the production of tools and technologies that facilitate citizen's use of open government data. The project specifically produced the following: online and offline knowledge portals on open government data and social accountability that can be accessed by citizens; city budget infographics and budget analysis based on publicly disclosed data that can be used by CSOs and local government units to improve local planning and budgeting; and a compendium of local social accountability tools that can be accessed by citizens for capacity development.<sup>2</sup> Through the partnership, research centers in the regional universities gained knowledge and skills on using information, particularly publicly-disclosed, open government data. The initiative also contributed to the development of new local knowledge partnerships between regional universities, CSOs, and LGUs.

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1 The MAVC program grant is being implemented by a consortium composed of the following organizations: Hivos, Global Integrity, and the Institute of Development Studies at the University of Sussex

2 See JRIG Knowledge Hub for Open Government website; Transparency and Accountability Portal, Ateneo de Naga University; City Budget Analysis and CSO Knowledge Portal of the Center for Local Governance and Indigenous People, Central Philippine University; Cagayan de Oro CSO Knowledge Portal, Xavier University.



- CSOs of Naga City and Cagayan de Oro City discussing how to translate and communicate their respective annual budgets to the city residents

## Open Budget Survey 2017

From January to December 2017, the JRIG was commissioned to do research in the International Budget Partnership's assessment of fiscal transparency of the Philippine government through the Open Budget Survey. The study measured/ determined how the Department of Budget and Management (DBM), the

Commission on Audit (COA), and the Philippine legislative bodies ensure openness of budget information, citizen's participation in the budget process, and accountability for public expenditure. The Institute organized a knowledge forum to disseminate the results of the survey to the public.



- At the Knowledge Forum on Open Budget Survey 2017: "How Did the Philippines Fare?" with DBM Secretary Benjamin E. Diokno (2nd from left), COA Chairperson Michael G. Aguinaldo (extreme right), and Congressman Karlo Alexei B. Nograles (3rd from left)



► JRIG researchers conducting interviews with the local chief executives of Tacloban City (left) and Iligan City (right)

### **Local Governance Capacity Development in Disaster Risk Reduction and Management (DRRM)**

With support from the Philippines-Australia Human Resource and Organizational Development Facility (PAHRODF), the JRIG identified the organizational development issues, capacity needs, and institutional challenges in implementing the Philippine DRRM Law at the local level. The research, which was conducted from May to August 2015, identified the collaborative areas where LGUs, CSOs, the academe, and national agencies can work together to improve the delivery of DRRM-related services at the local level. The project involved the conduct of key informant interviews and FGDs with local chief executives, DRRM workers, and non-governmental organizations (NGOs).

### **Organizational Development (OD) and Human Resource (HR) Management for Local Competitiveness**

Also, with support from the PAHRODF, the JRIG determined how local government policies and practices on OD and HR impact local economic development and competitiveness. For the period May to October 2015, the JRIG specifically examined the best practices of cities in facilitating local investments. The Institute documented the innovations of cities including their pursuit of internal reforms to harness the local economy and improve development outcomes. The research provided recommendations to LGUs and national government agencies on how they can provide an enabling environment for economic competitiveness.





► JRIG fieldwork and visit at the Daet Go Negosyo Center (left) and interview with Hon. Mayor Benito Sy Ochoa of Daet, Camarines Norte (right)

## Building Capacities for Open Data in Developing Countries

The JRIG implemented this project, from June 1, 2015 to March 30, 2016, with funding from the World Wide Web Foundation (WWWF) and the International Development Research Centre (IDRC). It identified and analyzed the institutional competencies that LGUs need to develop to implement open government platforms and programs. Case studies on local open government data applications used by LGUs were produced. These were

presented in international academic conferences and submitted to journals for publication.

## University Town Plan

With support from the Office of the Vice Chancellor for Lasallian Mission (OVCLM), the JRIG developed a University Town Plan strategy guide that can serve as DLSU's roadmap in engaging the University's immediate communities. The initiative was undertaken from November 5 to 6, 2015. It provided DLSU with a venue



► Workshops on Local Open Government Data in Iloilo City (left) and Iligan City (right)





► **DLSU VCLM Br. Michael Broughton FSC with the leaders of barangays around the DLSU campus facilitating the Mission-Vision Session**

to dialogue with leaders and stakeholders of surrounding barangays and communities regarding key issues and potential/future development concerns and how to address them.

## COMMUNITY ENGAGEMENT – CONTINUING INITIATIVES

### Knowledge for Development Community (KDC)

The JRIG, in partnership with the DLSU Library, manages the KDC Library in the

University. The KDC, which is supported by the World Bank, functions as a knowledge resource and a venue for the collaboration of stakeholders in the promotion of good governance and inclusive development. Knowledge products developed by the Institute are housed at the KDC. These can be accessed by the public. The KDC also hosts various knowledge activities that gather stakeholders to discuss solutions to urgent policy and governance challenges.



► **Congresswoman Maria Leonor "Leni" G. Robredo (2nd from left) and DLSU President Br. Raymundo B. Suplido FSC (middle) with World Bank officials, during the launch of the KDC at DLSU**

## Open Government Partnership (OGP) Philippines

The JRIG is a member of the OGP Philippines steering committee representing the academe. The OGP Philippines is an international platform where member-governments commit themselves to implement governance reforms for greater transparency and citizens participation through enabling technology. As a member of the steering committee, the Institute undertakes initiatives to mobilize higher education institutions in the Philippines to monitor key programs of the DILG.



► JRIG Director Dr. Francisco A. Magno at the ASEAN High Level Conference on Open Government

## Local Governance Training and Research Institutes Philippines Network (LoGoTRIPhilNet)

The JRIG director is the president of the LoGoTRIPhilNet, a consortium of over 60 universities and NGOs in the country which are accredited to deliver knowledge services to LGUs and local CSOs. As head of the PhilNet, the JRIG coordinates with the DILG Local Government Academy (LGA) in pushing for initiatives that will support the development of Sangguniang Kabataan (SK) youth officials.

## Local Governance Policy Development with the DILG

The JRIG is engaged with the DILG Support to Local Government Program Management Office in implementing the Assistance to Municipalities Program. The Institute provides technical support to DILG in mobilizing universities and colleges to serve as knowledge hubs for local planning and local service delivery. The JRIG has been working with the DILG since 2001.



► JRIG with DILG officials and the LoGoTRIPhilNet Board







► DILG regional officers during the DILG's Workshop on Assistance to Municipalities Program.

### Technical Resource for Congressional Committees

The JRIG shares its research outputs in the Technical Working Committees (TWCs) of the Senate and the House of Representatives. It works with the Senate Committee on Local Government for amendments to the Local Government Code. The JRIG sits in the Technical Working Group (TWG) of the House of Representatives' Committee on Peoples Participation. Experts from the JRIG are invited as resource persons in legislative hearings.



► JRIG Director Dr. Francsico A. Magno testifying before the Senate Committee on Local Government

### Engagement with Local Government Units

The JRIG has provided technical assistance to various LGUs to address specific local development challenges. The Institute has assisted in the formation and development of the Alyansa ng mga Baybaying Bayan ng Bulacan at Pampanga, which is a coalition of LGUs that seek to address environmental and disaster risk issues in Manila Bay. This resulted in the MoA signing of LGUs and the development of the coalition's action plan. The Institute has also provided assistance to the following LGUs: Naga City, City of Manila, Municipality of Magallanes in Cavite, City of Iloilo, and the City of Cagayan de Oro.



► MoA signing of the ABB-BP in Bulacan



► JRIG meetings with Hon. Mayor John G. Bongat of Naga City (left) and Hon. Mayor Joseph “Erap” M. Ejercito-Estrada of the City of Manila (right)

## Task Force Participatory Local Governance

As a champion of citizen’s participation in governance, the JRIG is a member and was the former Secretariat of the Task Force Participatory Local Governance (TF-PLG). TF-PLG is an alliance of CSOs championing the participation of the people in local decision-making and service delivery. The Institute has implemented projects to support the efforts of the TF-PLG on participatory planning and budgeting.



► JRIG researchers facilitating a workshop on Bottom-Up Budgeting with Metro Manila CSOs



## Sustainable Development Solutions Network

The JRIG is a member of the Sustainable Development Solutions Network Philippines which is a consortium of research centers that are based in Philippine universities. These universities provide knowledge support to stakeholders in government, business, and civil society to achieve the SDGs.

## KNOWLEDGE ACTIVITIES

### Bringing the Boys Back In: Addressing School Drop-out Rates

On October 21, 2015, the JRIG, in partnership with The Asia Foundation and the Department of Foreign Affairs and Trade of the Australian Government, conducted a roundtable discussion on addressing boys' school drop-out rates. The activity gathered education stakeholders and experts who tackled policy issues and potential policy prescriptions to improve the retention of male students in the public school system.



► Meeting of representatives from The Asia Foundation, DepEd, and DLSU

### Unitalks for Good Governance

In partnership with the Kaya Natin Movement for Good Governance and

Ethical Leadership, the JRIG organized a forum on the Role of the Youth in Good Governance on September 15, 2015. Being a political education activity, the forum focused on how the youth as a critical sector can be mobilized to advance good local governance. Key local government and civil society leaders were panel speakers in the forum.



► DLSU VCLM Br. Michael Broughton FSC at the UniTalks with the Kaya Natin Movement

### Lead Like Jesse Exhibit

To commemorate the life and works of the late DILG Secretary Jesse M. Robredo, the JRIG organized the "Lead Like Jesse" Exhibit on August 25, 2015. The activity showcased the governance principles and practices that Secretary Robredo championed both as DILG Secretary and as former Mayor of Naga City.



► Trisha Robredo of the Jesse Robredo Foundation and JRIG Director, Dr. Francisco A. Magno, at the opening of the "Lead Like Jesse" Exhibit

## i4Juan Voters' Education Session

The JRIG conducted a voters' education session with the administrators, faculty, and staff of De La Salle Santiago Zobel School on January 29, 2016. Guided by the i4Juan framework, the sessions focused on how citizens can assess the performance, integrity, and capacity of candidates in the 2016 elections. The i4Juan Framework was developed by the JRIG anchored on the core governance values of the late DILG Secretary Jesse M. Robredo, which are inclusiveness, intelligence, integrity, and information-driven.



- JRIG leading the discussions at the i4Juan Sessions with the De La Salle Santiago Zobel School administrators and faculty

## National Conference on Universities for Open Government

On August 6, 2015, the JRIG co-organized with the Right-to-Know, Right Now Coalition and the Action for Economic Reforms, a national conference to discuss the importance of Freedom of Information in conducting research, teaching, and implementing community engagement programs. The conference gathered leaders from universities and civil society.



- Cong. Leni Robredo delivering the keynote address during the conference on Freedom of Information

## Lecture on Engaging Times: Decades of Lessons and Future Prospects for E-Democracy and Open Governance

Mr. Steven Clift, Executive Director of the Minnesota E-Democracy, delivered a lecture focusing on the evolution and development of the e-democracy movement in the United States. The lecture was held on June 18, 2015. It examined how lessons from across the world can be used as a lens to understand the Philippine e-democracy initiatives.



► **Mr. Steven Clift of Minnesota E-Democracy at the Lecture on Engaging Times**

## Roundtable Discussion on Governance Performance Index

As an output of her stint as visiting scholar at the JRIG, Dr. Laura Lorente Bayona of the University of Murcia in Spain presented an index that she developed to measure governance performance of national agencies across various economies. The roundtable discussion, which was held on November 27, 2015, resulted in an exchange on how the index can be used to craft policy recommendations for governance reforms.



► **Dr. Laura Lorente Bayona of the University of Murcia (Spain) leading the roundtable discussion**

## Roundtable Discussion on Applied Disaster and Emergency Studies

Dr. Jack R. Lindsay, associate professor at the Applied Disaster and Emergency Studies Department of Brandon University in Canada, led a roundtable discussion on developing an applied disaster and emergency studies program. The event, which was held on February 19, 2016, gathered faculty members from the various academic departments of DLSU.



► **Dr. Jack R. Lindsay leading the roundtable discussion**



## Public Forum on Governance and the Law: Realizing Change and Approaches that Work

Co-organized by the JRIG and the World Bank, the forum, which was held on September 16, 2016, provided a venue to present the initial findings of the World Development Report. Stakeholders from the government, civil society, and the academe participated in the public forum.



► Forum on the World Bank's Governance and the Law Report

## Knowledge Forum on University Town (U-Town) and Sustainable Development

The JRIG organized a Knowledge Forum on U-Town and Sustainable Development on November 26, 2016 to usher in the start of University Week 2016



► Hon. Mayor Francis S. Garcia of Balanga City, Bataan (left) and Ms. Justine Espina-Letargo of World Bank, leading the Knowledge Forum discussions

at DLSU. The activity showcased the emerging concept and practice of U-township as a platform in fostering sustainable development. The event featured speakers from LGUs, academe, and CSOs.

## Knowledge Forum on Health and Employment

In partnership with Lilac Center for Public Interest, Inc., the JRIG organized a forum on health and employment on December 7, 2016. The keynote speaker was former Department of Labor and Employment (DOLE) Secretary Marianito D. Roque. Participants were graduate students, former government officials, and representatives from CSOs.



► Former DOLE Secretary Marianito D. Roque at the Knowledge Forum



## Democracy at Work: Moving Beyond Elections to Improve Well-being

On February 23, 2017, the JRIG hosted and organized an International Lecture Series with Dr. Brian Wampler, chair and professor of political science at Boise State University in Idaho as guest speaker. The lecture series was co-organized with the Philippine Political Science Association (PPSA). Dr. Wampler gave a presentation on "Democracy at Work: Moving Beyond Elections to Improve Well-being." The lecture highlighted the lessons drawn by Dr. Wampler from studying participatory budget systems in Latin America. Graduate students participated in the lecture.



► Prof. Brian Wampler of Boise State University (Idaho, USA) sharing the results of his study

## Lecture on Innovation Bureaucracy

On April 3, 2017, the JRIG co-organized with the PPSA an International Lecture Series with Dr. Wolfgang Drechsler, Professor of Governance at the Ragnar Nurkse Department of Innovation and Governance, Tallinn University of Technology, Estonia, as guest speaker.



► Prof. Wolfgang Drechsler of Tallinn University (Estonia) giving a lecture on Innovation Bureaucracy

## Forum on Global Education Challenges

The JRIG, in cooperation with the World Bank (WB) and the DLSU School of Economics, conducted a forum on Global Education Challenges. The knowledge activity gathered experts and stakeholders on Philippine education to discuss the implications of the WB report on education. The forum, which was held on September 18, 2017, was an activity of the KDC.

## Strengthening the Ecosystem of Public Participation

Bringing together stakeholders in promoting citizen participation and transparency in governance, the JRIG organized a knowledge dialogue on

Strengthening the Ecosystem of Public Participation. The event, which was held on August 3, 2017, examined the implications of Executive Order No. 2, s 2016 or the Freedom of Information for Executive Departments of the Duterte administration on governance and social accountability. Government officials and civil society leaders were part of the panel of speakers.



► (from left to right) Atty. Eireen Jhone Aguila of Right to Know Right Now Coalition, JRIG Director Dr. Francisco A. Magno, and PCOO Assistant Secretary Atty. Michel Kristian R. Ablan

## 2nd Philippine Civil Society Summit

In partnership with the Dutch Embassy, the JRIG conducted a Civil Society Summit in December 2017. The knowledge activity gathered more than 100 representatives of NGOs working on development issues of the country. The activity served as a strategic planning workshop for CSOs on engaging the challenges and opportunities presented as a result of the 2016 elections.



► H.E. Dutch Ambassador Marion Derckx addressing the participants at the Civil Society Summit

## Movies that Matter

The JRIG, in collaboration with the Dutch Embassy, held a film showing on December 4, 2017, featuring movies about human rights, inclusive development, and issues related to extrajudicial killings and the shrinking civic space. The activity endeavored to raise the awareness of students about human rights issues using creative work.



► H.E. Dutch Ambassador Marion Derckx (top and bottom left photos) and DLSU CLA Dean Dr. Jazmin B. Llana (bottom right photo) at the film showing.

# Progressio

## *Project Leader*

Dr. Merlin Teodosia C. Suarez (Software Technology)

## *Members*

Mr. Gregory Cu (Software Technology)  
Ms. Jocelynn Cu (Computer Technology)  
Mr. Fritz Flores (Computer Technology)  
Ms. Kathryn Josann Pfeider  
Ms. Toni May Singson

## INTRODUCTION

Autism is a global concern. It is a lifelong developmental disability that affects the way a person communicates with and relates to other people. It also affects how a person experiences the world around him/her. According to the World Health Organization, one in every 160 individuals has, or over 67 million people worldwide have some degree of autism.

Data from the Philippine Department of Health (DoH) reveal that the number

of people with autism spectrum disorder (ASD) in the country, and other countries worldwide, has almost doubled in the past six years; and the number is still rising. One out of 68 children worldwide has autism, and the figure is way above the five cases in every 1,000 children in the 1980s, and one in 110 children in 2008, during the launching of the Autism program at Nature's Village Resort, Talisay City, Metro Bacolod, Negros Occidental.

Children with ASD experience developmental delays and have difficulty

**Advanced Research Institute for Informatics, Computing and Networking (AdRIC)** Established in 1994 as the Advanced Research Institute for Computing, the Advanced Research Institute for Informatics, Computing and Networking (AdRIC) is the research center of the College of Computer Studies. It pursues innovative and world-class scientific research in computing toward DLSU's vision of a research university. Its tasks include setting the directions and priority research activities in the various fields of computing; commissioning and promoting the conduct of research and development projects consistent with the identified CCS thrusts and priorities; and seeking collaborative ventures with partners in industry, government, and academe to better serve society through research and innovation.

AdRIC has eight (8) research laboratories, namely: Center for Automation Research (CAR), Center for Complexity and Emerging Technologies (COMET), Center for ICT for Development (CITE4D), Center for Language Technologies (CeLT), Center for Human-Computing Innovations (CeHCI), Center for Networking and Information Security (CNIS), Graphics, Animation, Multimedia and Entertainment Laboratory (GAMELab), and Technology, Education, Entertainment, Empathy, Design (TE3D) House.





in social interaction and communication. They have a hard time developing language skills, and encounter problems in understanding what others are telling them. They often experience difficulty communicating non-verbally, i.e., through hand gestures, eye contact, and facial expressions as reported by the National Institute on Deafness and other Communication Disorders (NIDCD).

## THE INTELLI5ENSE TEAM

Intelli5ense is a team of Lasallian researchers who are passionate about delivering technology solutions to the marginalized sector of the Philippines. It analyzes human emotions and behavior in a sensor-rich space to provide assistive technologies to individuals at risk, e.g., the elderly, or individuals diagnosed in the autism spectrum.

The team's approach is interdisciplinary. Members work with other professionals in the social sciences (psychology and behavioral sciences),

computing sciences (computer science and IT, including engineering), and cognitive sciences, as well as with major stakeholders such as parents, teachers, therapists, and school owners. The Internet of Things (IoT), artificial intelligence, and data analytics and visualization are more than buzzwords as they are the team's tools to bridge the gap between the need and its proposed solution.

**Inclusive.** Intelli5ense develops tools for health care and education that offer technology solutions to serve the needs of children in the special education sector and the elderly.

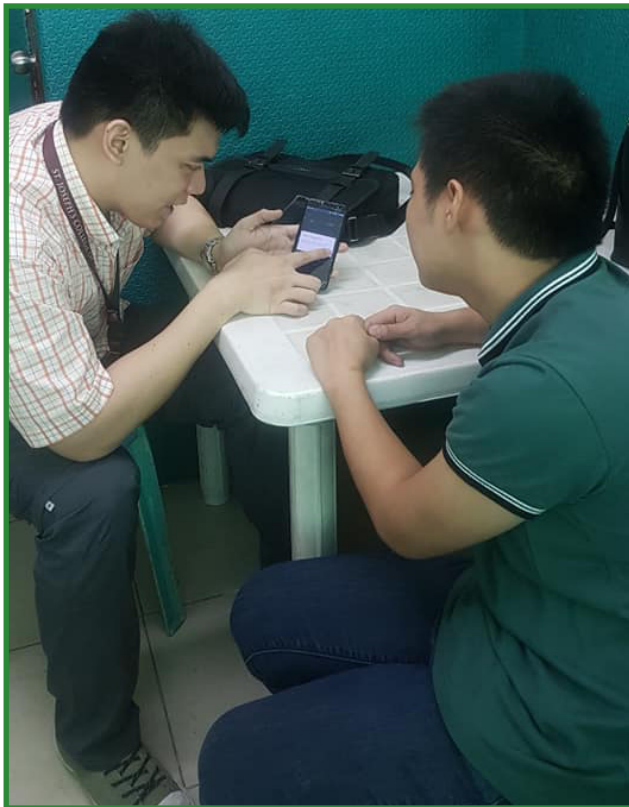
**Accessible.** Intelli5ense aspires to mainstream assistive technologies for the Filipino. In this way, scientific expertise serves the purpose of society.

**Ethical.** Intelli5ense respects its users and ensures the highest level of security to protect their privacy. In addition, scientific methodologies and research practices are vetted by the University's Research Ethics Office.



## THE PROGRESSIO THERAPY MANAGEMENT PROJECT

The Intelli5ense Team found that children with autism are often enrolled in special classes to undergo therapy sessions with various medical and education professionals. In each session, the therapist manually records in a notebook the progress of the child. The therapist usually discusses these updates and recommendations with the parents after each session for follow-up activities at home. However, if neither of the parents is present, the notes are given to the caregiver for transmission to the parents, which can possibly cause a communication gap. For long-term therapy programs, parents usually meet with their child's therapists in a conference once every six (6) months to discuss the child's progress



in detail. Getting the therapists, medical professionals, and parents together for a face-to-face conference can be challenging in terms of scheduling. Therefore, timely interventions to improve the child's therapy may not be possible. In cases when there is a need to consult a new therapist or a medical professional, it becomes an arduous task to go through all the written reports to gain a better understanding of the child's needs. Thus, a significant effort may be spent on repeating the diagnosis and assessment.

To provide a technology solution for easier and effective monitoring of the child's therapy progress and to keep the parents updated in this regard, the Intelli5ense Team developed Progressio. This project was funded by DLSU and the Department of Science and Technology – Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD). Also instrumental in the development of Progressio are the special education schools, teachers, and medical practitioners in the country.

### **Project Design and Development.**

Progressio is the first product of the Intelli5ense Team in the market. It is a web-based therapy management system that serves as a therapy assistance tool geared towards the effective treatment and care of children diagnosed to be within the ASD.

Progressio is a digital platform that brings together a community of medical, and education professionals to help parents better manage the therapy of their children diagnosed with ASD. It allows therapists to easily record a therapy session and generate a progress report. It becomes possible for parents to view these therapy

sessions and reports as soon as they are submitted. It enables them to better understand and provide the appropriate support for their children. Parents can also access these reports anytime and anywhere using any mobile device.

Progressio was pilot-tested in three special education schools, namely St. Joseph's College, Alpha Angelicum Academy, and Angeli Dei School. The team installed its equipment in these schools and conducted orientation sessions for both the parents and teachers, before deployment. Parents also signed a consent form prior to participating in the pilot test. The team communicated with the teachers and parents regularly to collect bug reports and other concerns. At the end of the pilot-test, all the participants were interviewed to determine and assess their experiences, as well as to glean their insights.

The security of their respective children's information was the primary concern of parents especially because videos of the children were recorded. The parents also cited Internet speed and availability problems that prevented them from fully experiencing the benefits and features of Progressio. The teachers experienced connectivity issues as well

and reported some bugs that muddle the software. The teachers also expressed experiencing difficulty with the workflow. They could not easily encode the information about the session prior to recording it because of their tight schedule between students and when students would "act-up."

## CONCLUSIONS, RECOMMENDATIONS, AND REALIZATIONS

The full implementation of Progressio includes the installation of cameras connected to a local server in the therapy room. Users are required to login to a virtual private network (VPN) in order to securely access the child's recorded therapy sessions and reports. However, this set-up demands high maintenance in terms of user support, and the extra step in securing the information may not contribute to a user-friendly experience.

Improvements on Progressio are currently underway. To ensure a less complex and better user experience while maintaining the security of information, the project team will adjust Progressio's architecture to accommodate cloud-based solutions that would no longer require a VPN login or demand too much in terms of user support. The team will introduce a more customizable platform that would allow users to choose the features of Progressio that would be useful for their purpose and record only the data that these users would be willing to share with other parties. The following are some sample features:



- Users can choose to use the online collaboration module only. This will not require the installation of cameras in a therapy room. Therefore, the parents need not worry about having a video recording of their child during a therapy session. They would have full control over who to share the data with, for example, the child's therapist or special education teacher. The therapist or the teacher can customize the reporting form to make it easier for him/her to prepare the progress report and incorporate it into his/her workflow. Data can be limited to the child's progress report and the discussion of interventions. Analytics can be generated to monitor the progress that the child makes on each session.
- Users can choose to use the session recording and streaming modules only. Some parents prefer to see how their child behaves or interacts with others when they are not present; others prefer to observe how the therapist conducts the session so that reinforcements can be done at home. Progressio can be customized to enable the therapists to record these sessions, and allow online streaming through a secure connection. Videos can be accessed from Cloud; they will not be stored in any local machine.
- Users can choose to activate the automatic video annotation and report generation modules

together with the session recording feature. This feature allows the seamless integration of Progressio into the therapist's workflow and saves time in the encoding of information. The automatic video annotation feature can be used to identify "hot spots" in the video that will facilitate the report generation process. The therapists can choose to "zoom in" to these points of interest in the video and write down their comments. The system can then automatically generate a compiled report using this feature.

The technologies for these improvements are ready and available. However, the results of the pilot test showed that the target users are not yet ready to trust these technologies. They remain wary of technology-based security solutions. The country's limited Internet connectivity and inadequate infrastructure also contribute to poor user experience.

## REFERENCES

- World Health Organization in <http://www.who.int/mediacentre/factsheets/autism-spectrum-disorders/en/>
- National Institute on Deafness and other Communication Disorders in <https://www.nidcd.nih.gov/health/autism-spectrum-disorder-communication-problems-children>
- National Autism Society in <https://www.autism.org.uk/>

# Integrated and Optimal Scheduling of Public Transport Operations in Metro Manila (PUBFix)

## *Project Leader*

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## INTRODUCTION

This study was implemented by the Sustainable Mobility sub-Center of the CESDR with funding from the Department of Science and Technology – Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) and DLSU, Manila. It was completed in April 2017.

## BACKGROUND

The PUBFix research project stands for Integrated and Optimal Scheduling of Public Transport Operations in Metro Manila. A two-year research project, it included a one-year extension for the integrated and optimal scheduling of public transportation system demand and supply in Metro Manila and the development of tools and devices

The **Center for Engineering and Sustainable Development Research (CESDR)** is the research arm of the Gokongwei College of Engineering (GCOE). It is mandated to promote, catalyze, and crystallize scientific activities in engineering sciences and technology to achieve strategic advances in complex engineered systems and firm-level technologies necessary for the sustainable development of the country.

Envisioned as a center of excellence in engineering research and technology innovations, the CESDR endeavors to make significant contributions to the growing scientific knowledge in engineering and technology. It is engaged in experimental research and modeling of industrial systems, and the development of innovative processes and products that lead to the utilization of sustainable technologies. It facilitates the effective transfer of these technologies from the academic research community to industry and society in pursuit of sustainable development. The CESDR specifically aims to: provide an intellectually and culturally vibrant environment for academics and students where teaching and research in engineering can proceed efficiently and effectively; enhance the productivity of faculty members and students in the different centers of excellence by carrying out research and development for the implementation of practical and effective solutions for industry and society; contribute to the economic and social development of the nation by promoting sustainable technology; provide a training ground for future engineering scientists and researchers of participating departments through education, research, and publication; gain recognition in the international scientific community; and strengthen close collaboration with industry, government, and other stakeholders, including civil society.



for the improvement of the public transport service operation.

## OBJECTIVES

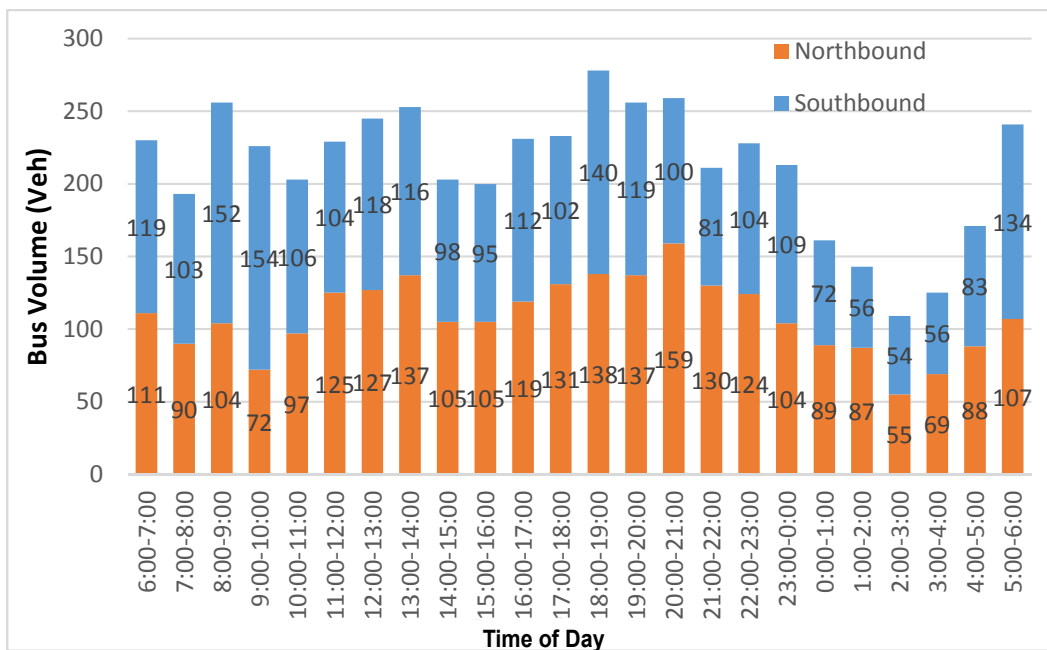
The study sought to conduct an inventory of existing public transport systems in Metro Manila and determine their service operating characteristics, most especially the city buses that traverse Epifanio de los Santos Avenue (EDSA), the metropolis' main transport corridor; assess the demand for public transport along selected major roads of Metro Manila; develop a Microsoft Excel-based software for the scheduling and daily operation of city buses in Metro Manila; develop an automatic passenger counter that keeps track of the entry and exit of passengers on a bus using a laser counter and a video camera through image processing; develop a wireless communication system that can transmit—from bus to bus or from bus to a base station—information regarding bus demand for the proper and efficient dispatching of buses; and propose, test, evaluate, and recommend, using scenario modelling, possible new high-capacity public transport systems (i.e., LRT, MRT, BRT, and/or city buses) in Metro Manila under a 10-year and a 20-year planning horizon.

## RESULTS/OUTPUTS

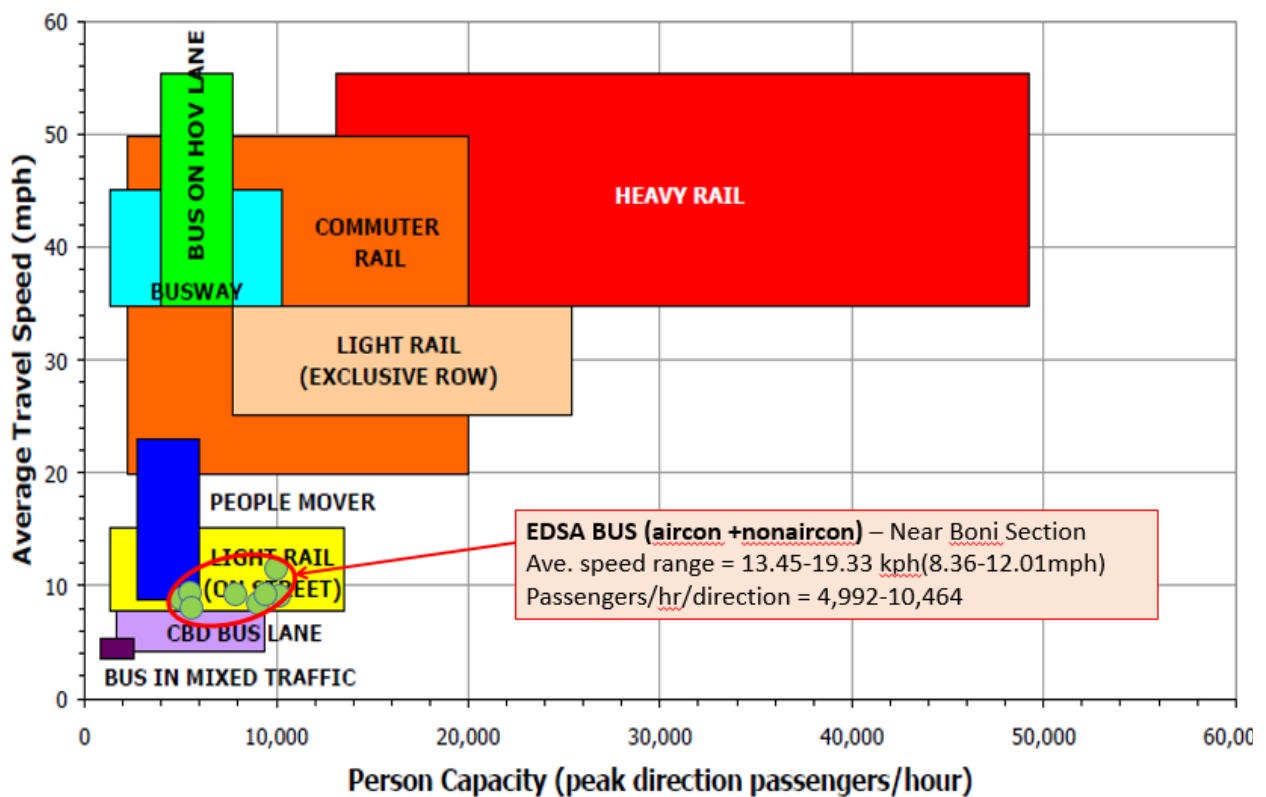
The public transport surveys conducted found that city bus passengers along EDSA, during peak hours, range from 4,992 to 10,464 passengers while city bus supply along that highway, in one directional flow (either southbound

or northbound), within a 24-hour period, only ranges from 2,610 to 4,039 buses. A large percentage of bus passengers come from or are bound for Quezon City. Jeepneys and Asian utility vehicles (AUVs) that traverse along or partly serve EDSA have travel speeds ranging from 9.37 to 13.99 kilometers per hour (kph) and 17.24 to 33.69 kph, respectively. Using the transportation planning software, the urban transportation network of Metro Manila was plotted and used basis to assess the current transportation infrastructure plan of the National Capital Region. The assessment indicated that only through the provision of a mass transport system can the daily traffic congestion be addressed, and with the assumption that a good percentage of car-riding individuals will shift to using the mass transit system.

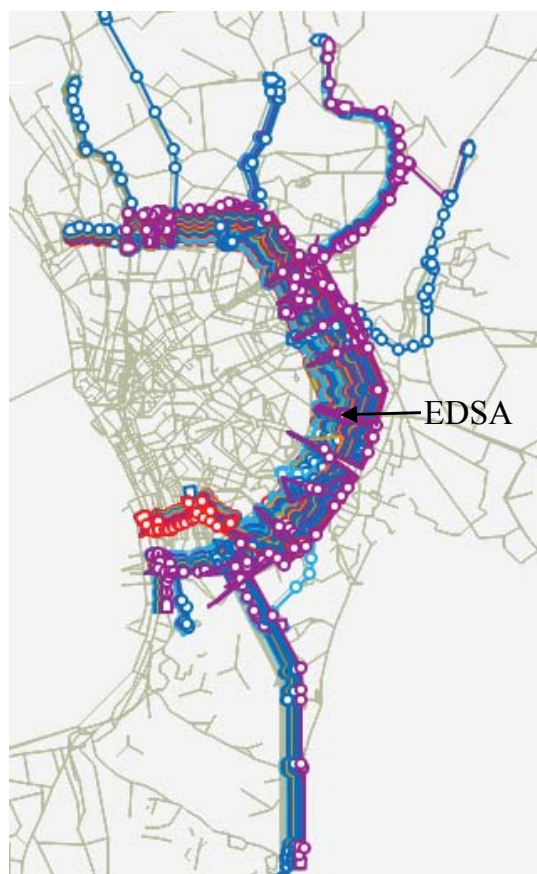
A bus scheduling tool that uses Microsoft Excel was also developed. This tool can be shared with public utility vehicle (PUV) operators and government personnel involved in transportation planning. PUV operators can use the tool to schedule buses efficiently, especially under a fleet management system, while government personnel involved in transportation planning can utilize it to monitor the service performance of public transport systems. A bus passenger counter, which uses video images to monitor the number of passengers boarding and alighting a bus, was also developed. This tool can help in the efficient dispatch of buses depending on the volume of passengers waiting in stations and stops. Lastly, a wireless communications system that can relay data regarding bus demand—from bus to bus or from bus to a base station for the timely and orderly dispatch of buses was also developed.



Hourly volume count of buses along Boni Avenue, Mandaluyong, EDSA



Estimated total person capacity of city buses along EDSA



City bus routes using EDSA



Public transport routes in Metro Manila

## Bus Scheduling Tool User Interface

● Select Route   
 ● Input Sheet   
 ● Results and Analysis   
 ● Schedule

**Route Selection**

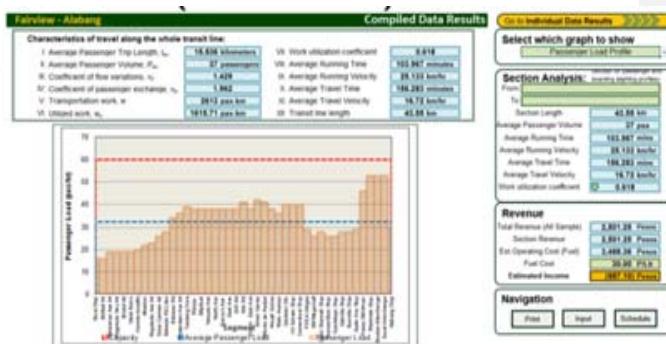
Select a route and click **Proceed** or create a new route and click **Submit**

Select Route:

Add Route:

Route Name	Location	Distance from start (M) (km)	Location	Distance from start (M) (km)
A1			A1	
A2			A2	
A3			A3	
A4			A4	
A5			A5	
A6			A6	
A7			A7	
A8			A8	
A9			A9	
A10			A10	
A11			A11	
A12			A12	
A13			A13	
A14			A14	
A15			A15	

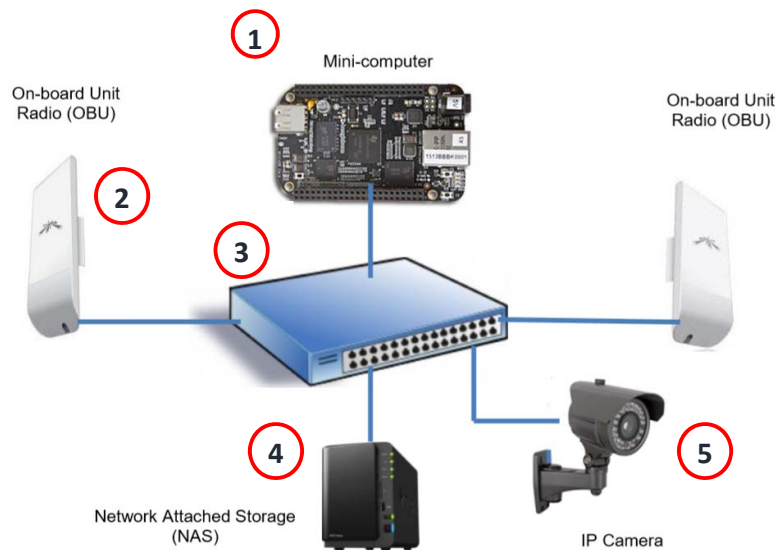
Intelligent Transport Systems (ITS) Forum 2017, February 17, 2017, 8AM-5PM, 5th Fl., WSH, DCSU, Manila



Intelligent Transport Systems (ITS) Forum 2017, February 17, 2017, 8AM-5PM, 5th Fl., WSH, DCSU, Manila

The Bus Scheduling Tool Interface in Microsoft Excel





- 1: Mini-computer as on-board processing unit
- 2: On-Board Unit (OBU) Radio to transmit/receive signal to/from base stations
- 3: Network Switch to connect devices
- 4: Network Attached Storage (NAS) for data storage
- 5: IP Camera to capture images of passengers/pedestrians

### Passenger Detection and Counting Technology

## SUMMARY OF FINDINGS AND CONCLUSIONS

The following are the findings and conclusion of the study:

- The road-based public transportation in Metro Manila was observed, which include buses plying the EDSA route, public utility jeeps (PUJs), and Asian utility vehicles (AUVs) using parts of or

traversing the highway. The service frequency of buses along EDSA is relatively high, and their average travel speed ranges from 19 to 23 kph, with a load factor of 0.49 to 1.05.

A load factor higher than 1.0 means that the bus passenger load is more than the bus seating capacity. This usually occurs in the afternoon peak period. PUJs that ply the EDSA route travel at a

speed range of only 9.37-14.0 kph. Their load factor ranges from 0.42 to 0.55, which means that the PUJs are only half full of passengers when they ply the route. For AUVs that traverse the EDSA route, their average speed is 16.4 kph with a load factor of 0.75.

- The average access time of commuters to board a bus that passes EDSA is 20.94 minutes while their average egress time is 16.87 minutes. The average bus travel time of commuters along EDSA is 56.70 minutes. The estimated total cost of travel to commuters is ₱45.57, while their total travel time is 94.48 minutes. A large number of bus commuters either come from or are bound for Quezon City. The passenger demand for buses along EDSA during peak hours ranges from 4,992 to 10,464 passengers/hour, depending on the peak time period.
- Transport mode choice models were developed for EDSA. The model could predict the number of passengers using the available modes, including private vehicles, along this major thoroughfare. The significant variables that influence the choice of a mode are travel time, cost, and the purpose of the trip. A stated preference model was also developed to determine whether a car user would shift to a public transport mode when the latter's services are improved in terms of travel time, fare, and comfort level. Around 43% of existing public transport users and 20% of car users would shift to a better public transport mode. The percentage (20%) of car users who expressed that they would shift to a better public transport mode is considered significantly high.
- Several scenarios were developed to illustrate the current and future public transport plans of the national government, as well as the unsolicited proposals for expressway systems from private entities. The results showed that the most effective undertakings to reduce congestion in Metro Manila are the mass transit projects, most especially if car users are encouraged to shift to the use of public transportation. Building more expressways and roads cannot address the traffic congestion and may even induce more travel using private cars.
- As regards city bus service operations, the study revealed that the most effective measure to address the increasing demand for public transportation in Metro Manila would be providing bus services along the radial and circumferential roads. Since not all public transport users' end destination is along EDSA, spreading the bus service along the radial and circumferential roads will decongest this major highway of city buses.
- The bus passenger counter device developed in this research, which uses image analytics to monitor the number of passengers boarding and alighting a bus,

has a 98.30% rate of accuracy given the conditions set when the experiment was conducted. It was, however, only tested on a static bus and not during an actual operation.

- The method of transmitting the image data from bus to bus or from bus to the roadside station uses a wireless mesh network (WMN) radio equipment. The experiment was successfully conducted; the images that were transmitted through one-, two-, and three-hop routing yielded satisfactory results.



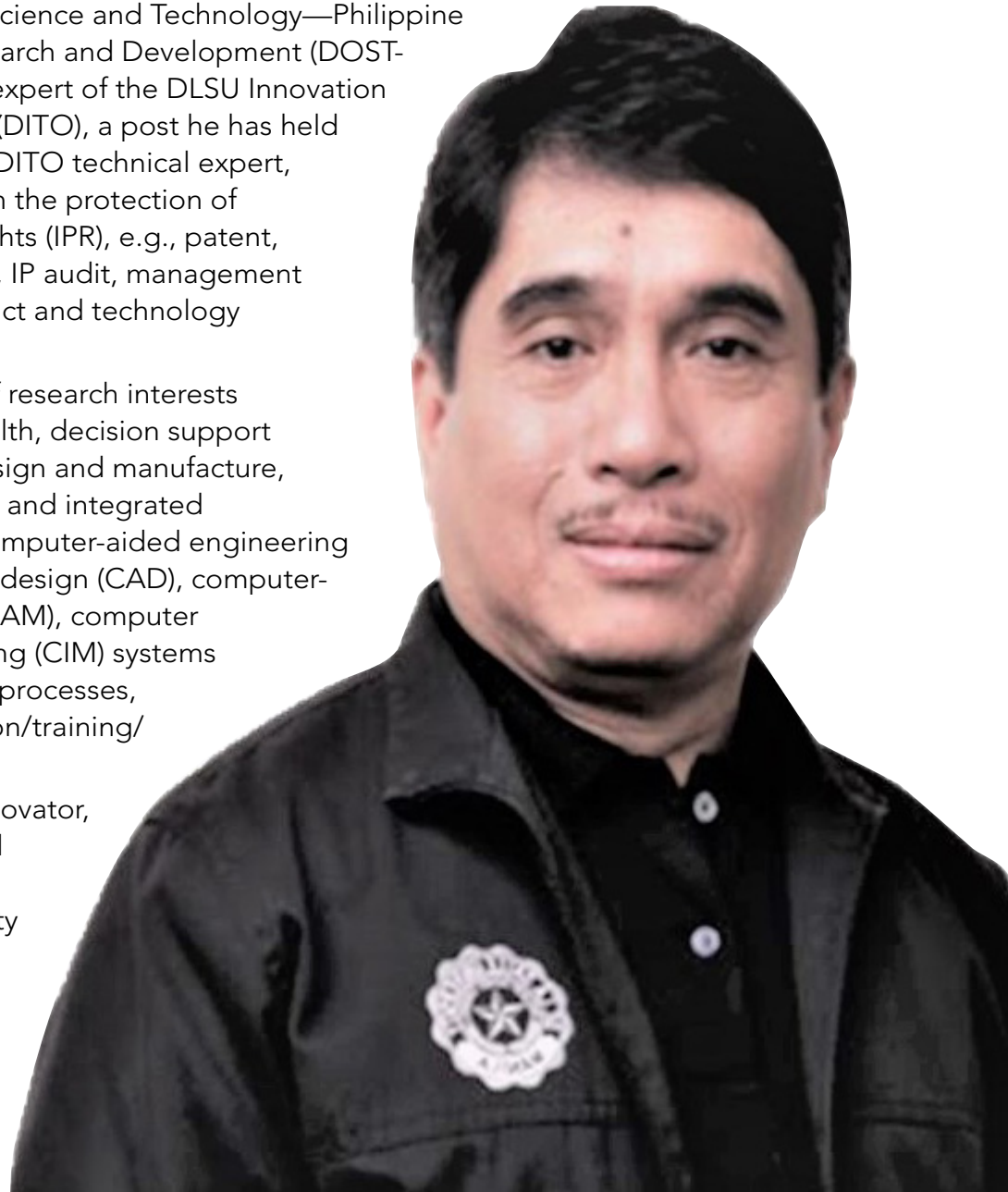
## FEATURED RESEARCHER

### *Prof. Nilo T. Bugtai, Ph.D.*

A full professor at the Manufacturing Engineering and Management (MEM) Department of the DLSU Gokongwei College of Engineering (GCOE), Dr. Nilo T. Bugtai heads the MEM's Biomedical Devices Innovation (BDI) and e-Health Research Group. He also serves as program leader of the Institute of Biomedical Engineering and Health Technologies (IBEHT) funded by the Department of Science and Technology—Philippine Council for Health Research and Development (DOST-PCHRD) and technical expert of the DLSU Innovation and Technology Office (DITO), a post he has held since May 16, 2010. As DITO technical expert, Dr. Bugtai is engaged in the protection of intellectual property rights (IPR), e.g., patent, utility model, copyright, IP audit, management and training, and product and technology commercialization.

