

### BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Eduardo R. Mendoza (born Oct. 25, 1946)		POSITION TITLE Adjunct Professor	
eRA COMMONS USER NAME			
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Heidelberg	BS	1968	Mathematics
University of Bonn	MS	1974	Mathematics
University of Bonn	PhD	1980	Mathematics

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

#### A. Positions and Honors.

##### 1. POSITIONS.

Instructor, University of Bonn 1974 – 1977  
Assistant Professor, University of Wuppertal 1977 - 1980  
Systems software developer (data communications) Siemens Data Systems Division 1980 - 1983  
 Project leader, Office Automation Group, Scientific Control Systems Germany 1984 - 1986  
Division head, Softlab GmbH (systems house owned by the BMW group) 1986 - 1991  
Director, Microsoft Consulting Services, Germany 1991 - 1998  
Director, Microsoft Consulting Services, Europe, Middle East, Africa 1998 - 2002  
Guest Scientist, Faculty of Physics & Center for NanoScience, Ludwig-Maximilians-University, Munich 2002 - 2003  
Senior Research Scientist, Faculty of Physics & Center for NanoScience, Ludwig-Maximilians-University, Munich 2003– 2011  
Guest Scientist, Faculty of Physics , Ludwig-Maximilians-University, Munich Oct 2011 – Dec 2021  
Guest Scientist, Max Planck Institute of Biochemistry, Munich Oct 2011 – present  
Visiting Professor, Department of Mathematics, University of the Philippines Diliman (Jan-Mar 2003, Aug 2003, Jan- Feb 2004)  
Adjunct Professor of Mathematics and Computer Science, University of the Philippines Diliman (June 2004 – June 2019) and Los Baños (June 2010- 2019)  
Adjunct Professor of Mathematics, De la Salle University (January 2016 – present)  
Visiting Professor, Institute of Mathematical Sciences and Physics, University of the Philippines Los Baños, November-December 2012, November 2015  
Visiting Professor, Institute of Mathematics, University of the Philippines Diliman, August-September 2014  
Visiting Professor, Mathematics and Statistics Department, De la Salle University, Nov-Dec 2016, January 2018 and Oct-Nov 2019  
Honorary Scientist, Center for Natural Sciences and Environmental Research (CENSER), De la Salle University, 2019 – present

##### 2. HONORS.

Graduated Valedictorian, Ateneo de Manila High School 1963  
University scholar, Ateneo de Manila University 1963-1965  
 Graduated magna cum laude, BS Math, University of Heidelberg 1968

Program Director/Principal Investigator (Last, First, Middle):

<u>Scholar</u> , Deutscher Akademischer Austauschdienst (DAAD)	1969-1974
<u>President's Award</u> , Microsoft Corporation	1997
Elected <u>Full Member</u> , Philippine-American Academy of Science and Engineering,	2005
<u>Award of Distinction</u> , Computing Society of the Philippines	2006
<u>BalikScientist Awards</u> , Department of Science and Technology, Philippines	2008-2010
Elected <u>Corresponding Member</u> , Mathematical and Physical Sciences Division, National Academy of Science and Technology (NAST), Philippines	2011

### 3. OFFICES HELD.

<u>Founding Member</u> , European Electronic Messaging Association	1987
<u>Member, Editorial Board</u> , <i>Offene Systeme</i> " (Springer Verlag)	1997-1998
<u>Founding Member</u> , Center for Digital Technology and Management (Ludwig-Maximilians-University and Technical University of Munich)	1998
<u>Chair</u> , 9th International Conference on Molecular Systems Biology 2006, Munich, Germany	2006
<u>Member, Board of Trustees</u> , Max-Planck-Institute for the Dynamics of Complex Technical Systems, Magdeburg, Germany	2006 – 2011
<u>PI and Member, Steering Committee</u> , EUCLOCK FP6 Integrated Project	2006 -- 2011
<u>Member, Board of Directors</u> , Philippine-American Academy of Science and Engineering 2010-2012r	
<u>Coordinator</u> , Munich Systems Biology Forum (www.msbf.mpg.de), SMILES (Statistics, Mathematics, Informatics in the Life and Environmental Sciences)	2003-2010
<u>Coordinator</u> , MBaRC (Manila Bay Area Research Corridor)	2008-2010C
<u>Member, Editorial Board</u> , <i>Communications in Mathematical and Computer Chemistry</i> (MATCH)	2021 -

List of PhD graduates: <https://www.genealogy.math.ndsu.nodak.edu/id.php?id=93551>