His broad range of research interests includes BDI and e-Health, decision support systems for product design and manufacture, concurrent engineering and integrated information systems, computer-aided engineering (CAE), computer-aided design (CAD), computer-aided manufacturing (CAM), computer integrated manufacturing (CIM) systems and machine tools and processes, and IPR (audit/protection/training/management).

An exceptional innovator, Dr. Bugtai is considered one of the pillars of research in the University for having brought in several multi-million



pesos' worth of programs and projects. The more recent ones are the "AGAPAY Project-Phase 1: Design and Prototype Development for Reliability and Functionality—A Robotic Exoskeleton for Upper Extremity Rehabilitation," and the "AGAPAY Project-Phase 2: Safety Tests, Preclinical Studies—A Robotic Exoskeleton for Upper Extremity Rehabilitation," both funded by DOST-PCHRD. He also mentored and closely worked with graduate students for projects funded by the DOST—Engineering Research and Development for Technologies (ERDT). These research undertakings included the "Electromyography-Based Motion Intention Detection System Using Machine Learning Techniques," "Design of a Hand Wearable Device for Grasping with Kinematic Simulation" that received the Gold Award for Most Outstanding Graduate Thesis, "Design and Implementation of a Database Management System for an Android ECG Device," "Development of an Automated Transesterification Reactor Controller Using Refractive Index to Detect End-Point Reaction," and "Design for Assembly of the Jointed Articulating Laparoscopic Tool."

Dr. Bugtai is a multi-awarded faculty researcher. In 2011 and 2012, he won together with his students the Gold Prize in the Intel Asia Pacific Challenge, which was participated by 12 countries in the Asia Pacific region. Similarly, with his students, he garnered the 1st Prize for two consecutive years (2013 and 2012) in the National Academy of Science and Technology (NAST) Magsaysay Future Engineers/Technologists Award.

His more recent achievements include the Best Paper Awards for co-authored papers: "Biomechanical Analysis of a 5-Degree-of-Freedom Upper-Limbs

Exoskeleton Mechanism Using Motion Capture," and "Supervised Learning for Multi-label Classification of pH Levels," during the 2017 International Symposium on Novel and Sustainable Technology (ISNST 2017) at the Southern Taiwan University of Science and Technology (STUST); "Sustainable Development Research Practices in Philippine Biomedical Devices Innovation: A Case for the AGAPAY Project," during the 4th DLSU Innovation and Technology (DITECH) Fair & Conference in 2016, and "Recent Developments of Robotics Exoskeletons for Hand Rehabilitation," during the 2016 DLSU Research Congress; and "Development of an Online Refractive Index Monitoring System to Detect the End Point of Transesterification Reaction," during the 2015 International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM 2015) held at the Waterfront Hotel in Cebu City. He was also the holder of the Thomas J. Lee Academic Chair in Manufacturing Engineering for AY 2017-2018 and the Arch. Rogelio G. Villarosa Academic Chair in Industrial Engineering for AYs 2009-2010 to 2012-2013 and 2016-2017.

A prolific researcher, Dr. Bugtai had published at least 90 papers in the proceedings of numerous international scientific meetings. He also co-authored the following: "Implementation of a Normalized Cross-correlation Coefficient-based Template Matching Algorithm in Number System Conversion," "Image Pre-processing Using Quick Color Averaging Approach for Color Machine Vision (CMV) Systems," "A Non-contact pH Level Sensing Indicator Using Computer

Vision and Knowledge-based System," and "Design Implementation of a Sketch Isolation Algorithm: A Computer Vision-based Approach," all of which were presented during the 9th Institute of Electrical and Electronics Engineers, Inc. (IEEE) International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management 2017 (HNICEM2017) at the Hotel Jen in Manila; "Active Motor Control for an Upper Extremity Exoskeleton" presented during the 3rd Advanced Research in Material Sciences, Manufacturing, Mechanical and Mechatronic Engineering Technology International Conference (AR4MET) held in November 2017 in Melaka, Malaysia; "A Bio-inspired Design of a Hand Robotic Exoskeleton for Rehabilitation," Biomimetic Approach in the Design of a Robotic Exoskeleton for Upper Limb Therapy," "Recent Technological Advancements in Laparoscopic Surgical Instruments," and "Trends in Telemedicine Utilizing Artificial Intelligence" which were presented during the 2nd International Symposium on Biomedical Engineering (ISBE 2017) in Bali, Indonesia; "Sensitivity Determination of a Wearable Electromyography (EMG) Sensor for Muscle Therapy Exercises," "Design of an Innovative Hand Robotic Device for Rehabilitation," and "Development of a Wireless Telepresence Robot" presented during the 1st International Biosensing Technology Workshop and Conference at DLSU, Manila; "A Fuzzy-based Dynamic Threshold Algorithm for Motion Intention Detection System for Upper-limb EMG Signal Characterization," presented during the 2nd International Conference on Business and Engineering Research (ICBER 2016), in Osaka, Japan; "Development

of a Telepresence Robot for Medical Consultation" and "Application of a Kinect and Wireless Technology for Patient Data Recording and Viewing System in the Course of Surgery" presented during the 1st International Symposium on Biomedical Engineering (ISBE 2016) at the Margo Hotel in Depok, Indonesia; "Design of an Improved Jointed Articulating Laparoscopic Tool," "Exploitation of 3D Printing Technique in Design and Prototype of an Eyeglass Frame for the Philippine Eye Research Institute," and "Design Consideration in Manufacturing Cost-effective Robotic Exoskeleton for Upper Extremity Rehabilitation," which were presented during the 8th IEEE HNICEM2015 at the Waterfront Hotel in Cebu City; and "Utilization of Rapid Prototyping Techniques in Design and Manufacture: A Review" presented at the 12th Engineering Research and Development Technologies (ERDT) Conference, at the Century Park Hotel in Manila.

Dr. Bugtai also co-authored the following papers published in the proceedings of DLSU-hosted scientific forums: "A Sustainable Innovation for Product Component Prototyping with 3D Printing Techniques" and "Design of a Telepresence Robot Utilizing Wireless Technology for Sustainable Development," presented during the 4th DLSU Innovation and Technology (DITECH) Fair; and "Robotic End-effector Design for Grasping Utilizing CATIA Software," "Design and Manufacture of a Mechanical Ventilator: A Future Direction," and "Recent Developments of Telepresence Robots for Healthcare" presented during the 1st DLSU Graduate Research Conference.



He had been invited as a plenary speaker in several seminars and conferences. His more recent talks were on “Global Trends of Biomedical Devices and the Philippine BDI” during the 2017 Engineering Innovations and Technology Conference (EITC 2017) at the University of San Jose Recoletos in Cebu City; the DLSU Manila initiatives on “Sustainable Development for Philippine Biomedical Devices Innovation” during the 2017 International Symposium on Novel and Sustainable Technology (ISNST2017) at the Southern Taiwan University of Science and Technology; “Development of a Telepresence Robot for Medical Consultation” during the 1st International Symposium on Biomedical Engineering at the Margo Hotel in Depok, West Java, Indonesia; and “Development of a Crab Claw Meat Extracting and Crab Shell-Granulating Machine” during the 2015 Manufacturing Engineering Research Symposium at the Colegio de San Antonio de Padua in Danao City, Cebu.

Before joining DLSU, Dr. Bugtai was a college instructor at the Don Bosco College and a training officer at the Don Bosco Manpower Training Center in Canlubang, Laguna, from April 15, 1985 to May 31, 1989. He was also a technical instructor at the Machine Shop Department of the Don Bosco Technology Center in Punta Princesa, Cebu City, from May 15, 1978 to May 31, 1983.

He was hired by DLSU on September 9, 1989. Since then, he has been teaching students in diverse engineering fields. To further his knowledge, experience, and expertise, Dr. Bugtai was a visiting professor at the Precision Micro Machining Center, University of Toledo, Ohio USA

(2013), and at the University of Pisa—Faculty of Engineering in Pisa, Italy (2005) where he immersed himself in biomedical and clinical engineering. He was a visiting research fellow (2004) at the School of Mechanical and Aerospace Engineering, of Nanyang Technological University in Singapore where he worked on smart tools for product design and development. In 1994, he was an exchange faculty at the University of Southern Queensland in Australia, where he dealt with wall climbing robots at the National Center for Engineering and Agriculture’s Mechatronics Laboratory.

Dr. Bugtai had served the MEM Department in various administrative capacities in the past as chair, vice chair graduate program coordinator, practicum coordinator, and thesis coordinator.

He obtained his B.S. in Mechanical Engineering from the University of San Jose—Recoletos in Cebu City, and his M.S. in Manufacturing Engineering from DLSU under a Department of Science and Technology—Philippine Council for Industry and Engineering Research and Development (DOST-PCIERD) scholarship grant in 1983 and 1992, respectively. As a US-ASEAN scholar, he completed the computer integrated manufacturing (CIM) course at the Asian Institute of Technology in Bangkok, Thailand (1990). He was also a recipient of the British Council scholarship grant for the manufacturing engineering course at the Loughborough University in Leicestershire, England (1991). He pursued his doctoral studies under a DOST-Engineering and Science Education Program (ESEP) scholarship at the Loughborough University, where he earned his Ph.D. in Manufacturing Engineering in July 2003.

Dr. Bugtai is a senior member of the Society of Manufacturing Engineers–Association for Manufacturing Excellence (SME-AME) in Dearborn, Michigan, the Institute of Electrical and Electronics Engineers–Engineering in Medicine and Biology Society (IEEE-EMBS), Piscataway New Jersey, USA, and the Mechatronics and Robotics Society of the Philippines (MRSP). He is also a lifetime member of the Network for Integrative Multi-Disciplinary Bioinformatics Utilization Strategies

(NIMBUS) and Biomed Society of the Philippines (BSP).

Having risen from the ranks to become a research trail blazer in the country, Dr. Bugtai has these few pieces of advice for upcoming faculty researchers: “It is never too late to do research; always put your heart into improving the life of others when conducting research; it is not just for publication and promotion; people must benefit from your ideas and the results of your research work.”

# My Personal Impression of Nilo

by Mr. Homer Co

It was in the mid-90s, I think 1994, that I first met Nilo. He was working on his master's thesis and had just returned from a short training course in manufacturing engineering. At that time, the Manufacturing Engineering and Management (MEM) Department was still pretty young. Few faculty members were servicing the department. A quiet, and humble person, Nilo was one of us 'pioneers' who were servicing the program. I have known him through the years as a mild-mannered, hardworking individual. Very meticulous and organized (a borderline OC, if I may say so), he assumed the post of vice chair and then chair of the department, providing the much-needed leadership and management of the program. Those were the years when the program was at its infancy and struggling to create an identity in a very new field of study. The practice of doing multidisciplinary and interdisciplinary studies was quite new at that time. Traditional engineering programs were still parochial, rigid, and resistant to innovation. Nilo, therefore, endeavored to provide the essential leadership and administrative supervision to bridge the gaps and resolve these issues.

The turn of the century marked a new challenge for Nilo. After being awarded a scholarship grant by DOST-ESEP, he packed up his bags and left for Loughborough, UK for his doctoral studies. However, leaving a young family behind proved to be very challenging for him, both mentally and later on, financially. I saw him struggle. He struggled to a point where others would have broken down. It was with the help of the late Brother Andrew Gonzalez FSC that he persevered. I think it was his firm faith in God that actually sustained him. After earning a doctorate, he returned to DLSU and proceeded to provide the department with new insights on program development, capacity-building, and faculty development.

To date, he is a respected figure in the field of biomedical engineering in the country because of the healthcare devices he has developed that assist people with physical disability. He now trains the next generation of young researchers to build our capacity for innovation and development.

All these years, I have known him to be a true friend and an excellent colleague. He is gracious and forgiving to a fault that others tend to abuse his good nature. He has always lived the Bosconian values. That is CHARACTER. Like the biblical patriarch Abraham, God has truly blessed him that he may be a blessing to others.



## LIDER activities for AY2015-2016 and AY2016-2017

### PROGRAMMATIC AREAS OF RESEARCH AND TRAINING

Each department under the BAGCED has its own set of research thrusts and themes, around which faculty members

develop their expertise through research studies and scholarly pursuits. These thrusts and themes also serve as guide in tapping the expertise of the college's education professionals.

Department	Research Thrusts	Research Themes
Counseling and Educational Psychology	Contextualizing Counseling and Educational Psychology in the Philippines and Asia (Toward a culturally-sensitive understanding of the experiences of youth-at-risk and of the educational programs and services that can foster their holistic development)	<ul style="list-style-type: none"> <li>• Counselor Education and Supervision</li> <li>• Defining Emerging Functions and Competencies of Counselors</li> <li>• Test Development for Counseling Use</li> <li>• Counseling in Different Socio-cultural Contexts</li> <li>• Psychology of Learning and Teaching in Socio-cultural Contexts</li> <li>• Educational Psychology Measurement</li> </ul>

The **Lasallian Institute for Development and Educational Research (LIDER)** was established in 1993 as the research and development arm of the Br. Andrew Gonzalez FSC College of Education (or BAGCED, the former College of Education). Through this Institute, the College pools the expertise of various education professionals to serve the needs of various sectors of the educational community.

LIDER assumes the dual purpose of generating knowledge and helping solve the nation's developmental and educational problems. Its establishment also responds to the growing demand for cooperative and multidisciplinary efforts to address these problems. In general, it aims to: (1) contribute to nation-building by conducting research studies, training educational leaders, and developing innovative strategies and culturally relevant educational materials; (2) provide leadership in pushing the frontiers of education by offering varied and creative programs in different disciplines; and (3) initiate interdisciplinary research-based educational technology, human development, and formation programs. To achieve its objectives, LIDER encourages the participation of researchers and other human resource development experts from diverse disciplines. Moreover, it facilitates linkages with various end-users, policy makers, funding agencies, parents, teachers, students, community leaders, and researchers.

Department	Research Thrusts	Research Themes
English and Applied Linguistics	Language Pedagogy and Applied Linguistics in Multicultural and Multilingual Contexts	<p><b>Basic Research:</b></p> <ul style="list-style-type: none"> <li>Socio-cultural Processes in Filipino Bilingualism</li> <li>Cognitive Processes in Filipino Bilingualism</li> <li>Austronesian Linguistics, Computational Linguistics</li> <li>World Englishes</li> </ul> <p><b>Applied/Action Research (Basic Language Skills)</b></p> <ul style="list-style-type: none"> <li>Reading</li> <li>Writing</li> <li>Listening and Speaking</li> </ul>
Educational Leadership and Management	Socially sensitive and scholarly research that enhance the quality of management and leadership in educational institutions	<p><b>Basic Research:</b></p> <ul style="list-style-type: none"> <li>Filipino Paradigms of Educational Leadership</li> <li>Theory Building on Various Aspects of Educational Leadership and Management</li> <li>Organizational Culture</li> <li>Models of School Effectiveness</li> <li>Development and Validation of Assessment Tools for Exceptional Children</li> </ul> <p><b>Applied/Action Research (Basic Language Skills)</b></p> <ul style="list-style-type: none"> <li>Technology-enabled Educational Delivery Systems</li> <li>Administrator and Teacher Training Programs</li> <li>Children-at-risk: Assessment of Risk Factors and Interventions</li> <li>Inner Core of Management: Spirituality</li> </ul>
Science Education	Understanding Mathematical and Scientific Thinking and Learning of Youth-at-risk (For the Design of Appropriate Science and Mathematics Education Program)	<ul style="list-style-type: none"> <li>Science and Mathematics Curriculum Design</li> <li>Teacher Training (Capacity Building)</li> <li>Studies on Students' Conceptions</li> <li>Self-regulated Learning</li> </ul>

Department	Research Thrusts	Research Themes
		<ul style="list-style-type: none"> <li>• Developing Dynamic and Authentic Assessment Tools and Strategies</li> <li>• Effective Integration of Technology in Science /Math Instruction</li> </ul>
Physical Education	Wellness and Health Education	<ul style="list-style-type: none"> <li>• Efficacy in Attaining Sports/Dance Skills</li> <li>• Fitness Profile Studies</li> <li>• Physical Activity Monitor for Personal Fitness and Exercise</li> <li>• Cardiovascular Fitness Status</li> </ul>

## MAJOR ACCOMPLISHMENTS FOR AY 2015-2016 AND AY 2016-2017

During the period AY 2015-2016 and AY 2016-2017, LIDER continued to provide educators and education professionals working at different levels in the academe opportunities to address the difficulties and problems that they experience in the everyday practice of their profession. It offered innovative ways to equip and empower educators systematically and scientifically, not only to identify the causes of these difficulties and problems but also to craft solutions to improve the manner they deliver knowledge to their students.

### Action Research, Action Learning (ARAL) Congress

In 2015, in collaboration with the BAGCED, LIDER launched the first Action Research, Action Learning (ARAL) Congress. Since its inception, the ARAL Congress has been envisioned to serve as a venue to address a wide range of critically important issues and themes relating to action research and action learning. Significantly, the Congress' acronym "ARAL" is a Filipino term meaning *study*

or *lesson*. The general objectives of the ARAL Congress are to:

- instill a deeper appreciation of the need and importance of action research;
- provide a thorough understanding of the different methodologies that can be used in the conduct of action research; and
- provide a venue for the sharing of experiences and best practices, as well as for the discussion of possible collaborations among action researchers who are based in different institutions and countries.

### The ARAL 2015 Congress: *First National Congress on Action Research in Education*

The ARAL Congress 2015 activities were thus designed to further build the competencies of educators and education professionals in addressing the difficulties and problems that they experience in their daily practice and improving the quality of education in the country.

Held in March 2015 at DLSU, the two-day National Congress had 313 registered participants from various schools

nationwide. Although the participants were primarily basic education teachers, there were also teachers from higher education institutions, as well as graduate students. More than one-half (172) of the participants were female, and most of them learned about the congress through their respective DepEd Division Offices.

ARAL 2015 focused on action research outputs that had been conducted in both public and private institutions by individuals at different levels in the educational system: superintendents, supervisors, school administrators, teachers, and teacher professionals. It featured plenary talks of distinguished educators, workshops, paper presentations from the different levels in the form of parallel sessions, and exhibits from the Congress' sponsors.

It kicked off with messages from key individuals in the field of research and education, namely Department of Education Secretary Br. Admin A. Luistro FSC; National Research Council of the Philippines Vice-President/Chair, Medical Sciences, Dr. Isidro C. Sia; and CHED Commissioner Dr. Ruperto S. Sangalang. These were followed by the inspirational messages from DLSU President Br. Dennis M. Magbanua FSC, and DLSU External Relations and Internationalization Director Dr. Alvin B. Culaba.

Five workshops were conducted simultaneously. The participants chose from the following workshop topics:

- Understanding Action Research as a Reflexive Process
- Action Research for School Leaders,
- Developing Instruments for Action Research
- Educational Quality Assurance through Action Research

- Qualitative Data Analysis using MaxQDA

Seven action research network groups were formed on the following themes:

- Teaching and Learning
- Science and Mathematics Education
- Educational Leadership and Management
- Information Technology Education,
- Language Education
- Music, Arts and Physical Education,
- Counselor Education

Capping the activities for the first day of the Congress were the concurrent paper presentations of 70 action research papers. These papers were grouped into 10 clusters according to the aforementioned themes.

Prof. Mary Brydon-Miller, Ph.D. delivered the keynote address during the second day of the congress. This was followed by panel discussions on the themes: Science and Mathematics Education, Educational Leadership and Management, and Counseling Education.

### Participants' Feedback

The participants rated the ARAL 2015 National Congress using an evaluation form with eight statements, and that employed the Likert scale where '1' represented strong disagreement and '4' represented strong agreement toward the statement. The participants' feedback (Table 1) showed that the ARAL 2015 objectives were met. They gave high ratings to its content, registration process, venue, parallel sessions, workshops, action formation, research network, and communication and coordination, among others.



**Table 1:** Evaluation Results of ARAL 2015 Congress

Statement	Mean	Standard Deviation
The purpose of the Congress has been accomplished very well.	3.56	0.503
I would like to participate in next year's ARAL	3.73	0.461
The purpose of the workshops provided in the Congress was attained.	3.54	0.513
I will recommend this Congress to other educators and education professionals.	3.73	0.447
The Congress fulfilled my reason for attending ARAL 2015.	3.57	0.503
The speakers were interesting to listen to.	3.52	0.521
After attending this Congress, I have decided to conduct action research in my classroom/school.	3.61	0.489
The formation of action research group is a good attempt to sustain a network of interested action researchers.	3.60	0.512

The participants cited the following as the most beneficial aspects of the Congress: the inspirational messages, keynote address, workshops, parallel paper presentations, research and development culture, and action research networking. They were particularly inspired by the messages of DepEd Secretary Br. Luistro FSC and NRCP Vice-President/Chair, Medical Sciences Dr. Sia.

The participants mentioned looking forward to ARAL 2016. They identified the following themes and suggested topics that future ARAL Congresses can possibly address.

Identified Themes	Suggested Topics
Social Science and Social Science Education	Action Research Methodologies
Science and Mathematics Education	Statistical Analysis
Educational Leadership and Management	Action Research from Other Countries
IT Education	Responsibility to Community
Discovery Learning	Teachers' Attitudes toward Action Research
Science Investigatory Projects	Ethical Considerations in Conducting Action Research
IP Education	Funding Opportunities for Action Researchers
Language Teaching and Assessment	Qualitative Methods of Action Research

### **The ARAL 2016 International Congress: Action Research and Innovation: Improving Educational Practices in the ASEAN Region**

Inspired by the outcome of and feedback on the ARAL 2015 National Congress, LIDER organized ARAL 2016 as an International Congress on Action Research in Education. The 3-day event held on March 3 to 5, 2016 at DLSU was anchored on the theme “Action Research and Innovation: Improving Educational Practices in the ASEAN Region.” The Congress provided the participants with a series of workshops that were aimed to promote further understanding of the action research process as a tool for the continuous improvement of professional practice. It likewise created more opportunities for the participants to learn from and collaborate with some of the world’s best minds in the field of action research.

Of the 188 ARAL2016 attendees who registered for the Congress, 63% were female. This gender distribution was observed to be similar to ARAL 2015.

A total of 91 action research papers were presented during ARAL 2016.

#### **Day 1 Activities**

The day’s activities were ushered in by the welcome remarks of DLSU’s Brother President Raymundo B. Suplido FSC, which was delivered by DLSU Chancellor Dr. Gerardo C. Janairo. This was followed by the presentation of the ARAL 2015 output and the rationale of ARAL 2016 by LIDER Director Dr. Maricar S. Prudente. Thereafter, the inspirational messages of Commission on Higher Education (CHED) Commissioner Dr. Patricia B. Licuanan, and Department of Education Secretary, Br. Armin A. Luistro FSC, were read by Dr. Pinky Ramos and Dr. Nino Agoncillo, respectively.

Guided by the instructions and key points given by BAGCED Research and Advanced Studies Director (RASD) Dr. Lydia S. Roleda, the participants proceeded with the workshop sessions for Day 1. The workshop themes/titles and their facilitators were:

Workshop 1	Action Research for Continuous Improvement	Dr. Maricar S. Prudente Dr. Socorro E. Aguja
Workshop 2	Qualitative Methods of Action Research	Dr. Auxencia A. Limjap
Workshop 3	Action Research and Lesson Study Model	Dr. Levi E. Elipane Ms. Pauline Anne Therese M. Mangulabnan
Workshops 4	Action Research in Business and Economics	Dr. Maria Victoria P. Tibon
Workshop 5	Instrument Development in Action Research	Dr. Jerome A. Ouano

Emceed by DEAL's Dr. Paolo Niño M. Valdez, Day 2 commenced with LIDER's Dr. Jovito C. Anito, Jr. giving a synthesis of Day 1. This was followed by the inspirational message from Knowledge Channel Foundation, Inc. President Ms. Rina Lopez-Bautista. Setting the tone for the day's activities were the plenary talks of Dr. Mary Brydon-Miller, Director, Action Research Center, University of Cincinnati, USA, entitled "Lighting the Spark, Seeing the Light: Educational Action Research as Transformative Practice" and Prof. Kamisah Osman from the Universiti Kebangsaan Malaysia, entitled "Action Research: The Malaysian Experience." An open forum ensued after each plenary talk.

Parallel sessions (paper presentations) were held in several venues in the afternoon of Day 2. A total of 50 papers were presented:

1. "There's Something Smart in Your Pocket: Integrating Mobile Phones in Learning Mathematics"
2. "ICT Skills and Perceptions Towards ICT Use of Mandaluyong ICT Teachers: Basis for Training K-to-12 ICT Curriculum"
3. "E-Communication in the Private Schools"
4. "O.N.E. on O.N.E.: 21st Century Tool"
5. "The Impact of Film Viewing on the Performance of Students in English 9 at Maximo L. Gatlabayan Memorial National High School, School Year 2015-2016"
6. "Mga Gawaing Task-based: Daan Tungo sa Aktibong Pakikibahagi ng mga Tahimik na Mag-aaral"
7. "Improving Pupil's Performance in Music through Multimedia Instruction"
8. "A Learner-centered Tool for Computer Hardware Servicing Course: A Game Approach"
9. "The Effect of Coding Test Questions Using Structure of Observed Learning Outcomes (SOLO) on the Performance of Students in Science 7"
10. "Enhancing the Note-taking Skills of Grade 10 Students through Graphic Organizers"
11. "Raising Students' Understanding of Photosynthesis through the Computer-mediated Strategic Intervention Material"
12. "Strategic Intervention Material (SIM): Effects on Students' Performance in Mathematics"
13. "Comparative Analysis on the Learning Effects of Presentation Software Among Grade 7 Students in Science"
14. "Effect of Ability of Grouping in Cooperative Learning"
15. "Encouraging Mathematical Communication through Active Learning Approaches (ALAp)"
16. "Using Mnemonics in Enhancing Memory"
17. "Improving Performance Indicators through OHSP e-Education Video Lessons and Sagip Kamag-aral Program"
18. "A Framework for Understanding Inquiry-based Teaching in Selected International Baccalaureate Schools"
19. "ComPRESS: Drawing Implications on Senior High School Preferences"
20. "Division-wide Student Assessment (DSA) Program: An Intervention to

- Improve NAT Students' Performance in the Division of Cagayan de Oro City"
21. "Enhancing the Performance of High School Students in Physics through PROBEX with the Inclusion of Indigenous Games"
  22. "Improving Students' Performance and Interest in Physics through Instructional Models and Photos"
  23. "Intensifying Interest and Performance of Physics Students through Problem-solving Strategies Wheel"
  24. "The Effectiveness of Portfolio Assessment on Nuclear Energy Lessons in High School Physics"
  25. "Enhancing the Level of Performance of Science III Students through Formative Assessment Classroom Techniques (FACTs)"
  26. "Kamag-aral Ko, Sagot Ko: Enhancing Pupils' Performance in Mathematics through Strengthened Cooperative Learning Activities"
  27. "Attitudes, Anxiety, and Mathematical Performance of Grade 9 Students in Maximo L. Gatlabayan Memorial National High School"
  28. "Eureka, Science! An Integrated Approach in Teaching Microbiology"
  29. "Humanizing Mathematics Education: A Never-ending Task of Mathematics Teachers"
  30. "Process-oriented Guided Inquiry Learning Strategy Improves Grade 8 Students' Performance in Chemistry"
  31. "Effectiveness of Open Online Writing Course as a Supplementary Tool for Improving the Writing Skills of Selected Grade 10 Students"
  32. "Reading Attitude of Grade 9 Students in Rural and Urban Public Schools"
  33. "Word Wall at Proofreading Tungo sa Mas Maunlad na Kakayahan sa Pagbaybay sa Filipino"
  34. "Can Academic Writing Become Learner-centered? Reflections on the Pedagogy of Writing in the University"
  35. Phonetics Instructions Module: Improving Oral Reading Skills among Grade One Pupils of Mansabay Bajo"
  36. "Project E-CASH MOOE: Ensuring Learner-centered Environment Expediting Cash Advances of School MOOE (Maintenance and Other Operating Expenses)"
  37. "Sagip Mag-aaral: A Public-Private Partnership School-based Feeding Program"
  38. "Improving School-based Management Practices of Schools through Project TOW"
  39. "Family-based Approach as a Drop-out Reduction Tool: The Case of Ozamiz City National High School"
  40. "Guro Ko, Sagot Ko: A School-based Mentoring Technique in Providing Clinical Assistance to Teachers"
  41. "Document e-Tracking System: Reengineering Status Quo of Customer Service in the Division of Ozamiz City"
  42. "Learning Resources Management and Development System: Bridging Teaching and Learning for Excellence"
  43. "Improving Teachers' Efficiency through the Computer Literacy Training Program"



44. "Clinical Coaching Enhances School Heads' Engagement in School Learning Action Cell"
45. "Psychological and School-related Variables: Their Predictive Influence on Students' Performance in the Licensure Examination for Teachers (LET)"
46. "Enhanced Brigada Eskwela for School Transformation (E-BEST)"
47. "In or Out: Moving Employees Up through WRAP-UP (Winningly Raising Awareness of Personnel on Upgrading and Promotions)"
48. "Energy-efficient School"
49. "Teaching Large Class Using NHT Technique: A Mixed Methods Study"
50. "Engaging in Lesson Study: Exploring the Lessons Learned"

The Congress continued to gain momentum on Day 3, which was emceed by Dr. Roleda. A synthesis of Day 2 was given by Dr. Minie Rose C. Lapinid of the Science Education Department. This was followed by the inspirational talk from DLSU Manila's Vice Chancellor for Research and Innovation, Dr. Raymond Girard R. Tan, and the plenary talks. Prof. Sigit Supadmo Arif of the Department of Agriculture and Biosystem Engineering, Faculty of Agriculture and Technology, University of Gadja Mada, Indonesia, discussed the action research experience in Indonesia; Dr. Mya Oo, Rector and Director General, Department of Education, Myanmar tackled action research experiences in Myanmar; and Dr. Prudente talked about the action research experiences in the Philippines. A question-and-answer forum was held after each talk.

As in Day 2, the afternoon of Day 3 was spent for parallel sessions with several paper presentations held in different venues. A total of 41 papers were presented.

1. "Research Engagement and Assessment Program (REAP): Its Impact and Relevance in the Contextualization of Curriculum"
2. "Addressing the Needs of Students-at-Risk of Dropping Out through Project BUY (Buying materials for the Underprivileged Youth)"
3. "Development of Quirino State University – Cabarroguis Campus Computer-based Examination System"
4. "A Management Program for School Administration Based on the School-based Management System"
5. "Implementation of Programs and Projects and Performance of Public Secondary Schools in Antipolo City"
6. "How Could I Make the Members Attend Meetings and Participate in Other Activities of the Committee?"
7. "Practices of School Heads in Performing Their Leadership Responsibilities"
8. "Management of Western Philippines University External Campuses in Palawan, Philippines: An Assessment"
9. "Subanen IPed Framework: Embracing Indigenous Knowledge, Skills, and Practices"
10. "The Impacts of Quipper School: An Online-based Teaching,"
11. "Project REACH: Reviving Stakeholders' Engagement in Acquiring Conducive Home of Learning through Radio Telecasts and Public-Private Partnerships"

12. "Effectiveness of Newspaper Subscription to the Grade 9 Students' Academic Performance in Araling Panlipunan for School Year 2015-2016"
13. "Effectiveness of Social Media Exposure to the Level of Learning of Grade 10 Students in Araling Panlipunan for School Year 2015-2016"
14. "Assessing the Holistic Effect of Physical Education on Learners' Well-Being"
15. "The Pseudoscientific Characteristic of Traditional and Alternative Medicines"
16. "Avoiding Street Foods"
17. "Epistemological Beliefs of De La Salle Lipa Integrated School Teachers Toward the Inclusion of Students with Special Needs in the Regular Classroom"
18. "Determining Students' Motivation in Learning Philosophy through a Learner-centered Instructional Design: An Action Research on Third Year Student Nurses Taking Philosophy of the Human Person"
19. "Splendor and Miseries of Cohabitation Among College Students of Quirino State University, Cabarroguis Campus: A Phenomenological Approach"
20. "Enhancing Students' Research Skills through Constructivist Approach: A Way to Make Research Alive at GRSH-X"
21. "Strengthening Peace Education and De La Salle Lipa (DLSL)"
22. "Integrating Financial Literacy and Stock Investing in the Graduate School"
23. "Entrepreneurial Activities of Women with Physical Disability of Quirino Province"
24. "Enhancing Mother Tongue Phonic-letter Recognition Skill through Kinesthetic Activities"
25. "Improving Literary Appreciation Skills of Grade 9 Students through Six Thinking Hats"
26. "Better English Pronunciation Guide to Improve Pupils' Speaking Skills of Concepcion Central School"
27. "Enhancing the Competence of High School Students in Editing their Written Composition through the Use of Correction Codes"
28. "Enhancing the Word Recognition Skill of Pupils through Picture Puzzles"
29. "Photonary: Addressing the Poor Reading Comprehension of Grades I, II, & III Pupils in Marugang Elementary School"
30. "Developing Critical Literacy through Oral Narratives"
31. "K to 12 Curriculum: Implications for BISCAST CoE Curricular Programs"
32. "Paglinang sa Kasanayan sa Pagsulat ng Isang Rebyu Gamit ang Dulog Genre"
33. "Reducing the Occurrence of Challenging Behavior through the Good Behavior Game"
34. "Lessening Children's Problem Behavior through Music and Movement Activities"
35. "Using Action Songs in Teaching for the Knowledge and Understanding of Science Concepts Among Kindergarten Students"

36. "Mastering the Significant Events in Philippine History through Dramatization"
37. "Journal Writing as an Effective Affective Assessment Tool"
38. "The Effect of Crossword Puzzles in Building Science Vocabulary"
39. "Loving Reading through Film and Print Text"
40. "Enhancing the Grade 10 Interest in Reading Using OPTSR (Own-Picked Text for Silent Reading)"
41. "Improving the Vocabulary Level of the Grade 9 Students of RMHS through Online Vocabulary."

The "Best Action Research Paper" award was conferred on the participants from Mariano Marcos State University for their work entitled "Enhancing the Level

of Performance of Science III Students through Formative Assessment Classroom Techniques (FACTs)." The winning team composed of Jethromel Meneses, Aris Reynold V. Cajigal, and Harley Franklin received a certificate from the Editorial Board of the Educational Action Research Journal (EARJ) and a cash prize of US\$100. The award was conceptualized by Dr Brydon-Miller and Dr. Andrew Townsend, EARJ editor-in-chief.

The 3-day Congress was capped by the closing remarks of BAGCED Dean Dr. John Addy S. Garcia.

The sponsors and exhibitors (Epson, Adarna Publishing, Phoenix Publishing House, Faber-Castell, Inc., Knowledge Channel Foundation Inc.) of ARAL 2016 talked about their products and advocacies. Participants viewed the exhibits and visited the sponsors' booths in-between sessions.

**Table 2:** Evaluation Results of ARAL 2016 Congress

Statement	Mean	Standard Deviation
The purpose of the Congress has been accomplished very well.	3.72	0.50
I would like to participate in next year's ARAL	3.78	0.44
The purpose of the workshops provided in the Congress was attained.	3.68	0.49
I will recommend this Congress to other educators and education professionals.	3.81	0.39
The Congress fulfilled my reason for attending ARAL 2016.	3.72	0.46
The speakers were interesting to listen to.	3.60	0.58
After attending this Congress, I have decided to conduct action research in my classroom/school.	3.80	0.49
The formation of action research group is a good attempt to sustain a network of interested action researchers.	3.83	0.53

## Participants' Feedback

The participants rated the ARAL 2016 International Congress using the ARAL 2015 evaluation instrument. From the participants' feedback (Table 2), the ARAL 2016 objectives were met. As in ARAL 2015, high ratings were given to its content, registration process, venue, parallel sessions, workshops, action formation, research network, and communication and coordination, among others.

## Training and Development

During the same two-school year period, LIDER organized and conducted two major training and development seminars under the Overseas Study and Training (OST) program for head teachers and superintendents of the Bangladesh Ministry of Education, and education officials and teachers of the District Education Office/Upazila Secondary Education Office, also in Bangladesh. The OST intends to contribute significantly to the reform initiatives under the Second Teaching Quality Improvement (TQI-II) in Secondary Education Project of the Bangladesh Ministry of Education.

### **a. *Teaching Quality Improvement II (TQI - II) in Secondary Education Program 4-Overseas Study and Training (OST) Program on Leadership for Head Teachers and Superintendents***

This 14-day training program, funded by the Asian Development Bank (ADB), was conducted on September 4 to 18, 2016, at DLSU. It was participated by 25 head teachers from Bangladesh who were sponsored by the Government of Bangladesh

Ministry of Education Directorate of Secondary and Higher Education.

The training program recognizes how today's world is rapidly changing and how globalization and the World Wide Web have accelerated the pace of interconnectivity of people around the globe, thereby increasing the access of teachers and students to information and shaping the lifestyle and the manner they communicate, teach and learn. It also acknowledges that many schools are stuck to the traditional styles of leadership and management.

The September 2016 training offered 21<sup>st</sup> century education perspectives and skills to head teachers and superintendents who are well positioned to develop, decide, and ensure that education policies and programs are responsive to the needs of the hour. The training had three stages: analysis stage, assimilation stage, and action stage.

Analysis Stage - The ultimate goal of the training at this stage was to develop purposive leadership among head teachers and superintendents who would have a clear idea and a deeper understanding of the education context that requires change. Through exposure to new and cutting-edge pedagogical methods, the participants were expected to be open to changes



in teaching and learning and to learn how to effectively manage the various changes in their respective schools. The focus of the sessions at this stage was on relevant concepts, theories, and principles and their applications in the educational setting. The latest trends and developments in the field of education were also emphasized. The participants were guided into the thinking process of identifying and analyzing the personal, situational, and environmental elements that facilitate or hinder the attainment of desired outcomes of the Second Teaching Quality Improvement in Secondary Education Project (TQI-II) of the Bangladesh Ministry of Education.

Assimilation Stage - This stage involved a thorough understanding of the significance of action research in education and of developing an action research plan. It emphasized the relevance of action research as a highly reflective research methodology that is appropriate and useful for education leaders and managers who intend to effectively manage change and to continuously improve their schools. Via lecture-discussion with experts and the conduct of school visits, the participants were able to learn and observe relevant practices that are keys to the successful management of schools. They were equipped with time-tested leadership theories, proven practices, and well-timed strategies. At this stage,

the participants were empowered to initiate specific education programs that target the desired outcomes of the Bangladesh Ministry of Education.

Action Stage - This stage aimed to assist the training participants in developing a plan based on the learning they acquired from the previous stages and from the training experts. At this stage, the training experts walked through with the participants in developing the benchmarking report.

The training was highlighted by the development and presentation of the benchmarking reports prepared by the participants. The training looks forward to having the participants translate their benchmarking reports into action plans in their respective classes and institutions to improve the quality of learning and delivery of instruction.

**b. Teaching Quality Improvement II (TQI - II) in Secondary Education Overseas Study and Training (OST) Program for Education Officials and Teachers of Bangladesh Education Leadership Roles for District Education Office/Upazila Secondary Education Office**

This training, which was also funded by the ADB, was held from September 18 to October 2, 2016 at DLSU. Participants were from the Government of Bangladesh Ministry of Education Directorate of Secondary and Higher Education in Bangladesh.

Specifically, it aimed to further improve the quality of teaching and learning in secondary education institutions by strengthening a quality-assured system for training, recruitment, and performance monitoring of secondary teachers.

LIDER tendered its training services to Program 3.00 - Education Leadership Roles for District Education Office/Upazila Secondary Education Office of the OST Program. The training was conducted by highly qualified education leaders and managers, and reputable researchers, and University professors. Participants attended six core courses and experienced guided school visits, cultural trips, and science and technology tours during the 14-day training period. The core courses included the following:

- Leadership and Management in the 21st Century
- Managing Curriculum Reforms through Research
- Managing Professional Learning Communities and School Culture
- Leadership for Meaningful Teaching and Learning in the 21st Century
- Managing Learner-centered Transformative Learning Environment
- Technology Integration

As revealed in the participants' quantitative and qualitative evaluation, LIDER succeeded in delivering the OST program efficiently and effectively.

# Design Philippines – A Success by What Measure?

## *Project Leader*

Dr. Raymund B. Habaradas

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If one goes by the traditional notions of the nature of an organization and how it is managed, an organization is deemed effective if it meets the goals that it has set out for itself. Its success could be gauged in terms of its ability to grow and survive. However, an organization operates within an environment of which it has no absolute control. Therefore, there is always a risk that it would fall short of expectations or even fail. Strategic management proponents believe that the chances of failure could be reduced if an organization could come up with an appropriate strategy, i.e., an intelligent response to environmental



The **Center for Business Research and Development (CBRD)** is the research and advocacy arm of the Ramon V. del Rosario College of Business (RVRCOB) of De La Salle University (DLSU). As a signatory of the UN-backed Principles of Responsible Management Education (PRME), the RVRCOB is committed to promote the PRME principles. These principles encourage the CBRD faculty researchers, among others, to “engage in conceptual and empirical research that advances our understanding about the role, dynamics, and impact of corporations in the creation of sustainable social, environmental, and economic value,” and “facilitate and support dialogue and debate on critical issues related to global social responsibility and sustainability among different stakeholders.”

Keeping in mind DLSU’s mission of being “A leading learner-centered and research University bridging faith and scholarship, attuned to a sustainable Earth, and in the service of Church and society, especially the poor and marginalized,” the CBRD provides support to research programs and activities that address the following themes: responsible management education, multi-stream management approaches, humanistic management, ethical business practices, sustainable business practices, corporate social responsibility, corporate governance, social marketing, SME development, family business management, and social entrepreneurship.

conditions. This response must capitalize on the organization's inherent strengths, including its ability to acquire and utilize scarce resources, not only to achieve its goals but also, to ensure its survival.

In a way, organizations are like natural organisms (or entire species). Those that are able to protect themselves from or adapt to the harsh conditions of the natural environment (i.e., predators, natural calamities, extreme shifts in temperature) survive while those that are unable to do so perish or become extinct. Some organization theorists view it as inevitable that in a population of organizations in a particular industry, many would fail. This is understandable given that organizations face a multitude of challenges due to competitive pressures, technological shifts, tighter regulations, and shifting consumer preferences, among others. Exposed to a process similar to natural selection, only those that overcome organizational inertia (i.e., those that adapt by introducing new products, entering new markets, adopting new technology, co-opting regulators, acquiring competitors, or changing business models) would remain economically viable and ultimately survive.

Guided by the premises of resource dependence theory, population ecology theory, and strategic management, the project team examined the pathways followed by several companies that participated in Design Philippines, one of the programs introduced by the Center for International Trade Expositions and Missions (CITEM) to support key players in the furniture export industry. Briefly, Design Philippines is a branding initiative that positions the country as a sourcing destination for finely crafted products for the world market. According to CITEM, it

is "a design movement that nurtures and celebrates the creativity and originality of a globally competitive and passionate community of Filipino designers and craftsmen."

The study endeavored to address the following questions: Is Design Philippines effective in terms of its goal of building new Philippine brands recognized in the international market? Can its success be gauged in terms of other positive, though unintended outcomes? Can CITEM make a case for continuing the program, and perhaps get additional resources to expand its impact? What can be done so that Design Philippines can evolve into a more responsive program, i.e., successful in more measures than one?

## CHALLENGES AND PROSPECTS OF THE PHILIPPINE FURNITURE INDUSTRY

A major concern of industry players is the rising production costs. Manufacturers of wooden furniture, in particular, face higher prices of raw materials due to limited supply. According to the Forest Management Bureau, the average rate per board foot of mahogany in the third quarter of 2016 was 36 percent higher compared to that of the previous year. Also, the cost of gmelina rose by 48 percent in 2016. Suppliers also deal with high logistics costs, which could account for 24 to 53 percent of wholesale prices. This is aggravated by the congestion in domestic ports, which delays the delivery of raw materials, resulting in longer lead times.

A number of furniture suppliers, especially those engaged in small operations, face the additional challenge of



limited access to additional capital or credit to fund capacity expansion, marketing, and other activities. Participation in trade shows, for example, requires an investment of US\$20,000 to US\$30,000 if held abroad and US\$10,000 to US\$20,000 if held locally. The rates cover product development, booth fee, transportation, and accommodations, among others.

To cover production costs and other business expenses, furniture suppliers in the Philippines target mid-range and high-end segments where there is less price competition. Because of higher costs and the limited supply of wood, companies are encouraged to diversify in terms of materials used and designs offered. Many manufacturers combine traditional furniture materials like wood, rattan, and *buri* with stone, bamboo, and plastic. Some incorporate seagrass, shells, coconut lumber, and leather in their pieces. Several furniture suppliers also keep price adjustments to a minimum to sustain and grow existing buyer relationships.

Among the factors supporting the furniture industry's shift to mid-range and high-end lines is access to a large pool of skilled workers who have formal and informal training. The English language proficiency of the majority of the country's population facilitates communication between suppliers and buyers. The country is also home to craftsmen whose skills have been passed down from previous generations. Northern Luzon, for instance, is known for the quality woodwork of its craftsmen. The Philippines' skilled workforce includes creative and resourceful designers who draw inspiration from the country's diverse culture and rich history to create pieces that are relevant to the lifestyle of the modern consumer.

## DESIGN PHILIPPINES – SUPPORT FOR FILIPINO MANUFACTURERS AND EXPORTERS

Recognizing the challenges faced by Filipino exporters, the Philippine government provides them with various support programs and incentives. Taking the lead in facilitating market access is the CITEM, the export promotion arm of the Philippine Department of Trade and Industry (DTI). Committed to “developing, nurturing, and promoting globally-competitive small and medium enterprises (SMEs), exporters, designers, and manufacturers,” CITEM implements an integrated approach to export marketing, in partnership with other government and private entities (<http://www.citem.gov.ph/>).

CITEM contributes to the DTI's export growth targets “by marketing and promoting the Philippines as a reliable source of quality export products and services in the global market through trade fairs and missions and other export promotion programs.” In 2013, CITEM launched Design Philippines, a program intended to provide support to companies that have a good track record in international trade fair participation, and a ‘strong voice’ and regarded as ‘top of the craft.’ By employing a holistic brand development program involving export coaching and design and promotional support for international fair participation, Design Philippines endeavored to establish in the international market by 2017 at least six strong brands that have “clarity, consistency, and competitiveness.”

## BUSINESS MODELS OF PARTICIPATING COMPANIES

Since 2013, several companies have participated in international fairs under the Design Philippines umbrella. This study focuses on the four companies that belonged to the first batch: Industria Edition, Ito Kish, Schema, and Triboa Bay Living.

**Industria Edition.** This is a brand created by Vico Manufacturing Co., a firm founded in the early 1990s. It “romanticizes steel, tempers it to evoke lightness and grace in a chair or a table.” The result is “a delightful and deceptively whimsical collection of furniture exuding elegance by its scale, form, and creative manipulation of materials” (<https://www.designboom.com/design/industria-vico-romanticizes-steel/>). In its website, Industria Edition describes itself as taking “creative cues from the timeless aesthetics of the mid-century modern era while also drawing inspiration from nature.” The company also “merges organic structure with the raw quality of steel and translates it into a statement piece.” By combining modern design with traditional, handmade production, Industria Edition “blurs the lines of art and furniture – crafting collections that are sculptural yet practical, innovative yet instant classics” (<http://www.industriedition.com/industria-edition/>).

**Ito Kish.** Named after its owner, Ito Kish started out in the early 2000s as a retailer of imported furnishing, lighting, and décor items. It offered interior design services shortly after. The company came out with its first furniture line after joining Manila FAME in 2012. According to Kish, “our objective is to change the way people

live by exposing them to what’s new, what’s trendy.” The company pursues this goal by providing: (a) internationally sourced furnishing, lighting, and décor items through **Ito Kish Stories**; (b) his signature line of furniture and design pieces, under **Ito Kish Home**; and (c) interior decorating services, via **Ito Kish Projects**.

**Schema.** This company was established in 2013 as a trademark brand of Kalikasan Crafts, a manufacturing company founded in 1994. It capitalizes on the versatility of galvanized iron, which inspires its designers to come up with innovative concepts “that give character and life to every home or space.” This malleable medium allows the company’s artisans to mold simple patterns into complex shapes, resulting in decorative pieces that are beautiful, intricate, and functional at the same time. In its website, Schema declares that “This art of metal weaving is something we take pride in, coming from years of learning and mastering the craft. Because our items are not manufactured by machine, the result each time is a unique, hand-woven product that brings the artisan’s personal touch into any living space” (<http://www.schemaproduct.com/story.html>).

**Triboa Bay Living.** Managed by Vivere Lifestyles Co., Inc., which is a high-end indoor furniture and lighting brand based in Angeles, Pampanga, Triboa Bay Living primarily utilizes wood with raw finishes, and “mixes classic forms with a pared-down contemporary sensibility” (<http://triboabay.com/>). Known for its warm and simple designs, the company “combines resort-inspired ambience with a touch of unassuming luxury.” Inspired by Triboa Bay in nearby Subic, Zambales, owner and designer Randy Viray, crafted the

brand “to be synonymous with calm, and relaxation.” Since its establishment in 2008, Triboa Bay Living has achieved international recognition from clients in Australia, Belgium, Japan, New Zealand, Poland, South Africa, and the United States (<http://industry.gov.ph/testimonial/triboa-bay-living/>).

To help generate insights from the experiences of these four companies under Design Philippines, the research team examined their business models using the building blocks of the business model canvas (Osterwalder & Pigneur, 2010). Roughly, the building blocks that correspond to value creation are key resources, key activities, and key partners. Those that correspond to value delivery are customer relationships and channels. These two broad activities provide value to customer segments and allow the company to appropriate value by ensuring that the revenue streams exceed the cost of undertaking these activities.

### **Shift to new value propositions and new customer segments**

The four companies cater to different customer segments and, therefore, create a variety of products that provide value for their respective target markets (see Table 1). All four companies either expanded or changed their product lines over the years as a response to market demand or competitive pressures.

The experience of Kalikasan Crafts (now Schema) is illustrative. Founded in 1994 by Celia Gamboa Jiao, the company started out by producing Christmas and holiday decorations. For just over a decade, Kalikasan Crafts focused on designing and manufacturing holiday decorations for

export to wholesalers and retailers in Asia, Europe, and the United States. By mid-2000, the demand for holiday decorations produced in the Philippines started to decline due to the entry of Chinese manufacturers. This prompted the company to branch out into the tabletop category, which included decorative baskets, trays, vases, and candleholders. Seeing the potential of tabletops made of metal wires, the company decided to make bigger pieces using the same material. It was at this point that the company entered the lighting category.

Schema’s chief operating officer, Jego Luis Jiao, explained that the company’s venturing into lighting started when his mother Celia Jiao developed a small table lamp using metal wire, which they introduced at the Manila FAME in 2008. The customers liked the idea. Thus, when CITEM handpicked the company to become part of Design Philippines in 2013, it was already into lighting. In 2015, Schema introduced a furniture line. According to the company’s president, Jerry Jiao, “if you display lighting and furnishings, you need some floor pieces to display also. We wanted to present our company as a lifestyle brand, meaning it’s a complete line of home furniture, furnishings, and lighting.”

In a feature article published in Real Living, Jego Jiao said, “Schema focuses on the use of metal wire as its primary medium for its lighting, furniture, and decorative accessory product range. Using metal wire, we develop various hand-woven patterns that retain the honesty and purity of the raw material” (<https://www.realliving.com.ph/tips-and-guides/shop-of-the-week-schema-a00043-20170606>).

**Table 1. The Value Proposition and Customer Segments of the Four Companies**

Company	Value Proposition	Customer Segment
Industria Edition	<ul style="list-style-type: none"> <li>Creates a “delightful and deceptively whimsical collection of furniture exuding elegance by its scale, form, and creative manipulation of materials.”</li> <li>Creates vintage concepts in design using a combination of wood and metal with earthy colors.</li> </ul>	<ul style="list-style-type: none"> <li>Industria Home: Crate &amp; Barrel (USA), and local clients, for which it serves as the manufacturer of products that carry the clients’ brand.</li> <li>Industria Edition: Local and foreign clients that purchase uniquely designed products that carry the Industria brand.</li> </ul>
Ito Kish	<ul style="list-style-type: none"> <li>Changes the way people live by exposing them to what is trendy and new. <ul style="list-style-type: none"> <li><i>Ito Kish Home</i> – a signature line of furniture and decor</li> <li><i>Ito Kish Stories</i> – internationally sourced lighting/décor</li> <li><i>Ito Kish Projects</i> – interior decorating services</li> <li><i>Ito Kish Live</i> – social media &amp; branding</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Individuals – upper-class niche, society mavens, showbiz</li> <li>Corporate – Robinson’s, Ayala Land Premiere</li> </ul>
Schema	<ul style="list-style-type: none"> <li>Employs the art of metal weaving to come up with unique and innovative hand-woven products (e.g., lighting and tabletops) that bring “the artisan’s personal touch into any living space.”</li> </ul>	<ul style="list-style-type: none"> <li>Kalikasan – Caters to two long-time clients for which it serves as a manufacturer.</li> <li>Schema – Caters to a niche export market; also caters to a growing domestic market, resulting from the boom in the real estate industry.</li> </ul>
Triboa Bay Living	<ul style="list-style-type: none"> <li>Produces high-end indoor furniture and lighting primarily by utilizing wood with raw finishes, and “mixes classic forms with a pared-down contemporary sensibility.”</li> </ul>	<ul style="list-style-type: none"> <li>Export clients (specialty stores)</li> <li>Local clients</li> </ul>

Of the four companies, Industria and Schema continue to cater to corporate clients for whom they manufacture products that carry the clients’ brands. This ensures a steady revenue stream as it experiments on building its own brands.

Vivere Lifestyles Co., Inc. also previously operated under an Original Equipment Manufacturing (OEM) arrangement providing products for Crate & Barrel and other large retailers before it

decided to focus on a specific niche market (i.e., specialty stores).

Among the four, Ito Kish is the only company that does not have a production facility. When the company came up with its own furniture line in 2012, it decided to subcontract the manufacturing of its products, which carried the Ito Kish Home brand. In addition to Ito Kish Stories (retailing of imported furnishing, lighting, and décor items) and Ito Kish Projects (interior design services), the company



offers social media and branding services under Ito Kish Live.

### **Value creation and value delivery – Expanding the global reach**

Value is created and delivered by utilizing the organization's resources (e.g., people, equipment, facilities, distribution channels, cash, and brands) and subjecting them to work processes that eventually become part of the organization's culture (Chambers & Patrocínio, 2011). Given that the aforementioned four companies belong to the same industry, their value creation and value delivery activities closely resemble each other. The similarity is particularly evident among the three companies with manufacturing facilities—Industria Edition, Schema, and Triboa Bay Living.

These three manufacturers invested in factories in their respective locations, where they also largely source their raw materials. For example, Industria Edition's manufacturing facility is in Pampanga, where it also sources metal and wood from a local supplier. Schema, on the other hand, set up its factory in Antipolo where it sources metal wires from a supplier who also recycles the company's scraps. Consequently, the companies also hire workers living in their respective areas, as in the case of Triboa Bay Living, whose factory is located in Pampanga.

A critical resource for these companies is their respective teams of designers and design consultants. Industria Edition chief designer, Jude Tiotuico, works with a talented team of Filipino designers composed of Lilianna Manahan, Leeroy New, and Eric Paras. In the case of Schema, the team of Celia Gamboa Jiao and Antonio "Budji" Layug is augmented by

Thai artist and designer Anon Pairot and Franco-Swiss graphic artist and designer Ségolène Aebi-Faye. Meanwhile, Triboa Bay Living's Randy Viray collaborates with designers Mariel Lazo, Eric Paras, and Dutch designer Robert van Embricqs, among others.

Since their participation in Design Philippines, the companies have steadily expanded their network of distributors in the country and abroad. Industria Edition, for example, has established a network of distributors across the globe that include A11, for the Philippines; Hermon Hermon Commercial and Globe West, for Australia; Quattro Design Co., Ltd., for Thailand; Asiatique Collections PTE, Ltd., for Singapore; Oggetti, for the USA; and Loft, for Saudi Arabia. Aside from its main office in Bacolor, Pampanga, Industria Edition has an office in Portugal.

Schema, likewise has a network of distributors worldwide that include: Oggetti, which is based in Florida, USA; Orbitex, in Tokyo, Japan; Lightcraft (KL) Sdn Bhd, in Kuala Lumpur, Malaysia; Hermon Hermon Commercial, in Australia; Haans Lifestyle B.V., in the Netherlands; and A-Z Décor, in Poland (<http://www.schemaproduct.com/distributors.php>). Schema remains equally committed to servicing the local market.

The network of distributors of Triboa Bay Living include: Knots Living by Xpressflower.com Pte. Ltd., in Singapore; Norhor by Hangzhou, Nuodifu Home Supplies Co., Ltd. with offices in Beijing, Hangzhou, and Shanghai in China; Pinglin 52 Home, in Taiwan; Loft, in Israel; La Grange Interiors with offices in the South African cities of Cape Town, Johannesburg, and Pretoria; Moda Bagno–Interni in

Athens, Greece; Yargici Homeworks in Istanbul, Turkey; May Time in Auckland, New Zealand; and LE Interiors with showrooms in Sydney, and Melbourne in Australia ([triboabay.com/distributors/](http://triboabay.com/distributors/)).

For Ito Kish, value creation and value delivery go beyond designing, producing, and selling its furniture line through *Ito Kish Home*. *Ito Kish Stories* curates global elements for contemporary homes. *Ito Kish Projects*, on the other hand, offers the following services: (a) consulting with prospective clients to determine their needs, (b) preparing a project proposal and budget, (c) assembling the furnishing and decors, and (d) staging the interiors in the development or in the home of the client.

To reach the domestic market, the companies have their own showrooms. Schema's showroom, which was designed in collaboration with Concept 28 Architecture and designer Ken Reyes, is located in Robins Design Center, Meralco Avenue, Ortigas Center in Pasig; Triboa Bay Living's showrooms are located in LRI Design Plaza in Makati, and at the Mega Fashion Hall in Mandaluyong; Ito Kish showroom, when it was still open, was located in Glorietta, Makati.

All four companies regularly participate in Manila FAME, which enables them to gain local exposure for their products. They also utilize their respective websites and social media to promote their products.

### **Value capture - Greater returns by moving up the value chain**

Value is captured through the returns generated by an organization. Like any business, the participating companies generate returns by making sure that

the cost of their value creation and value delivery activities are more than covered by their revenue streams. In the case of Industria Edition and Schema, a large proportion of their revenue comes from the manufacture of products for clients that provide their own concepts and designs. However, for Triboa Bay Living, revenue depends largely on the sales of products carrying its own brand.

Worthy of mention is that the profitability of companies in the Philippine furniture industry had been affected by the threat of competition from manufacturers from countries like China and India, which could afford to bring down their prices due to lower production costs and by the bargaining power of large institutional clients.

For all four companies, establishing their brands meant moving up the industry's value chain, which had entailed risks but had also generated higher returns. Overall, the participating companies were able to substantially increase the margins for their products, given the value of their respective brands.

## **INSIGHTS AND CONCLUSIONS**

This section presents the insights that were drawn by the project team from the examination of the participating companies' business models.

### **Insight 1: Not all exporters are prepared to invest in a new business model**

Evidently, not all companies that received support from Design Philippines actively pursued the branding initiative. After participating in a few international

fairs, there were companies that felt that this was not the way for them to go. These companies might have expected quicker and more substantial returns from their participation and were thus, not prepared to tread the more difficult path of building brand equity. Even the ones that, eventually, decided to build their brands needed some initial prodding. Industria Edition, for instance, wanted to join international trade shows but had reservations because of the costs involved. Fortunately, the company was selected by CITEM to join the Design Philippines program, which gave it an opportunity to showcase its products in the leading international trade fairs alongside leading Italian brands.

Since CITEM only partially subsidized participation in trade fairs, the owners of Industria Edition still had to pay for their plane tickets, accommodations, and the shipment of their products. This had been the arrangement for all of the trade fairs that they participated in from 2013 to 2015. In 2016, Industria Edition was already able to fund its participation in the trade fairs. In 2017, however, it decided not to participate since it allocated its resources to the opening of its own store in Makati.

It was apparent that the availability of financial resources is a factor in a company's decision to build brand equity. For those that consider their participation in the international trade fairs simply as an opportunity to generate quick sales, rather than as a way to generate exposure to build their brands, the costs of committing to the process of building a brand may be too much. Ultimately, some companies decide that they are not yet ready to abandon their existing business models.

## **Insight 2: Branding must be consistent with the firm's overall strategy**

Design Philippines' participating companies realize that branding is more than having great designs or presentations at the exhibits. Equal attention must be given to production and personnel challenges to meet the demands of buyers.

In the case of Schema, it implemented strict quality control processes to create high-quality uniform units while maintaining the handmade value of the products. When coming up with new designs, the company considers the malleability of the material to be used as well as the production technique. At the end of the day, the design concept would have to give way to the limitations of the technique and the materials to be used. For Schema, getting serious about branding also meant professionalizing other business functions such as sales, payroll, purchasing, and inventory. Given the current demand for Schema's products, the company is looking for a bigger production area to accommodate bigger manufactured items.

In the case of Triboa Bay Living, the decision to create a differentiated brand meant having to address first its human resource management issues in mid-2000. The appointment of an HR professional augured well for the company. A sense of authority, discipline, and control was established so that the business could move forward. Today, the company has a very low turnover rate which the management attributes to an effective compensation and benefits package that it was able to develop over time. Triboa Bay Living also considers its strength in manufacturing as critical in building its brand. Having its own factory enables it to ensure quality and control costs. It

recognizes that this core competence is closely linked to the quality of its craftsmen, whose strengths are basically are in woodworking and engineering. Expertise in woodworking means knowing how the wood behaves, such as what makes it contract or expand. A solid foundation in engineering, on the other hand, includes the ability to masterfully manipulate metal, which separates the experts from the amateurs.

## CONCLUSIONS

Given the above insights, the project team revisited the questions that it initially sought to address: Is Design Philippines effective in terms of its goal of building new Philippine brands recognized in the international market? Can its success be gauged in terms of other positive, although unintended, outcomes? Can CITEM make a case for continuing the program and, perhaps, get additional resources to expand its impact? What can be done so that Design Philippines can evolve into a more responsive program, i.e., successful in more measures than one?

The four companies generally consider their participation in Design Philippines as having contributed to their growth and profitability. To a certain extent, there is already brand recognition in the sense that these companies have already established a global network of distributors that carry their unique designs. The companies, however, differ in terms of what aspects of the Design Philippines program were most beneficial to them.

Industria Edition regards its exposure in international trade fairs as having contributed to a considerable increase in

the volume of its sales. This had resulted in business expansion, allowing the company to employ more people. Industria had also been exposed to new materials and techniques that are used by other companies abroad. It was also able to establish links with young designers from Milan who had shown interest in its brand.

For Schema, the partial subsidy that the company received through Design Philippines had helped it keep up with world standards through exposure in the international market. Participation in the top trade fairs enabled the company to determine the needs of the market and observe the marketing practices of its competitors. Another significant result that it cited is that several international designers started to notice the materials and techniques involved in the craftsmanship of the Schema brand. This gave the company the chance to collaborate with foreign designers in Europe and Southeast Asia.

For Ito Kish, Design Philippines' export coaching program was helpful because it allowed the company to undertake branding improvements that entailed producing advertising collaterals, such as catalogues and brochures for exhibitions abroad. The company now insists on using only expert photography services, which sometimes involves shooting on location. Although the exposure in the international shows did not immediately translate into a return on investment (ROI), the media mileage generated by the company's participation in Design Philippines had helped make its brand more aspirational. As a result, regular patrons returned for more of the company's products. Similarly, the company was able to



establish new customer relationships. It took about three or four years, though, before people began to recognize what an Ito Kish brand is. It took a while for people to trust Ito Kish as a brand and to love it.

Triboa Bay Living claims that the company's new business model had made it more profitable, compared to 10 years ago when it was just a manufacturer. The company admits, though, that it was not able to break even from some shows. Overall, though, the company's experience had been a positive one. Today, its operations are highly integrated.

## **MOVING FORWARD: RECOMMENDATIONS FOR DESIGN PHILIPPINES**

In interviewing the four participating companies, the project team was able to generate some recommendations to improve the implementation of the Design Philippines program. These recommendations include: (a) being more selective when inviting companies, (b) formalizing the mentoring scheme, and (c) providing additional logistical support in international shows.

### **Being more selective when inviting companies**

The four companies acknowledged the necessity for CITEM to be more selective when inviting companies to become part of Design Philippines. They deem it important for participating companies to be adequately oriented on the goals of Design Philippines so that they would know what benefits to expect. New participating companies need to be

oriented on the transitions that they have to go through, even to the extent of losing some long-term customers, should they decide to pursue rebranding initiatives. They must also be prepared and willing to undergo the journey for the long haul.

CITEM must also consider the stage of the business cycle where the companies are and how they are currently positioned in the furniture supply chain. It seems that the impact of Design Philippines is the greatest on companies that have the manufacturing capacity and that are currently involved in own-equipment-manufacturing (OEM) and ready to move into own-brand-manufacturing (OBM). When it comes to branding, Industria Edition believes that companies must learn the discipline of not giving in to the temptation of selling in volume. It is a difficult choice to make between selling or branding.

### **Formalizing the mentoring scheme**

Most of the participating companies agreed that the coaching program was very helpful. For Triboa Bay Living, Design Philippines can come up with a big-brother, little-brother arrangement under which the newer companies can learn from the experience of the more matured ones. The company feels that it would be more effective if Design Philippines can make arrangements wherein the more established and successful companies can mentor the smaller and less established ones.

### **Providing additional logistical support**

The four companies also stressed how other companies could benefit from the logistical support during international shows. One specific recommendation is

to ask the participating companies if they would like to stay in one area for their accommodations. According to Triboa Bay Living, some of the companies had the privilege of staying in quite affordable accommodations while other participating companies did not even know how to get to the venue. Triboa Bay Living felt that if Design Philippines had looked into possible places where its subsidized companies could stay, these companies could have developed a better sense of camaraderie.

Another concern raised by the companies interviewed had to do with the difficulty in bringing unsold items back to the Philippines. Triboa Bay Living recounted how costly it was to ship back the items from a Paris show. It had to pay for the taxes and wait for two to three months for the items to arrive. Triboa Bay Living suggested that Design Philippines help the companies in looking for buyers, or in getting tax exemptions.

The participating companies are of the opinion that when the subsidies are spread too thinly, only a few companies will

benefit from them. Given the prohibitive costs of participation, should CITEM consider providing additional subsidies for companies that participate in key international fairs? The subsidy can be progressively reduced over a three- or five-year period, as the companies build their reputation, establish an international market, and consequently augment their resources.

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# Promoting Entrepreneurship Research in South East Asia: Applying Global Entrepreneurship Monitor (GEM)

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## THE GEM RESEARCH PROJECT: AN OVERVIEW

The Global Entrepreneurship Monitor (GEM) research project examines entrepreneurship in different countries to better explain the role of small and medium enterprises (SMEs) in economic development. It conducts annual surveys of entrepreneurial activities within the different phases of businesses, population attitudes and perceptions towards entrepreneurship, and the nature of the environment in which entrepreneurship thrives in different economies. Its two primary research instruments are the Adult Population Survey (APS) and the National

Experts Survey (NES). The APS participated in by a minimum of 2,000 adults asked about activity, phases of entrepreneurship, and perception and intentions of the population regarding entrepreneurship. The NES determined the opinion of experts (minimum of 36 experts) on the factors in their respective countries that support or constrain entrepreneurial activities and growth.

Nineteen years after the initial study by Babson College and the London Business School in 1997, over 100 countries have, thus far participated in the project. Today, the GEM has become the broadest and most extensive study on entrepreneurship worldwide.

The De La Salle University–Angelo King Institute (DLSU-AKI) was established in 1999 inspired by the complementary noble goals of its two founding institutions: DLSU and the Angelo King Foundation. Committed to becoming “a leading learner-centered and research university” in Southeast Asia “bridging faith and scholarship...in the service of Church and society, especially the poor and marginalized,” the University participates actively in improving the quality of life in Philippine society and the region. Through the Institute, the Foundation addresses its overriding concern, which is poverty alleviation, by pushing for appropriate government policies and by promoting entrepreneurship and self-help among economically disadvantaged groups.



## THE DLSU-AKI STUDY

The project “Promoting Entrepreneurship Research in South East Asia: Applying Global Entrepreneurship Monitor” was commissioned by the International Development Research Centre through the Universiti Tun Abdul Razak in Malaysia. In the Philippines, it was implemented from 2015 to 2017 by the DLSU-AKI, in collaboration with the Office of the Vice Chancellor for Research and Innovation, the DLSU Science Foundation, and the Ramon V. del Rosario College of Business.

The project generally aimed to build the research capacity on entrepreneurship in Southeast Asia to provide policymakers with a stronger empirical foundation on which to promote and monitor entrepreneurship and job creation, especially among women.

Sixty-five (65) economies participated in the 2015–2016 survey. These economies were classified according to their levels of development as used by the World Economic Forum: factor-driven economies, efficiency-driven economies, and innovation-driven economies. Factor-driven economies are countries that depend on agriculture and extraction businesses using more labor and natural resources.

Efficiency-driven economies are countries that have become more competitive with economic development supported by industrialization and economies of scale where capital-intensive businesses dominate the economy. Innovation-driven economies are countries that rely more on new knowledge and are expanding into the service sector.

**GEM in the Philippines: Empirical Analysis & Policy Recommendations.** The results of the 2015 Philippine APS and NES reveal the Filipinos’ perception that entrepreneurship is a prime mover in improving life and achieving a more progressive society. Although government policies, structure, and bureaucracy were perceived as constraints to the growth and sustainability of entrepreneurial undertaking, more than half of the respondents saw business opportunities in the country, and close to 70% believed that they have the necessary skills to seize the entrepreneurial opportunities in the economy. On the other hand, the high business closure rate was principally attributed to unprofitable business operations and difficulties in accessing financing to sustain business operations.

The Philippines registered the highest gender equity index among the 65 economies that participated in the 2015 GEM survey. As regards entrepreneurship impact on the economic development of the country, only 10.2% of total early-stage entrepreneurial activity (TEA) or start-up businesses envisioned to employ more than five (5) workers in the next five (5) years, 5.5% offered innovative products or services, and 2.7% were in the service industry. Eighty-two percent of all TEA were





into retail or wholesale businesses, 4.4% were into services, while only 2% were in manufacturing.

The trend on entrepreneurship motivation, activity and aspirations was also analyzed from 2006 to 2015 (the period when the Philippines joined the GEM research). The trend showed the same pattern for factor-driven economies where developing countries registered a higher percentage of the population starting a business. The respondents maintained their strong belief in their capability to become entrepreneurs, their perception of the presence of good business opportunities in the country, and their view that entrepreneurship is a good career option. The media was found to play a significant role in generating more interest in entrepreneurship by featuring successful Filipino entrepreneurs and offering programs that encourage the establishment and conduct of businesses.

However, it was observed that, to some extent, the improvement in the economy could dampen the interest to start a business due to the generation of more jobs in the last 10 years. More start-up businesses were established because of better opportunities for financial rewards and independence rather than for necessity or because there were no jobs available.

There was also a noted sustained increase in established businesses as the economy improved.

To promote and sustain the development of SMEs, encourage the establishment of more businesses in the country, and enable them to be more active in the global market, the following policy recommendations are outlined:

- a. Identify industry priority areas where the country can be more globally competitive.
- b. Evaluate the regulatory environment for start-up businesses and the ease of doing business.
- c. Develop the innovation capabilities of the business sector.
- d. Introduce entrepreneurship and its different forms in all levels of education.
- e. Create new ways of access to financing through equity.
- f. Promote export capacity and enhance the ability to be integrated with the global supply chain.
- g. Enhance human capital development for women and the youth on entrepreneurship.

# Research and Knowledge-Generation Activities, AY 2015-2016 to AY 2016-2017

## INTRODUCTION

For academic years 2015-2016 and 2016-2017, the Yuchengco Center sustained its efforts in undertaking research and knowledge-generation activities by way of publication of research findings and organizing national and international conferences. The Center is committed to the task of tackling relevant and pressing issues in the future in the spirit of knowledge-building and social awareness.

## ITS PUBLICATIONS

Within the two academic years, the Yuchengco Center produced at least 35

publications containing the findings of its research projects that are in aid of policy and which have program implications. The publications specifically focused on the poverty alleviation program of the government; aspects and implications of the Association of Southeast Asian Nations (ASEAN) Integration; the Bangsamoro Law; the K+12 basic education program; *teleseryes* and their implication to society; the Philippine Development Plans during the administrations of former Presidents Gloria Macapagal-Arroyo and Benigno Simeon C. Aquino III; updates on the Priority Development Assistance Fund (PDAF) and the Disbursement Acceleration Program (DAP) cases; rice production and consumption; landownership of

The **Yuchengco Center** conducts innovative studies and produces excellent research outputs that highlight friendly bilateral relations between the Philippines and Japan and other neighboring countries. The Center's mission includes the heightening of public knowledge and awareness on political, economic, and social policy concerns in the Philippines and the Asian region; and enhancing its role as a think tank where research results are regularly transmitted to end users for evidence-based legislation, policy formulation, and program planning. It received an award from the Japanese Government for its invaluable contribution in the promotion of mutual understanding and friendly relations between the two countries through its research projects, conferences, and publications.

It was inaugurated on August 29, 1994, as the Yuchengco Institute of Philippines-Japan Relations. In 1997, it was renamed Yuchengco Center for East Asia by its Board of Trustees to reflect the expansion of its concerns to Northeast and Southeast Asia. In 2002, the Board shortened its name further to Yuchengco Center to signify a shift towards a broader perspective that is more issue-oriented and policy-focused.

foreign investors; the South China Sea issues; the US-Southeast Asia relations; the Philippine war on drugs; Philippine Health Insurance Corporation (PhilHealth); aging, and the concerns of the elderly; acquired immunodeficiency syndrome (AIDS) transmission; climate change and its impact; coal production; and access to affordable drugs, among others.

### **The Conditional Cash Transfer Program in the Philippines: Emerging Issues and Challenges**

The Conditional Cash Transfer (CCT) program, otherwise known as the “Pantawid Pamilyang Pilipino Program” or “4Ps,” was implemented in February 2008. It was regarded as the keystone of the government’s social protection program that would further address the Millennium Development Goal (MDG) on combating and reducing poverty. The 4Ps works through the provision of cash transfers to low-income households with conditionalities related to education and health that each household must comply with and maintain. Its main goal is to break the intergenerational cycle of poverty by fostering change in the behavior of parents by investing in their children’s future. Various mechanisms have been used to countercheck the program’s effectiveness and beneficiary-compliance. However, specific issues became major drawbacks to its implementation, which painted a bleak picture of the long-term solution to the problems resulting from poverty and inequality, and the nature of the policy to avoid confronting the structural issues. How the policy identifies its beneficiaries, such as those in the extremely low-income spectrum, needs to be addressed. Its effectiveness also has to be determined to assess if it is truly adequate to keep children in school or

if it affects family expenditures. Moreover, monitoring and evaluation efforts must be undertaken to improve the mechanisms involving the beneficiaries and address loopholes in the system, as well as the supply-side deficiencies.

### **The ASEAN Economic Community in 2015: Implications on Labor Migration To and From Constituent Countries**

The ASEAN Economic Community (AEC) Blueprint, signed by heads of state of ASEAN member-countries, aims to fulfill higher levels of economic dynamism, sustained prosperity, inclusive growth, and integrated development. One of its components is the free flow of services, which includes domestic work. The Philippines is considered a major provider of labor of which, Malaysia and Singapore are the recipients within the Southeast Asian region. Although several domestic laws and regulations govern labor flows between member-states, they also pose serious obstacles in implementation despite the Mutual Recognition Agreements (MRAs). The MRAs serve as frameworks for recognizing education, experience, certification, and even licensing of domestic workers, albeit disparities may be present in each country. This paper discusses concerns regarding the substantiation of the migration policy, the need for consensus on policy decisions, and the social challenges of ASEAN labor migration within the region.

### **The ASEAN Economic Community by 2015: How Viable is Its Realization**

The AEC has been targeted to be in place in 2020 by the ten ASEAN heads

of states. The Community will promote an increased interdependence among ASEAN economies resulting in a unified legal identity to narrow development gaps and establish a highly competitive region in Asia. It is premised on these four pillars: a single market and production base, a competitive economic region, an equitable economic development region, and eventual integration into the global economy. The implementation of the provision in these pillars will be assessed using scorecards. As of 2015, many of the specific deadlines in the implementation have not been met, while some initiatives have not gotten off the ground. Such delays present the ASEAN with daunting challenges in realizing its goals. However, the targets could still be achieved if member-states will genuinely unite in striving for the common good.

### **Recruitment and Movement of Professionals under the ASEAN Economic Community: Differentials and Adherence to the Blueprint**

The transformation of the ASEAN into a region with free movement of services, highly-skilled labor, and talents, as envisioned in the AEC Blueprint, has yet to be realized. ASEAN's timetable to accomplish the AEC Blueprint in 2015 was deemed unrealistic. Not even bringing into fruition Sections A2 and A5 ("Free flow of services," and "Free flow of skilled labor," respectively) is viable given policy and institutional issues and problems.

### **The Politics of the Bangsamoro Law**

The research delves into the controversial provisions of the Basic Law for the Bangsamoro Autonomous Region,

and the complex repercussions of defining the Muslim secessionist movement in the country. The agreement was an outcome of the existing 'transitional framework' that required the establishment of the Bangsamoro as a new autonomous political entity by June 30, 2016, the end date of the six-year term of office of President Benigno Simeon C. Aquino III.

### **Improving Philippine Education: Why K + 12?**

This study assesses the issues in the implementation of the K+12 program. It discusses the rationale, goals, and main features of the program, as well as the challenges that surfaced upon its implementation. These challenges include the need for improvements in the qualifications of teachers, provision of inputs and materials, and the adoption of a better system of testing focusing on skills and competencies.

### **The ASEAN Economic Community in 2015: Implications for Labor Migration To and From Constituent Countries**

The research examines the extent to which the provisions of the AEC 2015 relative to labor migration are being implemented. It also determines the relevant issues emanating from both the sending and the receiving countries. One AEC 2015 migration provision that was deemed contentious had to do with the free flow of services, specifically the phrase that states, "no substantial restrictions to the ASEAN service supplies subject to domestic regulations." The other had to do with recognizing "domestic work as a fundamental right and freedom of the unskilled."



### **Developments in the Disbursement Acceleration Program (DAP)/Priority Development Assistance Fund (PDAF) Case Resolution**

This research describes and analyzes the chronology of events in the release of the DAP and PDAF as they relate to the impeachment of former Chief Justice Renato C. Corona, and the alleged misuse of the funds by particular senators and congressmen. The DAP was designated to fast-track public spending in 2011. It was also used as an additional source of funding for the development projects of the lawmakers. It was alleged that these funds were illegally and unethically utilized to bribe the senators to make them decide to impeach Chief Justice Corona. In 2013, a multi-million pork barrel scam was exposed in which certain members of the Senate were implicated. The PDAF allocated to certain senators and representatives were diverted to their personal use. The Supreme Court declared both the PDAF and the DAP unconstitutional. However, funds from the DAP will still be released to fund ongoing projects that it has been supporting, rendering as imperative the monitoring of their release and use.

### ***Teleseryes* as Vehicles for Social Transformation in the Philippines: Prospects and Constraints**

The research describes *teleseryes* (soap operas) in the country and assesses their potential of becoming vehicles for social transformation. It presents truisms and realities of *teleserye* production that may influence the values of its audience. *Teleserye* actors seem to have become role models to many viewers. However, these

*teleseryes* may negatively influence their audience because of their emphasis on fatalism, i.e., the acceptance of suffering, the value of patience, belief in destiny, and the preoccupation with good looks. Traditional myths and values are reiterated, which may deter value change. The challenge, therefore, is to transform these soap operas into mediums from which viewers can draw hope and empowerment.

### **The Role of the Academe in Transformative *Teleseryes* in the Philippines**

The research delineates the potential role of the academe in the production of *teleseryes* that can transform the values and mindset of their viewers. Academe can achieve this by partnering with the *teleserye* production team in the following areas: plot development and scriptwriting; influencing advertisers to support educational and instructive programs; conduct of surveys that would elicit information on the perspectives of viewers relative to the impact of *teleseryes* on them; and evaluating the effects of the *teleseryes* on social change.

### **Philippine Development Plans 2004-2010 and 2011-2016: A Comparative Assessment of the Arroyo and Aquino Sectoral Policies (Research Note No. 10)**

Two graduating students from the DLSU Political Science Department spent a term at the Yuchengco Center to write a paper with development implications. They compared the Medium-Term Plans of the Arroyo and Aquino administrations, specifically the plans' focus on education and health. The plans were compared in terms of their priorities, the clarity of their

goals, the viability of their implementation, and their perceived outcomes. They developed the following criteria that served as the bases for the comparison: continuity of the programs that are deemed relevant and beneficial; incisive analysis and solution of the problems (continuous or recent) that would ensure the achievement of results; clear-cut specifications of the overall and sub-sectoral goals as well as the mechanism for achieving them; numerical presentation of trends and patterns linked with particular concerns and outcomes; ease in monitoring to assess programs with institution of corrective measures; and amenability of the plan to translate into operational mechanisms.

### **Revisiting the ASEAN Political-Security Community Blueprint**

The study revealed that 12 years after the ASEAN Political-Security Community (APSC) was conceived, together with the other pillars of ASEAN integration (the AEC and ASEAN Socio-Cultural Community (ASCC)), and nine years after the adoption of the APSC Blueprint, there remains much to be done.

### **Impact of Internet Adoption on the Economy**

This publication presents an overview of Internet adoption and its contribution to the conduct of Philippine business, particularly e-commerce and micro, small, and medium enterprises. It concludes that for the Philippines to transact business overseas, it is essential to create laws promoting the adoption of information and communications technology (ICT).

### **Rice Production and Consumption Trends in the Philippines from 2000 to 2015**

Rice sufficiency refers to a country's ability to secure its supply of the staple grain and ensure that there is easy access regardless of the location where it is sourced. Rice sufficiency has been one of the common goals of past and present governments. Based on the 2000-2014 data, the country had consistently been more of a consumer than a producer of rice.

The study found that domestic production will not suffice to meet the increasing consumption demand for rice in the future. It would take a longer time, radical measures such as increasing the capacity of domestic rice farms to produce more, filling the supply gap through imported rice stocks and storing them in strategic areas, and political will to achieve rice self-sufficiency.

### **The Legal Dimension of Foreign Investors' Land Ownership**

Through a detailed review of literature the advantages, and disadvantages of allowing foreign investors to own land in the Philippines were assessed. Currently, the Philippines controls the ownership of land by foreign investors through stringent regulations and restrictions. The analyses focus on the potential benefits of foreign direct investments (FDIs) on the economic growth of the country and the negative prospects for Filipinos who intend to utilize the lands for their livelihood. The study suggests that certain amendments to the laws governing foreign ownership of property in the Philippines should be made to optimally balance the sovereign interests of the country and the benefits of FDIs to Filipinos.

## **ASEAN's Soft Stance on the South China Sea Issue: The Impact of China's Involvement on the Economy of Southeast Asian Countries**

China has always viewed Southeast Asia as an integral part of its security environment. It values ASEAN for the role it can play in the realization of its desired vision of a multipolar order. Although Southeast Asian countries appear prepared to accept China's legitimate interests in the region, they fear that its interests to become an Asia-Pacific military power could affect smaller and weaker neighbors. Moreover, tensions over bilateral issues are expected to emerge periodically as part of the normal state of relations. Sino-Southeast Asian economic relations are currently important but not vital from each side's perspective. Neither China nor ASEAN has a unified economic policy toward each other.

## **ASEAN Socio-Cultural Community: How Viable is the Blueprint**

The ASEAN Socio-Cultural Community (ASCC) Blueprint was reiterated in the paper according to the goals related to human development, social welfare and protection, poverty alleviation, social safety nets, food security, and health care. The focus was on the Aquino Administration's response to the described ASCC Blueprint through specific numeric targets and the means to achieve them. Among the proposed initiatives were the introduction of technical and vocational education, information technology, education and housing of rural workers, and ICT in the workforce. However, efforts were marred by the inability of Conditional Cash Transfer (CCT) programs to achieve intended objectives, corruption in

the implementation of programs, and misleading priorities such as focusing on health infrastructure rather than on basic health services for the poor.

## **Issues in the Implementation of the Duterte Presidential Platform**

In his state of the nation address (SONA), President Rodrigo Duterte enumerated the concerns his administration will face such as the worsening traffic congestion, lack of basic infrastructure, slow and expensive Internet, control of illegal drugs, and reduction of poverty. However, government implementation plans have been met with certain controversies such as the human rights dimension in extrajudicial killings related to drug usage and distribution; the nebulous foreign policy with the U.S., Europe, and neighboring countries; internal security; taxation; and the proposed shift to federalism.

## **Social and Economic Concerns of U.S.-Southeast Asia Relations in the Trump Presidency**

Economic development and globalization have not improved lives within and across countries, and inequality is prevalent in most countries. Countries that have benefited most from globalization tend to be the wealthiest and the most powerful. What happens in America has far-reaching ramifications for the rest of the world. Southeast Asia should remain Trump-neutral and wait for what policy and how his administration will implement it. What is known is that China has been omnipresent and will dominate its neighbors unless there is a different

kind of rebalance from a Trump-led U.S. foreign policy establishment that backs up its rhetoric. By and large, none of the Southeast Asian countries wants to be all-in on China or the United States. For the region, the rebalance that works must bring the United States back with talk and action—with Japan and Australia in close support—in a moving mix that allows more autonomy for individual Southeast Asian states and for ASEAN as a whole.

### **Prospects and Challenges of the Bangsamoro Law Under Duterte's Presidency: Resolution through Inclusive Governance**

The attempt to address the armed conflict between the state and the Bangsamoro through the Roadmap to Peace rests principally on three strategic grounds. First is the ability of the Bangsamoro to unite as a political entity, resolve inter-ethnic animosities and divisions, and negotiate for the right to self-determination and self-rule as a nation. Second is the promulgation of the Bangsamoro Basic Law (BBL) that is acceptable not only among the multi-ethnic Moro constituents but among the indigenous peoples and Christian communities living in the Bangsamoro territory. Third is the ability to rally the entire nation to support the BBL as the governing document for an all-inclusive Moro people and institute, in the most democratic way, the amendment of the 1987 Constitution from a unitary to a federal structure of government.

The paper asserts the need to recognize the multi-ethnicity and multi-nationality of the country's political, economic, and cultural landscape. The heterogeneity of the country cannot be

homogenized by a unitary and domineering power and the national policies of the state. The state should be committed to greater inclusivity to meet the challenges of the mosaic of its democracy. It should establish a heterogeneous development mechanism that is designed and supported by its local or regional population. The study cites the imperative for a new form of governance to be explored to unite the country's population despite its diversity.

### **Political and Ethical Issues in the Philippine War on Drugs**

One of the national issues prior to Rodrigo Duterte's assumption of the Philippine presidency was the prevalence of illegal drugs in the country. Between 2008 and 2016, 14.8 million Filipinos had used illegal drugs at least once (Dangerous Drugs Board, 2016). In his state of the nation address (SONA) on July 25, 2016, the President vowed to launch an intensified battle against illegal drugs. Observers noted that the war against drugs is undertaken through apprehension, imprisonment, and rehabilitation. However, there have been reports of extrajudicial killings of both drug abusers and pushers. In light of these findings, a more humane approach to the drug war is demanded by human rights advocates.

### **The South China Sea Territorial Disputes and their Repercussions on Sino-Philippine Relations**

The South China Sea has become an object of dispute due to its strategic location. Claiming territorial jurisdiction over some parts of the sea, including land



masses and resources, are the Philippines, Vietnam, Malaysia, Brunei, Taiwan, and the People's Republic of China. The conflict has become more complicated due to the involvement of other claimant-states of South China Sea land masses and territorial waters such as Vietnam and Taiwan. Indonesia has had a long-standing dispute with China over the Indonesian-controlled oil-rich Natuna Islands. Regional powers such as Japan, Australia, the United States, and Russia maintain ties with China.

### **Is the Philippine Health Insurance Corporation (PhilHealth) Adequately Addressing the Health Needs of the Poor Elderly in the Philippines?**

The combined increase in life expectancy and the decline in fertility account for the rise of the elderly population in the Philippines. It is projected that by 2040, 15 percent of the population will be in the elderly category. A shift in illness pattern has been noted among the elderly population in recent years. Chronic non-infectious diseases have become more prevalent among the elderly. These include acute coronary symptoms; endocrine problems, such as diabetes; and musculoskeletal issues, such as arthritis and osteoporosis. PhilHealth provides universal coverage through its health insurance program, which enables the elderly to receive free or subsidized medical care. An assessment of the extent to which PhilHealth addresses the needs of the indigent elderly was undertaken by analyzing its compensation mechanism relative to the readiness of the health service centers to meet the management and health care needs of the elderly. The study noted several inadequacies in this regard.

### **The Psychosocial Basis of Human Immunodeficiency Virus (HIV) Transmission in Homosexuals: Towards the Promotion of Condom Use in High Risk Groups**

The Philippines is one of the countries with the highest prevalence of acquired immunodeficiency syndrome (AIDS) in the Asian region, and the figures are seen rising over time. Most (95%) of the cases reported involved males. This paper raised the issue of why, despite a thorough education program through pamphlets and leaflets on AIDS, the number of cases continues to rise. It also determined the extent to which the psychological and emotional bases of homosexual relations are dealt with in condom promotion. The failure to acknowledge that risky behaviors are closely tied to romantic feelings, expression of love, and sexual desire can hamper information efforts targeted at high risk groups. The study recommends that education efforts toward condom promotion be strengthened.

### **Providing Health Care to the Poor Elderly in the Philippines: The PhilHealth Story**

This paper examines PhilHealth and its programs and operations in relation to the health needs of the poor elderly in the Philippines. It addresses two major concerns: coverage and adequacy of health services.

As life expectancy increases, the level of expenditures for health care rises. In the Philippines, the proportion of the elderly population has been slowly rising. The increasing longevity has posed challenges to the healthcare system of the country. It particularly raises the question as to how the government should be, and is,

responding to the concomitant issues such as a sufficient and appropriate resource allocation, or relevant social health insurance programs; non-compliance by healthcare providers; and non-cooperation by the citizenry, including various technical and other socio-political concerns.

### **The Cost Implication of Illness in the Elderly: Are their Resources Sufficient?**

The situation of middle- and upper-class elderly in Metro Manila was determined through a self-administered questionnaire, which focused on their living arrangements, help-seeking behavior, health problems, need for consultation and medication, and independence in daily living. The results revealed that the multiplicity of illnesses represents a drain on the elderly's financial resources, and the prospects for healthcare maintenance need to be examined in the light of increased life expectancy and the depleting funds of the elderly.