## B. Publications

### Mathematical Chemistry and Systems Biology

1. Jose EC, **Mendoza ER**, Talabis DASJ. Complex Balanced Equilibria of Weakly Reversible Poly-PL Systems: Existence, Stability, and Robustness. *MATCH Communications in Mathematical and Computer Chemistry* 89 (2023) 1 pp. 107 – 142
2. Espina A, **Mendoza E**, Lao A. Modelling the Effects of Medium-Chain Triglycerides on Cerebral Ketone Body Metabolism. *Frontiers of Systems Biology* 23 (June 2022)
3. Hernandez BS and **Mendoza ER**. Weakly reversible <cf decompositions of chemical kinetic systems. *Journal of Mathematical Chemistry* 60, 799–829 (2022). (2022)
4. Jose EC, **Mendoza ER**, Talabis DASJ. Absolutely complex balanced kinetic systems. *MATCH Communications in Mathematical and Computer Chemistry* 88 (2022) 2, pp. 397 - 436
5. Lao AR, Lubenia PVN, Magpantay DM, **Mendoza ER**. Concentration robustness in LP kinetic systems. *MATCH Communications in Mathematical and Computer Chemistry* 88 (2022) 1, pp. 29 – 66.
6. Fortun NT, Razon LF, Lao AR, **Mendoza ER**. Robustness in power law kinetic systems with reactant-determined interactions. (2018). *Proceedings of the Japan Conference on Geometry, Graphs and Games 2018, Lecture Notes in Computer Science*, Springer Verlag, August 2021, pp. 106 – 121
7. Fontanil LL and **Mendoza ER**. Common complexes of decompositions and complex balanced equilibria of of chemical reaction networks. *MATCH Communications in Mathematical and Computer Chemistry* 87 (2022), pp. 329 – 366.

8. Hernandez BS, Amistas DA, de la Cruz RJ, Fontanil LL, de los Reyes V AA, **Mendoza ER**. Independent, incidence independent and weakly reversible decompositions of chemical reaction networks. *MATCH Communications in Mathematical and Computer Chemistry* 87 (2022), pp.
9. Farinas HF, **Mendoza ER**, Lao AR. Chemical reaction network decompositions and realizations of S-systems. *Philippine Science Letters* 14 (2021) (1): pp. 147 – 157.
10. Lao AR, de la Cruz MA, Tenio GJ, Sy P, **Mendoza ER**. Stochastic Process Algebra Model of Amyloidogenic Processing in Alzheimer’s Disease. Chapter 18 of “Towards intelligent systems modeling and simulation: with applications to energy, epidemiology an risk assessment, Eds. SA Abdul Karim, A. Shafie. Springer International Publishing 2021
11. Hernandez BS and **Mendoza ER**. Positive equilibria of Hill-type systems. *Journal of Mathematical Chemistry* 59 (2021), pp. 840 – 870.
12. Fontanil LL, **Mendoza ER**, Fortun NT. A computational approach to concentration robustness in power law kinetic systems of Shinar-Feinberg type *MATCH Comm. Math. Comput. Chem.* 86 (2021) (3): 489 - 516
13. Magpantay DM, Hernandez BS, de los Reyes A, **Mendoza ER**, Nocon EG. A computational approach to multistationarity in poly-PL kinetic systems *MATCH Comm. Math. Comput. Chem.* 85 (2021) (3); 605 – 634.