### **Socio-cultural Barriers in the Prevention of AIDS Transmission in the Philippines: Why Men Who Have Sex with Men (MSMs) do not use Condoms**

The paper examines why, despite intensive information, education, and communication (IEC) program, the prevalence of AIDS is increasing and condom use, decreasing. The socio-cultural dimension of the non-use of condoms among the highly susceptible individuals was explored. The study provided meaningful inputs for the government's AIDS education and prevention program. It debunked the hypothesis that non-use

of condoms is due to lack of awareness and access to them. It showed that the cultural and psychological dimensions of homosexual pairing among Filipinos detract from its adoption.

### **Memory Loss in Aging: Antecedents and Familial Response**

The burden of dementia and its prevention are discussed in this paper. Brain development and mental functioning change in the course of the disease are presented in detail. Brain changes resulting from Alzheimer's disease, as well as their manifestations, such as forgetfulness and cognition problems, are illustrated. The therapeutic milieu in the Philippines, as well as the means to deal with the problem from the familial and institutional perspectives, are asserted.

### **The Teleserye as a Medium for Social Transformation in the Philippines: Prospects and Problems**

Research studies in Mexico, Peru, Korea, India, and Tanzania demonstrate that television soap operas are influential to the value reorientation and behavior modification of viewers. Women empowerment, adoption of family planning, and reduction in AIDS transmission were the topics tackled in the soap operas. In the Philippines, however, the production of soap operas is mainly for entertainment with a focus on the actors and their popularity. Aside from this, too many advertisements tend to detract viewers from the focus and defeat the goal of social transformation.

## **Adaptation to and Risk Reduction in Climate Change in the Philippines**

Located in the pathway of typhoons on the earthquake-prone Pacific Rim and having a tropical climate and thousands of miles of coastline, the Philippines is highly susceptible to the effects of climate change. Apart from its direct health consequences, i.e., diseases and deaths, the country is also affected by its indirect impact of displacing large numbers of people that can disrupt agricultural and economic activities. The damage of Typhoon Haiyan, which hit the archipelago in November 2013, was a reminder of the importance of implementing an integrated plan to cope with natural disasters. According to the Department of Health, the typhoon resulted in 6,300 deaths, affected 16M people, and displaced 4.1M families. Heavier rainfall and warmer temperature that accompany climate change are likely to increase the vectors that cause waterborne communicable diseases. In the Philippines, a significant correlation between the amount of rainfall and the incidence of dengue fever exists. Also, floods can disrupt garbage collection services. Uncollected garbage and improperly disposed human waste can increase the likelihood of a disease outbreak, particularly cholera. Contact with flood water also increases the possibility of acquiring Leptospirosis, a bacterial infection that can damage the kidneys and lead to death.

## **The Economic Gains from Mining vis-a-vis Its Effects on the Environment, Agriculture, and Marine Life**

This study revealed that for the past 30 years, the highest contribution of mining to

gross domestic product (GDP) registered at two percent; over the last five years, mining output was from a minimum of 0.7 percent to a maximum of 0.9 percent of GDP. Amid the mining industry's minimal contribution, there are reports that it has done more harm than good, i.e., destroying forests, watersheds, coastal waters, mangrove areas, farmland, and fishing areas, and contaminating water resource that could be used for livelihood activities, and for more productive purposes, to meet the consumption needs of the population.

The study indicated that compared to the mining industry, agriculture and fisheries contributed to food security and had a greater contribution to the country's GDP. These productive activities required no extraction of non-renewable resources. The research also noted that the previous administration should not have issued mining permits in prohibited watershed areas. The study recommends that the issuance of mining permits be more rational, selective, and limited; and the ban on mining in protected critical watershed areas and wildlife preserves be strictly enforced.

## **Coal Production in the Philippines: Development, Issues, and Challenges**

The gap between the supply and demand for coal is extremely wide. This is due to the increasing demand to meet the energy consumption needs of the population and the requirements of development initiatives. One of the challenges that the country has been facing since the 1970s is inadequate energy supply. This has resulted in incidences of blackouts, particularly in areas in Mindanao. Also, electricity rates in the

country are the highest in Southeast Asia. The distribution of coal in the country is inadequate because production is limited. The coal-fired power plants, established in some rural areas, prevent the equitable distribution of supply. The impact of a monopoly in coal production is the inability to meet large-scale needs due to the business ends of the procedures. Having one company undertaking the mining activities implies control over public services in the area such as water supply. The study recommends that the government control the business monopoly in coal production because of its negative effect on the equitable distribution of energy. Imposing more strict provisions on contracts and penalties can curb the monopolization of coal production. The government would also do well to look for alternative sources of energy to expand the country's power sources, improve the country's power supply, and avoid a power crisis. Advocates urge the government to do away with coal and shift to other sources of renewable energy. It should also be more strict in issuing permits to coal-fired power plants.

### **Conditional Constraints in the Implementation of the Conditional Cash Transfer Program**

This paper examines the Conditional Cash Transfer (CCT) Program of the Philippines, dubbed "Pantawid Pamilyang Pilipino Program" (Pantawid Pamilya or 4Ps) through an institutional approach. It also determines the implementation modality of the CCT program and how successful it is in alleviating poverty. The results showed that, on the surface, the government's decision to adopt, continue, and subsequently expand the CCT program had been

triggered by the urgent need to address poverty in the country, as well as the intent to meet the MDG targets, especially with regard to the reduction of poverty and hunger, and the improvement in education and health indicators. This decision reflected the country's unchanged social policy trajectory epitomized by the bias for targeted, palliative, and purportedly apolitical social provision measures. These externally-influenced measures draw 'encouragement' and social support from multilateral institutions at the expense of structural reform and redistribution. The results further showed that the nature of the scheme did not address structural issues, and that there is a need to shift to a more redistributive and universal social provision. They presented a bleak picture of the long-term solution to the problems of poverty and inequality.

### **The Philippine Medicines Policy (2017- 2022): Will This Increase Access to Cheap Drugs?**

A new regime for pricing and purchasing pharmaceuticals was introduced to the Philippine health system under the Universal Health Care Scheme with a focus on the cost of medicines. The goal was to maximize the overall health outcomes. Reference pricing and pharmacoeconomic analysis played a major part in determining the level of subsidy of the Department of Health (DOH) and PhilHealth for all essential drugs. However, political pressure from drug companies and outlets seemed to have undermined the implementation of the Generics Law, and the price reductions called for by the government. The study deems it important for pricing reforms to run parallel with the efforts to change the drug sourcing/procurement mechanisms



in the public sector through a more transparent, harmonized, efficient, and non-corrupt rule of government.

### **The Cheaper Medicines Act (R.A 9502) of the Philippines: The Political Dimension of Its Implementation**

In drafting the Cheaper Medicines Act, a number of factors and a variety of concerns and issues needed to be resolved to address the problem of access to medicines. These major and critical issues included: rational drug use; public perception about generics; behavior of health professionals in prescribing and dispensing medicines; information asymmetry, and exercising informed choice; pricing, supply, and distribution; procurement systems' transparency; respect for patent rights; access by members of the economically disadvantaged sector; and quality assurance. The initial feedback identified the following concerns: the selection of products for price control does not follow the rational choice principles (for example, not all the first-line treatments for hypertension or asthma are covered); the level of price reductions is arbitrary (surveys found that prices for originator brands in the Philippines are more than 15 times higher than international reference prices, even the lowest-priced generics drugs are 5-6 times higher than the international reference prices); the scheme may reduce generic consumption and promote branded medicines; and PhilHealth cannot use voluntary price reduction in the reimbursement of medicine expenses because it only deals with specific manufacturers.

## **YUCHENGCO CENTER'S CONFERENCES AND SEMINARS**

For AYs 2015-2016 and 2016-2017, the Center organized and hosted several conferences and seminars, focusing on the following themes: issues and geopolitical stakes of the 2016 Philippine elections; post-Aquino issues and concerns relative to security and development in the Philippines; transformative communication using *teleseryes* as vehicles; prospects and challenges of federalism in the Philippines; social and psychological dimensions of aging; memory deterioration in the elderly; and the ASEAN's role in the regional order.

### **The 13th Ambassador Alfonso Yuchengco Policy Conference**

The 13th Ambassador Alfonso Yuchengco Policy Conference was convened on February 9, 2016 at the New World Hotel in Makati City with the theme, "The Philippine Elections in 2016: Defining Issues and Geopolitical Stakes."

#### **Conference Objectives:**

- To assess the domestic and external issues in the country confronting the next presidency at the national and local levels
- To discuss the obstacles and setbacks in addressing the issues
- To analyze the development implications of the candidates' platforms

### **Guest Speakers:**

- Dr. Francisco A. Magno, Director, Jesse M. Robredo Institute of Governance, DLSU
- Hon. Reynato S. Puno, Former Chief Justice, Supreme Court of the Philippines
- Prof. Richard Javad Heydarian, Assistant Professor, DLSU
- Mr. Jose Enrique A. Africa, Executive Director, IBON Foundation

### **Current Security Situation and Development in the Philippines: Issues and Concerns on the Post-Aquino Period**

This lecture by Dr. Rommel C. Banlaoi, Chairman of the Philippine Institute for Peace, Violence, and Terrorism Research, was held on October 6, 2015 at the Yuchengco Center Conference Room. Dr. Banlaoi discussed the developments regarding the settlement of the conflict over the South China Sea. He focused on territorial assertiveness, reef creation, and China's artificial island construction.

### **How the Academe Can be a Vehicle Toward the Production of Relevant and Transformative Teleseryes**

Held on November 25, 2015, this roundtable discussion was the third installment in its Transformative *Teleserye* series with Professor Louie Jon A. Sanchez of Ateneo de Manila University, and Dr. Rhoderick V. Nuncio, Vice Dean of the DLSU College of Liberal Arts, as speakers. The discussion assessed the prospect of forging a partnership between the *teleserye* producers and the academe in

the production of socially transformative programs.

### **The 14th Ambassador Alfonso Yuchengco Policy Conference**

The 14th Alfonso Yuchengco Policy Conference was convened on February 9, 2017 at the New World Hotel in Makati City with the theme, "Regional Authority and the Management of Diversity: Prospects and Challenges of Federalism in the Philippines."

### **Conference Objectives:**

- Assess the feasibility of adopting the federal system of governance in the country
- Discuss the issues and challenges confronted by the government in the shift to a federal structure
- Arrive at a consensus on a realistic configuration of governance within the federal system

### **Guest Speakers:**

- Sen. Aquilino Q. Pimentel, Jr., Senate President
- Dr. Paul D. Hutchcroft, Professor, Australian National University
- Prof. Jose V. Abueva, Professor Emeritus, University of the Philippines Diliman

### **Social and Psychological Dimensions of Aging**

Under the Yuchengco Center Social Program, Dr. Madelene A. Sta. Maria gave a lecture on the social and psychological dimensions of aging. She discussed major

concerns related to the elderly, such as social isolation, loneliness, depression, and poor quality of life. The need for social support, engagement in community activities, and social participation were also underscored.

### **Memory Deterioration in the Elderly**

Dr. Mary Jean V. Guno, President of Home Health Care, which provides custodial care to Alzheimer's patients, explained the illness from both the medical and layman's perspectives, focusing on its manifestations and management. Brain changes were succinctly noted in the discussion of memory impairment, recall retrieval, and mental functioning. The manifestations of Alzheimer's were presented in their various stages. Toward the end of her lecture, Dr. Guno described the residential care facilities in the country

that provide therapeutic and custodial support to Alzheimer patients.

### **Asserting ASEAN's Role in the Regional Order**

The Yuchengco Center co-sponsored with the Foreign Service Institute of the Department of Foreign Affairs the Mangrove Forum on International Relations on November 28, 2016. The theme of the Forum was "Asserting ASEAN's Role in the Regional Order," with Ambassador Ong Keng Yong as the speaker. Ambassador Ong is the Executive Deputy Chairman of the Rajaratnam School of International Studies in Singapore and the former Secretary-General of the ASEAN. He noted that the ASEAN's engagements with major and middle powers like the U.S., China, Japan, and South Korea, have been conducted through bilateral and multilateral strategies.

# Fabrication of Metal Oxide Gas Sensor for Lung Disease Detection

## *Project Leader*

Dr. Gil Nonato C. Santos

## *Research Assistant*

Mr. Klaud Jenssen F. Haygood

## INTRODUCTION

Human breath contains clues to latent or active respiratory illnesses. Specific types of molecules are present in the exhaled gas. They include oxygen, carbon dioxide, water, nitrogen oxides, and volatile organic compounds (VOC)[1]. These VOCs are of particular interest since they could be used as biomarkers in identifying respiratory

illnesses present in the human body. Using gas chromatography, mass spectrometry studies have identified VOCs present in the exhaled breath of lung cancer patients that are not present in the breath of healthy people. The VOCs identified for lung cancer include aldehydes-butanal, formaldehyde, acetaldehyde, pentanal, hexanal, octanal, and nonanal[2, 3]. Present diagnostics are expensive and complicated

The **Center for Natural Sciences and Environmental Research (CENSER)** is the research arm of the College of Science (COS). Initially established as the Environmental Research Center (ERC), it had the mandate to encourage and nurture scholarly activities related to the environment among COS faculty. Today, the former ERC has evolved into CENSER, a dynamic conduit and resource for excellent scholarship in the natural sciences and mathematics. It hosts the externally-funded research projects of COS faculty and provides basic administrative and clerical services.

CENSER consists of 3 shared laboratories and 10 research units. The shared laboratories are the iNano Laboratory (iNano Lab), Molecular Science Laboratory (MSUL), and the High Performance Computing Laboratory (HPCL). Meanwhile, the 10 research units are the Material Science and Nanotechnology (MaNa), Biological Control Research Unit (BCRU), Technologies for Biodiversity Use and Conservation (TechBioDive), Advance Nanomaterials Investigation by Molecular Simulations (ANIMoS), Natural Products and Drug Development (NPDD), Organic Materials and Interfaces (OMI), Condensed Matter Research Unit (CMRU), Applied Research Community, Health and Environment Sustainability (ARCHERS), Microalgal Systematics and Applied Phycology Research Unit (MSAPRU), and the Mathematical and Statistical Modeling (MastMod). The shared laboratories maintain a core facility which houses a common pool of equipment essential to the operation of their respective research areas. CENSER continues to operate with a mandate from the University to manage externally-funded research and is under the Vice Chancellor for Research and Innovation (VCRI).



for use as a point-of-care detection tool. The use of gas sensors, however, makes it simple, cheap, and non-invasive with direct access to physiological and non-physiological parameters.

This study used metal oxide nanomaterials such as SnO<sub>2</sub>, ZnO, and Ga<sub>2</sub>O<sub>3</sub> in the fabrication of a VOC gas sensor. Many studies have been made on metal oxide nanomaterials since they can form various structural geometries with an electronic structure that can exhibit metallic, semiconductor, or insulator characteristics. Metal oxides possess exceptional potential as base materials in emerging technologies [4]. It is significant in offering an alternative point-of-care detection tool for patients with lung disease. It provides medical personnel with a simple and faster way of diagnosing patients. The non-contact mechanism of the device avoids the risk of infection for health personnel. The device is intended to be portable and cheap, thus beneficial to both patients and medical institutions. It helps improve the services provided by such institutions.

Nanomaterials are of interest because of their ability to reduce working temperatures and power consumption. One of their profound characteristics is their high surface-to-volume ratio. A high surface-to-volume ratio favors the adsorption of gases (and a change in conductivity) on the sensor, decreases the response time, and increases the sensitivity of the device due to higher interaction between the analytes and the sensing part. Studies show that sensitivity increases or the response time decreases as the film thickness or the particle size of the metal oxides decreases [16, 17].

The research was undertaken with a grant from the United States Agency for International Development—Science, Technology, Research, and Innovation for Development (USAID— STRIDE), the help and support of the Interdisciplinary Nanotechnology Laboratory (i-NANO) Research Facility members, and the collaborative effort and assistance of the Lung Center of the Philippines, the Integrated Micro-Electronics, Inc., and DLSU.

## METHODOLOGY

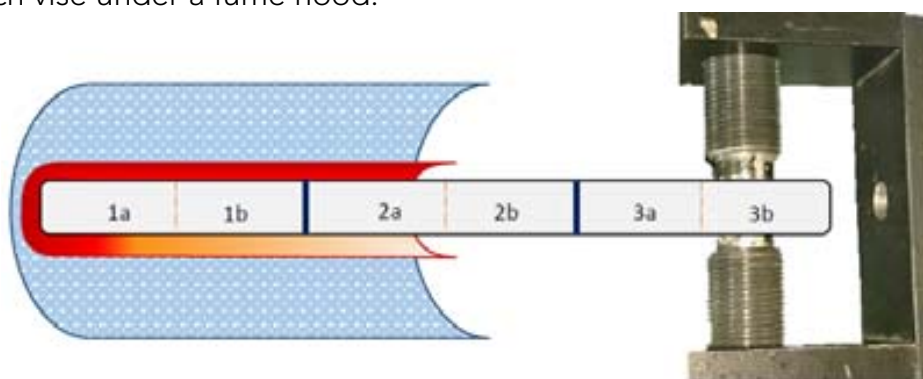
A fused quartz tube measuring around 8.5 mm in inner diameter, 11.5 mm in outer diameter, and 12 inches in length was used as the container of the metal oxide semiconductor material. One end was sealed using a high-temperature blow torch fueled by a mixture of LPG and oxygen. From the sealed end, a length of 10 cm or 13 cm, corresponding to a particular section of the tube was marked. At that mark, a dent was created in the quartz tube to hold a silicon dioxide substrate in place. The tube was cleaned for 30 minutes using an ultrasonic cleanser to remove the contaminants. After this, it was air-dried to remove the excess water from the inside. Fifty (50) milligrams of the bulk powder of 99% purity and <5microns grain-sized were weighed and placed into the clean closed-end quartz tube; after which the substrate (8mm x 15 mm) was poured into it, making sure that it would not leak through the dent. The quartz tube was evacuated using a Thermionics high vacuum system decreasing the pressure to about 10<sup>-6</sup> Torr. The tube was fully sealed by annealing it to a length of around 6 inches. The horizontal

vapor phase crystal growth (HVPCG) Technique was used in the fabrication of the metal oxide nanomaterials.

Following the HVPCG phase, the sealed quartz tube was placed in a Thermolyne horizontal tube furnace and cured. The furnace was programmed at a ramp time of 40 minutes, a growth temperature of 1200 °C, and at a growth time of 8 hours. To characterize the nanomaterials that were grown on the inner walls of the quartz tube, it was sectioned into three zones with 5 cm length. Each zone was further divided into 2 sections (A and B) as shown in Figure 1. To create the necessary temperature gradient for the growth of the nanomaterials, the tube was inserted halfway through the furnace and monitored using a type-K thermocouple. The tube was positioned such that zone 1, where the bulk powder was located, was inside the furnace; the end of section 2a, middle of zone 2, was located at the opening of the furnace; and zone 3, which was at the opposite end of zone 1 was completely outside the furnace (Figure 1). After the curing time, the set-up was allowed to cool down on its own to room temperature. Prior to retrieving the nanomaterials, the cooled quartz tube was covered with tape, and the zones and sections were marked. The tube was mechanically cracked with the use of a bench vise under a fume hood.

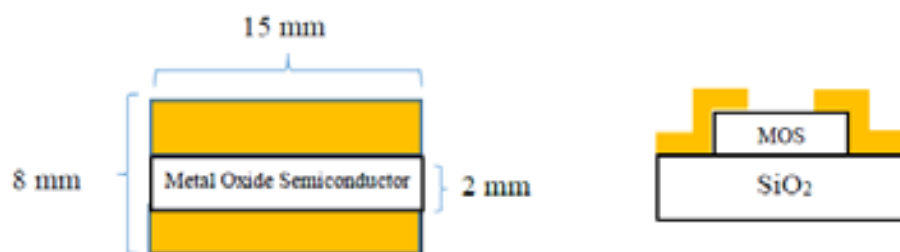
All characterization tests were done by the Integrated Micro-Electronics, Inc. (IMI) Group, the team's industry partner. The deposits on quartz tube fragments were characterized using SEM (scanning electron microscope) and XRF (X-ray fluorescence). SEM was used to determine the morphology of the nanomaterials present on the fragments of the quartz tube and on the substrate. The elemental composition was determined using XRF. Electric characterization like current-voltage (IV) testing was done by the IMI Group. The prepared individual VOCs were correlated using the gas-chromatography mass spectrometry (GCMS) apparatus from the DLSU Chemistry Department.

The section with the highest density of nanowires and rods or 1D nanomaterials was used in the fabrication of a gas-sensing substrate. The collected substrates from the respective set-ups/tubes were sputtered with gold on both sides to serve as the electrodes, leaving a 2 mm width line in the middle of the unexposed substrate (Figure 2). The nanomaterials that were not sputtered with gold were the ones used to detect the target gas from the exhaled breath of the subjects. An AWG #30 wire was fused at the ends of the gold electrodes using a silver paste. The wire was later soldered into the circuit board.



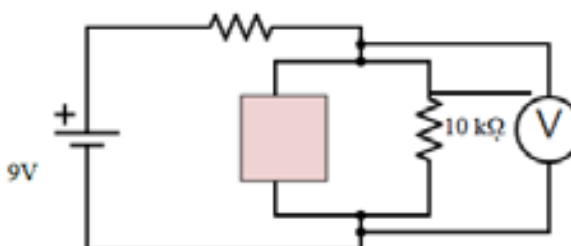
► **Figure 1. diagram of the quartz tube inserted halfway through the horizontal tube furnace.**

**Figure 2. Sensor substrate with gold-sputtered electrodes**



**Figure 2. Sensor substrate with gold sputtered electrodes**

**Figure 3. Circuit diagram of the gas-sensing set-up**

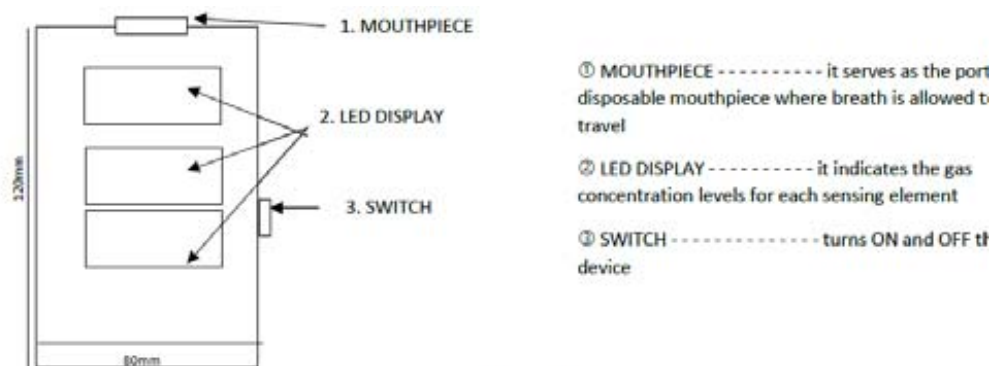


A 9V input voltage from a battery was delivered to the circuit, as shown in Figure 3. A 10 kΩ variable resistor was used to calibrate the sensitivity of the sensor. This was connected in parallel with a DC voltmeter and LED. The voltmeter was, in turn, connected to a Passport Interfaced Pasco Scientific Voltage Sensor and Data Studio. The latter was used for data-acquisition in measuring the voltage response of the sensor. The pattern of change in the resistance of the material, which is converted into a change in voltage measurement was read via a Pasco Scientific Voltage Sensor. The analysis of

the principal components was conducted with the assistance of a statistician.

The circuit was placed in a plastic chamber as shown in Figure 4. The design of the prototype device was coordinated with the Lung Center of the Philippines in preparation for future commercial use. Three sensors were set up in which the seven prepared analytes (VOCs) were allowed to individually interact in each set-up with the sensing layer through the injection port of the chamber. Three gas chambers were prepared. Each chamber contained the three metal oxide (tin oxide,

**Figure 4. Prototype representation**



zinc oxide, and gallium oxide) nanomaterial sensors. Testing was done in ambient temperature for several trials. Heater and alcohol vapor were used to purge the sensor. The sensitivity of the metal oxide sensors was measured through response time, while selectivity was determined using an array of sensors. The IMI Group was responsible for the noise reduction and signal refinement of the circuit. Liquid crystal display (LCD) was also integrated by the IMI Group in the prototype device. The reliability assessment of the sensors was conducted by the IMI Group.

## RESULTS AND DISCUSSION

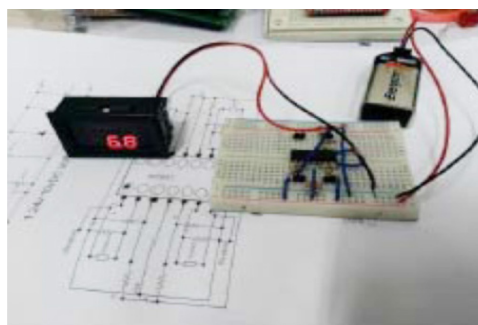
Three gas-sensing devices were fabricated by the project team and submitted to the IMI Group. Each gas sensor contained three metal oxide (one

zinc oxide, one tin oxide, and one gallium oxide) substrates as its gas-sensing material. The volatile organic compounds (VOCs) used include nonanol, octanol, hexanal, valeraldehyde, and acetaldehyde. Photos "a" to "d" show the experimental set-up.

The metal oxide array gas sensor device was used to detect the VOC levels. In this case, the VOC gases were prepared in the laboratory. The device was equipped with a sensor array of zinc oxide, tin oxide, and gallium oxide, which were nanomaterials that provided distinct measurements for different types of exposed gases. The sensor device contained three light-emitting diodes (LEDs) that displayed the corresponding measurement readout (voltage) for the individual metal oxide nanomaterial sensor to the exposed gas.



a) Gas chambers



b) Circuit used (without metal oxide substrate)



c) Gas sensing measurement



d) Prototype (front and top view)



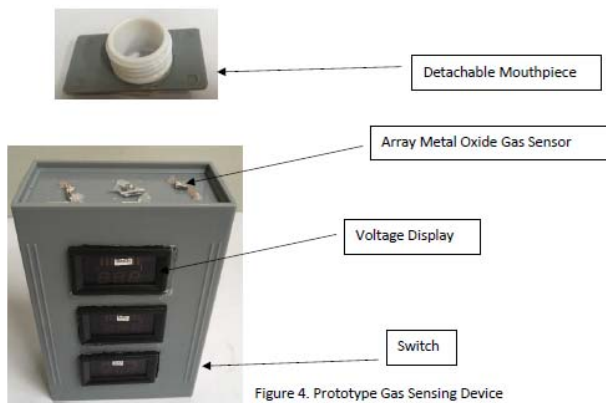


Figure 4. Prototype Gas Sensing Device

► **Figure 5. Prototype gas-sensing device**

Prototype gas sensors of different sizes were fabricated to determine the desired size of the sensor that would be evaluated by the industry partner and the medical doctor (pulmonologist)-consultant. The industry partner suggested reducing the size of the prototype and adopting the function of a flash drive when transferring the readout

data. The project team was also advised to integrate into the prototype gas-sensing device a microcontroller circuit that requires lower battery consumption, optimizes the use of space, and uses disposable mouthpieces for hygienic and safety purposes. Meanwhile, the medical doctor-consultant recommended securing the packaging of the device, and testing the device on both healthy people and people with lung disease.



► **Figure 6. Three metal oxide gas sensing device**



► **Figure 7. The meeting of the research team and the demonstration of the device. (No data were collected as the device was for demonstration purposes only.)**

The data gathered during the gas-sensing are presented in Table 1. The selectivity and sensitivity capabilities of each gas-sensing material were analyzed by plotting the data in a radar chart, using the principal component analysis (PCA), and observing the response time of each gas-sensing voltage measurement. An accuracy test was not conducted because there was no standard data available for comparison.

A baseline of 6.2 V was used. This could also be considered as "0" due to the absence of analyte prior to the data-gathering. Average values were used in the radar chart and PCA analysis. From the table, it is evident that each metal oxide

had a different response spectrum to the gases. An immediate voltage response, which was an average of 3 seconds, was seen in all trials upon exposure of the analyte to the sensor. Sensitivity was measured using its response time and voltage difference measurement. The sensors can, therefore, be considered sensitive in terms of response time and voltage difference measurement.

The average values of each analyte for each metal oxide were used and plotted in a radar chart to see how the analytes react to each metal oxide. The radar charts of tin oxide, zinc oxide, and gallium oxide were analyzed. For tin oxide, the radar

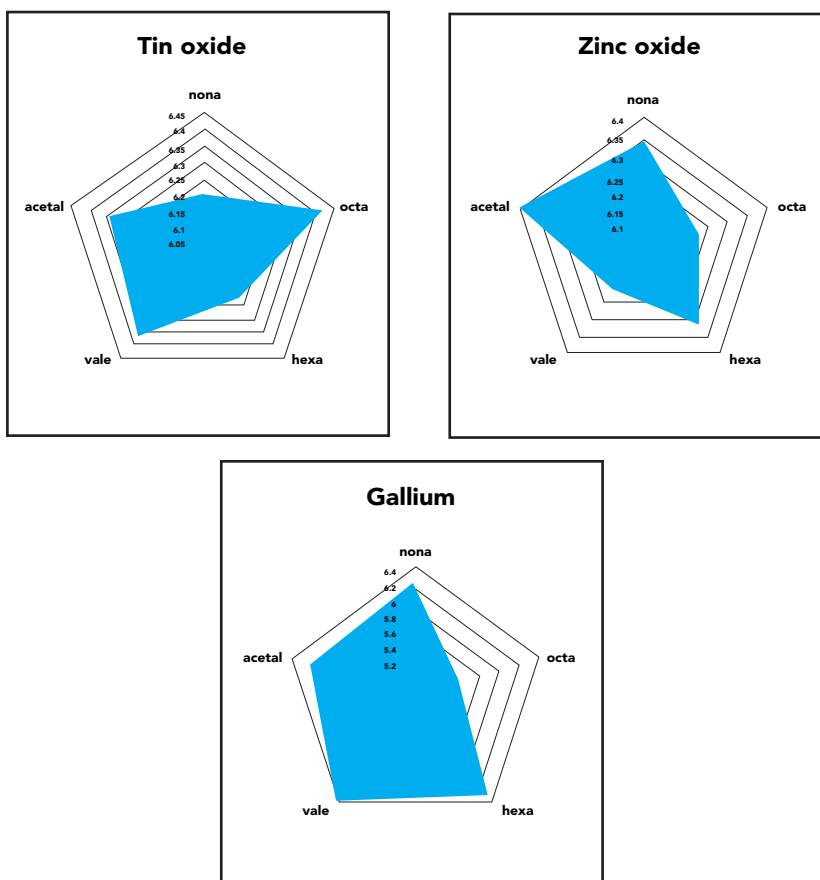
**Table 1. Voltage data**

1	Baseline	Zinc oxide	Tin oxide	Gallium oxide
Nonanol 1	6.2 V	6.33 V	6.2 V	6.3 V
Nonanol 2	6.2 V	6.4 V	6.22 V	6.24 V
Nonanol 3	6.2 V	6.33 V	6.2 V	6.22 V
Average value of nonanol		6.353 V	6.21 V	6.25 V
Octanol 1	6.2 V	6.2 V	6.4 V	4.23 V
Octanol 2	6.2 V	6.2 V	6.43 V	6.33 V
Octanol 3	6.2 V	6.3 V	6.44 V	6.3 V
Average value of octanol		6.23 V	6.42 V	5.62 V
Hexanal 1	6.2 V	6.3 V	6.22 V	6.3 V
Hexanal 2	6.2 V	6.33 V	6.24 V	6.34 V
Hexanal 3	6.2 V	6.33 V	6.22 V	6.35 V
Average value of hexanal		6.32 V	6.23 V	6.33 V
Valeraldehyde 1	6.2 V	6.2 V	6.33 V	6.4 V
Valeraldehyde 2	6.2 V	6.23 V	6.4 V	6.4 V
Valeraldehyde 3	6.2 V	6.23 V	6.4 V	6.4 V
Average value of valeraldehyde		6.22 V	6.38 V	6.40 V
Acetaldehyde 1	6.2 V	6.4 V	6.33 V	6.35 V
Acetaldehyde 2	6.2 V	6.44 V	6.34 V	6.1 V
Acetaldehyde 3	6.2 V	6.36 V	6.35 V	6.2 V
Average value of acetaldehyde		6.40 V	6.34 V	6.22 V

chart showed that analytes octanal (6.42 V), valeraldehyde (6.38 V), and acetaldehyde (6.34 V) have a very active response to the sensor. However, since the baseline was set at 6.2 V, nonanol (6.21 V) and hexanol (6.23 V) had very subtle responses to the tin oxide. For zinc oxide, the radar chart indicated that analytes acetaldehyde (6.40 V) and nonanol (6.353 V) had very active responses to the sensor. It should be noted that hexanal (6.32 V) also responded to the tin oxide. Subsequently, octanol (6.23 V) and valeraldehyde (6.22 V) showed little response to the zinc oxide. As regards gallium oxide, the radar chart signified that analytes valeraldehyde (6.40 V) and hexanal (6.33 V) exhibited very active responses to the sensor. Acetaldehyde (6.22 V) and

nonanol (6.25 V) had little response as well. Meanwhile, the average reading for octanol (5.62 V) went below the 6.2 V baseline due to an outlier recorded on octanol trial 1 (4.23 V). Evidently, each metal oxide exhibits a unique radar chart profile representing its selectivity property for each of the gases.

A statistical procedure is needed to make the distinctions more apparent. In the case of gas- sensing, PCA was needed to distinguish and strengthen the sensitivity analysis of the aforementioned radar charts. The PCA was plotted using xlstat in the Excel spreadsheet. The active observations were the voltage readings during measurements, while the active variables were the three metal oxides.



► Figure 8. Radar charts of tin oxide, zinc oxide, and gallium oxide.

Figure 6 shows that the responses of the tin and zinc oxides to the gases are statistically distinguishable. However, gallium oxide was seen as statistically insignificant because it was responsive to almost all gases with almost the same values, with the exception of the outlier octanol (5.62 V).

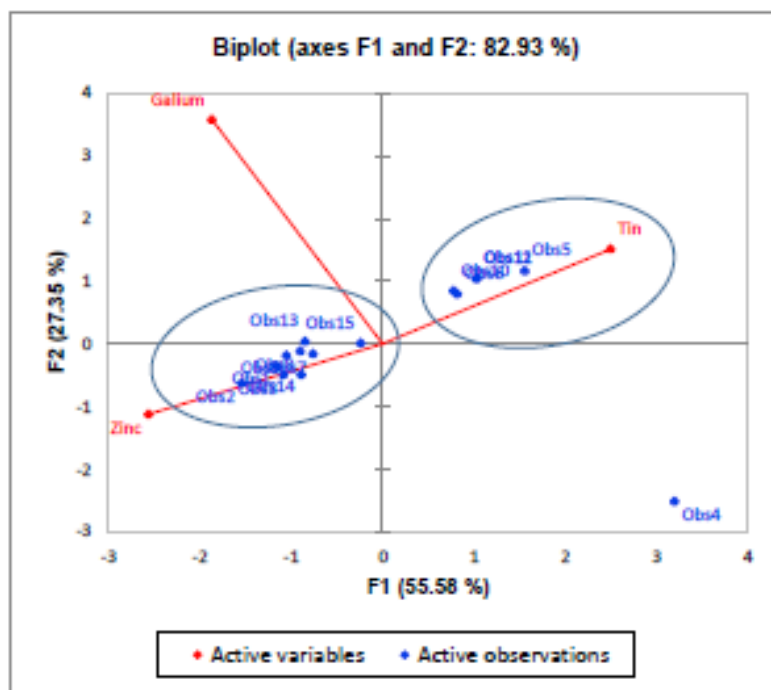
## CONCLUSIONS

Three metal oxide array gas-sensing devices were successfully fabricated to detect laboratory-prepared VOCs. The results showed that the responses of the tin and zinc oxides to the gases were statistically distinguishable. However, gallium oxide was seen as statistically insignificant because it was responsive to almost all gases with almost the same values, with the exception of the outlier

octanol (5.62 V). The tin and zinc oxides can, therefore, be used to discriminate between the gases. Gallium has limitations. This only signified that tin and zinc oxides are compatible with an array of sensors in terms of their selectivity property.

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► Figure 9. The principal component analysis (PCA) using xlstat in Excel spreadsheet



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## FEATURED RESEARCHER

### *Dr. Divina M. Amalin*

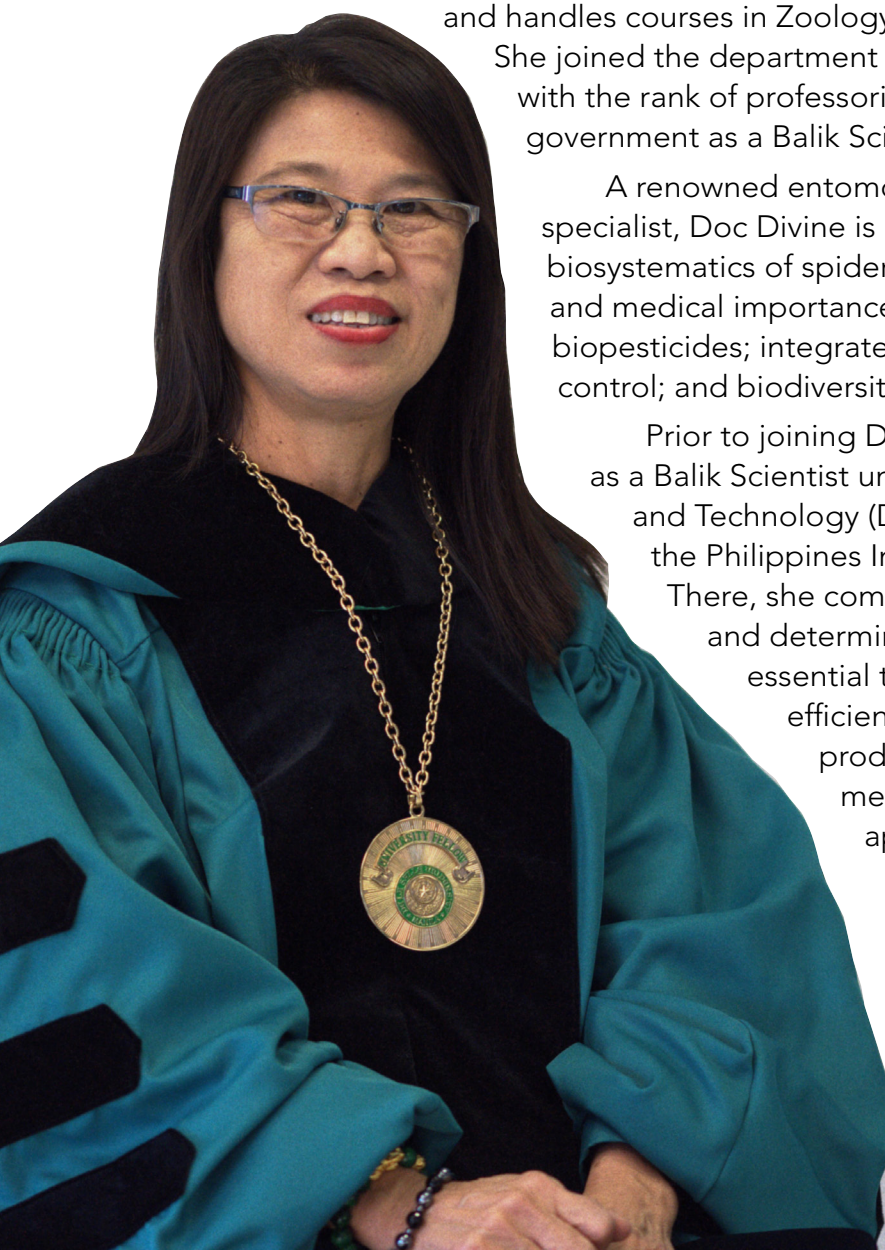
**D**r. Divina M. Amalin, fondly called 'Doc Divine,' 'Ma'am Divine,' or simply 'Divine,' by her friends and colleagues is the current director of the DLSU Center for Natural Sciences and Environmental Research (CENSER) and an active member of the Biological Control Research Unit (BCRU), one of the research units of CENSER. She holds the rank of full professor in the Biology Department, College of Science (COS) and handles courses in Zoology, and New Materials and Technology.

She joined the department in May 2013 as a part-time faculty with the rank of professorial lecturer, after serving the Philippine government as a Balik Scientist Program (BSP) Awardee.

A renowned entomologist and biological control specialist, Doc Divine is particularly interested in taxonomy and biosystematics of spiders, and species of both of agricultural and medical importance; the control of invasive pest species; biopesticides; integrated pest management (IPM); vector control; and biodiversity.

Prior to joining DLSU, she worked from 2010 to 2012 as a Balik Scientist under the Department of Science and Technology (DOST) at the Cocoa Foundation of the Philippines Inc. (CocoaPhil), her host institution.

There, she compiled existing baseline information and determined key knowledge gaps that are essential to the development of a sustainable and efficient biological control program for cacao production. In addition, she developed methods and introduced technological applications that could provide and disseminate information and data, leading to the implementation of more ecologically sustainable control programs (e.g., biological control, IPM) for cacao farmers. She likewise



conducted a cost-benefit analysis for applying an IPM in the production of cacao.

In 2012, CocoaPhil appointed her as technical and training consultant, a post she holds up to now. Her primary tasks include the development of IPM programs as a component of the bio-intensive cacao farming systems in the Philippines, conduct of hands-on field clinics for cacao farmers and extensionists, and research on the biologically-based pest control approaches for the prevention of major insect infestation, and diseases of cacao.

When Doc Divine joined DLSU in 2013, she brought along her training and experience in research and scholarship. Her extensive research background included her being a post-doctoral research associate under a cooperative agreement with the United States Department of Agriculture (USDA)—Animal and Plant Health Inspection Service (APHIS)—Center for Plant Health Science and Technology (CPHST) (2002 to 2004; 2007 to 2010), a subcontracted scientist (2005 to 2006), post-doctoral research associate (1999 to 2001), and graduate research assistant (1995 to 1999) at the Tropical Research and Education Center (TREC) of the University of Florida, a research associate at the International Potato Center, Region VII, Los Baños, Laguna (1991 to 1993), research assistant at the Genetics Laboratory of the Institute of Biological Sciences (1985 to 1988) and at the Department of Life Sciences (1980 to 1984), of the University of the Philippines in Los Baños (UPLB), Laguna, and a student assistant at the Entomology Department of the International Rice Research Institute (IRRI) in Los Baños, Laguna (1979).

Aside from her impressive track record in research, she had competently handled lecture and laboratory classes at TREC where she taught Fundamentals of Entomology, and Tropical Fruit Production Course (Summers of 1999 and 2000); Miami Dade College where she taught Fundamentals of Entomology (Falls of 1997 and 1998); and UPLB where she taught Fundamentals of Biology, General Genetics, and Cytology ((1989-1990).

To date, Doc Divine had mentored undergraduate students who engaged in over 40 entomological research projects of medical and agricultural importance. She had chaired the panel for Ph.D. and M.S. students on the topics "Biological control of coconut scale insect (CSI) in the Philippines," and "Use of kairomones for the control of insect pests of cacao." During the summers of 2004, 2007, and 2009, she served as project advisor for student projects under the USDA-Agricultural Research Service (ARS)-Subtropical Horticultural Research Station (SHRS) Junior Ambassador Program; and in the summer of 1999, as research advisor and mentor of high school students of Broward County High School Science Program, Fort Lauderdale, Florida in the U.S. She was also an undergraduate research advisor at UPLB in 1989 and 1990.

As a well-known expert in her field, she had been invited to deliver lectures, as well as present papers in numerous scientific meetings. Her more recent lectures delved on the following topics: "Biologically-based approach for the management of cacao pests in the Philippines," during the 6<sup>th</sup> ASEAN Cocoa Club TWG on GAP at DLSU in May 2017; "BBTs for the management of cacao pests in the Philippines," during

the 49<sup>th</sup> Anniversary and Annual Scientific Conference of the Pest Management Council of the Philippines (PMCP) at the Crown Regency Resort and Convention Center in Boracay Island, Aklan in May 2017; "Current research and development on sustainable cacao production in the Philippines," during the 19<sup>th</sup> Meeting of the National Focal Points for ASEAN Cocoa Club (ACC) on Joint ASEAN Cooperation in Agriculture and Forest Products Promotion Scheme held in May 2016; and "CSI pest management with emphasis on biological control," during the 10<sup>th</sup> Global Technology and Information Search Seminar at the Elvira O. Tan Hall of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the DOST (DOST-PCAARRD) in December 2015.

Among the more recent scientific papers that Doc Divine solo-, or co-authored are: "Efficiency of Entomopathogen as Carried by Particle Film against Insect Pests and Diseases of Cacao," presented at the Newton Agham Mini-Symposium: Bioactive Natural Products with the theme "Moving Forward with Modern Biotechnological Approaches for Natural Products Discovery," at the National Science Complex of UP Diliman in October 2017; "BBTs for the Management of Cacao Pests in the Philippines," "Field Parasitism of *Comperiella calauanica* sp. n. (Hymenoptera: Encyrtidae) on *Aspidiotus rigidus* Reyne (Hemiptera: Diaspididae) in Southern Tagalog," "Searching for Potential Kairomones of the CSI, *Aspidiotus rigidus* Reyne," and "Life History and Host Range of *Helopeltis bakeri* Poppius (Hemiptera: Miridae), a Major Pest of *Theobroma cacao* L. in Luzon," presented at the 49<sup>th</sup> Anniversary and Conference of the PMCP in May 2017; "Preliminary Study

on the Identification of Potential Ground Dwelling Natural Predators of Hard Ticks (Arthropoda: Arachnida: Acari: Ixodida) Infesting Cattle (*Bos indicus*) in Selected Areas in Nueva Ecija Using Pitfall Traps," and "Presence of *Wohlbachia* sp., in *Culex* sp. from Metro Manila, Philippines," presented at the 9<sup>th</sup> Meeting of the PSP at DLSU in March 2017; and "Beyond the Medical Use of Putat, *Barringtonia asiatica*: Potential Natural Fungicide against Cacao Black Pod Rot," presented at the 2<sup>nd</sup> Cagayan Valley Health Research and Development Biennial Health Symposium, at Fort Ilocandia in Laoag, Ilocos Norte in June 2015.

Doc Divine is well-published. A number of her solo- and co-authored articles appear in these reputable refereed journals: *Asia Life Sciences Journal*, *Biomass and Bioenergy Journal*, *Biomedical Central Infectious Diseases Journal*, *Chiang Mai Journal of Science*, *Crop Protection Journal*, *Florida Entomologist*, *Hellenic Plant Protection Journal*, *International Food Research Journal*, *International Journal of the Bioflux Society*, *Journal of Applied Entomology*, *Journal of Biochemistry*, *Oriental Journal of Chemistry*, *Philippine Journal of Crop Science*, *Southwestern Entomologist*, *Subtropical and Agriculture Environments Journal*, and *Z. Naturforsch Journal*. In 2016, she co-authored the article "*Trichogramma* spp. (Hymenoptera: Trichogrammatidae) as biological control agents in the Philippines: History and current practice," that was featured in the book *Biological Control of Pests Using Trichogramma: Current Status and Perspectives* published in 2016 by the Northwest A&F University Press (eds. Vinson, S.B., Greenberg, S.M., Liu, T. X., Rao, A., and Voloscluk, L. F.).



Helping colleagues and students is second nature to her; it is not motivated by the dictates of her job as a teacher. Low key and unassuming, she goes the extra mile to instill rigor and develop a passion for research among her colleagues and students. She draws genuine fulfillment in sharing her expertise to interested learners. As such, she was engaged as a trainor by the Benguet State University (December 2018) on elevating potato as a food security crop in response to climate change, tapped by the DOST-PCAARRD (September 2018) for a training workshop on sustainable cacao farming system in the Philippines amidst climate change, and by the Philippine Coconut Authority (November 2016) on the biological control of the CSI, *Aspidiotus rigidus*. She was also involved in the containment of coconut scale insect (Cocolisap) infestation using biological control agents.

Despite her busy schedule, Doc Divine finds time to network and collaborate with other professionals in her field. She is an active member of prestigious local and US-based professional organizations such as the American Arachnological Society, ASEAN Coco Club, Entomological Society of America, Florida Entomological Society, Florida Society of Horticultural Science, Gamma Sigma Delta Honor Society, Philippine Association of Entomologists, Philippine Society of Parasitology, and Plant Biologists of South Florida.

In recognition of her sterling achievements as a researcher, Doc Divine has been a recipient of numerous awards and recognitions. Individually and as a member of a research team, she was granted research funds by different institutions namely, DOST-PCAARRD, USDA-ARS, World Cacao Foundation

(Washington, DC), DOST-PCAARRD and PCHRD, USDA-APHIS-Plant Protection and Quarantine (PPQ) under an Eastern Region Cooperative Agreement), USDA-ARS - The Areawide Management and Evaluation (TAME) of *melaleuca* or tea tree, and the Florida Citrus Research Advisory Council. For doing research of medical, agricultural and environmental significance, she was appointed chair of the TWG on GAP by the ASEAN Cocoa Club (2012 up to the present); conferred the Balik Scientist Award by the DOST (2010 to 2012); won the Research Team Award for BioControl of Tropical Soda Apple from the Florida Entomologists (2010); and awarded the Harold E. Kendall, Sr. Endowed Scholarship Grant (1998), the Florida Entomological Society Research Mini-Grant (1997-1998), the AGRI-Council Scholarship Grant (1995-1998), the Dennis Carpenter Memorial Fellowship (1997), and the Undergraduate Grants-in-Aid Scholarship (1977-1982).

A very hands-on professional, Doc Divine possesses the technical skills that make her very meticulous in the conduct of laboratory and field experiments. She is adept in microscopy (tissue fixation and sectioning), cytology (chromosomal techniques), molecular biology processes and procedures (gel electrophoresis, polymerase chain reaction (PCR)), insect rearing (establishment and maintenance of insect-rearing facilities), and photography and digital imaging (photomicroscopy, digital image processing, and operating video time-lapse machine). Beyond these, she is well-versed in various softwares for publishing, imaging and designing, multimedia presentations, and data entry and statistical analysis (using SigmaPlot, and Statistical Analysis Software (SAS)).

Doc Divine earned her B.S. in Entomology and M.S. in Entomology from UPLB in 1982 and 1988, respectively, and her Ph.D. in Entomology from the University of Florida in Gainesville, Florida, in the U.S. Her dissertation proved that “spiders are important component of the natural enemy complex of citrus leafminer in South Florida.”

To help her colleagues and young science students develop their skills, and imbibe a passion for research that impact the medical, agricultural, and environmental milieus, Doc Divine has this to say: “Be truthful to what you are doing to benefit the next generation. Good science is the key to economic growth.”

# Simply Divine

by: Dr. Billy Joel Almarinez

**D**r. Divina Medina Amalin, known to her colleagues and friends in DLSU as 'Divine', 'Ma'am Divine,' or 'Doc Divine,' is without a doubt one of the pillars not only of the Biology Department and the College of Science, but of the University as well, especially in the areas of research and extension. I first got to know her as a Balik Scientist who was hired by the Biology Department in 2013 as a part-time faculty member to handle a Zoology Laboratory section in tandem with mine. As colleagues, our relationship started to develop over laboratory activities and practical examinations which we prepared jointly for our respective laboratory sections. Truth be told, I never realized how big a deal she actually was (and still is) in the Philippine scientific community (especially in the field of entomology) until another colleague in the department (Tads Carvajal, then-classmate in one of the courses I attended for my Ph.D.), told me that she was 'THE' Dr. Amalin whose publications on spiders he had been reading and citing in his works. To this day, she is not one to brag about her accomplishments. She prefers to keep a low profile unless the situation demands that she assert herself to drive her point across. Her works and numerous multi-million funded projects always tend to speak for her.

The renowned entomologist and biological control specialist eventually became my 'academic mother.' I actually had no prior formal training in entomology when I took an academic gamble by choosing and asking her to be my Ph.D. supervisor toward the end of 2013. In fact, at that time, I was still undecided on what to work on for my dissertation. However, as I went with her on research trips with undergraduate thesis students, I was able to determine what I could work on for my Ph.D. thesis (by discovering with her a new species of insect which turned out to be what could and would solve the "cocolisap" problem). I also developed my skills and expertise as an entomologist. Outside the classroom and without a formal entomology curriculum, Dr. Amalin turned me from a novice into an expert in my own right. Just by being with her in the field, in the laboratory, or on road trips, I was able to learn a lot from Dr. Amalin as an academic mentor. Because of her and working with her, I was also able to go to places I had never imagined to visit on my own.

Just as she was able to bring in a lot of her local and foreign linkages to help DLSU further develop into a research university, Dr. Amalin has also been helping me (and other up-and-coming young scientists within and outside the University) to form linkages and networks with other experts from whom I have been learning and with whom I can collaborate. If not for her, the University and I would not have had the chance to benefit from

the expertise and networks of Dr. Alberto T. Barrion (formerly of the University of the Philippines Los Baños and International Rice Research Institute, and now proudly of DLSU), Dr. John Wise (Michigan State University), Dr. Jiasui Zhan (Fujian Agriculture and Forestry University), and Dr. Kozo Watanabe (Ehime University), among many others. Almost single-handedly, she was able to bring DLSU, a private university, to the forefront of entomological and pest management research in the Philippines, a field which

for many years had been dominated by scientists and researchers from state colleges and universities.

Mommy Divine (as I now fondly call her in my text messages and informal e-mail correspondences to her) is indeed a one-of-a-kind leader in research and in the academe. She is an outstanding and most understanding colleague and friend. It was not a stroke of serendipity, but the amazing power of God's hand – DIVINE intervention, if you care to call it—that led her to DLSU, and which led me and the University to her.



# Stony CORal REScue (SCORES) Project

## *Project Leaders*

Dr. Wilfredo Y. Licuanan

Ms. Michelle Z. Reyes

## INTRODUCTION

The Philippines has the third largest reef area in the world, with about 25,000 km<sup>2</sup> of coral reefs, mostly of the fringing type, i.e., found immediately around islands. The coral organisms that form these reefs are sensitive to changes in the quality of the surrounding waters, and the volume of sediments that wash off from the adjacent islands. Coral reefs are also damaged by coastal development activities, such as the construction of roads

and buildings that disturb the ground and lead to erosion by waters from rainfall and strong waves. This brings about a conflict between economic development and coral reef conservation efforts which have become untenable given that local reefs contribute over PHP 1 billion to the Philippine economy each year.

## THE SCORES PROJECT

The SCORES (Stony CORal REScue) Project was funded by the Pagbilao Energy

The **Br. Alfred Shields FSC Marine Station**, formerly known as the DLSU Marine Biological Station, is an academic facility of the College of Science intended to further class field activities, research, and extension programs in coastal areas. Located on a one-hectare parcel of land in Sitio Matuod, Barangay Binubusan in the town of Lian, Batangas, the Shields Marine Station is a four-hour drive from the Taft campus. The Marine Station has the following basic laboratory and field research equipment and facilities: a dry laboratory; a reference collection of corals and seaweeds; computers and various communication and video equipment; a small outrigger boat, SCUBA diving gear, tanks and a compressor; basic housing facilities for faculty and students, including a small kitchen and two 10-bed dormitory rooms; freshwater supply from a deep well; and a generator for emergency power.

The Marine Station is one of the component units of the Br. Alfred Shields FSC Ocean Research ((SHORE) Center. The other units are the Seawater Aquarium Laboratory (SAL), the Coastal Biodiversity Stewardship Unit (CBSU), Biodiversity Studies Facility (Biodiv StuF), and the Coastal Habitats and Environments Monitoring Unit (CHEM Unit). Through these component units, the ShORe Center is able to make way for collaborative endeavors with a growing network of schools and take-offs from the traditional organizational/ disciplinary boundaries that plague the existing marine research and training organizations.

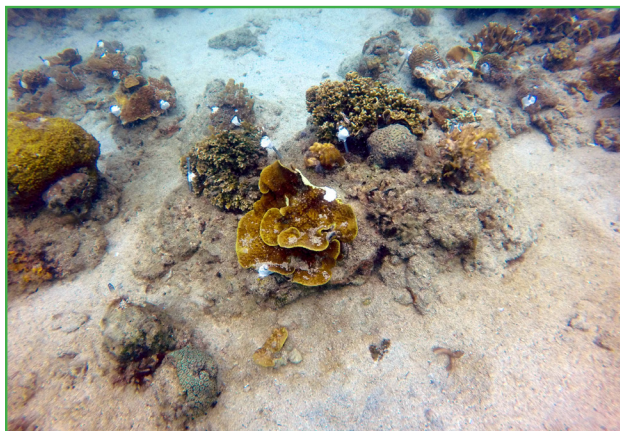
Corporation, Inc. while the coral relocation was under Gratuitous Permit # 0104-15 from the Philippine Department of Agriculture signed by former Secretary Proceso J. Alcala.

The SCORES Project, which was implemented from 2015 to 2016 by DLSU's Shields Ocean Research (SHORE) Center, required the relocation of over 3,000 coral colonies from a coral reef in Pagbilao, Quezon. The coral colonies risked being affected by the expansion of a cooling system of a power plant (which involved the construction of a seawater intake pipe). The corals had to be moved some 200 meters from their original locations.

Prior to implementing the project, however, the researchers had to explore the effects of relocating corals to already crowded reefs, and to artificial substrates that are made from concrete. The study

also determined the effects of transplanting corals to depths deep enough to protect them from weather disturbances such as typhoons and the giant waves that they generate.

The relocation effort proved to be strenuous, as it involved more than 500 person-days. The work was further complicated by the need to keep the corals underwater all throughout the relocation process. Some corals were huge and heavy that they could not be lifted by a single diver. Small boats, ropes, and underwater lift bags were thus essential. Epoxy was used to reattach the corals to the bottom, although the use of cement was also explored. Larger corals had to be stabilized with concrete nails and cable ties. All experimental corals had to be identified, tagged, mapped, and tracked.



## PRIMER ON CORAL RELOCATION

With the support of the DLSU Publishing House, the research team authored a *Primer on Coral Relocation* to serve as a handy reference in coral relocation efforts. The authors hope that the primer will continue to be updated by other researchers with similar projects, in order to advance the science of coral relocation in the Philippines.



## De La Salle Food and Water Institute

The **De La Salle Food and Water Institute** is a consortium between Lasallian institutions belonging to De La Salle Philippines for the purpose of education, research, innovation, and transfer of technology in the different areas of study along the food supply chain. The Institute is guided by the Lasallian mission of generating and propagating new knowledge for human development and social transformation. It seeks to serve the food supply chain requirements of the Philippines in particular and Southeast Asia in general; and takes advantage of the Philippines as one of the platforms of education in the region.

# Research Ethics Office

As a research university, DLSU commits itself to the generation and dissemination of new knowledge for human development and social transformation. The University prioritizes the conduct of research and provides opportunities, assistance, and incentives at all levels, in all areas, and in all stages of the research process towards this ideal. As an institution of higher learning, its community of scholars, artists, and learners pursues this vocation within the realm of Christian ideals and values. As a Catholic institution, the University strives to balance the demands of the search for new knowledge with those of the mores and norms inscribed by Catholic dogma.

DLSU has had an established ethical review mechanism since 2008. This has been guided by the DLSU Code for the Responsible Conduct of Research. Ethics review procedures had since been implemented, and checklists for various research categories had been used. Back then, the Research Ethics Committees (RECs) of the different colleges were constituted to undertake the ethical review of faculty research projects. By 2011,

research proposals of faculty members had been subjected to expedited and full ethics reviews.

To more efficiently and effectively fulfill its responsibility of ensuring the quality and integrity of research undertaken by its faculty and students, DLSU formally established the Research Ethics Office (REO) during the 3<sup>rd</sup> term of AY 2014-2015 under the Office of the Vice Chancellor for Research and Innovation. It was given the mandate to institutionalize and ensure the efficient and effective research ethics governance in the University. REO's tasks include the development, implementation, and evaluation of policy and procedures related to research ethics governance in the University.

In January 2017, the Research Ethics Review Committee (RERC) was formed as an independent ethics review body composed of representatives of the various colleges of the University, an independent member not affiliated with the University, a social scientist, and a layperson not associated with the sciences.



## THE RESEARCH ETHICS OFFICE(REO) AND THE RESEARCH ETHICS REVIEW COMMITTEE (RERC)

The REO serves as a conduit between the University's faculty and student researchers and the Research Ethics Review Committee (RERC). It also manages the records and database of protocols and supporting documents relating to research ethics governance.

The REO ensures that an effective research ethics governance is in place in the University. It continually develops, implements, and evaluates policies and procedures related to research ethics governance in the University. A major task of the DLSU REO is the provision of administrative and clerical support to the RERC. Among its major tasks are:

- To endorse and undertake a regular re-appraisal of the DLSU Code for the Responsible Conduct of Research;
- To ensure that the conduct of research in the University complies with contemporary universal ethical standards and requirements;
- To promote awareness of research ethics governance among members of the University community;
- To continuously improve and monitor the operational structures for research ethics approval in the University;
- To develop guidelines for good practice in research ethics through the publication of the Standard Operating Procedures (SOPs) for

the RERC for the conduct of ethics reviews;

- To continually undertake the training for the RERC on the conduct of ethical review, and other relevant topics;
- To receive notices/communication on and respond to unfavorable events, particularly related to safety and ethics that may occur in approved studies;
- To consult and advise the concerned sectors of DLSU regarding policies and procedures related to research ethics governance in the University; and
- To seek and maintain certification/ accreditation/recognition from national and international accreditation agencies

## THE RESEARCH ETHICS REVIEW COMMITTEE

The Research Ethics Review Committee (RERC) is primarily tasked to assess the ethics of proposed research protocols and their supporting documents. It is expected to facilitate, not hinder valuable research, and to protect researchers from possible legal action. Its members are appointed by the Vice Chancellor of Research and Innovation (VCRI). They are expected to serve in the Committee for at least three years and are vested with the authority to approve/ disapprove the ethics of a research protocol.

The RERC had been granted full Level 2 three (3)-year accreditation by the Philippine Health Research Ethics Board on

October 26, 2017. Being Level 2 accredited means that the University RERC can review all types of research projects except clinical trials required for FDA registration of new drugs as these may entail more than minimal risk to participants. The RERC can, however, make arrangements for the review of post-marketing studies.

It ensures that the research projects of affiliated members of the University are of the highest standards of scientific integrity and ethical accountability. The primary responsibilities of the RERC are identifying and assessing the risks involved in and the potential benefits of the research; providing guidance to researchers for adherence to the University Code for the Responsible Conduct of Research, and international, national, and disciplinary guidelines on research ethics.

The ethics review process ensures that the health, welfare, dignity, and rights of human participants are safeguarded and that risks to participants, researchers, third parties, and the University are minimized.

The RERC had maintained its full Level 2 Accreditation with PHREB by continually engaging in activities to upgrade its members' ethics review skills and competencies. Its members attended meetings, seminars, and

training workshops, which include: the **PHREB Emerging Ethics Issues Seminar (2014)**, and **Basic Research Ethics Training (2016)**; and the **RERC Standard Operating Procedures Writing Workshop (2017)**, and **Meeting on Data Privacy (2017)**.

Within the university, the RERC members and the REO regularly conduct Research Ethics briefing sessions, forums, orientations, and training seminars for the colleges/school, faculty, and students. As of the end of AY 2016-2017, the RERC had cleared 124 proposals, in various fields including science, engineering, mathematics, software development, economics, philosophy, liberal arts, religion, and so on.

## PROSPECTS

The RERC and REO will embark on a continuing effort to enhance and expand their ethics review competencies and expertise by way of capacity building activities and to further ensure that all DLSU research projects uphold the five research ethics principles, namely Beneficence, Honesty, Justice, Accountability, and Respect for Persons.

# University Research Coordination Office

This consolidated report covers Academic Years (AYs) 2015-2016 and 2016-2017—a period characterized by vibrance and vitality as regards research productivity in the University. The University experienced a sustained and steady inflow of new projects and fresh grants from government agencies, private institutions, and international aid-based funding programs.

Faculty research activities continued to focus on the following research priority areas: 1) Food, Nutrition, and Health, 2) Sustainability, Environment, and Energy, 3) Women, Children, and Family, 4) Living Culture and Contemporary Societies, and

5) Learners and Learning Innovations. For its part, URCO remained faithful to its mandate. It sustained and nurtured a culture of research in the University by providing grants and deloading schemes to faculty members engaged in research projects.

## NEW PROJECTS DURING THE PERIOD

The URCO had a total of 192 new projects for the period AY 2015-2016 to AY 2016-2017, broken down into 126 URCO-managed internally-funded research

The **University Research Coordination Office (URCO)** is a service unit under the Office of the Vice Chancellor for Research and Innovation. It provides valuable support in fulfilling the University's vision-mission through its programs and services. URCO promotes and nurtures a culture of genuine intellectual inquiry, advances inter-and multi-disciplinary studies, and serves as a clearinghouse for information related to faculty research activities on campus, among others, in support of this vision-mission.

It administers the Faculty Research Program, Special Project Grants, and Interdisciplinary Research (IR); monitors externally-funded projects undertaken by the different college research centers; serves as a clearinghouse of research-related information, and disseminates salient findings of completed research projects; provides project development and implementation assistance; documents and assists in the formulation, review, and amendment of guidelines and policies governing research in the University; ensures uniform implementation of policies across colleges/school; and manages research data and handles the retrieval of information in response to the requirement of the research end-users.

The Office is guided by the following strategic goals: alleviation of poverty; promotion of peace, and social justice; protection and welfare of women, youth at risk, and other vulnerable sectors of society; creation of wealth and resources to bridge the various societal divides; provision of models and avenues for stewardship of God's creation; and influencing policy, governance, and management of institutions.

projects (IFRP) and 66 externally-funded research projects (EFRP).

### **Internally-funded Research Projects.**

The 126 IFRP projects include 62 Faculty Research Program (FRP) projects, 28 Interdisciplinary Research projects, 20 Special Project Grants, six Research Program Workshops (RPWs), six Creative Works, and four Review Articles. Meanwhile, the breakdown of the 20 Special Project Grants is as follows: 15 New PhD project grants, three Book/Article Manuscript Writing grants, and two Thesis and Dissertation grants.

The fund sources for the total approved grant of ₱17,428,966.60 for these new projects are: URCO – ₱8,156,572.84, New PhD Grants – ₱1,473,214.35, DLSU Science Foundation – ₱1,217,929.83, College Research Funds – ₱21,629.58, Interdisciplinary Research Grants – ₱5,359,620.00, and Research Program Workshops – ₱1,200,000.

### **Externally-funded Research**

**Projects.** The 66 new externally-funded research projects (EFRP) received a total grant of ₱240,755,237.04 in various denominations. Broken down into fund sources, the grants were awarded by Advance Telecommunications (ADTEL, Inc.); Asia Professional Education Network – Japan ASEAN Integration Fund (APEN-JAIF); BEVTECH, Inc.; Center for International Trade Expositions and Missions; Commission on Higher Education (CHED); CHED-Dare 2; CHED-K to 12 Program Management Unit; CHED-Newton Fund Institutional Links Programme; Department of Science and Technology - National Academy of Science and Technology (DOST-NAST);

DOST - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD); DOST - Philippine Council for Health Research and Development (PCHRD); DOST - Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD); DOST - PCIEERD Grants-In-Aid (DOST-PCIEERD GIA); DOST - Special Projects Division (DOST-SPD); Education, Audiovisual and Culture Executive Agency (EACEA Program ERASMUS +CBHE); European Commission; H.J. Eysenck Memorial Fund; Hivos People Unlimited; La Salle Green Hills; Metrobank Foundation; Monde Nissin Corp.; National Historical Commission of the Philippines; National Kids Online Survey; Office of the Presidential Adviser on the Peace Process (OPAPP); Pagbilao Energy Corp.; Philippine California Advanced Research Institute-CHE; Philippine Institute of Petroleum (PIP); Philippines Australia Human Resource and Organizational Development Facility (PAHRODF); Philippine National Volunteer Service Coordinating Agency; Population Media Center; Private Education Assistance Committee (PEAC); SEAOL Foundation; Sony Pictures; STEAG State Power Plant Inc.; The Asia Foundation; UNILAB Foundation; United Kingdom-Department for Environment, Food and Rural Affairs (UK-DEFRA); United Kingdom-Department of International Development Research Centre (IDRC); United Nations Children's Fund (UNICEF); United Nations Educational, Scientific and Cultural Organization (UNESCO); United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women); University of Queensland; United States Agency for International Development (USAID); USAID - Science, Technology,



Research, and Innovation for Development (STRIDE); USAID-STRIDE - Collaborative Applied Research with Industry (USAID STRIDE CARWIN GRANT); University of Huddersfield Queensgate HDI 3DH/ ERASMUS + Huddersfield, UK; Victoria University Melbourne, Australia; World Health Organization (WHO); and World Wide Web Foundation.

## COMPLETED PROJECTS DURING THE PERIOD

The period saw the completion of 115 internally-funded and 92 externally-funded projects. The 115 completed IFRP are broken down into FRP projects – 53, Special Grants – 29, Interdisciplinary Projects – 18, Research Program Workshop (RPW) projects – 8, Creative Works – 5, and Review Articles – 2. Comprising the 29 completed Special Grants projects are 16 New PhD Grants, five General Education (GE) Modules for Transformative Learning, four Book/Article Manuscript Writing projects, three Sabbatical Leave Projects, and a Thesis/Dissertation project.

Meanwhile, the breakdown of the 92 completed externally-funded projects by centers/institutes is as follows: Angelo King Institute – 17, Social Development Research Center (SDRC) – 20, Center for Engineering and Sustainable Development Research (CESDR) – 16, Jesse M. Robredo Institute of Governance (JRIG) – 14, Center for Natural Sciences and Environmental Research (CENSER) – 10, Advanced Research Institute for Computing (AdRIC) – 6, Center for Business Research and Development (CBRD) – 3, Lasallian Institute for Development and Educational Research (LIDER) – 3, and Br. Alfred Shields Ocean

Research (SHORE) Center Marine Station – 3.

Excluding the RPW projects that do not fall under any research priority area, the rest (199) of the completed projects fall under the following research thrusts: Sustainability, Environment, and Energy – 62, Living Culture and Contemporary Societies – 60, Food, Nutrition, and Health – 30, Women, Children, and Family – 24, and Learners and Learning Innovations – 23.

### Ongoing/Continuing Projects During the Period

The URCO continued to monitor other ongoing and multi-year projects: 175 in AY 2015-2016 and 154 in AY 2016-2017. The office also managed and provided administrative support to 41 ongoing/ multi-year EFRP conducted by the research centers/institutes.

### Research Productivity and Impact Factor During the Period

AYs 2015-2016 and 2016-2017 were years of significant achievements in research in DLSU. For the 3<sup>rd</sup> consecutive year, DLSU emerged as the country's most productive research institution based on publications indexed by Scopus, which is the world's largest abstract and citation database of peer-reviewed literature. Vice Chancellor for Research and Innovation (VCRI), Dr. Raymond Girard R. Tan, Chemistry's Dr. Consolacion Y. Ragasa, and Manufacturing Engineering and Management's Dr. Elmer P. Dadios landed on the Scopus List of Top 10 Most Productive Scopus Paper Authors based on Scopus records as of August 2017.

For the years 2015, 2016, and 2017, the following faculty members consistently

figured among the Philippines' Top 20 Most Productive Scopus Paper Authors: Dr. Ragasa, Dr. Tan, Dr. Dadios, Dr. Michael Angelo B. Promentilla (Chemical Engineering), Dr. Kathleen B. Aviso (Chemical Engineering), Dr. Argel A. Bandala (Electronics and Communications Engineering), and Dr. Aristotle T. Ubando (Mechanical Engineering). Dr. Esperanza Maribel G. Agoo (Biology) and Dr. Virgilio D. Ebajo, Jr. (Office of the VCRI) also landed in the Top 20 list for 2015 and 2016 (as of June 15, 2016), while Dr. Maria Carmen S. Tan (Chemistry), Dr. Anthony Shun Fung Chiu (Industrial Engineering), and Dr. Al Rey C. Villagrancia (Physics) landed on the Top 20 list for 2016 and 2017 (as of August 2017).

## DLSU QUALITY INDICATORS

Moreover, DLSU was the only Philippine private university listed among the research and development institutes in the 2017 Scimago Institutions Ranking (SIR). The SIR "is a classification of academic and research-related institutions ranked by a composite indicator that combines three different sets of indicators based on research performance, innovation outputs, and societal impact measured by their web visibility" (<https://www.scimagoir.com/methodology.php>).

Additionally, the 2018 QS World University Rankings listed DLSU as the first, among all Philippine higher education institutions (HEIs), in terms of citations per faculty member.

### Research Program Workshops (RPWs)

The URCO continued to assist in the development of Centers of Excellence in the eight colleges/school of the University, by providing funds for college-based RPWs that are anchored on a priority thematic area of the college, school, or the University.

The RPW was launched in June 2011 with the following objectives: 1) to enhance the collaboration among faculty and graduate students in the priority areas of research in the colleges/school and the University, 2) to facilitate the development of research agenda and plans that have both theoretical and applied significance, and 3) to provide the necessary resources and support for the writing and submission of proposals for external grants.

The RPWs run within one academic year. They are facilitated by a team of faculty members. Each RPW consists of three phases, each phase corresponds to a term of an academic year. Phase 1 consists of an organized discussion of fundamental issues and key literature in the

	Citations Received Since 1996	
	Cited documents published from 1982 to June 15, 2016:	Cited documents published from 1975 to August 2017:
	1965	2,452
H-index	53	58
Citation count	12,980	17,124

Source: Scopus

research area, Phase 2 serves as the venue for crafting the research problem/s and designs to pursue multi- interdisciplinary studies, and Phase 3 involves the preparation and submission of proposals to external agencies for possible funding.

Within the two academic years (AY 2015-2016 and AY 2016-2017), 30 RPWs generated 18 new projects, which received a considerable amount of funding from various sources, namely, ASEAN University Network/Southeast Asia Engineering Education Development Network (AUN/SEED-Net)/Japan International Cooperation Agency (JICA) – US\$48,740.00; CARDNO-AusAID – Php5,482,160.41; Department of Science and Technology National Research Council of the Philippines (DOST-NRCP) Basic Research Grant – Php992,100.00; DOST and NRCP – Php300,000.00; DOST - Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD) – Php10,998,849.04; DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) – Php3,460,000.00; International Development Research Centre (IDRC) – CAD\$1,104,140.00; Filipino-French Scientific Cooperation Program – Php2,445,161.00; Newton Fund – Php232,696.80; National Economic Development Authority – Php12,000,000; Philippine Institute for Development Studies-University of the Philippine Los Baños-Resources, Environment, and Economics Center for Studies (PIDS-UPLB-REECS) – Php350,000.00; Philippine Institute of Petroleum – Php2,644,850.00; The Sumitomo Foundation – Php219,660.00; United States Agency for International Development – Science, Technology, Research and Innovation

for Development (USAID-STRIDE) – Php3,760,000.00; United States National Academy of Science Partnership for Enhanced Engagement in Research (PEER) Program – US\$300,000.00; and World Bank – Php1,500,125.00.

**Challenge Grants.** In celebration of the University's Centennial Year in 2011, the URCO launched the Challenge Grants (CG). These grants are intended to promote the conduct of research projects that are aligned with the strategic research priority areas of DLSU.

The CG program accords faculty from diverse research backgrounds and disciplines a venue to collaborate, achieve more innovative and participative solutions that address the aforementioned research thrusts, engage in high-impact research, and have greater access to the required external funding.

The research proposals submitted for this grant are expected to affirm the University's support for research that secure positive, meaningful, lasting and inclusive growth in society and contribute to nation-building by aiming to alleviate poverty, promote peace and social justice, protect the welfare of women, youth-at-risk, and other vulnerable sectors of society, create wealth and resources that would bridge the various societal divides, provide models and avenues for stewardship of God's creation, and influence policy, governance, and the management of institutions.

Within the period AY 2015-2016 to AY 2016-2017, 20 proposals were approved under the CG program. These proposals focused on e-learning outreach program for K-to-6 pupils in public schools; air and weather observation system in DLSP

schools for sustainable development; empowering local communities through e-participation; investigating behaviors of Filipino learners based on face, brainwaves, peripheral and motor signals; the threats and opportunities from invasive suckermouth armoured catfishes and their implications for the Philippine Millennium Development Goals; engaging La Salle schools in the identification, conservation, and propagation of Philippine plant species that indicate the presence of heavy metals in soil environment; determining and characterizing the anti-cancer properties of metabolites from selected vegetables, fruits, and mushrooms found in the Philippines; development of an unmanned aerial vehicle-assisted imaging and monitoring systems for algal blooms; determining antibiotic residues in meat tissues from pork, chicken, freshwater aquaculture products, and eggs with the aim of influencing agricultural policy and farm practices; development of a calibrated multipole-objective linear programming interoperability input-output model for disaster risk management in the Philippines; development of a technology transfer model for DLSU micro-hydro power (MHP) system technology for socio-economic sustainability and inclusive development; assessing current practices in service learning in DLSU toward a unified mode of institutionalization; the Advanced New-Keynesian Integrated Microfounded Open-Economy (ANIMO) Forecasting Model; atmospheric research for climate and health educators, researchers and students (ARCHERS); the tilted earth and its effect on performance, and disaster resilience; a roadmap to blended teaching training program for public school teachers; transnational family structures and their

effects on risk behaviors and positive developmental outcomes among Filipino youth; and piloting a 'community-based e-learning and media literacy pisonet' in Metro Manila slums.

## **COLLABORATIONS AND PARTNERSHIPS WITH GOs, NGOs, CSOs, AND OTHER INSTITUTIONS**

Recognizing that scholarly pursuits become more in-depth and meaningful, and their findings become more useful when there is collaboration between the academe and the other sectors of society, the faculty forged and strengthened their local and international partnership with several government, non-government, and civil society organizations, and academic institutions for at least 27 collaborative projects funded by the following: ASEAN Secretariat; Australian Agency for International Development; Australian Aid (AusAID)/United Nations Population Fund (UNFPA) through Nossal Institute Limited; Caucus of Development Non-Government Organizations, Inc.; Commission on Higher Education (CHED); CHED-Philippine Higher Education Research Network; De La Salle Philippines; DLSU-Angelo King Institute for Economic and Business Studies-CBMS; Fund for Assistance to Private Education (FAPE); Food and Agriculture Organization of the United Nations; Global Integrity, Inc.; International Development Research Centre through Universiti Tun Abdul Razak, Malaysia (UNIRAZAK); National Research Council of the Philippines; Office of the Presidential Adviser on the Peace Process; Phil-Australia Community Assistance Program; United Nations Development Programme

(UNDP) - Manila; United Nations Industrial Development Organization; Universite Laval-DFID; University of British Columbia-Social Sciences and Humanities Research Council; World Bank; and World Wide Web Foundation.

The partner organizations/institutions include the Australian Government, and The Asia Foundation; Centre Intruniversitaire sur le Risqué les Politiques et l'emploi (CRIPEE) of Laval University, Canada and Grupo de Analisis para el Desarrollo (GRADE), Peru; Central Philippine University in Iloilo and Iloilo CODE NGO, Cagayan de Oro (Xavier University and the Lopez Group Foundation); Commission on Higher Education (CHED), Regions V, VI, X, and NCR.; Concerned Citizens of Abra for Good Government (CCAGG); Environmental Management Bureau, Quezon City; Food and Nutrition Research Institute; George Washington University, USA; Indigenous Peoples Economic Union; Institute for International Monetary Affairs of Japan, ASEAN +3 Research Group, and the Association of Credit Rating Agencies in Asia (ACRAA); Department of Interior and Local Government, including its LGUs in Cagayan de Oro City, Cotabato City, Iloilo, Laguna, Siquijor, and Taguig; Laguna Lake Development Authority; National Economic Development Authority - Social Development Staff (NEDA-SDS); Office of the Presidential Adviser on the Peace Process (OPAPP), Overseas Workers Welfare Administration (OWWA); Philippine Association of Colleges and Universities (PACU); Polytechnic University of the Philippines (PUP), Philippine Normal University (PNU), Emilio Aguinaldo College (EAC); La Consolacion College, and Knowledge Community, Inc.; Silliman University and University of San Carlos;

Tokyo Institute of Technology; United Nations Population Fund (UNFPA) Philippine Country Office; Likhaan Centre for Women's Health, Persons with Disability Advocating for Rights and Empowerment (PARE), Women with Disabilities Leap Social and Economic Progress (WOW LEAP), and the University of the Philippines Centre for Women's Studies; Universiti Tun Abdul Razak, Malaysia (UNIRAZAK); and University of the Philippines Cebu.

### **Capability-building Seminars/Workshops**

In coordination with the Office of the VCRI, and the different colleges/schools, the URCO continued to undertake initiatives to determine variables that can measure the research productivity of the University. It has likewise offered opportunities to further enhance the research proposal and manuscript writing skills of faculty members of the University, thus promoting the principle of "publish and flourish."

***Refining Research Metrics and Productivity Indicators.*** Inspired by the positive responses received by the initial report on the University's research productivity index, the URCO embarked on a continuing effort to further refine the parameters and variables used and improve the data gathering and validation techniques to provide a more accurate picture of DLSU's research performance in the coming years.

Related to this, it conducted a "Research Metrics Workshop" on August 26-27 and September 2, 2015. It was facilitated by URCO Dr. Feorillo Petronilo A. Demeterio III and participated in by the RASDs and college research committee members of the different colleges/school,



and headed by the members of the Research Metrics Committee, namely, Dr. Demeterio, Dr. Divina M. Edralin, Dr. Ethel C. Ong, Dr. Francisco A. Magno, and Dr. Arlene B. Inocencio. On February 5, 2016, a follow-up forum was held to undertake the metrics revision for the most productive departments. The follow-up forum was facilitated by Dr. Demeterio and Dr. Antonio P. Contreras.

On June 30, 2016, another forum/meeting was held to discuss research metrics and impact. It was facilitated by URCO Director Dr. Demeterio and attended by Dr. Antonio P. Contreras (Political Science), Dr. Benito Teehankee (Management and Organization), Dr. Arnulfo P. Azcarraga (Software Technology), Dr. Luis F. Razon (DLS Food Institute), and Dr. Shirley O. Lua (Bienvenido N. Santos Creative Writing Center).

### ***Holding of Research Proposal***

***Writing Workshops.*** Consistent with its mandate, the URCO regularly held research proposal writing workshops for researchers in various fields.

- Workshop on Research Proposal Writing in the field of Social Sciences: "The Epistemological Axis: Review of Literature, Methodology, and Data Analysis" (This was Part 2 of an earlier workshop)  
Date: June 16, 2017  
**Facilitator:** Dr. Dennis S. Erasga, Behavioral Sciences
- Research Proposal Writing for Researchers in the Social Sciences and Related Fields  
Date: December 8, 2016  
**Facilitator:** Dr. Ma. Caridad H. Tarroja, SDRC

- Research Proposal Writing for Researchers and Scientists: "How to Write a Fundable Research Proposal"  
Date: August 12, 2016  
**Facilitator:** Dr. Aristotle T. Ubando, Mechanical Engineering
- Research Proposal Writing for Researchers in the Field of Social Sciences: "Framing: Strategies in Articulating Research Questions in the Social Sciences"  
Date: July 29, 2016  
**Facilitator:** Dr. Dennis S. Erasga, Behavioral Sciences
- Research Proposal Writing for Researchers in the Field of Humanities and Arts: "Writing Yourself onto Paper: Writing Research Proposals in the Humanities and the Arts"  
Date: July 15, 2016  
**Facilitator:** Dr. Elenita D. Garcia, Philosophy
- Research Proposal Writing for Researchers in the Field of Humanities: "What is Out There Left Unsaid—Exploring Humanities Beyond the Academe"  
Date: March 18, 2016  
**Facilitator:** Dr. Rhoderick V. Nuncio, CLA Vice Dean
- Research Proposal Writing for Researchers in the Field of Social Sciences: "Getting Your Research Published: Keys to Successful Proposal Writing"  
Date: March 11, 2016  
**Facilitator:** Dr. Krista Danielle S. Yu, School of Economics

- Research Proposal Writing for Researchers in the Field of Natural Sciences: "Two Basic Skills for Researchers: Making that Pitch and Writing that Grant Application"

Date: October 16, 2015

**Facilitator:** Dr. Ma. Carmen Ablan-Lagman, Biology

- Research Proposal Writing for Researchers in the Field of Humanities: "Doing Authentic Multidisciplinary Research from the Ground Up: The Experience of the Multidisciplinary Research Team on the Filipino Youth and the Sacred"

Date: September 18, 2015

**Facilitator:** Dr. Jeane C. Peracullo, Philosophy

### ***Publishing in High-Impact Journals.***

The University believes that research can make a significant contribution to the improvement of society. It, therefore, provides faculty members with venues to train on how to get their research works published in high-impact journals to reach out to a wider audience and have greater chances of influencing public policy. During the period, URCO organized several workshops for researchers in the different disciplines and fields.

- Publishing Research Papers in High-Impact Journals in the Field of Humanities: "*Dulce et utile: A Seminar on Stylish Writing in the Theoretical Humanities*"

Date: May 26, 2017

**Facilitator:** Dr. Jeremy C. de Chavez, Literature

- Publishing Research Papers in High-Impact Journals in

Engineering and Related Fields: "Publish and Flourish: Workshop on Publishing in High-Impact Journals"

Date: February 10, 2017

**Facilitator:** Dr. Michael Angelo B. Promentilla, Chemical Engineering

- DLSU Research Leadership Training Program

Date: November 26, 2016

**Speakers:** Atty. Christopher E. Cruz, Dr. Antonio P. Contreras, and Dr. Raymond Girard R. Tan

- Publishing in High Impact Journals for the Social Sciences

Date: November 25, 2016

**Facilitator:** Dr. Ador R. Torneo, Political Science

- Workshop on Publishing in High Impact Journals for Researchers in the Field of Social Sciences: "Publishing in High-Impact/ISI or SCOPUS-indexed Journals: Lessons Learned from the Field"

Date: July 23, 2016 and September 3, 2016

**Facilitator:** Dr. Rito V. Baring, Theology and Religious Education

- Workshop on Publishing in High Impact Journals for Researchers in the Humanities and Related fields: "Publishing Articles Around a Thesis or Dissertation"

Date: April 8, 2016

**Facilitator:** Dr. Ador R. Torneo, Political Science

- Workshop on Publishing in High-Impact Journals for Researchers in the Natural Sciences: "Publishing in High-Impact Journals in Medical and Natural Science"

Date: September 22, 2015

**Facilitator:** Dr. Maria Nilda M. Muñoz, Director, Research and Management and Associate Professor of Medicine, St. Luke's College of Medicine; and Dr. Divina M. Amalin, Biology

**Research Leadership Training Program.** In established research universities worldwide, a doctorate degree is a *de facto* minimum requirement for starting a research career, which may include years of on-the-job experience in research. Current policies in DLSU emphasize the need for basic level research skills by encouraging the pursuit of a Ph.D. degree. However, a doctoral degree by itself does not make the holder an experienced researcher. Considering the prevailing conditions in the country and DLSU, it is imperative to encourage new doctoral degree holders and to optimize the development of their research careers.

To prepare the current pool of research talents to assume the leadership of the next generation of researchers and ensure a seamless transition to a modern research university, DLSU saw the need to embark on initiatives that would deepen the knowledge and hone the skills of its current pool of research talents. Thus, in August and October 2016, the URCO hosted a three-day research leadership training program. The 19 participants were faculty members from DLSU and other La Salle schools. The training program included topics on effective work habits, research ethics, getting funds, getting published, research teams, research mentoring, professional networking,

intellectual property and technology utilization, communicating with the public, and career planning.

**Designing Webpages.** The URCO also held training and tutorial workshops on webpage design for administrative assistants and secretaries to enable them to upload important research-related activities on the websites of their respective centers/institutes. The 1<sup>st</sup> and 2<sup>nd</sup> Tutorial Workshops on Webpage Design for Administrative Assistants and Secretaries were held on March 10, 2017, and May 12, 2017, respectively. The sessions were facilitated by URCO's Ms. Cherry M. de los Santos and Ms. Mary Irene Clare O. Deleña,

## RESEARCH DISSEMINATION ACTIVITIES

During the period, the URCO embarked on several initiatives to provide venues through which faculty members could share the findings of their completed research projects to stakeholders. It held several multidisciplinary research dissemination seminars, conferences, and research congresses during the period. The office coordinated with the Strategic Communication Office for the publication of selected research projects in *Questions Magazine*, in a language and format that can be appreciated even by non-technical readers.

**Research Congress 2016.** The 2016 Congress was anchored on the theme "Responding to the Challenges of the ASEAN Integration." It was held on March 7 to 9, 2016. The keynote speaker was Dr. Wilfrido V. Villacorta, Professor Emeritus of International Relations, DLSU, and Former

Ambassador to the ASEAN. He discussed the "Limitless Opportunities Offered by ASEAN Integration." This was followed by the University Fellows Talk: Dr. Tereso S. Tullao, Jr. tackled the issue, "Can Education Serve as an Avenue for Regional Integration in ASEAN?" and Dr. Alfredo C. Robles, Jr. delved on "Services Trade and Regional Integration in Southeast Asia." Highlighting the Congress was the presentation of the "Sky Farm" Hult Prize Team Project Entry.

The parallel workshops were held in the afternoon of Day 1. The workshop topics included "Increasing Research Productivity," facilitated by Dr. Nelson B. Arboleda, Jr. (Physics) and Dr. Michael Angelo B. Promentilla (Chemical Engineering); "Current Status and Innovation in Food Research," facilitated by Dr. Drexel H. Camacho (Chemistry Department); "The Development of a Technology Transfer Model for the DLSU Micro-Hydro Power System Technology in Barangay Parina, Apayao for Socio- economic Sustainability and Inclusive Development," facilitated by Dr. Alvin B. Culaba (External Relations and Internationalization Office) and Engr. Isidro Antonio V. Marfori III (Mechanical Engineering); "Research Publication: Walking through the Process," facilitated by Dr. Krista Danielle S. Yu (School of Economics); "Social and Professional Responsibility through Research Ethics", facilitated by Dr. Madelene A. Sta. Maria (Director, DLSU Research Ethics Office); "Campus Sustainability," facilitated by Mr. Antonio Carlos M. Maralit (Director, DLSU Campus Sustainability Office); "Natural Products Research: Testing and Evaluation Methods," facilitated by Dr. Ma. Luisa D. Enriquez (Director, CENSER); "Some Multivariate Statistical Techniques for

Knowledge and Pattern Discovery: The Cases of Principal Components Analysis, Clustering Methods, and Association Rules," facilitated by Mr. Robert Neil F. Leong (Mathematics), Dr. Rechel G. Arcilla (Mathematics), and Mr. Daniel Stanley Y. Tan (Software Technology).

Day 2 was keynoted by Prof. Jeffrey G. Williamson, a Laird Bell Professor of Economics, emeritus, Harvard University, and Honorary Fellow, Department of Economics, University of Wisconsin. He talked on "A Century of Regional Inequality in the Philippines." This was followed by the Research Fellows Talk: Dr. Divina M. Amalin (Biological Control Research Unit, CEN SER) discussed the "Identification, Risk Assessment, and Rapid Response to Invasive Pest Species of Agricultural Importance: A Science-based Approach"; Dr. Ma. Carmen Ablan-Lagman (Center for Natural Resources, Biology Department) delved on "Insights from Building a Research Team and Agenda at DLSU"; Dr. Anthony Shun Fung Chiu (Professor and Research Fellow, DLSU) explained "Urban Metabolism"; and Dr. Drexel H. Camacho (Organic Materials and Interfaces Research Unit, CENSER) talked about "Designing New Composite Materials from Biopolymers."

As in Day 1, the afternoon of Day 2 was devoted to parallel sessions on the technical session topics: Food, Nutrition and Health; Sustainability, Environment and Energy; Women, Children and Family; Living Culture and Contemporary Societies; Learners and Learning Innovations; Human Centric Technology; Entrepreneurship, Business and Management; and Theoretical, Philosophical and Historical Studies.

The Congress also featured the Graduate Research Colloquium of the Ramon V. del Rosario College of Business. The keynote speech was delivered by Dr. Benito L. Teehankee (Management and Organization). He talked on "Developing Practical Management Knowledge: Action Research and Critical Realism." Dr. Divina M. Edralin, Vice Dean for Research and Graduate Studies served as moderator.

Dr. Feorillo Petronilo Demeterio III delivered the keynote speech on Day 3. He talked about "DLSU University Research Coordination Office's Role in Stimulating Research in the Lasallian Academic Community." This was followed by the "Interaction with Center Directors" via a talk show format hosted by Dr. Julita Robles (Director, Quality Assurance).