14. Fortun NT and **Mendoza ER**. Absolute concentration robustness in power law kinetic systems. [MATCH Comm. Math. Comput. Chem.](#) 85 (2021) (3), pp. 669 – 691
15. Farinas HF, Mendoza ER, Lao AR. Structural properties of an S-system model of Mycobacterium tuberculosis gene regulation. *Phil J. Science* 149 (2020) (3), pp. 539-555
16. Gabud RS, Batista-Navarro RB, Mariano VY, **Mendoza ER**, Yap SI. Literature mining of dipterocarps: Towards better informed natural regeneration and reforestation in Luzon, Philippines. *Sylvatrop* Vol. 29 (2020)
17. Cabayon RC, Lucilo JA, Arceo CPP, **Mendoza ER**. Comparison of Two Nature-inspired Algorithms for Parameter Estimation of S-Systems. *Philippine J. Science* (2020)149 (1): 61-78
18. Hernandez BS, **Mendoza ER**, de los Reyes A. Fundamental decompositions and multistationarity in power law kinetic systems *MATCH Comm. Math. Comput. Chem.* 83 (2020) (2); 403 – 434.
19. Talabis DASJ, Magpantay D, Mendoza ER, Nocon EG, Jose EC. A Weak Reversibility Theorem for poly-PL kinetics and evolutionary games *MATCH Comm. Math. Comput. Chem.* 83 (2020) (2): 375 – 412.
20. Nazareno AL, Eclarin RPL, Mendoza ER, Lao AR. Linear conjugacy of chemical kinetic systems *Math. Biosciences and Engineering* 16 (2019) (6), pp. 8322–8355
21. Hernandez BS, **Mendoza ER**, de los Reyes A. A computational approach to multistationarity in power law kinetic systems. *Journal of Math. Chemistry* 58 (2020); 56 – 87.
22. Talabis DASJ, **Mendoza ER**, Jose EC. Complex balanced equilibria of weakly reversible power law kinetic systems. *MATCH Comm. Math. Comput. Chem.* 82 (2019) pp. 601-624.
23. Magpantay DM, **Mendoza ER**, , Nocon EG. [Craciun’s EMAC Method: A DynamicsDynamics-focussed approach to poly-PL systems.](#) *Manila Jour. Science* (2019)
24. Villar JJS, Lubenia PL, **Mendoza ER**, Arceo CPP. Structural stability analysis of dopamine synthesis and D1 receptor trafficking in RPT cells using CRNT. *Philippine Journal of Science* 148(3), 2019.
25. Fortun NT, Lao AR, Razon LF, **Mendoza ER**. A Deficiency Zero Theorem for a class of power law kinetic systems with non-reactant determined interactions. *MATCH Comm. Math. Comput. Chem.* 81 (2019) 621 - 638.
26. Arceo CP, Jose EC, Lao AR, **Mendoza ER**. Chemical reaction networks: Filipino contributions to their theory and its applications. *Phil. Journal of Science* (2019) Vol. 148 No. 2
27. Fortun NT, Lao AR, Razon LF, **Mendoza ER**. Multistationarity in Earth’s Pre-industrial Carbon Cycle Models. *Manila Journal of Science* 11 (2018), 81-96
28. Fortun NT, **Mendoza ER**, Razon LF, Lao AR. A Deficiency One Algorithm for Power in Law Kinetic Systems with Reactant-Determined Interactions. *Journal of Mathematical Chemistry* 56 (2018) 10, 2929-2962
29. **Mendoza ER**, Talabis DASJ, Jose EC. Positive equilibria of weakly reversible power law kinetic systems with linear independent interactions. [Journal of Mathematical Chemistry](#) October 2018, Volume 56, [Issue 9](#), pp 2643–2673

30. Arceo CP, Jose EC, Lao AR, **Mendoza ER**. Reactant subspaces and kinetics of chemical reaction networks. *Journal of Mathe. Chemistry* 56 (2018) 2: 395-422.
31. Talabis DASJ, Arceo CPP, **Mendoza ER**. Positive equilibria of a class of power law kinetics. *J. Math, Chem* 56 (2018) 2: 358-394.
32. Cortez MJ, Nazareno AN, **Mendoza ER**. A computational approach to linear conjugacy in a class of power law kinetic systems. *J. Math. Chem* 56 (2018) 2: 336-357.
33. Arceo CPP, Jose EC, Lao AR, **Mendoza ER**. Reaction networks and kinetics of biochemical systems. *Math. Biosci.* 283 (2017): 13-29.
34. Azizan KA, Resson HW, **Mendoza ER**, Baharum SN. Proteinogenic Amino Acid Profiles and Flux Distribution in *Lactococcus lactis* at various growth conditions. *PeerJ* (2017)
35. Nazareno AL, Dionisio-Sese ML, Cuaresma GA, **Mendoza ER**. Jose EC. Continuous Logical Modeling of the Submergence Regulatory Network in Rice. *Phil. Journ. Of Science* (2017).
36. Talaue CO, del Rosario RCH, Pfeiffer F, **Mendoza ER**, Oesterhelt D. Model Construction and Analysis of Respiration in *Halobacterium Salinarum*. *PLoS ONE*, March 24, 2016, 1-22.
37. Arceo CPP, Jose EC, Marin-Sanguino A, **Mendoza ER**. Chemical Reaction Network Approaches to Biochemical Systems Theory. *Mathematical Biosciences* 269 (2015), pp. 135-152.
38. Gabud RS, Manalang Jr GF, Chua RBL, **Mendoza ER**, Lozano-Kuehne JP. An Assessment of chronotype and social jet lag among Filipinos. *Int. Journal of Phil. Science and Technology Vol 1 No. 1* (2015)
39. Cayetano AC, Roa FC, **Mendoza ER**, Naval Jr PC. Finding the optimal dose for usoriasis ultraviolet radiation therapy through multi-objective evolutionary optimization on a skin model. *Int. Journal of Phil. Science and Technolgy Vol 1 No 1* (2015)
40. Yap JM, Mauleon R, **Mendoza ER**, Adorna H. A Partial Regression Coefficient Analysis Framework for Inferring Candidate Genes Causal to Traits in Recombinant Inbred Lines. *Philippine Science Letters* (2014,).
41. Yap JM, Adorna H, Mauleon R, **Mendoza ER**. Correctness and Algorithmic Efficiency of a Method for Systems Genetics. *Philippine Computing Journal* (2014)
42. Dobay MPD, Schmidt A, **Mendoza ER**, Bein T, Rädler JO. Cell type determines the light-induced endosomal escape kinetics of multifunctional mesoporous nanoparticles (*ACS NanoLetters*, Apr 2013).
43. **Mendoza ER**. Model organisms. in *Encyclopedia of Systems Biology* (Dubitzky W, Wolkenhauer O, Yokota H, Cho K.-H. Eds.), Springer 2013.
44. **Mendoza ER**. Organelles and Functional Modules. in *Encyclopedia of Systems Biology* (Dubitzky W, Wolkenhauer O, Yokota H, Cho K.-H. Eds.), Springer 2013.
45. **Mendoza ER**. Modeling nanoparticle-cell interactions with stochastic process algebras. 2012. Invited paper for the Proceedings of the 6<sup>th</sup> International Jagna Workshop (Jan 4-7, 2012), *International Journal of Modern Physics, Conference Series* (Nov 2012) .
46. Dobay MPD, Alberola AP, **Mendoza ER**, Rädler JO. Modeling nanoparticle uptake and intracellular distribution using stochastic process algebras. 2012 (*Journal of Nanoparticle Research* 14)
47. Lozano-Kühne J, Aguila MER, Manalang GF Jr, Chua RB, Gabud RS, **Mendoza ER**. Shift work research in the Philippines: current status and future directions. 2012. *Philippine Science Letters*, Vol. 5 No. 1.
48. Dobay MPD, Dobay A, Bantang JY, **Mendoza ER**. How many trimers? Modeling influenza A virus fusion yields a minimum aggregate size of six trimers, three of which are fusogenic. 2011. *Molecular Biosystems*, Vol 7, No. 10. Chosen as Cover Story of the Oct 2011 issue.
49. Marin-Sanguino A, **Mendoza ER**, Voit EO, Flux Duality in Non-Linear GMA Systems: Implications for Metabolic Engineering, *Journal of Biotechnology* 149, Issue 3, Sept 2010
50. Naval PC, Sison LG, **Mendoza ER**. Parameter estimation with Term-wise Decomposition in Biochemical Network GMA Models by Hybrid Regularized Least Squares-Particle Swarm Optimization. *Proceedings of the IEEE Conference on Evolutionary Computation (CEC) 2010*, July 18-23, 2010, Barcelona, Spain
51. **Mendoza ER** and Aguila MER. Social jet lag, shift work and senior citizens. *NAST Transactions 2010* (Proceedings of NAST ASM, Manila, July 14-15, 2010).
52. Gonzalez O, Oberwinkler T, Mansueto, L, Pfeiffer F, **Mendoza ER**, Zimmer R, Oesterhelt D. Characterization of growth and metabolism of the polyextremophile *Natronomonas pharaonis*. June 2010, *PLoS Computational Biology*