**Research Congress 2017.** The year's Congress was anchored on the theme "The ASEAN ECOSYSTEM @ 50: Change for a More Inclusive Growth." It was held on June 20-23, 2017.

Dr. Tereso S. Tullao, Jr. delivered the keynote address entitled "Is the ASEAN Ready for a Monetary Integration." This was followed by the University Fellows Talk: Dr. Wilfrido V. Villacorta (Professor Emeritus of International Relations) discussed "ASEAN and the Filipino's Future," while Dr. Anthony Shun Fung Chiu (University Fellow, DLSU) tackled "ASEAN's Resource Management Effort Towards SDGs."

The University Fellows talks were followed by the presentation of the 5<sup>th</sup> volume of *Questions Magazine*, the opening of exhibits, and parallel workshops 1 to 5. The workshops discussed "Inobasyon sa Kurikulum ng Filipino Bilang Disiplina sa Antas Tersyarya," with Mr. Ramilito B. Correa (Filipino) as

moderator; featured a "Case Teaching Workshop" and a "Case Writing Workshop," facilitated by Dr. Emilina R. Sarreal (Vice Dean for Research and Graduate Studies, RVRCOB); and a "Roundtable Discussion on Research Ethics," facilitated by Dr. Madelene A. Sta. Maria (Director, REO). One parallel workshop was devoted to the combined research presentation of COS graduate students and the different research units of CENSER.

Day 2 featured the Society of Fellows' Annual Fellowship Lecture. The speakers were Dr. Raymund C. Sison, Head of the Society of Fellows who did the "Introduction of the DLSU Society of Fellows and the 2017 Fellowship," and Dr. Susan M. Gallardo, University Fellow who talked on "Networking and Collaboration for Health and Environmental Research and Innovation."

Dr. Nanak Kakwani (Delhi University) delivered the keynote address entitled "Measuring Equity Using Social Opportunity Function: Empirical Analysis for Selected Countries in Asia." This was followed by the launching of Dr. Kakwani's book *Social Welfare Functions and Development: Measurement and Policy Applications* (co-authored with Dr. Hyun Hwa So).

It also featured Dr. Arnel Onesimo O. Uy (Accountancy) who described the "Corporate Reported Landscape in ASEAN," and Dr. Jazmin B. Llana (Dean, College of Liberal Arts) who explained "Beyond Neoliberal *Kilig*: Finding Love and Politics in the K-Drama 'Love in the Moonlight.'"

The afternoon of Day 2 featured the first set of parallel sessions on the



following themes: Food, Nutrition and Health; Sustainability, Environment and Energy; Women, Children and Family; Living Culture and Contemporary Societies; Learners and Learning Innovations; Human Centric Technology; Entrepreneurship, Business and Management; Theoretical, Philosophical and Historical Studies; and Socio-economic and Political Landscapes. The Graduate Research Colloquium for the Ramon V. del Rosario College of Business (parallel session for doctoral and master's students on their initial research results) was also held in the afternoon of Day 2 with the poster presentations (one-slide oral highlight presentation). Day 2 concluded with the keynote remarks of Dr. Ulrike Guelich (GEM Thailand Team Leader; Global Entrepreneurship Research Association (GERA) Board Member; and Bangkok University School of Entrepreneurship and Management (BUSEM)).

The morning of Day 3 commenced with the second set of parallel sessions on the nine aforementioned themes. The afternoon plenary session was keyed by Dr. Guelich, who elaborated on "ASEAN Regional Entrepreneurship Report." The keynote address was followed by the launching of the GEM Philippine Report and the introduction of the GEM Philippine team by Dr. Tereso S. Tullao, Jr., AKI Director; and the talk on "Philippine Entrepreneurship: The Journey Continues," by Dr. Aida L. Velasco. Mr. George T. Barcelon, President of the Philippine Chamber of Commerce and Industry, served as reactor. The MOD Research Briefing for Applied Corporate Management was also held that afternoon, with Dr. Benito L. Teehankee, Lead Researcher of the CBRD for Business for Human Development Network as speaker.

The day's sessions concluded with poster presentations, an interaction of center directors, and the awarding of certificates for best papers.

Day 4 featured a set of parallel workshops: Workshop 5: Software Technology Department Research Colloquium, and Workshop 6: ASEAN Academic Partnership for Small Business and ICT Knowledge Transfer.

Ms. Courtney Anne M. Ngo (Software Technology) was the overall coordinator of Workshop 5, which was keyed by Dr. Eduardo Gomez-Ramirez of Universidad La Salle, Ciudad de Mexico, Mexico. Dr. Gomez-Ramirez explained the "Applications of Polynomial Artificial Neural Networks." The workshop had three main themes: Natural Language Processing facilitated by Louis Patrice R. Lu and Edward P. Tighe; Government, Transportation, and Health, facilitated by Briane Paul V. Samson; and General Computer Science, facilitated by Neil Patrick A. del Gallego and Teresita C. Limoanco.

Meanwhile, Workshop 6 was graced by Her Excellency Amanda Gorely, Australian Ambassador to the Philippines who gave the opening remarks. After Ambassador Gorely, Dr. Rafael Paguio, Associate Professor of Victoria University, Melbourne, Australia, explained "Small Business/ICT Research: Challenges and Opportunities: Introducing the LIAISE Framework," Ms. Rosario Juan, CEO of Commune PH Café & Bar, talked about "SME and ICT: The Commune PH Café Experience," and Ms. Claudia Ayaquil, Head of Commercial Lending, Fuse Lending, Inc., discussed "Giving Credit to SMEs: The FUSE by Mynt Experience."

The afternoon of Day 4 featured talks on “SME Development Plan (Philippines)” by Ms. Alicia M. Opeña, OIC – Assistant Director, Bureau of Small and Medium Enterprises Development, and Division Chief, Policy Research Division, Department of Trade and Industry; “Echo Session: Small Business and ICT Use—Illustrative Cases” by Dr. Raymund B. Habaradas (Management and Organization) and Ms Paz Esperanza T. Poblador (Marketing and Advertising); and “Facebook Content Orientation and User Engagement of Chosen Social Enterprises in the Philippines” by Ms. Marga Camara, Ms. Razel Lim, Mr. Francis Luigi Natanauan, and Mr. Jason Pascual. The Day 4 sessions were concluded with the closing remarks delivered by Dr. Brian C. Gozun, Dean of the RVR-COB, the awarding of certificates to participants, and a brief period for Reflection/Updates/Next Steps led by Australia-ASEAN Council Project team members.

***Multidisciplinary Research Dissemination (MRD) Conference.***

To establish and strengthen research collaboration among faculty and PhD apprentices from the different colleges and disciplines within the University, several MRD conferences were held within the two academic years. The MRD conferences were held on August 15, 2017, at the Diamond Hotel in Ermita, Manila, with 56 participants; August 24, 2016, also at the Diamond Hotel, with 62 participants; and September 4, 2015, at the Midas Hotel, with 34 participants.

***South Manila Educational Consortium (SMEC) Research Congress 2016.*** The first South Manila Educational Consortium (SMEC) Research Congress

was held on February 3 - 4, 2016, at De La Salle University, Manila. The Congress tackled topics like Food and Nutrition, Youth Studies, Educational Management for Development, Leadership Progress and Sustainability, Language Education and Inclusion, Pedagogy and Technology, Spirituality and the Modern World, Gender Studies, Nutrition and Wellness, Communication and Development, Legislation and Policy, Health and Wellness, Sustainable Cities/ Environment, and Education Mobility and Globalization.

The SMEC is a consortium of schools that was formed in 1974. URCO Director Dr. Demeterio served as its co-chairman in 2016. Its member-schools, which participated in the Congress were Adamson University, De La Salle–College of Saint Benilde, De La Salle University, Emilio Aguinaldo College, Lyceum of the Philippines University, Philippine Christian University, Philippine Normal University, Philippine Women’s University, Santa Isabel College Manila, St. Paul University Manila, St. Scholastica’s College, and University of the Philippines Manila. The other schools that participated in the Congress were Universidad de Manila and Jose Rizal University.

The speakers/presenters from DLSU included Dr. Alexis M. Fillone (Civil Engineering), Dr. Mary Jane C. Flores (Biology), Dr. Myla M. Arcinas (Behavioral Sciences), Dr. Cheryll Ruth R. Soriano (Communication), Dr. Anna Bella Siriban-Manalang (Industrial Engineering), Dr. Marites M. Tiongco (Economics), Ms. Jazmin Chong-Tangsoc (Industrial Engineering), and Dr. Laurence Gan Lim (Mechanical Engineering).

**Questions Magazine.** *Questions Magazine* is an institutional publication that presents research findings in a “laymanized” manner to enable the general public to better appreciate, support, and engage in the various research projects and creative endeavors of DLSU faculty. During the period, *Questions* featured research studies on Asian migration and health, cancer management, sustainable power system, E-waste management, a barangay water project, food and health advocacy, inclusivity in the workplace, LGUs in disaster management, revisiting history, E-learning in public schools, tv ads and cultural rituals, car floatation device, women and youth in parishes, underwater robots, daddy days, architecture of microprocessors, gay nation in revolution, intelligent stethoscope, Lasallian Filipino philosophers, in the margins of literature, youth employment and entrepreneurship in the Philippines, web-based software for disaster risk estimation and analysis, reclaiming Filipino indigenous cultures through teaching and learning, Kiniray-a literature online, a mathematical modeling of tuberculosis in the country, addressing the high incidence of breast cancer in Bacolod City, accessing Universal Health Care, biodegradable water filter—DLSU’s first IPO project, and the best cultivation sites for the algae industry.

## OTHER ACTIVITIES

To provide a venue for the formal discussion of the possible adoption of the journal article format as an alternative format for MA/MS theses, URCO, in coordination with the Office of the VCRI,

held a forum on “Article as an Alternative Format for MA/MS Thesis” on January 29, 2016. URCO Director Dr. Demeterio delivered the opening remarks, while VCRI Dr. Raymond R. Tan tackled “Article Format.” REO Director Dr. Madelene A. Sta. Maria talked on pertinent research ethics policies and guidelines, while CLA Assistant Dean for Research and Advanced Studies Dr. Elenita D. Garcia presented the GS Package. Attending the forum were the deans, RASDs, and graduate and undergraduate program coordinators. A follow-up forum was held on December 9, 2016.

Other activities organized by URCO during the period were:

- World Café Workshop: Special Workshop on Research Productivity  
Date: April 19, 2017  
**Facilitators:** Dr. Feorillo Petronilo A. Demeterio III, URCO Director  
Dr. Raymond Girard R. Tan, VCRI  
Dr. Robert C. Roleda, VCA
- Sustainability Lecture Series  
Date: February 13, 2017  
**Facilitators:** Prof. Anthony Shun Fung Chiu, DLSU  
Prof. Luiz F. Razon, DLSU  
Prof. Ming Xu, DOST ERDT Visiting Professor
- 2<sup>nd</sup> and 3<sup>rd</sup> Run Interdisciplinary Research Fellowships  
Date: March 3-5, 2016 and March 1-3, 2017, respectively  
Hosted by the Office of the VCRI  
Attendees were research fellows, research leaders, PhD apprentices, and GCOE post-doctoral fellows.

## SUPPORT ACTIVITIES FOR RESEARCH CENTERS AND INSTITUTES

At the start of every term, the Office of the VCRI conducts an "Orientation on the Hiring of Research Personnel, and Accounting and Procurement Procedures." The seminar is held in coordination with the Office of Personnel Management, Procurement Office, and the Accounting Office. Within the two academic years, the day-long sessions were held on May 26, 2017; January 13, 2017; September 23, 2016; June 10, 2016; January 22, 2016; and September 11, 2015.

## CULMINATING ACTIVITY

To cap each academic year, the URCO hosts a Faculty and Students Research Recognition Program where the significant contributions and achievements of faculty and students for the past year in the area of research are acknowledged. The annual ceremony recognizes faculty with the most

cited Scopus papers in the areas of Science and Technology, Business and Social Sciences, and Humanities and Education. It also serves as a venue for honoring faculty and students who published in journals cited and abstracted on either Scopus, International Scientific Indexing list, and the Commission on Higher Education list; completed their externally-funded projects; reached milestones in publication throughout their career; and/or authored or co-authored a book. The program also recognizes retired faculty members who contributed to the enrichment and nurturing of research culture in the University.

**Faculty and Students Research Recognition (FSRR) Ceremonies.** The recognition program for AY 2015-2016, and AY 2016-2017, were held on October 7, 2016, and October 6, 2017, respectively.

The FSRR 2016 commenced with an opening prayer that was followed by the Opening Remarks of the VCRI, Dr. Raymond R. Tan, and a Message from Dr. Gerardo C Janairo, Chancellor. University Fellow Dr. Elmer P. Dadios gave the response on behalf of the awardees.

Award for	No. of awardees	
	2017	2016
Faculty members who published with local and international collaborators in Scopus-, ISI-, or CHED- listed journals;	160	140
Undergraduate and graduate students who published in Scopus-, ISI-, or CHED-listed journals	119	84
Faculty members with completed externally-funded projects	100	103
Faculty with most cited works in Scopus in the areas of Science & Technology, Business & Social Science, and Humanities & Education	4	5
Faculty members with publication milestones: <ul style="list-style-type: none"> <li>with the following number of accumulated Scopus papers <ul style="list-style-type: none"> <li>– 5+</li> </ul> </li> </ul>	14	25

Award for	No. of awardees	
	2017	2016
– 10+	14	25
– 25+	7	7
– 50+	3	1
– 75+	–	–
– 100+	–	1
– 125+	1	–
– 150+	–	–
– 175+	–	1
– 200+	1	1
• with the following number of authored/co-authored books		
– 20+	–	2
– 25+	1	–
• with the following number of produced/written/directed films		
– 150+	–	1
Retired faculty whose works have enriched the research culture in DLSU.	Dr. Pag-asa D. Gaspillo (Chemical Engineering)	–

The FSRR 2017 ceremonies started with an invocation led by Dr. Rito V. Baring, TRED Chair. This was followed by the opening remarks of VCRI, Dr. Raymond R. Tan, and a short message from Dr. Robert C. Roleda, Chancellor. Dr. John Frederick D. Tapia of the Chemical Engineering Department gave the response on behalf of the awardees.

## PROSPECTS FOR AY 2017-2018 AND BEYOND

Inspired by DLSU's impressive performance in Scopus, Scimago, and

the QS World University Rankings, URCO vows to embark on initiatives that will help the University maintain and improve its current standings. Apart from providing the administrative and fund support needed by faculty members engaged in research, URCO will offer venues to hone their research and publication skills to prepare them to assume leadership of the subsequent generation of researchers. It will continue to encourage discussions on and refine the RPI to achieve an increasingly accurate and objective picture of faculty research productivity in the University, too.



It will extensively monitor the recently implemented Research Professors' Program, under which research professors who have less teaching loads are expected to produce a number of Scopus or ISI papers. URCO is working on the development of a similar program for graduate students.

In cooperation with the Office of the VCRI and the graduate program coordinators of the concerned colleges/school, URCO will also closely monitor the recently approved option for undergraduate and graduate students to submit a publishable article in place of a full thesis.

To achieve a seamless transitioning to a functional research university, URCO is working on developing a suitable model that may be patterned after the

Humboldtian philosophy and incentive systems to further increase research productivity. It will further intensify the promotion of more vigorous and sustained research collaborations between faculty and students, as well as further boost the conduct of interdisciplinary projects. Efforts will be made to address the imperative of achieving unity of pedagogy and research through more intensive and systematic collaboration between faculty and students. This strategy will deepen and enrich the quality of teaching and learning.

Lastly, with the Office of the VCRI, URCO will explore avenues for the establishment of a research endowment fund that can provide a steady source of funding for scholarly pursuits, especially those aligned with DLSU's research priorities and those that will impact society.

# LIST OF COMPLETED URCO-MANAGED INTERNALLY AND EXTERNALLY FUNDED PROJECTS

## INTERNALLY FUNDED PROJECTS AY 2015-2016

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<b>Faculty Research Program</b>	
Mr. Jasper Vincent Alontaga EMLD	Evaluation of Pre-service Teachers of Google for Education Online Training Modules 14 F U 1TAY15- 3TAY15
Ms. Myla Arcinas <i>Behavioral Sciences</i>	Feminization of Labor Outmigration and Parent-Child Relationship: What the Children Think 09 F U/C 1 03
Mr. Rumel Atienza <i>Industrial Engineering</i>	Textbooks Development for Methods Design and Improvement (METENG or IEPRO2) 09 M U 1TAY13-2TAY13
Dr. Jose Santos Carandang VI Dr. Ma. Luisa Enriquez Dr. Michael Ples <i>Biology</i> Dr. Eric Punzalan <i>Chemistry</i> Dr. Elmer Dadios <i>MEM</i> Dr. Dennis Erasga <i>Behavioral Sciences</i>	Addressing the High Breast Cancer Incidence in Bacolod City 51 F 3TAY14-3TAY15
Mr. Macario Cordel II <i>Computer Technology</i>	Convolutional Neural Network (CNN) Fast Implementation for Vehicle-Type Classification 60 F U 4TAY14-3TAY15
Dr. Elmer Dadios <i>MEM</i>	Genetic Algorithm for Public Transport/Bus Scheduling Problem 11 F U 1TAY14-1TAY15
Dr. Feorillo Demeterio III <i>Filipino</i>	Isang Pagsusuri sa Intelektual na Pamana ng mga Lasalyanong Pantas sa Pilosopiyang Pilipino 15 F U 1TAY14-1TAY15
Dr. Alicia Estrellado Dr. Jerome Ouano <i>CEPD</i>	Hope as an Enhancing Factor in the Relationship Between Academic Resilience and Learning Strategies 24 F U 1TAY14-1TAY15
Dr. Alexis Fillone <i>Civil Engineering</i>	Evaluating Proposed Transportation Infrastructure Projects in Metro Manila Using the Transport Co-Benefit Analysis 22 F U 2TAY11-2TAY12

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
Dr. Laurence Gan Lim <i>Mechanical Engineering</i>	Design and Development of the Mechatronics of an Autonomous Underwater Vehicle 38 F U 3TAY12-3TAY13
Mr. Emmanuel Garcia <i>Chemistry</i>	Chemistry for Business Majors: Activity-based Learning Modules 44 MD (URCO) 2TSY2000-2001
Ma. Alma Maria Jennifer Gutierrez <i>Industrial Engineering</i>	Affective and Attentional Responses to Eco-Label 26 F U 1TAY14-1TAY15
Mr. Miguel Gutierrez Mr. Roberto Caguin <i>ECE</i>	Materials and Curriculum Development for Health Resource System and Design (BIOPEM1) 06 M U 1TAY06-3TAY06
Dr. Richard Hartmann <i>Physics</i>	Excitons in Carbon-based Nanostructure 15 F U/S 3TAY13-2TAY14
Ms. Teresita Limoanco <i>Software Technology</i>	A Study to Determine the Impact of Weekend Exercises in Students' Learning in the Introductory Programming Course 06 F U 1TAY14-2TAY14
Dr. Nino Jose Mateo Mr. Jesus Alfonso Datu <i>CEPD</i>	Towards Building a Filipino Counselor Development Model: A Follow-up Study 19 F U 1TAY12-3TAY12
Mr. Ronaldo Polancos <i>Industrial Engineering</i>	A Mathematical Model that Measures Impacts of Project Changes to Time, Cost and Quality 10 F U 3TAY13-2TAY14
Dr. Michael Angelo Promentilla <i>Chemical Engineering</i>	Computational Investigation of the Microstructure-Transport Property in Cementitious Materials Based on X-ray Microtomography Images 44 F U 3TAY11-3TAY12
Dr. Consolacion Ragasa <i>Chemistry</i> Dr. Esperanza Maribel Agoo <i>Biology</i>	Isolation and Structure Elucidation of Secondary Metabolites from Six <i>Cycas</i> sp. 34 F 1TAY14-3TAY14
Dr. Luis Razon <i>Chemical Engineering</i>	Assessment of Alternative Processes of the Production of Ammonium Compounds from Diazotrophic Cyanobacteria 35 F U 3TAY12-3TAY13
Dr. Dinah Roma <i>Literature</i>	Travel Theory and Criticism: The Contemporary Dilemma 38 F U 2 08
Dr. Conrado Ruiz Jr. <i>Software Technology</i>	Automatic Generation of Paper Pop-up Designs Using 3D Meshes 39 F U 2TAY14-1TAY15
Dr. Andrea Santiago <i>Management and Organization</i>	Facing the Challenges of Working with Family: Practical Tips from One Business Family to Another 18 F U 2TAY11-2TAY12
Dr. Gil Nonato Santos Dr. Nikko Quevada (former DLSU Faculty) <i>Chemistry</i>	Synthesis and Characterization of Metal Oxide Nanostructures Using Static Vapor-Phase Technique 40 F U 3 09
Dr. Cheryll Ruth Soriano <i>Communication</i>	Examining Cultural and Media Rituals in Advertising: A Semiotic Analysis of Television Commercials on Mobile Services 35 F S 2TAY14-1TAY15

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
Ms. Jazmin Chong Tangsoc <i>Industrial Engineering</i>	Evaluation and Comparative Analysis of Both Level 4 Public and Private Hospitals' Performance in the National Capital Region (NCR) 11 F U 1TAY13-1TAY14
Mr. Roderick Yap <i>ECE</i>	Hardware Modeling and FPGA Implementation of Genetic Algorithm-based Controller for a DC to DC Boost Converter 65 F U 4TAY14-3TAY15
<b>Book/Article Manuscript Development</b>	
Dr. Angelyn Lao <i>Mathematics</i>	A Dynamical Analysis of Tuberculosis in the Philippines 29 A U 2TAY15-3TAY15
<b>Creative Works</b>	
Dr. Genevieve Asenjo <i>Literature</i>	Kamatayan sa Isla Boracay: Pagsasalin sa Filipino at Ilustrasyon 17 C U 1TAY14-3TAY14
Dr. Ernesto Carandang II <i>Departamento ng Filipino</i>	Hamog sa Riles - Ikalawang Yugto – Isang Nobela 49 C U 3 11
Mr. Mario Mendez, Jr. <i>Literature</i>	Lumbay ng Dila: Isang Trilohiya 46 C U 3TAY14-4TAY14
<b>General Education Modules for Transformative Learning</b>	
Dr. Ma. Luisa Enriquez Dr. Edgar Vallar Dr. Ma. Cecilia Galvez <i>Physics</i>	Energy and the Environment (A Transformative Learning Approach) 22 GE C 3TAY05-3TAY05
Dr. Jaime Raul Janairo Dr. Eric Punzalan <i>Chemistry</i>	Modules in Understanding Environmental Issues with Chemistry (Chemistry Component of the 6-unit Sciences Courses (Environment Track) for the General Education Curriculum 19 GE C 2TAY05-3TAY05
Dr. Wilfredo Licuanan Ms. Virginia Evasco Dr. Glenn Siasu Dr. Jose Santos Carandang VI Ms. Roima Lim Dr. Florenda Santiago Dr. Emelina Mandia Dr. Josefina de Jesus <i>Biology</i>	SCIENVB GE Biology (Environment) GE 3 05
Dr. Romeric Pobre Dr. Gil Nonato Santos <i>Physics</i>	Transformative Learning Modules on New Materials in Physics 21 GE C 3TAY05-3TAY05
Ms. Teresa Wright Ms. Antonette Talaue <i>Literature</i>	Preparation of Transformative Learning Modules for a Course in HUMALIT 35 GE C 1TAY06-3TAY06

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<b>New Ph.D. Grants</b>	
Dr. Noelle Leslie de la Cruz <i>Philosophy</i>	The Dream King, The Indian Prince, and Jewish Mice: An Hermeneutic Phenomenology of Sequential Art (or Comics) 15 N 1TAY07-1TAY08
Dr. Francisco Franco Jr. <i>Chemistry</i>	Investigation of Light Absorption and Transport Properties of Organic Materials for Solar Cell Applications 35 N 1TAY14-3TAY14
Dr. Jeremiah Joven Joaquin <i>Philosophy</i>	Fundamentality, Time, and Persistence: A Study in the Metaphysics of Realism 13 N 1TAY11-1TAY12
Dr. Michael Mananghaya <i>Chemical Engineering</i>	Theoretical Investigations on Mercury Containing Specie and Carbon Dioxide on the Surface of Calcium Oxide 27 N 1TAY14-1TAY15
Atty. Emily Sanchez-Salcedo <i>Commercial Law</i>	Expanding the Role of the Human Rights Commission for the Protection of Gender Equality: Lessons from Canada 28 N 1TAY14-1TAY15
Dr. Beverly Asistol Sarza <i>Philosophy</i>	As Manlolot Weaves Sabel and Bulol: An Analytic Aesthetic Evaluation and Critique of the Exclusivist Theories of Representation in the Subject Matters of the Indigenous Ifugao and BenCab's Visual Artworks 31 N 2TAY12-2TAY13
Dr. Elaine Tolentino <i>International Studies</i>	Small States' Constraint on Large States in Asymmetric Alliance in the Post-Cold War Era 21 N 1TAY14-1TAY15
Dr. Aristotle Ubando <i>Mechanical Engineering</i>	Selection of Algal Cultivation Sites in the Philippines 58 N 3TAY14-3TAY15
Dr. Arnel Onesimo Uy <i>Accountancy</i>	Analyzing Cost Behavior of Philippine Firms 54 N 3TAY11-3TAY12
<b>Review Article</b>	
Dr. Ruperto Majuca <i>Economics</i>	Bounded Rationality and Macroeconomics: A Review of Literature 29 R U 2TAY14-1TAY15
Dr. Genevieve Asenjo <i>Literature</i>	Contemporary Kinaray-a Literature Online: A Narrative Review with Infographics 31 F U 1TAY14-3TAY14
<b>Sabbatical Leave Project</b>	
Dr. Michael Alba <i>Economics</i>	A Cohort Analysis of Household Saving and Consumption in the Philippines 02 S U 1TAY06-1TAY07
Mr. Allan Borra <i>Software Technology</i>	Parallel Grammar Initiative: A Preliminary LFG Representation of the Tagalog Language Using XLE Specifications 48 S U 3TAY07-3TAY08
Ms. Ma. Angeles Guanzon-Lapeña <i>Psychology</i>	The Reliability and Validity of the Panukat ng Ugali at Pagkatao Computerized Version 35 S U 2TAY06-2TAY07



PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<b>Interdisciplinary Research Project</b>	
Dr. Rechel Arcilla <i>Project Coordinator, Mathematics</i>  <b>Project Team Members:</b> Dr. Madelene Sta. Maria, <i>Psychology</i> Dr. Roseann Tan-Mansukhani, <i>Psychology</i>	Meaning and Predictors of Originality Among Filipino Social and Natural Scientists 06 IR U 2TAY12-2TAY13
Dr. Elmer Dadios <i>Project Coordinator, MEM</i>  <b>Project Team Members:</b> Dr. Laurence Gan Lim, <i>Mechanical Engineering</i> Dr. Florante Salvador, <i>Software Technology</i> Mr. Argel Bandala, <i>ECE</i>	Development of Unmanned Aerial Vehicle Quadrotor Swarm 02 IR 1TAY14-1TAY15
Dr. Adrianne John Galang <i>Project Coordinator, Psychology</i>  <b>Project Team Members:</b> Dr. Rafael Cabredo, <i>ST</i> Ms. Ma. Jenina Nalipay, <i>Psychology</i>	Melody Preference Patterns Model Using Machine Learning: Prospects for a New Instrument 01 IR U 1TAY13-3TAY13
Dr. Anna Bella Manalang <i>Project Coordinator, IE</i>  <b>Project Team Members:</b> Dr. Ma. Carmen Lagman, <i>Biology</i> Dr. Marites Tiongco, <i>Economics</i> Dr. Arlene Inocencio, <i>Economics</i>	Investigating the Climate Change, Land Use Efficiency, and Food Production Nexus in the Philippines 12 IR U 3TAY12-3TAY13
Dr. Josefina Mangahis <i>Project Coordinator, Departamento ng Filipino</i>  <b>Project Team Members:</b> Dr. Maria Caridad Tarroja, <i>Psychology</i> Prof. Jose Victor Jimenez, <i>History</i> Mr. Mark Christian Reyes, <i>TRED</i>	Kahirapan at OFW Phenomenon: Pagdalumat sa Perspektibong Multidisciplinary 06 IR U 1TAY11-2TAY12
Dr. Shirley Tiong-Palisoc <i>Project Coordinator, Physics</i>  <b>Project Team Members:</b> Dr. Michelle Natividad, <i>Physics</i> Mr. Frumencio Co, <i>Mathematics</i>	Morphological and Thickness Analyses of Spin-coated Nafion Films 13 IR U/S 3TAY12 - 3TAY13

## INTERNALLY FUNDED PROJECTS AY 2016-2017

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<b>Faculty Research Program</b>	
Mr. Gerardo Augusto Dr. Archie Maglaya Mr. Neil Stephen Lopez Mr. Josue Robertson Reyes <i>Mechanical Engineering</i>	Review and Revision of Mechanical Engineering Laboratory Manuals 33 M U 2TAY14-2TAY15
Dr. Josephine Borja <i>Chemical Engineering</i>	Development of a Manual of Physical Chemistry Laboratory for Chemical Engineers 28 M U 2TAY07-1TAY08
Ms. Charibeth Cheng <i>Software Technology</i>	Parallel Language Resources for the AseanMT-Phil (the Philippine Component of the Asean Machine Translation project): A Hybrid Bi-directional English-Filipino Statistical Machine Translation System 41 F 3TAY14-3TAY15
Ms. Jocelynn Cu <i>Computer Technology</i>	Investigating Laughter Emotions in Spontaneous Interactions 02 F U 1TAY12-1TAY13
Dr. Jeremy De Chavez <i>Literature</i>	It's More Fun in the Philippines: A Study on the Cultural Politics of Happiness 18 F U 1TAY14-2TAY14
Ms. Ann Dulay <i>Industrial Engineering</i>	Narrowband Powerline Channel Emulator for Residential Environment of the Smart Grid 66 F U 4TAY14-3TAY15
Dr. Ma. Luisa Enriquez <i>Biology</i>	Philippine Blueprint for Natural Products, Inclusive of Primary and Secondary Metabolites, Development and Conservation 19 F U 2TAY16-1TAY17
Ms. Geanne Ross L. Franco <i>Computer Technology</i>	Design and Implementation of a Web-based Thesis Coordinator System (TCS) of the Computer Technology Department 04 F U 1TAY14-1TAY15
Mr. Claro Ganac <i>Marketing Management</i>	Optimum Stimulation Level (OSL) Personality Types and Online Buying Behavior: An Empirical Investigation 01 F U 1TAY15-3TAY15
Dr. Raymund Habaradas <i>Management &amp; Organization</i>	Corporate Social Initiatives and Social Enterprise 03 F U 1TAY14-1TAY15
Dr. Richard Hartmann <i>Physics</i>	Electron Confinement and Pairing in Dirac Materials 09 F U 1TAY15-1TAY16
Mr. Richard Li <i>Industrial Engineering</i>	Development of a Service Quality Tool for University Libraries in the Philippines 44 F U 3TAY14-3TAY15

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
Dr. Wilfredo Licuanan <i>Biology</i> Dr. Maria Angeli Diaz <i>Communications</i> Dr. Arturo Pacificador, Jr. Dr. Rechel Arcilla <i>Mathematics</i>	National Assessment of Coral Reef Ecosystems: Synoptic Investigations of Human Impacts on Nearshore Environments Project 2: Coral Reefs 50 F 3TAY14-3TAY15
Dr. Nancy Llanos <i>Chemistry</i>	Analysis of Omega -3 Fatty Acids and Heavy Metals in <i>Eucheuma denticulatum</i> (Guso) and <i>Caulerpa lentillifera</i> (Lato) 32 F U/S 1TAY14-3TAY14
Mr. Elmer Magsino <i>Civil Engineering</i>	Development of a Controller Board with On-board Sensors for Unmanned Rotor-based Aerial Vehicles 25 F U/S 1TAY14-1TAY15
Mr. Isidro Antonio Marfori III Mr. Byron Michael Omboy <i>Mechanical Engineering</i>	Design and Development of a Low-cost Dynamic Balancing Machine 49 F U 3 04
Dr. Jose Edgar Mutuc <i>Industrial Engineering</i>	A Course Manual Development for Organization Decisions and Design Part 1 10 M U 1TAY10-2TAY10
Dr. Andres W.C. Oreta <i>Civil Engineering</i>	Assessment of Independent and Cooperative Problem Solving in the Course on Theory of Structures 09 F U 1TAY14-2TAY14
Dr. Michael Promentilla <i>Chemical Engineering</i> Dr. Jonathan Dungca <i>Civil Engineering</i>	Mix Optimization and Life Cycle Analysis of Ternary Blend Geopolymer from Coal Fly Ash, Coal Bottom, and Rice Hull Ash 54 F 3TAY14-3TAY15
Dr. Rachel Quero <i>Management and Organization</i>	Assessment of Corporate Responses to Sustainability Imperatives: Emerging Practices on Sustainability and Humanistic Management With Dr. Divina Edralin and Dr. Ma. Victoria Tibon 02 F U 1TAY14-1TAY15
Dr. Consolacion Ragasa <i>Chemistry</i>	Isolation and Structure Elucidation of Secondary Metabolites from Six Edible Mushrooms 63 F U 4TAY14-1TAY16
Dr. Gliceria Ramos <i>Biology</i>	Expression Patterns of Antioxidative Enzyme Genes of Postimplantation Embryos Conceived by Ethanol-treated Female Mice Supplemented with a-tocopherol 43 F U/S 3TAY09-1TAY12
Dr. Antoinette Raquiza <i>Political Science</i>	Politics, Policy and Profit: Toward a Social History of Philippine Capitalism 26 F U 2 11
Dr. Emily Sanchez Salcedo <i>Commercial Law</i>	Women Law Professors in the Philippines Then, Now and Six Decades in Between: The Cheerless Transformation of a Road Less Traveled by to a Path Oft-Chosen for Convenience 17 F U 2TAY15-1TAY16
Dr. Rosemary Seva <i>Industrial Engineering</i>	Analysis of Motorcycle Driving Accidents in Metro Manila: Crash Typing 39 F U 3TAY10-3TAY11

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
Dr. Rosemary Seva <i>Industrial Engineering</i>	Development of Credibility Index for SMEs (CIS) 13 F U 1TAY15-1TAY16
<b>Book/Article Manuscript Development</b>	
Dr. Agnes Brazal <i>TRED</i>	Postcolonial Theology 46 A U 3TAY15-2TAY16
Dr. Dominador Bombongan Jr. <i>TRED</i>	<i>Evangelii Gaudium</i> : The Ecclesiological Vision of Pope Francis and Its Implications for Church Renewal and Praxis 45 A U 3TAY15-1TAY16
Dr. Agnes Brazal <i>TRED</i>	Mary as Type and Model of Church in <i>Lumen Gentium</i> : Reception in Asia 25 A U 2TAY15-3TAY15
<b>Creative Works</b>	
Mr. Carlito Casaje <i>Literature</i>	Mishima: Confessions of a Mask 23 C U 2TAY15-2TAY16
Dr. Genevieve Asenjo <i>Literature</i>	Isang Mahabang Kasaysayan ng Pag-ibig 43 C U 3TAY15-3TAY16
<b>Dissertation Project</b>	
Mr. Raymond Allan Vergara <i>Marketing Management</i>	A Study of Crowdfunding Stakeholders Characteristics and Experiences that Affect Outcomes of Philippine-based Campaigns 32 D U 3TAY15-3TAY16
<b>New Ph.D. Grants</b>	
Dr. Rafael Espiritu <i>Chemistry</i>	Biochemical and Pharmacological Evaluation of Proteinaceous Toxins Isolated from Fire Corals Belonging to the Genus <i>Millepora</i> 52 N 3TAY14-3TAY15
Dr. Rodiel Ferrer <i>Accountancy</i>	Financial Performance, Liquidity, Financial Leverage and the Extent of Their Compliance with IFRS3 Business Combination Between 2006-2010: A Test of Ross' Signaling Theory 47 N 3TAY10-3TAY11
Dr. Willard Enrique Macaraan <i>TRED</i>	When BECs Integrate Socio-Economic Component: The Case of Selected BECs in the Diocese of Boac 18 N 3TAY13-2TAY14
Dr. Ron Resurreccion <i>Psychology</i>	Filipino Translation and Validation of the Values in Action Inventory of Strengths (VIA-IS) 40 N 3TAY12-3TAY13
Dr. Asuncion Sebastian <i>Political Science</i>	Non-Financial Services as Tools for Inclusive Development: The Philippine MFI Experience 07 N 1TAY15-1TAY16
Dr. Charlle Sy <i>Industrial Engineering</i>	Robust Decision Support System for Closet-Loop Repair and Replenishment Network 12 N 1TAY14-1TAY15
Dr. Homer Yabut <i>Psychology</i>	The Development of Filipino Spirituality Scale 14 N 1TAY12-1TAY13

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<b>Interdisciplinary Research Project</b>	
Dr. Nilo Bugtai <i>Project Coordinator, MEM</i>  <b>Project Team Members:</b> Dr. Jade Dungao, <i>Physics</i> Engr. Renann Baldovino, <i>MEM</i>	Development of a Cost-effective Robotic Exoskeleton for the Upper-Limb Rehabilitation of Stroke Patients in the Philippines 02 IR 1TAY15-1TAY16
Dr. Emelina Mandia <i>Project Coordinator, Biology</i>  <b>Project Team Members:</b> Dr. Jose Isagani Janairo, <i>Biology</i> Mr. Lawrence Victor Vitug, <i>Biology</i> Dr. Aristotle Ubando, <i>Mechanical Engineering</i> Dr. Rafael Espiritu, <i>Chemistry</i>	Starting up a Microalgae Culture collection at DLSU with Profiling of Selected bio-compounds from Freshwater Microalgae Collected in the Vicinity of DLSU-Science & Technology Complex, Biñan, Laguna 10 IR 4TAY14-3TAY15
Dr. Elmer P. Dadios <i>Project Coordinator, Mechanical Engineering</i>  <b>Project Team Members:</b> Dr. Alvin B. Culaba, <i>Mechanical Engineering</i> Dr. Bjorn Santos, <i>Biology</i> Dr. Edwin Sybingco, <i>ECE</i> Dr. Aristotle T. Ubando, <i>Mechanical Engineering</i>	Automated Microalgae Growth Rate Characterization Using Vision System 03 IR 3TAY14-3TAY15
Dr. Melanie David <i>Project Coordinator, Physics</i>  <b>Project Team Members:</b> Dr. Alvin Culaba, <i>Mechanical Engineering</i> Dr. Aristotle Ubando, <i>Mechanical Engineering</i> Dr. Al Rey Villagrancia, <i>Physics</i> Dr. Nelson Arboleda, <i>Physics</i>	A Molecular Dynamics Investigation of Extracting Water from <i>Nannochloropsis</i> sp.: A First Step in the Design, Fabrication and Testing of Novel Catalytic Materials in Microalgae Drying for Biofuel Production 05 IR 3TAY14-3TAY15
Dr. Mariquit de Los Reyes <i>Project Coordinator, Biology</i>  <b>Project Team Members:</b> Dr. Consolacion Ragasa, <i>Chemistry</i> Mr. Glenn Oyong, <i>CENSER</i>	Isolation, Structure Elucidation, and Cytotoxicity Studies on Six Plants from DLSU-STC 04 IR U/S 1TAY14-3TAY14



PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
<p>Mr. Daniel Stanley Tan <i>Project Coordinator, Software Technology</i></p> <p><b>Project Team Members:</b>  Ms. Ann Franchesca Laguna, <i>Computer Technology</i>  Dr. Angelyn Lao, <i>Mathematics</i>  Dr. Divina Amalin, <i>Biology</i>  Ms. Courtney Anne Ngo, <i>Software Technology</i></p>	<p>Cacao Black Pod Rot Management Using Mobile Application 12 IR 4TAY14-1TAY16</p>
<p>Dr. Nelson Marcos <i>Project Coordinator, Software Technology</i></p> <p><b>Project Team Members:</b>  Mr. Briane Paul Samson, <i>Software Technology</i>  Dr. Gerardo Largoza, <i>Economics</i></p>	<p>Visualization and Simulation of CBMS Data 02 IR 3TAY13-1TAY14</p>
<p>Dr. Arnel Onesimo Uy <i>Project Coordinator, Accountancy</i></p> <p><b>Project Team Members:</b>  Dr. Ramund Habaradas, <i>MOD</i>  Dr. Reynaldo Bautista Jr., <i>MAD</i></p>	<p>Agriculture and Fisheries Sector-Business Model Development and Evaluation (CCRES Project) 06 IR 3TAY15-1TAY16</p>
<p>Dr. Divina Edralin <i>Project Coordinator, MOD</i></p> <p><b>Project Team Members:</b>  Dr. Maria Victoria Tibon, <i>MOD</i>  Mr. Junius Yu, <i>DSI</i>  Ms. Paz Esperanza Poblador, <i>MAD</i></p>	<p>Creativity, Innovation, and Sustainability: Insights of EntrePinays in the Handicrafts Industry 06 IR 4TAY14-3TAY15</p>
<p>Dr. Melanie David <i>Project Coordinator, Biology</i></p> <p><b>Project Team Members:</b>  Dr. Nelson Arboleda, <i>Physics</i>  Dr. Emmanuel Rodulfo, <i>Physics</i>  Dr. Al Rey Villagrancia, <i>Physics</i>  Mr. John Vincent Morales, <i>Mathematics</i></p>	<p>Theoretical Studies on Quantum Transport Properties of Boron Nitride Nanotubes 04 IR U/S 1TAY12-1TAY13</p>
<p>Dr. Nelson Arboleda <i>Project Coordinator, Physics</i></p> <p><b>Project Team Members:</b>  Dr. Gerardo Janairo, <i>Chemistry</i>  Dr. Michelle Natividad, <i>Physics</i></p>	<p>First Principles Study on the Absorption of Hydrogen on the Zigzag Edge of Bilayer Graphene 11 IR U 3TAY11-3TAY12</p>

PROPONENT(S)/DEPARTMENT	PROJECT TITLE/NUMBER
Dr. Nelson Arboleda <i>Project Coordinator, Physics</i>  <b>Project Team Members:</b> Dr. Melanie David, <i>Physics</i> Mr. Gregory Cu, <i>Software Technology</i>	Designing Materials for Emotion Detection Devices 09 IR S/C 3TAY10-3TAY11

## EXTERNALLY FUNDED PROJECTS

### AY 2015-2016

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Angelo King Institute for Economic and Business Studies (DLSU-AKI)</b>		
Dr. Krista Danielle S. Yu ( <i>Economics</i> ) Dr. Marites M. Tiongco ( <i>Economics</i> ) Dr. Kathleen B. Aviso ( <i>Chemical Engineering</i> ) Dr. Michael Angelo B. Promentilla ( <i>Chemical Engineering</i> )	Comparison of Vulnerability of Developed and Developing Economies to Disaster Ripple Effects: The Case of Japan and the Philippines SOE AKI 57 I 3TA14-3TA15	The Sumitomo Foundation
Dr. Celia M. Reyes CBMS Network Team	AMICAF Step 2: Household Vulnerability to Food Insecurity Resulting from Climate Change in the Philippines: Impact Assessment, Profiling and Mapping of Vulnerable Households and Policies SOE AKI 18 I	Food and Agriculture Organization of the United Nations
Dr. Jesus C. Dumagan ( <i>Economics</i> )	Relative Prices and Real GDP	AKI Research/Support Grants
Dr. Angelo A. Unite ( <i>Economics</i> ) Ms. Ailyn A. Shi ( <i>Economics</i> ) Dr. Michael J. Sullivan ( <i>Outsider</i> )	Women on Top: Diversity in Gender and Education Profiles of Top Management and Board of Directors of Philippines Publicly-traded Firms (Discussion Paper)	AKI Research/Support Grants
Dr. Angelo A. Unite ( <i>Economics</i> ) Ms. Ailyn A. Shi ( <i>Economics</i> ) Dr. Michael J. Sullivan ( <i>Outsider</i> )	Gender Diversity in Boards and Performance of Philippine Publicly Traded Firms: Do Women Matter? (Discussion Paper)	AKI Research/Support Grants
Ms. Mitzie Irene P. Conchada ( <i>Economics</i> ) Dr. Marites M. Tiongco ( <i>Economics</i> )	Making Social Protection Work for the Informal Sector: The Case of PhilHealth and AlkanSSSy Program for the Self-employed in the Services Sector	AKI Research/Support Grants
Mr. Christopher James R. Cabuay ( <i>Economics</i> )	Impact of Remittances on Youth Employment Decisions and Entrepreneurship: Evidence from the Philippines	AKI Research/Support Grants
Dr. Brian C. Gozun ( <i>Decision Sciences and Innovation</i> ) Dr. John Paolo R. Rivera ( <i>Economics</i> )	Youth Employment and Entrepreneurship in the Philippines	AKI Research/Support Grants

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Junette A. Perez <i>(Financial Management)</i> Mr. Denmark C. Alarcon <i>(Financial Management)</i> Mr. Mar Andriel S. Umali <i>(Financial Management)</i>	Credit Risk Factors and Access to Finance: Evidence from the CBMS Philippine Entrepreneurship	AKI Research/Support Grants
Ms. Paulyne J. Castillo <i>(Economics)</i> Ms. Mitzie Irene P. Conchada <i>(Economics)</i> Dr. Divina M. Edralin <i>(Management and Organization)</i> Dr. Marites M. Tiongco <i>(Economics)</i>	Promoting Entrepreneurship to Address Youth Unemployment	AKI Research/Support Grants
<b>Center for Business Research and Development (CBRD)</b>		
Dr. Ma. Andrea L. Santiago <i>(Management and Organization)</i> Ms. Shieradel V. Jimenez <i>(Management and Organization)</i> Mr. John Andrew See <i>(Management and Organization)</i> Mr. Florenz Z. Tugas <i>(Accountancy Department)</i> Dr. Arnel Onesimo O. Uy <i>(Accountancy)</i> Mr. Mar Andriel S. Umali <i>(Financial Management)</i> Dr. Divina M. Edralin <i>(Management and Organization)</i> Dr. Rachel A. Quero <i>(Management and Organization)</i> Dr. Ma. Victoria P. Tibon <i>(Management and Organization)</i> Ms. Cresilda Caning (RA) Dr. Raymund B. Habaradas <i>(Management and Organization)</i> Ms. Pia Redempta Manalastas <i>(Management and Organization)</i> Ms. Ma. C.P. Assumpta C. Marasigan <i>(Management and Organization)</i> Mr. Patrick H. Aure (RA)	Assessment of Corporate Responses to Sustainability Imperatives  CHED-PHERNet 53e L 2TA14-1TA15	CHED-PHERNet