Program Director/Principal Investigator (Last, First, Middle):

53. **Mendoza ER.** From communicational to computational: systems modeling approaches for psychiatric research. In "Systems Biology and Psychiatric Research" Tretter F, Gebicke-Härter P, Winterer G, Mendoza ER (Eds) Wiley VCH, June 2010.
54. Dulam-Banawa B, Marin-Sanguino A, **Mendoza ER.** The evolution of synapse models: from numbers to networks to spaces. *Pharmacopsychiatry* May 2010.
55. Schwake G, Youssef S, Kuhr JT, Gude S, David MPC, **Mendoza ER,** Frey E, Rädler JO, Predictive modeling of non-viral gene transfer, March 2010. *Journal of Biotechnology and Bioengineering* . 105: 805-813
56. David MPC, Bantang, JY, **Mendoza ER,** Modeling atonal membrane reactions with the projective brane calculus PABM, *Electronic Proceedings in Theoretical Computer Science* (Sept 2009)
57. **Mendoza ER,** Systems Biology: Its Past, Present and Potential. *Phil Science Letters*, Vol 2, No 1 Aug 2009 (available online at <http://www.philsciletters.org/> )
58. David MPC, Bantang, JY, **Mendoza ER,** A Projective Brane Calculus based on Activate, Bud and Mate Primitives, *Transactions on Computational Systems Biology*, Special issue on "Computational models for cell processes", Sept 2009 .
59. Rodriguez EM, Rudy A, del Rosario RCH, Vollmar A, **Mendoza ER,** A Discrete Petri Net Model for Cephalostatin-induced Apoptosis in Leukemic Cells, *Natural Computing*, Aug 2009
60. del Rosario RCH, **Mendoza ER,** Oesterhelt D. Modelling the Bioenergetics of *Halobacterium salinarum* with Petri Nets, *Journal of Computational and Theoretical Nanotechnology* Aug 2009
61. Marin-Sanguino A, del Rosario RCH , **Mendoza ER.** Concept Maps and Canonical Models in Neuropsychiatry. *Pharmacopsychiatry*. 2009;42 Suppl 1:S51-8.
62. Gonzalez O, Gronau S, Pfeiffer F, **Mendoza ER,** Zimmer R, Oesterhelt D. Systems Analysis of Bioenergetics and Growth of the Extreme Halophile *Halobacterium salinarum* . 2009, *PLoS Computational Biology*, Vol 5, Issue 4
63. Marin-Sanguino A, Torres, NV, **Mendoza ER,** Oesterhelt D, Metabolic Engineering with Power-Law and linear logarithmic Systems, *Mathematical Biosciences*, 2009; Vol 218, 50-8.
64. del Rosario RCH, **Mendoza ER,** Voit EO. Challenges in lin-log modelling of glycolysis in *Lactococcus lactis*. *IET Systems Biology*. 2008;2:136-30.
65. Marin-Sanguino A, **Mendoza ER.** Hybrid modeling in computational neuropsychiatry. *Pharmacopsychiatry*. 2008;41 Suppl 1:S85-8.
66. Roenneberg T, Chua EJ, Bernardo R, **Mendoza ER.** Modelling biological rhythms. *Curr Biol*. 2008;18:R826-35.
67. Gonzalez O, Gronau S, Falb M, Pfeiffer F, **Mendoza ER,** Zimmer R, Oesterhelt D. Reconstruction, modeling & analysis of *Halobacterium salinarum* R-1 metabolism. *Mol Biosys*. 2008;3:148-59.
68. del Rosario RCH, Staudinger WF, Streif S, Pfeiffer F, **Mendoza ER,** Oesterhelt D. Modelling the CheY (D10K,Y100W) *Halobacterium salinarum* mutant: sensitivity analysis allows choice of parameter to be modified in the phototaxis model. *IET Systems Biology*. 2007;1:207-2.
69. Batista RT, Ramirez DB, Santos RD, del Rosario MC, **Mendoza ER.** EUCLIS--an information system for circadian systems biology. *IET Syst Biol*. 2007;1:266-73.
70. Gonzalez OR, Kuper C, Jung K, Naval PC, **Mendoza ER.** Parameter estimation using simulated annealing for S-system models of biochemical networks. *Bioinformatics*. 2007;23: 480-6.
71. **Mendoza ER.** Coding theory and Hadamard Matrices I-II, in *Matimyas Matematika*, April 1981 & July 1981
72. **Mendoza ER.** On the group PGL2 over imaginary quadratics integers, in "Recent Advances in Mathematics and its Applications", SEAMS 5th Biennial General Meeting & Conference, Hong Kong, June 16-21 1980
73. **Mendoza ER.** Cohomology of PGL2 over imaginary quadratic integers, *Bonner Mathematische Schriften* No. 128, 1980

#### Editorials in co-edited Journals/Books

74. Tretter F, Rujescu D, Pogarell, Merndoza ER. Editorial. *Computational Neuropsychiatry* Vol.5 Special Supplement , *Pharmacopsychiatry* May 2010
75. Tretter F, Gebicke-Härter P, Winterer G, Mendoza ER Introduction. *Systems Biology and Psychiatric Research*. Wiley Blackwell, June 2010.
76. Dress A, Mendoza ER, Voit EO. Advanced Methods in Molecular Systems Biology. Speciall Issue, *Journal of Biotechnology*, 149, Issue 3, Sept 2010

77. **Mendoza ER.** Introduction to Section on “Resources for Systems Biology” in Encyclopedia of Systems Biology. Springer 2013.

#### Co-edited Books

1. Tretter F, Gebicke-Härter P, Winterer G, **Mendoza ER** Systems Biology and Psychiatric Research. Wiley Blackwell, June 2010.
2. **Mendoza ER.** Section on “Resources for Systems Biology” in Encyclopedia of Systems Biology (Dubitzky W, Wolkenhauer O, Yokota H, Cho K.-H. Eds.), Springer 2013.

#### Information & Communication Technology (Oct 1980 – Sep 2002)

1. Mendoza ER. The situation of Information Engineering in Developing Countries (in German). Proceedings of the Seminar “Information Engineering and Industrialization in Developing Countries”, Technical University of Berlin, May 1982.
2. Mendoza ER., Herboeck L, Peulen P. Concept and recommendations for the introduction of new office technologies at a large regional bank (in German), SCS Technical Report, Oct 1984.
3. Mendoza ER. A comparison of Xerox Courier and CCITT remote operation service (in German). Proceedings of the Workshop “ROS in open computer networks” of the German Informatics Society (GI), Munich, April 1986.
4. Mendoza ER. The role of portable software components in MAP solutions (in German). Proceedings of the Workshop on the Manufacturing Automation Protocol, BIGTECH Berlin, Nov 1986
5. Mendoza ER, Beyschlag U. OSI Migration strategies – a key business issue today (German issue of “Computerworld”), Computerwoche, June 26, 1987
6. Mendoza ER. OSI Management: An important component of open networks” (in German). Proceedings of the Conference on Advanced Information and Communication Technologies” at ONLINE 88 (Hamburg, Feb 1988)
7. Mendoza ER. Directory Services and COSINE”, in Computer Networks and ISDN Systems. Vol16, Nos. 1 & 2, Sept 1988
8. Mendoza ER. Manufacturing messaging specification and companion standards. OSI at the Application Layer (in German), Datakom. 1988, Chapter 6, pp 56-63
9. Mendoza ER. The application layer service elements: ACSE,RTSE,ROSE,CCR. OSI at the Application Layer (in German), Datakom. 1988, Chapter 9, pp 98-105
10. Mendoza ER. From standards via products and services to OSI infrastructures. OSI at the Application Layer (German), Datakom. 1988, Chapter 10, pp106-112
11. Mendoza ER. CCITT X.400 '88 and ISO/IEC MOTIS- a Comparison” (in German). Proceedings of the Muenchner OSI-Tage (Munich, May 1989)
12. Mendoza ER. ISO/OSI – the basis for successful business communications and its business benefits. Proceedings of the Executive Management Workshop, UNISYS International Management Centre (St. Paul-de-Vence, June 1989)
13. Mendoza ER, Cooper C. The CeBIT90 Experience. Proceedings of COMPAT 90 Conference at EDI Europe (Madrid, May 1990)
14. Mendoza ER. Current Trends in OSI technology” (in German). Proceedings of the Muenchner OSI-Tage (Munich, May 1990)
15. Mendoza ER. Recent Developments in Electronic Data Interchange Using OSI. Information Technology: The Tool for Economic Miracles”, Proceedings SEARCC 90, 9th Convention (Manila, Dec 1990), pp 618-620
16. Mendoza ER. OSI – from Open Systems Interconnection to Open Systems Infrastructure” (in German), Proceedings of the Muenchner OSI-Tage (Munich, May 1991)
17. Mendoza ER. The way forward to Workgroup Computing” (in German), Proceedings of the Conference on Client-Server Computing at Telecom Trends net 93 (Mainz, May 1993)
18. Mendoza ER. The Windows Platform for Client-Server Applications. Client-Server Architecture” (in German), Addison-Wesley 1993. Chapter 4. pp 141-177

19. Mendoza ER. Computer-supported Workflow (in German). Proceedings of the Seminar on "Application Development in a Client-Server Environment" (HMT, Munich, Nov 1993)
20. Mendoza ER, Olsowsky-Klein G. "The Microsoft COM Approach to Component-based Software Development (in German), Objekt-Spektrum (1996)
21. Mendoza ER. E = mc3: the Microsoft approach to Enterprise Consulting (in German). Microsoft Business Journal, June 1997
22. Mendoza ER. Know-How, Show-How: Knowledge Management as the Core Component of IT Consulting", Proceedings of the 10th Business Symposium, European Business School, Schloss Reichartshausen (Oct 1999)

## Other Publication-related Activities

### Information and Communications Technology (ICT)

1. Co-editor of the book "OSI in der Anwendungsebene" (OSI at the Application Layer), Datakom 1988
2. Co-Chairman (with Ulf Beyschlag) of the Conferences "Muenchner OSI-Tage 1988, 1989, 1990, 1991), Co-Editor of the Proceedings