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Advanced Research Institute for Informatics, Computing and Networking (AdRIC)</b>		
Dr. Arnulfo P. Azcarraga ( <i>Software Technology</i> ) Mr. Gerardo Dineros (RA) Mr. Angelo Juan Ramos (RA) Mr. Jonathan David Flavier	Get Better (A Collective Sharing and Learning System Among Health Professionals towards Quality Health Care in the Philippines) CCS AdRIC 23 I 2TA13-2TA14	World Health Organization (WHO-TDR)
Mr. Federico Gonzalez (AdRIC)	Nokia Phase II CCS AdRIC 7 L 2TA11-3TA11	Nokia
<b>Lasallian Institute for Development and Educational Research (LIDER)</b>		
Dr. Maria Fe A. Ferrer ( <i>Educational and Leadership Management</i> ) Dr. Alicia Bustos-Orosa ( <i>Counseling and Educational Psychology</i> ) Dr. John Addy S. Garcia ( <i>Counseling and Educational Psychology</i> ) Dr. Jerome A. Ouano ( <i>Counseling and Educational Psychology</i> ) Dr. Marikita T. Evangelista ( <i>Educational and Leadership Management</i> )	An Evaluation Study of the Provision of the Quality Early Childhood Care and Development (ECCD) for Young Children in Post-Yolanda Tacloban BAG CED LIDER 45 I 1TA14-1TA15	Save the Children International
Dr. Maricar S. Prudente ( <i>Science Education</i> ) Ms. Joyce F. Orillosa ( <i>Educational and Leadership Management</i> )	Schools Division Superintendent (SDS) Training Program Batch 3 CED LIDER 08 I 2TA12 - 3TA13	Australian Agency for International Development (AusAid)
<b>Center for Engineering and Sustainable Development Research</b>		
Dr. Elmer Jose P. Dadios ( <i>Manufacturing Engineering and Management</i> ) Dr. Laurence A. Gan Lim ( <i>Mechanical Engineering</i> ) Mr. Melvin K. Cabatuan ( <i>Electronics and Communications Engineering</i> )	Development of Breast Cancer Self Examination (BSE) Multimedia System for the Philippines  CHED-PHERNet 53g L 2TA14-1TA15	CHED-PHERNet
Dr. Luis F. Razon ( <i>Chemical Engineering</i> ) Dr. Esperanza Maribel G. Agoo ( <i>Biology</i> )	Screening of Indigenous Plants as Biodiesel Feedstock  CHED-PHERNet 53f L 2TA14-1TA15	CHED-PHERNet



PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Raymond Girard R. Tan (Chemical Engineering)	Development of Inoperability Input-Output Model (IIM) for the Philippines	CHED-PHERNet
Dr. Kathleen B. Aviso (Chemical Engineering)	CHED-PHERNet 53a L 2TA14-1TA15	
Dr. Krista Danielle S. Yu (Economics)		
Dr. Raymond Girard R. Tan (Chemical Engineering)	Development of Process Systems Engineering (PSE) Approaches to the Design and Operation of Low-Carbon Energy Systems	CHED-PHERNet
Dr. Kathleen B. Aviso (Chemical Engineering)	CHED-PHERNet 53b L 2TA14-1TA15	
Dr. Michael Angelo B. Promentilla (Chemical Engineering)		
Dr. Aristotle T. Ubando (Mechanical Engineering)		
Dr. Susan M. Gallardo (Chemical Engineering)	IPOPs Package 5: Conduct of National Inventory of POPS-contaminated Sites and Development of National Strategy for Management of POPS-Contaminated Sites	AECOM Phil. Consultants Corporation
c/o Dr. Michael Angelo B. Promentilla (Chemical Engineering)	GCOE CESDR 19 L 1TA12-3TA13	
<b>Social Development Research Center</b>		
Dr. Marlon D. Era (Behavioral Sciences)	Developing Competencies of Middle Level Health Workers and Maximizing their Roles in Task-sharing in the Philippines	Population Services Pilipinas, Inc.
Dr. Roberto E. Javier, Jr. (Psychology)	CLA SDRC 55 L 3TA14-1TA15	
Prof. Cristina A. Rodriguez (Behavioral Sciences)		
Dr. Dan Michael Pineda Ms. Annabelle B. Bonje Dr. Romeo B. Lee (Behavioral Sciences)		
Dr. Exaltacion E. Lamberte (Behavioral Sciences)	Sow the SEEDS of Change: Local BEST Practices in Disaster Risk Reduction Efforts	Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)
Dr. Melvin A. Jabar (Behavioral Sciences)	CLA SDRC 72 L 1TA15-2TA15	
Dr. Myla M. Arcinas (Behavioral Sciences)	Conflict of Interest in Infant and Young Child Nutrition Among Health Professional and Health Professionals Societies	World Health Organization (WHO)
Dr. Roseann Tan Mansukhani (Psychology)	CLA SDRC 70 I 1TA15-2TA15	
Ms. Yellowbelle del Mundo Duaqui (Behavioral Sciences)		
Ms. Klarizze Valdoria (RA)		

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Maria Caridad H. Tarroja (Psychology) Ms. Ma. Araceli Alcala (RA) Ms. Agnes Villegas (RA) Ms. Anna Cerezo (RA)	Review of the Status of Mental Health Promotion in the Western Pacific Region  CLA SDRC 69 I 1TA15-1TA15	World Health Organization (WHO)
Dr. Roberto E. Javier, Jr. (Psychology) Dr. Melvin A. Jabar (Behavioral Sciences) Ms. Mitzie Irene P. Conchada (Economics) Ms. Klarizze Valdoria (RA) Mr. Crisanto Q. Regadio, Jr. (Behavioral Sciences)	Qualitative Analysis on the Feasibility of a Universal Social Pension in the Philippines  CLA SDRC 66 L STA14-1TA15	Coalition of Services of the Elderly, Inc. (COSE)
Dr. Maria Caridad H. Tarroja (Psychology) Ms. Ma. Araceli Alcala (RA) Ms. Anna Cerezo (RA)	Development/Adaptation and Pilot Testing of Culturally Appropriate Content (SMS-based text messages) that will be Utilized to Implement the Cessation Intervention in the Philippines  CLA SDRC 67 I STA14-1TA15	World Health Organization (WHO)
Dr. Melvin A. Jabar (Behavioral Sciences) Mr. Crisanto Q. Regadio, Jr. (Behavioral Sciences) Ms. Klarizze Valdoria (RA) Mr. Zaldy Collado (RA)	Baseline Study and Formative Assessment of Holcim Philippines' Fostering A Child's Education (FACE) Project  CLA SDRC 54 L 3TA14-STA15	Holcim Philippines
Dr. Maria Caridad H. Tarroja (Psychology) Dr. Roberto E. Javier, Jr. (Psychology)	Improving HIV Programme Access and Programme Coverage for Key Populations in the Philippines: Geographical and Programmatic Mapping Study in Quezon City, Philippines	Family Planning Organization of the Philippines, Inc. (FPOP)
Dr. Hazel T. Biana (Philosophy) Dr. Melvin A. Jabar (Behavioral Sciences) Dr. Homer J. Yabut (Psychology) Mr. Crisanto Q. Regadio, Jr. (Behavioral Sciences)	Reclaiming Filipino Indigenous Cultures through Teaching and Learning	United Board for Christian Higher Education in Asia (UBCHEA)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Dennis S. Erasga <i>(Behavioral Sciences)</i> Dr. Antonio P. Contreras <i>(Political Science)</i> Dr. Roberto E. Javier, Jr. <i>(Psychology)</i> Dr. Marlon D. Era <i>(Behavioral Sciences)</i> Dr. Dan Michael Pineda	Whose Health, Whose Vulnerability: A Stakeholder Approach in Assessing Health- related Vulnerability and Adaptation in the Philippines  CLA SDRC 49 L 2TA14-3TA14	The Oscar M. Lopez Center for Climate Change Adaptation and Disaster Risk Management Foundation, Inc. (The OML Center)
Dr. Romeo B. Lee <i>(Behavioral Sciences)</i> Dr. Arturo Y. Pacificador, Jr. <i>(Mathematics)</i> Dr. Marites M. Tiongco <i>(Economics)</i> Dr. Maria Caridad H. Tarroja <i>(Psychology)</i> Ms. Ma. Angeles G. Lapeña <i>(Psychology)</i> Dr. Melvin A. Jabar <i>(Behavioral Sciences)</i> Ms. Mitzie Irene P. Conchada <i>(Economics)</i> Dr. Exaltacion E. Lamberte <i>(Behavioral Sciences)</i> Dr. Ma. Divina Gracia Z. Roldan <i>(Political Science)</i> Dr. Liberty Nolasco <i>(Management and Organization)</i> Ms. Ma. Ella C. Oplas <i>(Economics)</i> Dr. Roberto E. Javier, Jr. <i>(Psychology)</i> Ms. Jessica Albaniel (RA) Ms. Charisse Tan (RA)	How DOH and Other interventions Close the Gap in Health Outcome Discrepancies among LGUs  CLA SDRC 48 I 2TA14-3TA14	Delegation of the European Union to the Philippines (EU)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Prof. Ma. Angeles G. Lapeña <i>(Psychology)</i> Dr. Gary Mariano <i>(Communication)</i> Dr. Melvin A. Jabar <i>(Behavioral Sciences)</i> Dr. Homer J. Yabut <i>(Psychology)</i> Prof. Cristina A. Rodriguez <i>(Behavioral Sciences)</i>	Communication Analysis on Material and Neonatal Health with Emphasis on the Role of Community Health Teams in Facilitating the Adoption of Positive Behaviors in the Context of Conflict and Rapid Urbanization in Selected LGUs  CLA SDRC 46 I 1TA14-2TA15	United Nations Children's Fund (UNICEF)
Dr. Exaltacion E. Lamberte <i>(Behavioral Sciences)</i> Dr. Melvin A. Jabar <i>(Behavioral Sciences)</i>	Yolanda Aftermath: Disaster Risk Reduction Responses, Needs, Optimism, and Sentiments of Economically-Disadvantaged Families in Leyte  CLA SDRC 44 L 1TA14-2TA14	Department of Science and Technology (DOST-PCHRD) Philippine Council for Health Research and Development
Dr. Antonio P. Contreras <i>(Political Science)</i> Mr. Alexie Basileyo (RA)	Adapting to Climate Change in Peri-urban Southeast Asia  CLA SDRC 12 I 2TA12-2TA15	Asian Institute of Technology
Ms. Ma. Angeles G. Lapeña <i>(Psychology)</i> Dr. Homer J. Yabut <i>(Psychology)</i> Prof. Cristina A. Rodriguez <i>(Behavioral Sciences)</i>	Health Facility Assessment on Zuellig Family Foundation's Donated Barangay Health Stations and Birthing Units  CLA SDRC 25 L 2TA13-3TA13	Zuellig Family Foundation
<b>Center for Natural Sciences and Environmental Research</b>		
Dr. Ma. Carmen Ablan-Lagman <i>(Biology)</i>	Enhanced Marine Natural Resource and Biodiversity Management in the Philippines by Extending Population Connectivity Research  COS CENSER 02 I 1TAY12 - 1TAY13	United States National Academy of Sciences, Engineering, and Medicine and the United States Agency of International Development (USAID)
Dr. Jose Santos R. Carandang VI <i>(Biology)</i> Dr. Eric R. Punzalan <i>(Chemistry)</i> Dr. Ma. Luisa D. Enriquez <i>(Physics)</i> Dr. Elmer Jose P. Dadios <i>(Manufacturing Engineering and Management)</i> Dr. Michael B. Ples <i>(Biology)</i>	Addressing the High Breast Cancer Incidence in Bacolod City  CHED-PHERNet 53i L 2TA14-1TA15	CHED PHERNet

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Dennis S. Erasga (Behavioral Sciences) Ms. Ma. Ellenita de Castro (Biology)		
Dr. Consolacion Y. Ragasa (Chemistry) Dr. Esperanza Maribel G. Agoo (Biology)	Isolation and Structure Elucidation of the Chemical Constituents from the Dichloromethane Extracts of Twelve Philippine Endemic Cycas Species  CHED-PHERNet 53h L 2TA14-1TA15	CHED PHERNet
Dr. Nelson B. Arboleda (Physics) Mr. Al Rey C. Villagracia (Physics) Dr. Melanie Y. David (Physics) Dr. Alvin B. Culaba (Mechanical Engineering) Dr. Aristotle T. Ubando (Mechanical Engineering)	A Molecular Dynamics Investigation of Water Extraction in the DOPC/DPPC/DSPC Lipid Bilayer of Microalgae, <i>Chlorella vulgaris</i>  CHED-PHERNet 53c L 2TA14-1TA15	CHED PHERNet
Dr. Drexel H. Camacho (Chemistry)	Polymer Electrolyte Systems-based on Carageenan for Solid State Dye-sensitized Solar Cell  COS CENSER 15 L 3TA12-2TA13	Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD)
Mr. Lorenzo D. V. Alba (Chemistry)	Synthesis of Polylysine Dendrimer-modified Polyethylene Glycol Micelles for Anticancer Drug Loading  COS CENSER 03 L 1TAY12 - 1TAY13	Department of Science and Technology (DOST-NCR)
Dr. Edgar A. Vallar (Physics) Dr. Ma. Cecilia D. Galvez (Physics) Mr. Ernest Macalalad (RA) Mr. Patrick Ocampo (RA) Mr. Ramil Recentes (RA) Lung-chih Tsai (RA) Tung-Yuan Hsiao (RA)	FORMOSAT3/COSMIC Tri-band Beacon Data Utilization for Total Ionospheric Electron Content (Ionospheric TEC) Measurements  COS CENSER 66 I 2TA07-3TA11	National Central University (NCU), Taiwan



PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Jesse M. Robredo Institute of Governance</b>		
Dr. Francisco A. Magno (Political Science) Dr. Alvin B. Culaba (Mechanical Engineering) Dr. Ma. Divina Gracia Z. Roldan (Political Science)	Local Government Capacity and Cooperation in Climate Change Adaptation and Disaster Risk Reduction  CHED-PHERNet 53d L 2TA14-1TA15	CHED PHERNet
Dr. Sherwin E. Ona (Political Science) Mr. Redento B. Recio (JRIG)		
Dr. Francisco A. Magno (Political Science) Mr. Julius Mabandos (RA) Mr. Arthur Alvendia (RA)	Empowering Lumad Tribes through Strategic Planning  CLA JMRIG 39 L 3TA13-3TA14	DLS Philippines
Ms. Ma. Ella C. Oplas (Economics) Dr. Francisco A. Magno (Political Science) Ms. Anna Malindog (RA) Mr. McReynald Bandrerlipe II (RA)	Basic Mediation  CLA JMRIG 22 L 3TA12-1TA13	Chamber of Mines of the Philippines
Dr. Francisco A. Magno (Political Science)	Emergency Management Project  CLA LSIG 70 I 2TAY11 - 3TAY11	Center for Disaster Risk Policy of Florida State University
Mr. Antonio C. Pedro, Jr. (Political Science) Ms. Mary Jocelyn R. dela Cruz (Political Science) Ms. Carmina Y. Untalan (Political Science)	Transparency and Accountability Mechanisms in Local Governance in the Philippines  CLA LSIG 72 I 2TAY10 - 3TAY10	Global Integrity, Inc.
Dr. Francisco A. Magno (Political Science) Dr. Sherwin E. Ona (Political Science) Mr. Danny C. Cheng (Software Technology) Ms. Rhia S. Trogo (Software Technology)	Leveraging Mobile Phone Technology for Development  CLA LSIG 73 I 3TAY05 - 3TAY08	Swedish Program for ICT in Developing Regions (SPIDER)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Francisco A. Magno <i>(Political Science)</i> Mr. Ramon Padilla (RA) Mr. Ian Jayson R. Hecita <i>(JRIG)</i> Mr. Santi Regilme (RA) Ms. Mia Echevarria (RA)	Institute of Environmental Governance (IEG) Level 2 Project CLA LSIG 74 I 1TAY07 - present	Tanggol Kalikasan
Dr. Francisco A. Magno <i>(Political Science)</i> Mr. Allen B. Surla <i>(Political Science)</i> Mr. Ian Jayson R. Hecita <i>(JRIG)</i>	Local Legislative Governance Project CLA LSIG 75 I 2TAY07 - present	Southeast Center for Training and Development (SECTD)
Mr. Antonio C. Pedro, Jr. <i>(Political Science)</i> Ms. Mary Jocelyn R. dela Cruz <i>(Political Science)</i> Ms. Carmina Y. Untalan <i>(Political Science)</i>	Mechanisms for Promoting Transparency and Accountability CLA LSIG 76 I 1TAY11 - present	Australian Agency for International Development (AusAid)
Dr. Francisco A. Magno <i>(Political Science)</i> Mr. Ian Jayson R. Hecita <i>(JRIG)</i> Ms. Mia Echevarria (RA)	Book Project on Education Development in the Philippines CLA LSIG 77 I 1TAY06 - present	Office of the President (Term of Br. Roly Dizon)

## EXTERNALLY FUNDED PROJECTS

### AY 2016-2017

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Angelo King Institute for Economic and Business Studies (DLSU-AKI)</b>		
Dr. Celia M. Reyes Ms. Anne Bernadette E. Mandap Ms. Jasminda A. Quilitis Mr. Joel E. Bancolita Mr. Marmath A. Baris, Jr. Mr. Juan Paulo Fajando Ms. Alellie B. Sobreviñas Ms. Erica Paula S. Sioson Ms. Julie Ann Nadela Ms. Cecilia Ozamiz	CBMS-UNDP Development Grant Program 2008  SOE AKI 4 L 2TA08-3TA08	United Nations Development Programme (UNDP) - Manila
Dr. Celia M. Reyes Ms. Anne Bernadette Mandap Ms. Jasminda A. Quilitis Ms. Steffie Joi I. Calubayan Mr. Vincent Brylle W. Binas Ms. Rachelle Gladys M. Audar Ms. Jezha Lee Z. Nabiong	Development of Tablet-based Data Collection Instrument on Women Migrant Workers at the Local Level and Provision of the Corresponding Training of Trainers for the Administration of the Instrument (UN Women)	United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)
Dr. Tereso S. Tullao, Jr. (Economics)  Mr. Christopher James R. Cabuay (Economics)	Do Remittances Encourage Participation in School and in the Labor Force?	East Asian Development Network (EADN)
Dr. Celia M. Reyes Ms. Anne Bernadette E. Mandap Ms. Jasminda A. Quilitis Ms. Steffie Joi I. Calubayan Mr. Vincent Brylle W. Binas Ms. Rachelle Gladys M. Audar Ms. Jezha Lee Z. Nabiong	Technical Support to the Ex-post Impact Evaluations Using Mixed Methods Approaches of the Rural Microenterprise Promotion Programme (RuMEPP)  SOE AKI 56 L 3TA14-1TA15	International Fund for Agricultural Development
Dr. Celia M. Reyes	Policy Analysis for Growth and Employment (PAGE Project) DFID  SOE AKI 13 I 2TA12-1TA16	Université Laval-DFID
Dr. Celia M. Reyes	Policy Analysis for Growth and Employment (PAGE Project)  SOE AKI 10 I 1TA12-1TA15	De La Salle University - Angelo King Institute - Community-based Monitoring System (DLSU - AKI CBMS)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Krista Danielle S. Yu (Economics) Dr. Marites M. Tiongco (Economics)	Development of a Web-based Tool for Disaster Risk Reduction: A Dynamic Interoperability Input-Output Model for the Philippines  SOE AKI 78 L 2TA15-1TA16	Lopez Group Foundation, Inc. (LGFI), through the Oscar M. Lopez Center for Climate Change Adaptation and Disaster Risk Management Foundation, Inc. (The OML Center)
Dr. Michael Angelo B. Promentilla (Chemical Engineering) Dr. Kathleen B. Aviso (Chemical Engineering)		
<b>Center for Business Research and Development (CBRD)</b>		
Dr. Arnel Onesimo O. Uy (Accountancy) Dr. Ma. Andrea L. Santiago (Management and Organization) Dr. Raymund B. Habaradas (Management and Organization) Dr. Ma. Jesusa M. Marco (College of the Holy Spirit Manila) Ms. Shieradel V. Jimenez (Management and Organization) Mr. Perry Carl A. Lim (Accountancy) Dr. Reynaldo A. Bautista, Jr. (Marketing and Advertising)	Capturing Coral Reef & Related Ecosystem Services (CCRES)	The University of Queensland
Dr. Divina M. Edralin (Management and Organization) Dr. Raymund B. Habaradas (Management and Organization) Atty. Frances Jeanne L. Sarmiento (Management and Organization) Ms. Liza Mae L. Fumar (Management and Organization) Dr. Reynaldo A. Bautista, Jr. (Marketing and Advertising) Ms. Paz Esperanza T. Poblador (Marketing and Advertising)	Business Model Innovation: Assessing the Value Creation Processes of Selected Government Training/Learning Institutes in the Philippines RVRCOB CBRD 87 L 3TA15-3TA151	Philippines-Australia Human Resource and Organisational Development Facility (PAHRODF)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Advanced Research Institute for Informatics, Computing and Networking (AdRIC)</b>		
Dr. Joel P. Ilao (Computer Technology) Dr. Raquel E. Buban-Sison (Departamento ng Filipino) Ms. Charibeth K. Cheng (Software Technology) Mr. Ralph Vincent J. Regalado (Software Technology) Mr. Solomon L. See (Software Technology) Mr. Robert Roxas	ASEAN MT-Phil (The Philippine Component of the ASEAN Machine Translation Project): A Hybrid Bi-Directional English-Filipino Statistical Machine Translation System  CCS AdRIC 38 L 3TA13-3TA16	Commission on Higher Education (CHED)
Dr. Rachel Edita O. Roxas (Software Technology) Dr. Shirley N. Dita (Department of English and Applied Linguistics) Mr. Ralph Vincent J. Regalado (Software Technology)	Development of an Online Philippine Corpus Part II Sub-topics: Pangasinense Component Bicolano, Kapampangan, Waray Components Technical Component  CCS AdRIC 8 L 3TA10-1TA11	National Commission for Culture and the Arts (NCCA) through the DLSU Science Foundation
Ms. Ethel C. Ong (Software Technology)	Datacraft - CCS Cooperative Research Center  CCS AdRIC 11 L 1TA06	Datacraft
Dr. Merlin Teodosia C. Suarez (Software Technology) Mr. Gregory G. Cu (Software Technology) Ms. Jocelynn W. Cu (Computer Technology) Ms. Rhia Trogo Oblena (Software Technology) Mr. Juan Lorenzo M. Hagad (Software Technology) Ms. Mary Margarette Chua (Software Technology)	Towards the Development of a Self-Improving and Ambient Intelligent Emphatic Space: Data-centric, Multimodal Emphatic Modeling from a Pluridisciplinary Perspective Year III  CCS AdRIC 10 L 2TA11-2TA12	Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD)
<b>Lasallian Institute for Development and Educational Research (LIDER)</b>		
Dr. Maricar S. Prudente (Science Education) Dr. Anne Marie R. Ramos (Educational and Leadership Management) Dr. Abdul Jhariel M. Osman (Educational and Leadership Management)	Overseas Training and Support Services for Participants Under Teaching Quality Improvement II (TQI II) in Secondary Educational Project, Directorate of Secondary and Higher Education, Ministry of Education CED LIDER 96 I 1TA16-1TA16	Government of Bangladesh/ADB



PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<p>Ms. Liberty F. Santos (CAP)</p> <p>Mr. Jovito Anito (Research Assistant)</p> <p>Dr. Rochelle Irene G. Lucas (Department of English and Applied Linguistics)</p> <p>Dr. John Addy S. Garcia (Counseling and Educational Psychology)</p>		
<b>Center for Engineering and Sustainable Development Research</b>		
<p>Dr. Elmer Jose P. Dadios (Manufacturing Engineering and Management)</p> <p>Dr. Laurence A. Gan Lim (Mechanical Engineering)</p> <p>Dr. Argel A. Bandala (Electronics and Communications Engineering)</p> <p>Engr. Edwin Sybingco (Electronics and Communications Engineering)</p> <p>Dr. Alexis M. Fillone (Civil Engineering)</p> <p>Dr. Robert Kerwin Billones (Manufacturing Engineering and Management)</p>	<p>Contactless Apprehension of Traffic Violators on 24-hour Basis and All-vehicle Detection System (CATCH-ALL)</p> <p>GCOE CESDR 71 1TA15-1TA16</p>	<p>Philippine Council for Industry, Energy and Emerging Technology Research and Development Grants-in-Aid (PCIEERD-GIA)</p>
<p>Dr. Elmer Jose P. Dadios (Manufacturing Engineering and Management)</p> <p>Dr. Aristotle T. Ubando (Mechanical Engineering)</p> <p>Dr. Laurence A. Gan Lim (Mechanical Engineering)</p> <p>Engr. Edwin Sybingco (Electronics and Communications Engineering)</p> <p>Dr. Edwin J. Calilung (Manufacturing Engineering and Management)</p> <p>Dr. Alvin B. Culaba (Mechanical Engineering)</p> <p>Ms. Delpha Estrada</p> <p>Dr. Georgina Bordado</p>	<p>Automation of Coco-Sugar Production</p> <p>GCOE CESDR 75 I 1TA15-1TA16</p>	<p>United States Agency for International Development - Science, Technology, Research and Innovation for Development - Collaborative Applied Research with Industry (USAID-STRIDE CARWIN Grants)</p>

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Lasallian Institute for Development and Educational Research (LIDER)</b>		
Dr. Maricar Prudente ( <i>Science Education</i> ) Dr. Anne Marie R. Ramos ( <i>Educational and Leadership Management</i> ) Mr. Abdul Jhariel M. Osman ( <i>Educational and Leadership Management</i> ) Mr. Liberty F. Santos ( <i>CAP</i> ) Mr. Jovito Anito (RA) Dr. Rochelle Irene G. Lucas ( <i>Department of English and Applied Linguistics</i> ) Dr. John Addy S. Garcia ( <i>Counseling and Educational Psychology</i> )	Overseas Training and Support Services for Participants Under Teaching Quality Improvement II (TQI II) in Secondary Educational Project, Directorate of Secondary and Higher Education, Ministry of Education  CED LIDER 96 I 1TA16-1TA16	Government of Bangladesh/ ADB
Dr. Nilo T. Bugtai ( <i>Manufacturing Engineering and Management</i> ) Dr. Jade Dungao Trono ( <i>Physics</i> ) Mr. Renan G. Baldovino ( <i>Manufacturing Engineering and Management</i> ) Mr. Alexander C. Abad ( <i>Electronics and Communications Engineering</i> )	Project Agapay: A Robotic Exoskeleton for Upper Extremity Rehabilitation  GCOE CESDR 81 2TA15-1TA17	Department of Science and Technology - Philippine Council for Health Research and Development (DOST-PCHRD)
Engr. Isidro Antonio V. Marfori III ( <i>Mechanical Engineering</i> ) Dr. Alvin B. Culaba ( <i>Mechanical Engineering</i> ) Engr. Leonardo U. Ambata ( <i>Electronics and Communications Engineering</i> ) Dr. Marlon D. Era ( <i>Behavioral Sciences</i> )	Design and Manufacturing Feasibility of a Novel Smart Electric Folding Bicycles in the Philippines  GCOE CESDR 60 I 3TAY14-3TAY15	United States Agency for International Development - Science, Technology, Research and Innovation for Development (USAID-STRIDE)
Dr. Aristotle T. Ubando ( <i>Mechanical Engineering</i> ) Mr. Lawrence Vitug (RA) Mr. Ivan Gue (RA) Mr. Andres Philip Mayol (RA)	Life Cycle Assessment of Algae Biofuels in the Philippines  GCOE CESDR 59 I 3TA14-3TA15	United States Agency for International Development - Science, Technology, Research and Innovation for Development (USAID-STRIDE)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Jonathan R. Dungca (Civil Engineering) Dr. Michael Angelo B. Promentilla (Chemical Engineering) Dr. Derrick Ethelbhart C. Yu (Chemistry)	Characterization of Fly Ash from STEAG Power Plant and the Study of its Possible Application to Road Embarkments  GCOE CESDR 80 I 2TA15-1TA16	STEAG State Power Inc.
Dr. Kathleen B. Aviso (Chemical Engineering)	Development of an Optimization Model for Agricultural Production Considering Water Footprint and Climate Change Vulnerability	Department of Science and Technology - National Academy of Science and Technology (DOST-NAST)
Dr. Michael Angelo B. Promentilla (Chemical Engineering)	Development of a Novel Geopolymer-based Material Derived from the Ternary Blend of Coal Bottom Ash, Coal Fly Ash and Rice Hull Ash	Department of Science and Technology - National Academy of Science and Technology (DOST-NAST)
Dr. Kathleen B. Aviso (Chemical Engineering)	Development of an Optimization Model for Identifying Efficient Water RE-Use Opportunities in Industrial Parks	Department of Science and Technology - National Academy of Science and Technology (DOST-NAST)
Dr. Cynthia F. Madrazo (Chemical Engineering) Dr. Alvin B. Culaba (Mechanical Engineering) Dr. Aristotle T. Ubando (Mechanical Engineering)	Project Kamino: Bioethanol from Algae  GCOE CESDR 29 L 3TQY16-1TAY17	Advanced Telecommunications (ADTEL), Inc.
Dr. Rosemary R. Seva (Industrial Engineering) Dr. Susan A. Roces (Chemical Engineering) Mr. Conrad Alan Jay R. Pantua (Mechanical Engineering) Mr. Oswald O. Sapang (Electronics and Communications Engineering) Dr. Aileen H. Orbecido (Chemical Engineering) Dr. Vergel C. Bungay (Chemical Engineering) Dr. Nathaniel P. Dugos (Chemical Engineering) Dr. Gerardo L. Augusto (Mechanical Engineering) Dr. Alvin B. Culaba (Mechanical Engineering)	Advancing Competency for Engineering Supervision (ACES) for Monde Nissin Corporation  GCOE CESDR 91 L 3AT15-3AT18	Monde Nissin Corp

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
<b>Social Development Research Center (SDRC)</b>		
Dr. Maria Caridad H. Tarroja (Psychology) Dr. Abdul Jhariel M. Osman (Educational and Leadership Management) Ms. Klarizze Valdoria (RA)	Understanding the Context of Lack of Interest among Out-of-School Youth  CLA SDRC 98 L 3TA15-1TA16	The Asia Foundation
Dr. Maria Caridad H. Tarroja (Psychology) Ms. Anna Gabrielle Cerezo (RA)	Pilot Phase of the Be He@lthy, Be Mobile Project  CLA SDRC 94 L 2TA15-3TA15	World Health Organization (WHO)
Dr. Melvin A. Jabar (Behavioral Sciences) Dr. Exaltacion E. Lamberte (Behavioral Sciences) Dr. Ma. Luisa C. Delayco (Management and Organization) Dr. Sarah J. Delos Reyes (Biology) Mr. Crisanto Q. Regadio, Jr. (Behavioral Sciences)	Formative Research for Behavioral Modification Interpretation  CLA SDRC 82 L 2TA15-3TA15	Population Media Center
Dr. Jesusa M. Marco (Behavioral Sciences) Mr. Jerome Zayas (RA) Mr. Graeme Ferdinand D. Armecin (Behavioral Sciences)	Sexual and Reproductive Health of Women with Disability in the Philippines: Building Evidence for Action  CLA SDRC 03 I 1TA13-3TA15	Australia's Department of Foreign Affairs and Trade (formerly AusAID) through Nossal Institute for Global Health - The University of Melbourne and United Nations Population Fund (UNFPA)
Dr. Ma. Elena Chiong-Javier (Behavioral Sciences) Mr. Kent Tangcalagan (RA)	Conservation Agriculture for Food Security in Cambodia and the Philippines	USAID through the Virginia Polytechnic Institute and State University and the North Carolina Agricultural and Technical State University
<b>Br. Alfred Shields FSC Ocean Research Center</b>		
Dr. Wilfredo Y. Licuanan (Biology) Michelle Reyes (RA)	Community Reef  COS SHORE 77 L 2TA15-2TA16 Dr.	Sony Pictures
Dr. Maricar S. Samson (DLSU Integrated School) Dr. Rene N. Rollon (UP Diliman)	Synoptic Investigations of Human Impacts on Nearshore Environments (SHINE): Associated Habitats  COS SHORE 42 L 1TA14-1TA15	Department of Science and Technology- Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST- PCAARRD)

PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Wilfredo Y. Licuanan (Biology)	Synoptic Investigations of Human Impacts on Nearshore Environments (SHINE): Coral Reefs	Department of Science and Technology- Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)
Dr. Arturo Y. Pacificador Jr. (Mathematics)	COS SHORE 41 L 1TA14-1TA17	
Dr. Maria Angeli H. Diaz (Communication)		
Dr. Rechel G. Arcilla (Mathematics)		
Center for Natural Sciences and Environmental Research		
Dr. George V. Bañez (Biology)	Metal Bioindicator Plant Species of the Philippines	Department of Science and Technology
Dr. Esperanza C. Cabrera (Biology)	COS CENSER 09 L 2TA12 - 2TA13	
Dr. Marissa G. Noel (Chemistry)		
Dr. Gil Nonato C. Santos (Physics)		
Dr. Ma. Carmen Ablan-Lagman (Biology)	Initiating a DNA Barcode-based Species Identification System (DBSIS) for Hermatypic Corals and Coral Reef Fish in Palawan, Western Philippines	Commission on Higher Education (CHED)
Dr. Wilfredo Y. Licuanan (Biology)		
Mr. Dennis B. Bela Ong (Biology)	COS CENSER 58 L 3TA09-3TA10	
Dr. Gil Nonato C. Santos (Physics)	Synthesis and Characterization of Polymer-based Graphene Nanomaterials with Anticorrosion and Anti-barnacle Properties for Sea Vessel	United States Agency for International Development - Science, Technology, Research and Innovation for Development - Collaborative Applied Research with Industry (USAID STRIDE CARWIN GRANT)
Dr. Jose Bienvenido Manuel M. Biona (Mechanical Engineering)	COS CENSER 79 I 2TA15-2TA16	
Dr. Derrick Ethelbert C. Yu (Chemistry)		
Mr. Andy Mendiola (RA)		
Jesse M. Robredo Institute of Governance		
Dr. Ador R. Torneo (Political Science)	Evaluation of PNVSCA International Volunteer Service Program	Philippine National Volunteer Service Coordinating Agency (PNVSCA)
Ms. Michelle M. Sta. Romana (Political Science)	CLA JRIG 93 3TA15-1TA16	
Dr. Francisco A. Magno (Political Science)	Institutionalizing CSO Participation in Local Planning, Budgeting and Monitoring (BuB)	SEAOIL Foundation, Inc.
Mr. Ian Jayson R. Hecita (Political Science)	CLA JRIG 74 L 2TA15-3TA15	
Mr. Martin Josef E. Vivo (JRIG)		



PROJECT DIRECTOR/ COORDINATOR	PROJECT TITLE	FUNDING AGENCY
Dr. Sherwin E. Ona <i>(Political Science)</i> Ms. Ma. Beth Concepcion (RA) Mr. Rabby Lavilles (Ph.D. Student) Ms. Michelle Renee D. Ching <i>(Information Technology)</i>	Open Government Data in Developing Countries  CLA JRIG 75 I STA14-1TA15	World Wide Web Foundation
Dr. Francisco A. Magno <i>(Political Science)</i>	Collaborative Governance of Urbanizing Watersheds  CLA LSIG 14 I 3TA12-to be finalized	Social Sciences and Humanities Research Council, University of British Columbia

# De La Salle University Publishing House

## INTRODUCTION

For academic years 2015-2016 and 2016-2017, the DLSUPH continued to contribute significantly to the enhancement of DLSU's educational mission through the publication of works in a variety of genre authored by both new and established scholars; specialized and peer-reviewed research that have circumscribed readership; textbooks for DLSU's undergraduate and graduate courses; and journals in a wide range of academic disciplines including education, business and economics, the social sciences, and the physical sciences.

With a team of six people, DLSUPH averages 12 to 15 new book titles a year. Its Executive Publisher, Dr. David Jonathan Y. Bayot, has been a hands-on manager who pays close attention, among others, to the

book cover and layout to ensure that the product will be of international quality.

## DLSUPH AS DLSU'S OTHER WINDOW TO THE WORLD

Since its inception in 2012, the DLSUPH has endeavored to bring the Philippines, especially DLSU, closer to the intellectual discussions transpiring in the contemporary literary and critical world and in the heart of international publishing. DLSUPH has made substantial gains in terms of building DLSU's reputation as a center for serious scholarly intellectual dissemination and exchanges recognized by the international academic community.

By bringing aboard local and foreign authors who are luminaries in their fields, the DLSUPH has concretized its support for the University's internationalization agenda,

The **DLSU Publishing House (DLSUPH)**, is the publishing unit of the University under the Office of the Vice Chancellor for Research and Innovation. Since it transitioned on May 16, 2012 from the former Academic Publications Office, the DLSUPH has envisioned itself as a notable center of knowledge production and dissemination—through book and journal publication—in both the national and the international milieus. DLSUPH assumes the task of being the key conduit of ideas reaching out to readers worldwide hoping that they will process, transform, and eventually, mobilize these ideas for a better society in general and the Philippine communities in particular.

The DLSUPH seeks to enhance the educational goal of the University by supporting the latter's mission of excellence in research and education through the publication of academic and trade books, and scholarly journals in both printed and digital editions.

It is governed by a Publication Board that meets once a term to review the manuscripts from DLSU and non-DLSU authors that have already gone through the standard evaluation procedures. Publication is solely determined by the merits of the manuscript.

and its vision of “A leading learner-centered and research University bridging faith and scholarship...” The sustained effort of the publishing house of inviting world renowned authors and critics in various fields has directed the international community’s focus on the University. This development augurs well for Filipino authors who may want to publish their work through DLSUPH in the future.

The DLSUPH engagement with foreign authors and university presses began in July 2013, when the University of Chicago Press sent a formal request to DLSUPH asking permission to issue an international edition of *Poetics in a New Key: Interviews and Essays* published by the latter a few months earlier. The book is a set of conversations with Marjorie Perloff, one of the biggest names in international literary circles. The University of Chicago Press is the biggest university press in the United States, whose reputation is on a par with Harvard, Cambridge, and Oxford University Presses. *Poetics in a New Key* became the first scholarly book in the Philippines ever licensed with the University of Chicago Press.

With Perloff are other internationally acclaimed literary giants, and endowed professors from highly respected universities around the world, which include Harvard, Stanford, Princeton, and Chicago, as well as those at Swansea, York, and Cardiff. These literary icons include influential figures in contemporary cultural studies such as British literary critic and academic Catherine Belsey; cultural materialist Jonathan Dollimore; deconstruction experts Derek Attridge, Christopher Norris, as well as the first Poet Laureate of the Museum of Modern Art Kenneth Goldsmith; and Avalon

Foundation University Professor of the Humanities at Princeton University Susan Stewart.

In AY 2015-2016, the DLSUPH signature project *Critics in Conversation*, which was conceptualized and edited by Dr. Bayot, was cited for “putting the Philippines on the world map of literary theory.” The citation was read and awarded during the 34<sup>th</sup> National Book Awards sponsored by the National Book Development Authority and the Manila Critics Circle. The series consists of *Catherine Belsey in Conversation*, *Jonathan Dollimore in Conversation*, *Kenneth Goldsmith in Conversation*, *Derek Attridge in Conversation* (co-published with Sussex Academic Press), *Susan Stewart in Conversation*, *John Schad in Conversation*, and *Rachell Bowlby in Conversation*.

The AY also saw the inclusion of the DLSU journal, *The Asia-Pacific Education Researcher*, which is published by Springer, in the Excellence for Research in Australia (ERA) 2015 Journal List. This list is used extensively for research purposes in Australia (e.g., promotion, grant applications, etc). Applicants for the prestigious Australian Research Grants (ARC) grants—equivalent to those of the National Science Foundation (NSF) or Research Grants Council (RGC) in the USA and HK, respectively—are expected to have published in journals from this list.

In AY 2016-2017, the DLSUPH-published book, *Deconstruction After All: Reflections and Conversations* by Christopher Norris and edited by Dr. David Jonathan Y. Bayot (co-published with the Sussex Academic Press) was

reviewed in *The Times Literary Supplement* (TLS) by no less than Terry Eagleton one of the most prestigious and influential public intellectuals and scholars in the international milieu. The TLS, which is the leading weekly literary review, features only the best books in the humanities by international standards. It is published in London by News UK, a subsidiary of News Corp.

**Other Partnerships.** Apart from the aforementioned engagements, the DLSUPH has had partnerships with other highly reputable national and international organizations. They include the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Philippines, Asia-Europe Foundation, National Book Development Board, National Research Council of the Philippines, Springer, Women's Business Council Philippines, and the Vatican's Pontifical Academy of Social Sciences in Rome.

## NEW RELEASES FOR AY 2015-2016 AND AY 2016-2017

AY 2015-2016 and AY 2016-2017 has been a productive year for the DLSUPH. It published 28 new titles in various categories: literary/poetry, literary/cultural, social science, law and gender, critical theory, business, economics, education, literature/novel, fiction, science, literary studies, counseling/psychology, anthology, cultural studies, and poetry/philosophy. Some of these books were finalists in the prestigious annual National Book Awards.

Aside from launching the 28 titles, the DLSUPH likewise continued to manage the publication of various University research and other journals.

## NEW TITLES

1. Under the Critics in Conversation Series
  - *Derek Attridge in Conversation*, by Derek Attridge with Dr. David Jonathan Y. Bayot and Francisco Roman Guevara (published with Sussex Academic Press, United Kingdom)
  - *Susan Stewart in Conversation* by Susan Stewart with David Jonathan Y. Bayot
  - *John Schad in Conversation* by John Schad with David Jonathan Y. Bayot
  - *Rachel Bowlby in Conversation* by Rachel Bowlby with David Jonathan Y. Bayot and Jeremy C. de Chavez
  - *Marjorie Perloff in Conversation* by Marjorie Perloff and David Jonathan Y. Bayot
2. *Deconstruction After All: Reflections and Conversations* by Christopher Norris, edited by David Jonathan Y. Bayot (co-published with the Sussex Academic Press and finalist for Best in Literary Criticism in English, 35<sup>th</sup> National Book Awards)
3. *The Cardinal's Dog and Other Poems* (second edition) by Christopher Norris
4. *Lupang Hinirang, Lupang Tinubuan: Mga Sanaysay sa Kritika, at Politikang Pangkultura* by Epifanio San Juan, Jr. (finalist for Best Anthology in a Philippine Language, 35<sup>th</sup> National Book Awards)

5. *Seasons in Parenting: Studies on Parents' Life Stories and Parenting Achievements* by Dr. Roberto E. Javier, Jr.
6. *Health and Social Policy Issues of BPO Workers in the Philippines: Is Happiness at Work Attainable?* by Socorro M. Rodriguez and Nimfa B. Ogena
7. *Neither a Pedestal nor a Cage: In Pursuit of Genuine Gender Equality in the Philippine Workplace* by Emily Sanchez-Salcedo (finalist for Best Book on Professions, 35<sup>th</sup> National Book Awards)
8. *Women Entrepreneurship Studies in the Philippines, An Inventory* by Divina M. Edralin, Ma. Cresilda M. Caning, and Katherine Abbey S. Cheng (published in partnership with the Women's Business Council Philippines and the DLSU Center for Business Research and Development)
9. *Education Paradigms for the 21<sup>st</sup> Century* by Victor M. Ordoñez, edited by Regina M. Ordoñez (finalist for Best Book on Professions, 35<sup>th</sup> National Book Awards)
10. *The Cloak of God*, an English translation by Soledad Reyes of a novel in Filipino by Rosario de Guzman-Lingat.
11. *The Golden Dagger*, an English translation by Dr. Soledad S. Reyes of *Punyal na Ginto* by Antonio Sempio
12. *Convergence and Possibilities: Selected Papers from the Manila Journal of Science*, edited by Dr. Jose Isagani B. Janairo
13. *Entrepreneurship and Trade: Selected Essays from the Angelo King Institute of Economic and Business Studies*, edited by Paulyne J. Castillo
14. *Pathways Out of Poverty: Selected Essays from the Angelo King Institute of Economic and Business Studies*, edited by Marites M. Tiongco
15. *Counseling Psychology and Education, A Festschrift in Honor of Rose Marie Salazar- Clemeña*, edited by Allan B. I. Bernardo
16. *Bien! A Festschrift in Honor of National Artist Bienvenido L. Lumera* (vol. 1), edited by David Jonathan Y. Bayot, Jaime Oscar M. Salazar, and Johann Vladimir J. Espiritu (finalist for Best Anthology (Bilingual), 36<sup>th</sup> National Book Awards)
17. *Filipinas Everywhere: Essays in Criticism and Cultural Studies from a Filipino Perspective* by Epifanio San Juan, Jr. (finalist for Best Literary Criticism/Literary History in English, 36<sup>th</sup> National Book Awards)
18. *Jose M. de Mesa: A Theological Reader* by Dr. Jose M. de Mesa (finalist for Best Book in the Social Sciences, 36<sup>th</sup> National Book Awards)
19. *Kurap sa Ilalim* by Mesandel Virtusio Angeles (finalist for Best Book in Poetry in Filipino, 36<sup>th</sup> National Book Award)
20. *Notes for the Filipino Playwright* by Malou Jacob (finalist for Best Essays in English, 36<sup>th</sup> National Book Awards)
21. *Systematic Pesticides: A Worldwide Assessment* edited by Jean-Marc Bonmatin, Francisco Sanchez-Bayo, and Jose Isagani B. Janairo
22. *For the Tempus-Fugitives: Poems and Verse Essays* by Christopher Norris
23. *Corals of the Philippines* by Yasmeen Smalley-Norman and Dr. Wilfredo Roehl Y. Licuanan



24. *Chronicles of Refrigeration and Air-Conditioning in Tropical Philippines: The Cold Facts* edited by Dr. Alvin Y. Chua (in partnership with the American Society of Heating, Refrigerating and Air-Conditioning Engineers)

## UNIVERSITY RESEARCH AND OTHER JOURNALS



The ***Asia-Pacific Social Science Review (APSSR)*** is an internationally refereed journal published four times a year—March (online edition), June (online and print editions), September

(online edition), and December (online and print editions), by De La Salle University, 2401 Taft Avenue, 0922 Manila, Philippines (c/o Dr. David Jonathan Y. Bayot, Executive Publisher, david.bayot@dlsu.edu.ph and +632-8523-4281). The APSSR aims to be a leading venue for authors seeking to share their data and perspectives on compelling and emerging topics in the social sciences with, and to create an impact on, the region's communities of academics, researchers, students, civil society, policymakers, and development specialists, among others. Topics related to or with implications for the region that are pursued employing sound methodologies and comparative, and inter, multi, and transdisciplinary approaches are of particular interest. Overall, the APSSR seeks to globalize knowledge towards developing a body of regional perspectives on key global issues. All manuscripts submitted to the journal are reviewed by the editorial

team and by nominated or Publons-based (<https://publons.com/about/home/>) referees. The APSSR is listed in the Elsevier's Scopus, the ASEAN Citation Index, and EBSCO, and is a Category A journal based on the Philippines' Commission on Higher Education list. The APSSR has both printed and online (<https://apssr.com>) editions, and a Facebook Page, at <https://www.facebook.com/DLSUAPSSR/>. The journal's online submission platform, ScholarOne, is found at <https://mc04.manuscriptcentral.com/apssr>.