### Bioinformatics and Systems Biology

3. Reviewer for international journals including: *PNAS*, *PLoS Computational Biology*, *Bioinformatics*, *Molecular Biosystems*, *IEEE Transactions on Biomedical Circuits and Systems*, *IET Systems Biology*, *Biosystems*, *Mathematical Biosciences*, *Natural Computing*, *Theoretical Computer Science*, *PLoS ONE*, *New Phytologist*, *Pharmacopsychiatry*, *Journal of Biotechnology*

### C. Presentations on Bioinformatics and Systems Biology

1. Mendoza ER. Signal Transport in the Chemical Compass of eukaryotic cells, *CeNS Workshop on "Transport in Nanosystems"*, Sep 28-30, 2003, Kloster Seeon, Germany
2. Mendoza ER. Computational Aspects of Systems Biology, Invited Paper, *Proceedings of 4<sup>th</sup> Philippine Computing Science Congress (PCSC 2004)*, Feb 2004, Los Baños
3. Mendoza ER. Modelling biological systems with Petri Nets, Invited Paper, *Proceedings of the 5<sup>th</sup> Philippine Computing Science Congress (PCSC 2005)*, Mar 4-5, 2005, Cebu City
4. Mendoza ER., Growing interdisciplinary science & emerging technologies through communities of practice, *Proceedings of IEEE HNICEM05*, March 17-20, 2005, Manila
5. Naval P, Gonzalez O, Sison L, Mendoza E. Heuristic parameter estimation of S-System models of biochemical networks. *Proceedings of IEEE HNICEM05*, March 17-20, 2005, Manila
6. Mendoza ER. Systems Biology – Its Past, Present and Future, Keynote Speech, *Summer School on NanoScience and Systems Biology*, July 25-28, 2005, Munich, Germany
7. Balbuena AB, Mendoza ER, Tan EL: Topological adjacency relations and digital topologies in  $Z^2$  and  $Z^3$ , *2005 International Workshop on Applied Mathematics*, Nov 11-12, 2005, Chungnam National University, Daejeon, South Korea
8. Zuñiga P, A. Balbuena A, Mendoza E: A Graphical protocol editor for an integrated microscopy system, *Proceedings of the ASEAN Microscopy Conference*, Nov 24-25, 2005, Manila
9. Ganir P, Clarin C, Mendoza E: The Open Microscopy Environment and Mapping Image Formats, *Proceedings of the ASEAN Microscopy Conference*, Nov 24-25, 2005, Manila
10. Mendoza ER. EUCLIS – An Information System for Circadian Systems Biology, Invited Paper, *Proceedings of the 6<sup>th</sup> Philippine Computing Science Congress (PCSC 2006)*, Mar 28-29, 2006, Quezon City
11. Mendoza ER, Digital Library Aspects in EUCLIS, *1<sup>st</sup> ENGAGE European Union-Southeast Asia ICT Research Collaboration Conference*, March 29-31, 2006, Manila
12. Mendoza ER: EUCLIS – An Information System for Circadian Systems Biology, Invited Paper, *Proceedings of the First International Conference on Computational Systems Biology*, July 20-23, 2006, Shanghai, China
13. Mendoza ER. Systems Biophysics: An Opportunity for Filipino Researchers, Invited Paper, *Proceedings of the 24<sup>th</sup> SPP Physics Congress*, October 25-27, 2006, Davao City