The ***DLSU Business and Economics Review (DLSUBER)*** publishes high-quality theoretical, empirical, and methodological research in the fields of accounting, business management,

commercial law, economics, finance, and marketing. The online submission platform, ScholarOne, is at <https://mc04.manuscriptcentral.com/dlsuber>. The DLSUBER aims to reach an audience in these six fields and is published biannually (January and July) by De La Salle University, Manila, Philippines. Unless otherwise noted, the ideas, opinions, and conclusions expressed in the DLSUBER are those of the authors and not necessarily those of the Editorial Board of the journal or the management and staff of De La Salle University. It is listed in SciVerse Scopus since 2011, abstracted and Indexed in EBSCO since 2009, and listed in the ASEAN Citation Index. It is also an awardee of the Journal Challenge Grant of the Philippine Commission of Higher Education (CHED).



**Malay**, is an internationally refereed and abstracted multi/interdisciplinary journal in Philippine studies.

Published twice a year, under the supervision of the DLSU Publishing House, it features

papers, research, and articles that convey the thoughts and knowledge from various disciplines in the field of Philippine studies. The ideas, opinions, and conclusions expressed are the responsibility of the authors; they do not reflect those of the editorial board of the journal or the management and staff of De La Salle University.

***The Journal of Research in Science, Computing, and Engineering (JRSCE)***

a thrice-yearly international, refereed journal published by DLSU, Manila. It aims to disseminate information gathered from research activities in the fields of mathematics and the sciences such as biology, chemistry and physics, engineering, and computing. It covers both the pure and applied sciences, energy and the environment, and the varied fields of engineering and computing such as civil engineering, chemical engineering, electronics and communications engineering, industrial, manufacturing, mechanical, and robotics engineering, materials and corrosion, ergonomics, biotechnology, systems engineering, process control, modeling and optimization, information systems, computer science, software and computer engineering, and science and engineering education/ethics.

***The Journal of Computational Innovations and Engineering Applications (JCIEA)***

is a peer-reviewed, open access journal of De La Salle University, Manila. It aims to promote the development of new and creative ideas on the use of technology in solving different problems in different fields of our daily lives. The JCIEA solicits high quality papers containing original contributions in all areas of theory and applications of Engineering and Computing including, but not limited to, Computational Applications, Computational Intelligence, Electronics and Information and Communications Technology (ICT), Manufacturing Engineering, Energy and Environment, Robotics, Control and Automation, and all their related fields. The JCIEA editorial board is comprised of experts from around the world who are proactively pushing for the development of research in these fields.



***The Asia-Pacific Education Researcher (TAPER)***

is an international refereed journal of original and innovative research in education. It provides a venue for the publication of empirical and

theoretical studies in education, with emphasis on the experiences of successful educational systems in the Asia-Pacific Region.

The journal publishes regular articles that report original and innovative research work that leads to the understanding and/or improvement of educational processes and outcomes using research methods and analytic frameworks of the varied

academic disciplines (anthropology, applied linguistics, cognitive science, economics, history, philosophy, political science, psychology, sociology, among others) and also using multidisciplinary and interdisciplinary approaches; and Special issue articles whose description will be provided on Call for Papers of each special issue.

Regular articles shall contain a maximum of 6000 words (including references).

- Reports on successful educational systems in the Asia-Pacific Region that are currently underrepresented in research literature
- Surveys original work leading to the understanding and/or improvement of educational processes and outcomes
- Seeks to replicate studies originally done in western countries, in the context of specific Asian countries or communities



*The **Manila Journal of Science (MJS)*** is a peer-reviewed journal of De La Salle University, Manila. It publishes original research in the fields of Biology, Chemistry, Mathematics,

Statistics, Physics, Computer Science and Science Education. MJS evaluates submissions based on scientific rigor and soundness; and not on subjective indicators such as novelty or impact. A thorough presentation of the methodology and discussion of results is encouraged. MJS is an electronic and open-access journal that does not have article processing fees or page charges, and all papers can be

downloaded freely. MJS adopts a publication model wherein accepted papers are uploaded immediately.

## VISIBILITY

DLSUPH has been active and visible in academic and scholarly gatherings through its participation in the following:

- DLSU Research Congress 2016 and 2017 (March 7 to 9, 2016 and June 20 to 22, 2017, respectively, DLSU Manila campus)
- Philippine Political Science Association International Conference (April 21 to 22, 2016, Legaspi, Albay)
- Pambansang Seminar 2016 and 2017 sponsored by the DLSU Department of Filipino (April 27 to 29, 2016, and April 26 to 29, 2017 respectively, DLSU Manila campus)
- Department of Foreign Affairs (DFA) Ladies' Foundation Book Fair (May 30 to 31, 2016, DFA Building, Pasay City)
- National Literature Month Book Fair (April 24 to 28, 2017, University of the Philippines Los Baños, Laguna)
- Pista ng Librong Filipino sa Pandaigdigang Kongreso sa Araling Pilipinas sa Wikang Filipino (August 2 to 4, 2017, National Museum, Manila)

## EXCITING PROSPECTS FOR AY 2017-2018

DLSUPH eagerly looks forward to AY 2017-2018 with the following titles lined up for launching:

- *Kasaysayan at Vulnerabilidad: Ang Lipunang Pilipino sa Harap ng Pananalanta ng Pesteng Balang, 1569-1949* by Ma. Florina Orillos-Juan (in partnership with the National Book Development Board)
- *Bien! A Festschrift in Honor of National Artist Bienvenido L. Lumbera* (vols. 2 and 3), edited by David Jonathan Y. Bayot, Jaime Oscar M. Salazar, and Johann Vladimir Espiritu
- *Betsy Westendorp*, a two-volume coffee table book on her illustrious life and art, sponsored by the DLSU Office of the President. In 1976, His Majesty King Juan Carlos I of Spain bestowed on Westendorp the distinguished Lazo de Dama

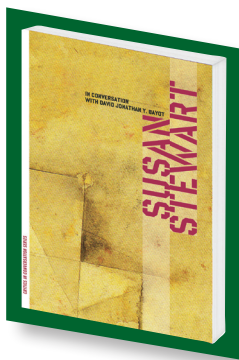
de la Orden de Isabel la Catolica, the equivalent of knighthood for ladies. This exclusive Order was originally created by His Majesty King Ferdinand VII of Spain in 1815. In 2008, Westendorp was awarded the Presidential Medal of Merit for Art and Culture by Former President of the Philippines, Gloria Macapagal Arroyo. She had pledged to donate a diptych (each piece with a dimension of 220cm x 150cm) for display at the Villavicencio Board Room of Henry Sy Sr. Hall

- *Reading Inside Out: Interviews and Conversations* by J. Hillis Miller, edited by David Jonathan Y. Bayot (published in partnership with the Sussex Academic Press). Miller is a Distinguished Professor Emeritus of Comparative Literature and English at the University of California, Irvine. He was former President of MLA, and a Fellow of the American Academy of Arts and Sciences.

# NEW RELEASES FOR AY 2015-2016 AND AY 2016-2017

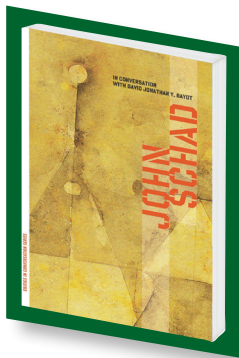
## New Titles

### Critics in Conversation Series



#### ***Susan Stewart in Conversation***

Susan Stewart with  
David Jonathan Y. Bayot



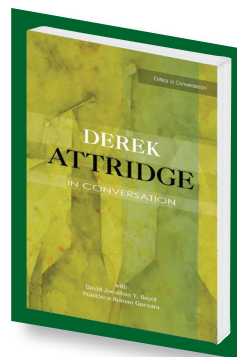
#### ***John Schad in Conversation***

John Schad with David  
Jonathan Y. Bayot



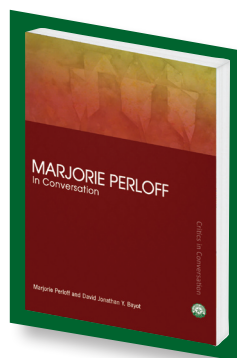
#### ***Rachel Bowlby in Conversation***

Rachel Bowlby with  
David Jonathan Y. Bayot



#### ***Derek Attridge in Conversation***

Derek Attridge with  
Dr. David Jonathan Y. Bayot  
and Francisco Roman  
Guevara

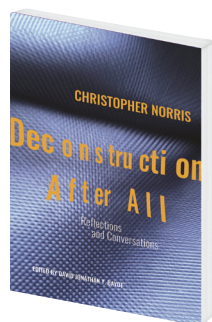


#### ***Marjorie Perloff in Conversation***

Marjorie Perloff and  
David Jonathan Y. Bayot

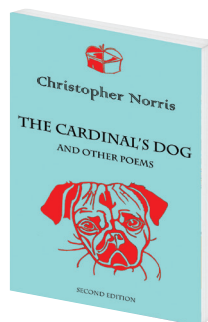


# Other Titles



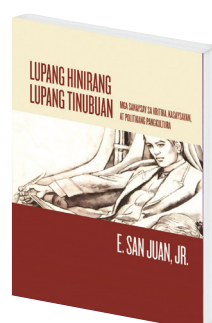
## ***Deconstruction After All: Reflections and Conversations by Christopher Norris***

Edited by  
David Jonathan Y. Bayot



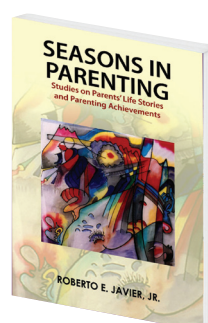
## ***The Cardinal's Dog and Other Poems (second edition)***

Christopher Norris



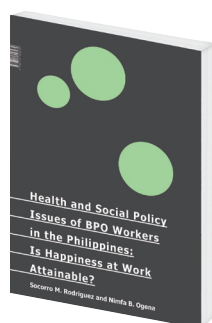
## ***Lupang Hinirang, Lupang Tinubuan: Mga Sanaysay sa Kritika, at Politikang Pangkultura***

Epifanio San Juan, Jr.



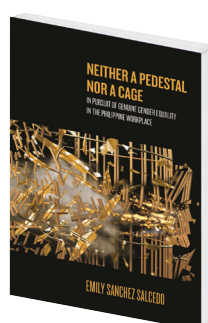
## ***Seasons in Parenting: Studies on Parents' Life Stories and Parenting Achievements***

Dr. Roberto E. Javier, Jr.



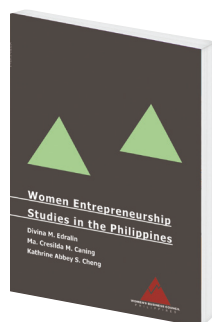
## ***Health and Social Policy Issues of BPO Workers in the Philippines: Is Happiness at Work Attainable?***

Socorro M. Rodriguez and  
Nimfa B. Ogena



## ***Neither a Pedestal nor a Cage: In Pursuit of Genuine Gender Equality in the Philippine Workplace***

Emily Sanchez-Salcedo



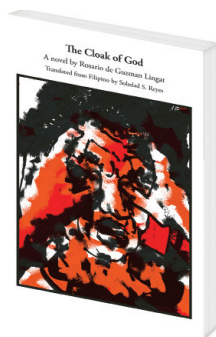
## ***Women Entrepreneurship Studies in the Philippines, An Inventory***

Divina M. Edralin,  
Ma. Cresilda M. Caning,  
and Katherine Abbey S. Cheng



## ***Education Paradigms for the 21<sup>st</sup> Century by Victor M. Ordoñez***

Edited by  
Regina M. Ordoñez



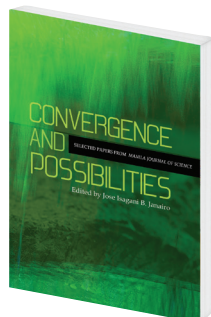
***The Cloak of God, an English translation***

Soledad Reyes



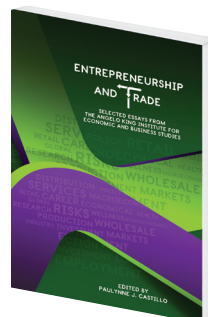
***The Golden Dagger, an English translation***

Dr. Soledad S. Reyes  
of *Punya na Ginto* by  
Antonio Sempio



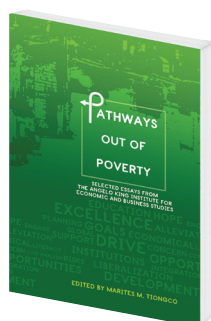
***Convergence and Possibilities: Selected Papers from the Manila Journal of Science***

Edited by Dr. Jose Isagani  
B. Janairo



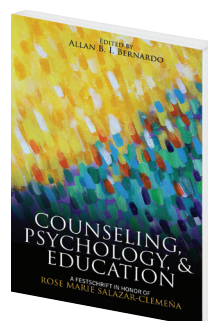
***Entrepreneurship and Trade: Selected Essays from the Angelo King Institute of Economic and Business Studies***

Edited by Paulyne J.  
Castillo



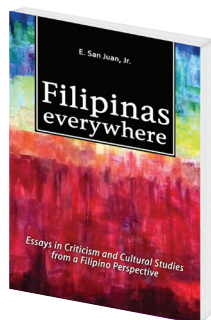
***Pathways Out of Poverty: Selected Essays from the Angelo King Institute of Economic and Business Studies***

Edited by Marites M.  
Tiongco



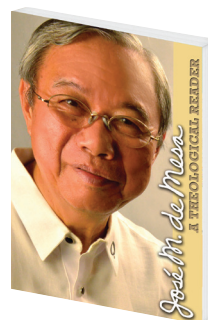
***Counseling Psychology and Education, A Festschrift in Honor of Rose Marie Salazar-Clemeña***

Edited by Allan B. I.  
Bernardo



***Filipinas Everywhere: Essays in Criticism and Cultural Studies from a Filipino Perspective***

Epifanio San Juan, Jr.  
(finalist for Best Literary  
Criticism/Literary History  
in English, 36th National  
Book Awards)



***Jose M. de Mesa: A Theological Reader***

Dr. Jose M. de Mesa  
(finalist for Best Book in  
the Social Sciences, 36th  
National Book Awards)



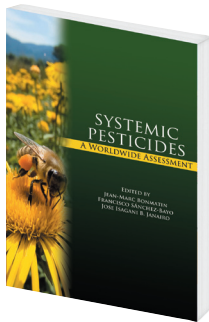
### **Kurap sa Ilalim**

Mesandel Virtusio Angeles  
(finalist for Best Book in Poetry in Filipino, 36<sup>th</sup> National Book Award)



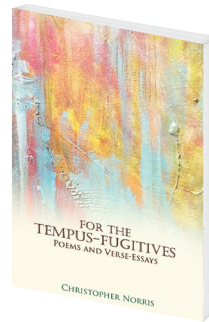
### **Notes for the Filipino Playwright**

Malou Jacob  
finalist for Best Essays in English, 36<sup>th</sup> National Book Awards)



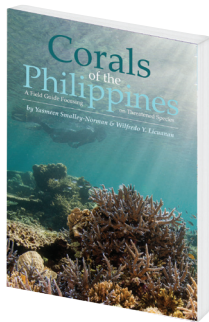
### **Systematic Pesticides: A Worldwide Assessment**

Edited by  
Jean-Marc Bonmatin,  
Francisco Sanchez-Bayo,  
and Jose Isagani B.  
Janairo



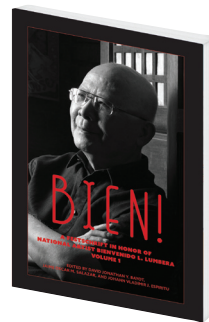
### **For the Tempus-Fugitives: Poems and Verse Essays**

Christopher Norris



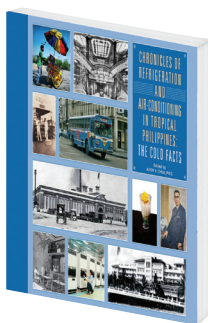
### **Corals of the Philippines**

Yasmeen Smalley-Norman  
and Dr. Wilfredo Roehl Y.  
Licuanan



### **Bien! A Festschrift in Honor of National Artist Bienvenido L. Lumera (vol. 1)**

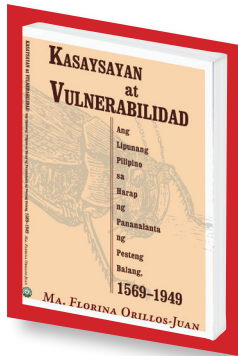
Edited by David Jonathan Y. Bayot, Jaime Oscar M. Salazar, and Johann Vladimir J. Espiritu (finalist for Best Anthology (Bilingual), 36<sup>th</sup> National Book Awards)



### **Chronicles of Refrigeration and Air-Conditioning in Tropical Philippines: The Cold Facts**

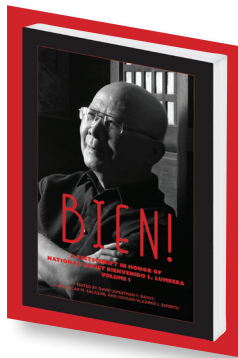
Edited by  
Dr. Alvin Y. Chua (in partnership with the American Society of Heating, Refrigerating and Air-Conditioning Engineers)

# Exciting Prospects for AY 2017-2018



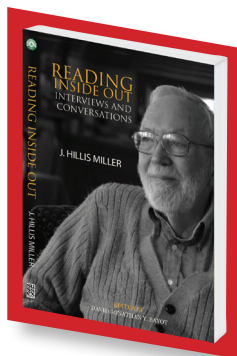
***Kasaysayan at Vulnerabilidad: Ang Lipunang Pilipino sa Harap ng Pananalanta ng Pesteng Balang, 1569-1949***

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***Bien! A Festschrift in Honor of National Artist Bienvenido L. Lumera (vols. 2 and 3)***

*Edited by David Jonathan Y. Bayot, Jaime Oscar M. Salazar, and Johann Vladimir Espiritu*



***Reading Inside Out: Interviews and Conversations***

*J. Hillis Miller, edited by David Jonathan Y. Bayot*



# De La Salle University Intellectual Property Office and De La Salle University Innovation and Technology Office

As a resource of Church and State, De La Salle University (DLSU) is committed to ensuring that society benefits from the institution's research activities. To fulfill this commitment, the University manages innovations generated by research and finds ways to diffuse them to the public, mindful of the importance of scholarship and the academic freedom of faculty to write, create, and publish.

The dawn of the knowledge economy has made the role of universities more complex and the demands on these institutions more challenging. In the knowledge economy, intellectual property (IP) and a highly-trained workforce are of paramount importance. Recognizing that knowledge and technology transfer has become an important activity in universities, the DLSU Intellectual Property Office (DIPO) and the DLSU Innovation and Technology Office (DITO) seek to help the University in fulfilling its mandate.

## DIPO AND DITO'S HUMBLE BEGINNINGS

DLSU started to manage IP in 2008 with the establishment of the office now

known as the DIPO under the Office of the Vice Chancellor for Research and Innovation (OVCRl). The DIPO manages DLSU intellectual assets, provides IP awareness campaigns and education, and enforces the University IP policies. In 2011, DLSU established the DITO to carry out the functions and provide the services of the Innovation and Technology Services Office (ITSO) of the Intellectual Property Office of the Philippines (IPOP HL). The IPOP HL ITSO network, composed of over 80 higher education institutions (HEIs) and research and development institutions nationwide, strengthens institutional and national capacity to access patent information and use the patent system. As an ITSO, the DITO is mandated to offer patent and technology transfer services to the DLSU community and to the public. The DIPO and the DITO work closely with the Animo Labs Technology Business Incubator (Animo Labs), a technology business incubator (TBI) established in 2015 to incubate entrepreneurial teams who have plans to commercialize an innovation project. Animo Labs is a separate legal entity that is fully owned by DLSU. The DIPO, DITO, and Animo Labs form the DLSU IP management, technology transfer



and commercialization group, which works to diffuse innovations from the University to the community.

The mission of DITO is to support the creation and development of innovative, creative, and sustainable products and services that improve lives, especially of the poor and marginalized. It also assists in the further development and commercialization of research projects and provides services that include, among others, patent searching, patent drafting, and patent filing.

## **IP PROTECTION WITHIN THE UNIVERSITY**

IP awareness remains low in the Philippines and efforts to raise it are difficult and tedious. There is a perception among members of the academic community that using the IP system is difficult and time-consuming. To address this misconception, the DIPO has devised mechanisms to make IP-related processes, such as invention disclosure and IP registration, easier. Inventors and researchers only need to fill out and submit the appropriate disclosure form. In the event of a potential patent application, the DITO schedules IP clinics and consultations including patent searches with researchers and inventors before preparing a patent application to protect the invention. The inventor is expected to cooperate with the DIPO and DITO from the application process to the eventual commercialization. The DIPO and DITO notify or update the inventors of the progress in every step of the patent application process up to the granting of the patent. Atty. Christopher Cruz, who is the university legal counsel and concurrent

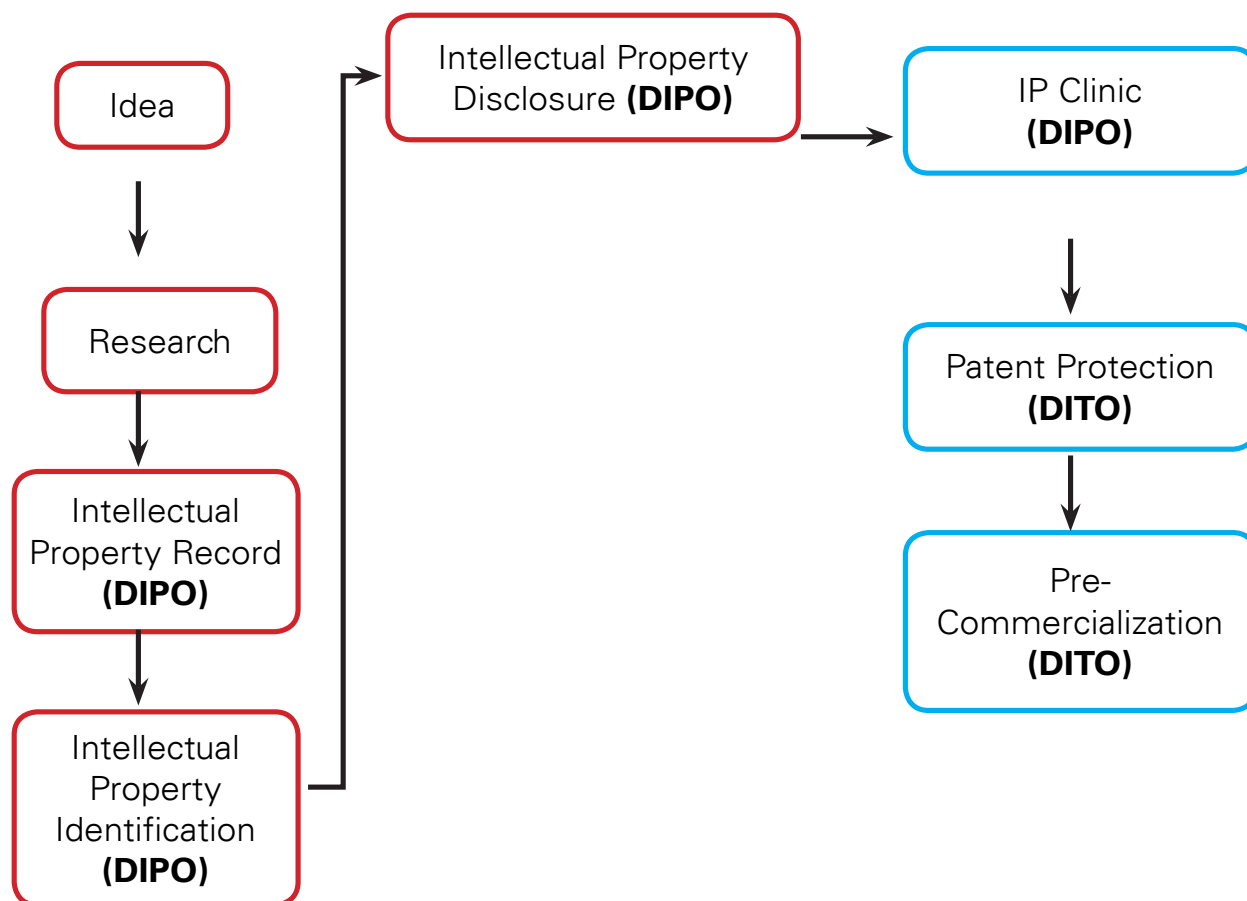
DIPO director and DITO manager, is optimistic that the DLSU community will eventually appreciate the professional and social benefits of using the IP system. The technology transfer process is presented on page 186.

As one of the first universities in the Philippines to establish a technology transfer office, DLSU envisions itself to be a role model and inspiration to other institutions in the country that are increasingly becoming aware of the changing role of universities in the innovation ecosystem and the role of IP in academia. Along with other universities and colleges, DLSU receives assistance from the United States Agency for International Development (USAID)-funded Science, Technology, Research, and Innovation for Development (STRIDE) project for its initiatives activities and projects.

## **ACTIVITIES AND ACHIEVEMENTS**

Since their establishment, the DIPO and DITO have managed a growing team of individuals who are passionate about the work of a knowledge and technology transfer office (KTTO). Members of the DITO team regularly attend IP training sessions and seminars under the ITSO program that are sponsored by the IPOPHIL and the World Intellectual Property Organization (WIPO), as well as events held by the ASEAN United Network (AUN), the Intellectual Property Alumni Association (IPAA), the Japan Patent Office (JPO), the European Patent Office (EPA), the United States Patent and Trademark Office (USPTO), and the Licensing Executives Society (LES), among others. The training sessions and events

## THE DLSU TECHNOLOGY TRANSFER PROCESS AY 2015–2016 TO AY 2016-2017



have equipped the DIPO and DITO team members with the necessary tools to better fulfill their mandate, updated them on IP developments, and exposed them to best practices in handling IP applications and advocacies. Over the years, the DIPO and DITO have conducted several IP clinics, consultations and patent searches with inventors and researchers that have resulted in an increase in patent applications and registrations. These IP workshops include IP for Engineers; Copyright Protection in the Academe; IP Training for Deans, Vice Deans, and

Research and Advanced Studies Directors (RASDs); Discussion of IP Policies with students and faculty; Technology Transfer Seminar in coordination with the DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD); Reference Citation Workshop in partnership with the intellectual property advocates (IPA) and other student organizations; IP workshops for faculty and researchers in various colleges; and innovation trainings. The IPA is a student organization that promotes IP awareness among University students.

The DIPO and DITO also opened their doors for the undergraduate and graduate students of the College of Law who underwent training and workshops on patent searching and the basics of IP. Apart from these above, DIPO has actively provided advice and assistance on issues of MOAs and contracts involving IP protection in the University.

In view of its accomplishments, DIPO and DITO have received various recognitions from external organizations for their efforts.

## DLSU IPA AND UNBOXD

To ensure that the DIPO and DITO services reach students, DIPO advises the IPAs. The IPAs learn about IP protection issues in the Philippines through regular visits to the IPHOPHL headquarters at McKinley Hill, Taguig City. The IPA conducts a series of seminars and talks about various kinds of IP such as trademarks, copyrights, and patents searching. In February 2017, the IPA, in partnership with the Rotaract Club of RCDM Scholars, conducted a National Capital Region (NCR)-wide campus journalism competition for high school students dubbed “RACJOURN 2017: For the Youth.” Anchored on the

theme “Intellectual Property Rights and the Modern Era of Mass Media Communication,” the contest was open to Filipinos who desire to promote pressing issues in our society through writing and journalism. It was attended by almost 500 students and teachers. The IPA also spearheaded the IP Week celebration, which is observed annually. The IP Week showcases IP exhibits, daily IP seminars and workshops, and other activities promoting IP rights. In cooperation with the DIPO and Animo Labs, the IPA also holds IP Thursdays, a weekly venue where students have the opportunity to learn more about IP, commercialization, design thinking, and other topics on innovation.

Meanwhile, the DITO has started advising Unboxd, a student organization—established during the 1<sup>st</sup> term of the AY 2016-2017—that aims to guide students in the commercialization of their ideas. In collaboration with other organizations within and outside the University, Unboxd also conducts business plan competitions; business, technology and reverse pitches; hackathons; and other student events on technology and entrepreneurship. Both the IPA and Unboxd are actively involved in the activities of DIPO and DITO, and many of their members help these offices organize events and workshops.



**IPA and UNBOXD**

## THE DLSU INNOVATION AND TECHNOLOGY FAIR

The DIPO and DITO, with support from the Office of the VCRI, have been holding the **DLSU Innovation and Technology (DITECH) Fair** annually since 2012. The fair serves as a venue for showcasing the different projects and inventions of the University's colleges/school to increase awareness of the importance of IP protection and innovation. The first DITECH Fair was held on November 27-29, 2012. It featured around 40 projects/inventions from DLSU students and faculty and was attended by 1500 guests. Since its inception, the yearly DITECH Fair has become a place for DLSU students and faculty, and representatives from academia, industry, and government to meet, discuss important developments in the local innovation ecosystem, explore, and form collaborations. Over the years, DITECH has expanded to include various technologies in diverse fields and applications. There were also paper presentations from faculty and students during the event. The annual themes

adopted by DITECH focused on relevant issues and current concerns. The themes adopted from 2014 to 2017 were as follows: 2014—"Ideas and Solutions for Nation-Building," 2015—"Green Innovation for Sustainable Future," 2016—"Green Future: Harnessing Academe, Government and Industry Partnerships for a Sustainable Earth," and 2017—"Academe-Created Technologies with Industry for Sustainability." DLSU-Dasmariñas and the DLSU College of St. Benilde also actively participated in DITECH 2016 and 2017.

## COLLABORATIONS WITH DE LA SALLE PHILIPPINES

De La Salle Philippines (DLSP), a network of De La Salle Schools within the Lasallian East Asia District, recognizes the expertise of DIPO and DITO on matters related to IP protection. DITO and the DLSP legal team have held meetings since 2012 to explore the possibility of DLSU-Manila helping the other La Salle schools in the country with their IP activities and projects.



## IP IN THE CURRICULUM

As a member of the ASEAN University Network Intellectual Property (AUN-IP), DLSU acknowledges and supports the undertakings of the ASEAN Project on the Protection of IP Rights (ECAP III). ECAP III aims to create an effective national and regional university IP network that will support IP education, as well as policy research and formulation in the region. DLSU is committed to: implement IP concepts and practices, share experiences on the implementation of its IP policy to formulate a common IP policy before embarking on educational cooperation activities, and gather international best practices concerning IP management. Part of the ECAP III project is the offering of courses on IP education to law students and other students toward the development of an "ASEAN IP brand."

## FUTURE IMPERATIVES

The DITO and DIPO have big plans and ambitions to turn research outputs into actual products and services that will benefit society. The two offices continue to respond to current realities and challenges. Today, the need to increase awareness of IP rights and their effects on society and business among DLSU faculty and students remains a tough challenge, given that IP awareness is relatively low not only in the University but throughout the country. The DIPO hopes to heighten IP awareness by urging the faculty and students to be more conscious of their IP rights and responsibilities. The DIPO and DITO encourage them to focus more on how their research projects and

inventions can best benefit society. The DIPO will sustain its effort to encourage, motivate, and educate the faculty in filing for a patent for their research, invention, etc., in addition to publishing in scientific literature, and thereby earn their promotion once the patent is granted. The office will continue to enforce the University's IP policies and promote the IP rights of every Lasallian. While it is true that the granting of a Philippine patent takes time from the date of application, planting the "IP seeds" today will enable the researcher/inventor to reap the "patent fruits" in the future.

Despite initial gains and achievements, there remains much to be done given the following issues and problems: the lack of IP awareness and appreciation among the faculty, students, and staff; the difficulty in encouraging the disclosure of inventions and creative works; the inadequate mechanism for IP audit and IP valuation; and challenges in networking for commercialization. With the cooperation of various stakeholders and the assistance of external organizations such as STRIDE and IPOPHL, government institutions like DOST, the DIPO and DITO are optimistic that the University will fulfill its vision to support the creation and development of innovative, creative, and sustainable products and services that improve lives and transform communities. By strengthening research capability, providing incentives to IP owners, and nurturing a culture of innovation and respect for IP among the University's faculty, students, and other stakeholders, DLSU is likely to have its first success story.



# FINANCIAL REPORT

## DE LA SALLE UNIVERSITY

### Research Expenditure Analysis AY 2015-2016

	September 01, 2015 to August 31, 2016		Rate of Utilization
	Budget	Expense	
INTERNALLY FUNDED RESEARCH			
<u>DLSU-MANILA</u>			
Sourced from DLSU Budget:			
Research Centers and Offices	76,865,771	64,439,206	84%
Research Deloading	11,000,000	10,911,297	99%
Research Honorarium	1,000,000	387,724	39%
Sabbatical	17,000,000	16,081,799	95%
Research Incentive II	26,000,000	27,226,970	105%
Scholarship:			
Graduate	30,000,000	20,746,837	69%
AUN/SEED-Net	980,000	560,200	57%
ERDT	2,700,000	1,173,446	43%
Sub-total	165,545,771	141,527,480	85%
Sourced from Depository Funds:			
College Research Funds	19,259,578	519,160	3%
Research Fellows Fund	1,890,441	–	0%
New PhDs Research Fund	2,477,220	761,406	31%
Research Capacity	14,606,083	5,523,143	38%
Research Faculty Grants	286,514	–	0%
Other Internally Funded Research	5,236,949	454,820	9%
Sub-total	43,756,785	7,258,530	17%
SCIENCE FOUNDATION			
Scientific Research & Development Grant	3,000,000	585,194	20%
Grants for Professorial Chair	7,500,000	29,825,500	398%
Publication Incentive Grants	6,000,000	9,709,861	162%
Faculty Travel Grants	900,000	1,847,358	205%
Other Grants:			
Conference Fees	2,500,000	2,491,143	100%
Other Grants- Angelo King,	1,200,000	1,570,273	
Sikat 2,		12,102	
CCS-NCCA		1,351,005	
Sub-total	21,100,000	47,392,436	225%
Research Overhead Costs:			
Office Space, Electricity, and Water	63,678,933	63,678,933	100%
Total Internally Funded Research (IFR)	294,081,489	259,857,378	68%

	September 01, 2015 to August 31, 2016		Rate of Utilization
	Budget	Expense	
<b>EXTERNALLY FUNDED RESEARCH</b>			
<b>Research Centers/Units</b>			
AKIEBS	72,367,353	34,386,825	48%
CBRD	7,263,651	4,680,432	64%
LIDER	10,097,675	5,043,306	50%
SDRC	27,244,162	15,919,987	58%
BNSCWC	(4,233)	–	0%
AdRIC	5,656,943	4,560,292	81%
CESDR	23,060,939	14,990,627	65%
ARRPET	355,506	142,536	40%
AUN/SEED-Net	4,219,196	1,077,045	26%
SHORE	22,825,129	15,141,811	
CENSER	17,552,081	9,712,995	55%
JRIG	7,964,471	4,051,263	51%
ECE Funded Research	102,580	–	0%
<b>Sub-total</b>	<b>198,705,453</b>	<b>109,707,118</b>	<b>55%</b>
<b>Scholarship</b>			
AUN/SEEDNet	8,871,918	4,658,479	53%
ERDT	33,760,722	30,254,239	90%
CCS DATACRAFT	14,163,895	6,493,924	46%
CHED SCHOLARS	6,178,438	10,574,431	171%
DOST-SEI ASTHRDP	8,927,678	10,745,795	120%
DOST -SEI SC	27,669,472	18,407,966	67%
<b>Sub-total</b>	<b>99,572,122</b>	<b>81,134,835</b>	<b>81%</b>
<b>Administrative Research Funds</b>	<b>4,485,451</b>	<b>1,355,382</b>	<b>30%</b>
<b>Grants</b>			
CHED Centers of Excellence/ Development	92,374	149,479	162%
<b>Sub-total</b>	<b>92,374</b>	<b>149,479</b>	<b>162%</b>
<b>Total Externally Funded Research (EFR)</b>	<b>302,855,400</b>	<b>192,346,814</b>	<b>64%</b>
<b>TOTAL RESEARCH EXPENDITURE (TRE)</b>	<b>596,936,889</b>	<b>452,204,192</b>	<b>76%</b>
<b>TOTAL RESEARCH EXPENDITURE AS % OF OPEX</b>	<b>26%</b>	<b>20%</b>	

Note: The basis for computing the Percentage of Research was derived from the following budget:

	Budget	Actual
Total DLSU OPEX Budget AY 2015-2016	2,261,736,300	2,220,158,555
Basis *	2,261,736,300	1,220,158,555

**DE LA SALLE UNIVERSITY**  
**Research Expenditure Analysis**  
**AY 2016-2017**

	September 01, 2016 to August 31, 2017		Rate of Utilization
	Budget	Expense	
<b>INTERNALLY FUNDED RESEARCH</b>			
<b><u>DLSU-MANILA</u></b>			
<b>Sourced from DLSU Budget:</b>			
Research Centers and Offices	68,987,858	58,195,246	84%
Research Deloading	11,500,000	12,151,865	106%
Research Honorarium	400,000	34,454	9%
Sabbatical	16,800,000	35,265,961	210%
Research Incentive	28,000,000	30,689,013	110%
Scholarship:			
Graduate	30,000,000	21,496,558	72%
AUN/SEED-Net	1,100,000	538,179	49%
ERDT	2,700,000	633,156	23%
<b>Sub-total</b>	<b>159,487,858</b>	<b>159,004,431</b>	<b>100%</b>
<b>Sourced from Depository Funds:</b>			
College Research Funds	19,018,562	114,789	1%
Research Fellows Fund	1,890,441	300,179	16%
New PhDs Research Fund	1,723,464	547,921	32%
PhD Research	439,152	439,152	
Research Capacity	16,065,901	12,894,088	80%
Research Faculty Grants	286,514	–	
Other Internally Funded Research	5,446,449	705,425	13%
<b>Sub-total</b>	<b>44,870,484</b>	<b>15,001,555</b>	<b>33%</b>
<b>SCIENCE FOUNDATION</b>			
Scientific Research & Development Grant	1,500,000	1,550,988	103%
Grants for Professorial Chair	5,056,275	4,760,226	94%
Publication Incentive Grants	7,183,392	11,025,353	153%
Faculty Travel Grants	2,272,500	2,505,435	110%
Conference Fees	4,082,065	3,767,190	92%
<b>Other Grants:</b>			
Angelo King Foundation, Inc.	945,000	941,199	100%
Animo Lab-Technology Business Incubator at STC	1,200,000	1,570,273	
Digital Repository Project (Mr. Uy)		400,057	
		1,363,000	
<b>Sub-total</b>	<b>21,039,232</b>	<b>26,313,448</b>	<b>125%</b>
<b>Research Overhead Costs:</b>			
Office Space, Electricity, and Water	63,678,933	63,678,933	100%
<b>Total Internally Funded Research (IFR)</b>	<b>289,076,507</b>	<b>263,998,367</b>	<b>91%</b>

	September 01, 2016 to August 31, 2017		Rate of Utilization
	Budget	Expense	
<b>EXTERNALLY FUNDED RESEARCH</b>			
<b>Research Centers/Units</b>			
AKIEBS	60,514,135	36,086,641	60%
CBRD	3,386,578	2,531,959	75%
LIDER	9,640,434	5,691,183	59%
SDRC	41,049,546	23,675,244	58%
BNSCWC	(4,233)	–	0%
AdRIC	2,814,102	1,641,405	58%
CESDR	81,986,210	50,317,565	61%
ARRPET	212,971	–	0%
AUN/SEED-Net	3,320,148	627,875	19%
SHORE	13,251,950	11,906,943	90%
CENSER	21,715,463	5,430,628	25%
JRIG	4,758,113	1,576,468	33%
ECE Research Fund	109,951	–	
<b>Sub-total</b>	<b>242,755,367</b>	<b>139,485,911</b>	<b>57%</b>
<b>Scholarship</b>			
AUN/SEEDNet	7,262,689	4,928,324	68%
ERDT	64,217,820	36,945,723	58%
CCS DATACRAFT	8,299,971	2,169,755	26%
CHED K12	(56)	17,982,612	
CHED SCHOLARS	(2,426,587)	3,941,330	-162%
DOST-SEI ASTHRDP	9,114,849	10,184,135	112%
DOST -SEI SC	26,704,238	23,402,743	88%
<b>Sub-total</b>	<b>113,172,924</b>	<b>99,554,621</b>	<b>88%</b>
<b>Administrative Research Funds</b>	<b>6,667,924</b>	<b>4,210,986</b>	<b>63%</b>
<b>Grants</b>			
CHED Centers of Excellence/ Development	(57,406)	(5,773)	10%
<b>Sub-total</b>	<b>(57,406)</b>	<b>(5,773)</b>	<b>10%</b>
<b>Total Externally Funded Research (EFR)</b>	<b>362,538,548</b>	<b>243,245,745</b>	<b>67%</b>
<b>TOTAL RESEARCH EXPENDITURE (TRE)</b>	<b>651,615,055</b>	<b>507,244,112</b>	<b>78%</b>
<b>TOTAL RESEARCH EXPENDITURE AS % OF OPEX</b>	<b>29%</b>	<b>23%</b>	

Note: The basis for computing the Percentage of Research was derived from the following budget:

	Budget	Actual
Total DLSU OPEX Budget AY 2016-2017	2,249,211,439	2,237,150,158
Basis *	2,249,211,439	2,237,150,158

## LIST OF FUNDING AGENCIES 2015-2016

1. AECOM Philippines Consultants Corporationn
2. Angelo King Institute Research/Support Grants
3. Asian Institute of Technology
4. Australian Agency for International Development (AusAid)
5. Center for Disaster Risk Policy of Florida State University
6. Chamber of Mines of the Philippines
7. Coalition of Services of the Elderly, Inc. (COSE)
8. Commission on Higher Education Philippine Higher Education Research Network (CHED PHERNet)
9. De La Salle Philippines
10. Delegation of the European Union to the Philippines (EU)
11. Department of Science and Technology (DOST)
12. Department of Science and Technology- Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)
13. Department of Science and Technology Philippine Council for Health Research and Development (DOST-PCHRD)
14. Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD)
15. Family Planning Organization of the Philippines, Inc. (FPOP)
16. Food and Agriculture Organization of the United Nations
17. Global Integrity, Inc.
18. Holcim Philippines
19. National Central University (NCU), Taiwan
20. Nokia
21. Office of the President (Term of Br. Rolando Dizon, FSC)
22. Population Services Pilipinas, Inc.
23. Save the Children International
24. Southeast Center for Training and Development (SECTD)
25. Swedish Program for ICT in Developing Regions (SPIDER)
26. Tanggol Kalikasan, Inc.
27. The Oscar M. Lopez Center for Climate Change Adaptation and Disaster Risk Management Foundation Inc. (The OML Center)
28. The Sumitomo Foundation
29. United Board for Christian Higher Education in Asia (UBCHEA)
30. United Nations Children's Fund (UNICEF)
31. United States National Academy of Sciences, Engineering, and Medicine, and the United States Agency for International Development (USAID)
32. World Health Organization (WHO)
33. World Health Organization (WHO-TDR)
34. Zuellig Family Foundation



## LIST OF FUNDING AGENCIES 2016-2017

1. Advance Telecommunications (ADTEL), Inc.
2. Australia's Department of Foreign Affairs and Trade (formerly AusAID) through Nossal Institute for Global Health - The University of Melbourne and United Nations Population Fund (UNFPA)
3. Collaborative Applied Research with Industry (CARWIN) Grants
4. Datacraft
5. Department of Science and Technology
6. Department of Science and Technology – National Academy of Science and Technology
7. Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)
8. Department of Science and Technology - Philippine Council for Health Research and Development (DOST-PCHRD)
9. Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD)
10. Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development Grants-in-Aid (DOST-PCIEERD-GIA)
11. DLSU-Angelo King Institute Community-Based Monitoring System (DLSU AKI – CBMS)
12. East Asian Development Network (EADN)
13. Government of Bangladesh/Asian Development Bank
14. International Fund for Agricultural Development
15. Lopez Group Foundation, Inc. (LGFI) through the Oscar M. Lopez Center for Climate Change Adaptation and Disaster Risk Management Foundation, Inc. (The OML Center)
16. Monde Nissin Corporation
17. National Commission for Culture and the Arts (NCCA) through the DLSU Science Foundation
18. Philippine National Volunteer Service Coordinating Agency (PNVSCA)
19. Philippines-Australia Human Resource and Organisational Development Facility (PAHRODF)
20. Population Media Center
21. SEAOIL Foundation, Inc.
22. Social Sciences and Humanities Research Council, University of British Columbia
23. Sony Pictures
24. STEAG State Power Plant Inc.
25. The Asia Foundation
26. The University of Queensland
27. United Nations Development Programme (UNDP) - Manila
28. United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)
29. United States Agency for International Development - Science Technology, Research and Innovation for Development Collaborative Applied Research with Industry (USAID-STRIDE)
30. Université Laval - DFID
31. USAID through the Virginia Polytechnic Institute and State University and the North Carolina Agricultural and Technical State University
32. World Health Organization (WHO)
33. World Wide Web Foundation



# De La Salle University

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