14. Mendoza ER. SMILES: The First 4 Years, *Proceedings of the 27th Annual PAASE Meeting & Symposium (APAMS 2007)*, Feb 2007, Manila
15. Mendoza ER, Novel software approaches for Circadian Systems Biology, *Proceedings of the 27th Annual PAASE Meeting & Symposium (APAMS 2007)*, Feb 2007, Manila
16. Mendoza ER. EUCLIS – An Information System for Systems Chronobiology, Invited Paper, *EuroMouse II, 2<sup>nd</sup> European Conference on Mouse Functional Genomics*, London July 2-4, 2007
17. Mendoza ER. What can we learn from a genome-scale model of unicellular metabolism, Invited paper, *Proceedings of the International Conference on Amino Acids and Proteins –Amino Acids Forum Supplement*, August 2007, Kallithea, Greece
18. Mendoza ER. Systems Biology of viral infection, Invited Paper, *Proceedings of the 8<sup>th</sup> Philippine Computing Science Congress (PCSC 2005)*, Feb 23-24, 2008, Quezon City
19. Mendoza ER. Systems Biology with SMILES, Keynote Speech, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
20. del Rosario RC, Echavez MT, de Paz MT, Zuñiga PC, Bargo MC, Talaue CO, Arellano C, Pasia JM, Naval, PC Jr., Voit EO, Mendoza ER. MADMan: A Benchmarking Framework for Parameter Estimation in Biochemical Systems Theory Models, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
21. Marin-Sanguino A, Torres-Darias NV, Mendoza ER, D. Oesterhelt D. Model driven Optimization based on Standard Formalisms, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
22. Rodriguez EM, Del Rosario RC, Rudy A, Vollmar A, Mendoza ER. Cephalostatin-1 induced Apoptosis in Leukemic Cells: From Petri Net Model to Kinetic Model, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
23. David MP, Phillips A, Mendoza ER, L. Cardelli L. Implementing Brane Calculus, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
24. Santos RD, Mendoza, ER. Towards a digital-library based common Information Space for Chronobiologists, *10<sup>th</sup> International Conference on Molecular Systems Biology*, Feb 25-28, 2008, Manila
25. Mendoza E, Weaving the WeP- a worldwide experimental platform for Biomedical Studies, Invited Paper, *International Conference on ICT4Health*, March 2008, Quezon City
26. del Rosario RC, E.R. Mendoza ER. An Integrated View of Apoptotic Processes—the MINA project, *International Conference on ICT4Health*, March 2008, Quezon City
27. Mendoza ER. Understanding eukaryotic chemotaxis, Invited paper, *7<sup>th</sup> HUGO Asia Pacific Conference*, April 2-5, 2008, Cebu City, Philippines
28. Mendoza ER. Modelling in Systems Biology: Methods and Challenges, *4<sup>th</sup> International Workshop on Computational Neuropsychiatry, Focus on “Systems Biology and Addiction”*, April 18-19, Haar, Germany
29. Mendoza ER. EUCLIS: Towards an Information Infrastructure for the Chronobiology community, *17<sup>th</sup> European Chronobiology Summer School*, June 7-14, 2008, Laulasmaa, Estonia
30. Mendoza ER. Computational Analysis of the circadian and dopamine systems, Invited paper, *XXVI Congress of the Collegium Internationale Neuro-Psychopharmacologicum (CINP)*, July 13-17, 2008, Munich,
31. Mendoza ER. The Evolution of Information Technology as a Platform for 21<sup>st</sup> Century Life Sciences and its Industries, Keynote speech, *The 2<sup>nd</sup> KAIST Institutes International Symposium*, Sept 4-5, 2008, Daejeon, Korea
32. Mendoza ER. Hybrid Modelling, *Summer School on Medical Applications of Systems Biology*, Sept 30-Oct 2, 2008, Tenerife, Spain
33. Mendoza ER. The Impact of Systems Biology on Drug Discovery and Development, Keynote speech, *35<sup>th</sup> Annual Convention of the Philippine Society for Biochemistry and Molecular Biology*, Dec 1-2, 2008, Quezon City, Philippines.
34. Mendoza ER. Modelling the dopamine synapse: from numbers to networks to..., Invited lecture *Hamilton Institute*, Maynooth, Ireland, Jan 14, 2009
35. David MPC, Bantang, JY, Youssef, S, Mendoza ER, A Projective Brane Calculus based on Activate, Bud and Mate Primitive Actions, Feb 26, 2009, (*Invitational*) *Workshop on “Formal Methods in Molecular Biology”*, Leibniz Center for Informatics, Schloss Dagstuhl



36. Mendoza ER. Modelling the dopamine synapse: from numbers to networks to brane spaces, Invited lecture, Distinguished Seminar Series Lecture, IBSI at Georgia Tech, March 25, 2009
37. Mendoza ER. Modelling the dopamine synapse: from numbers to networks, Invited Lecture, NIMH (NIH Bethesda, MD), March 27, 2009
38. Mendoza ER, The evolution of synapse models; from number to networks, Invited lecture, 5<sup>th</sup> International Workshop on Computational Neuropsychiatry, May 8-9, 2009 Munich, Germany
39. Mendoza ER, The synapse: where Systems Biology meets Proteomics today, Invited lecture, First International Conference on Radiation Proteomics, May 27-28, 2009, Munich, Germany
40. Mendoza ER, The dopamine systems in neurons and nephrons, Invited talk, 11<sup>th</sup> International Conference on Molecular Systems Biology, June 21-25, 2009, Shanghai, China
41. Mendoza ER, Why Mathematics Is Important for Biology, why Biology is important for Mathematics, Lecture Series, Institute of Mathematics, UP Diliman, July 2009
42. Mendoza ER, Social Jet Lag, Shift Work and Senior Citizens: New Insights into the Human Circadian System, NAST Annual Scientific Meeting, July 8-9, 2009, Manila
43. Mendoza ER, The Philippine Network for Bioinformatics and Systems Biology: Evolving a sustainable platform for integrating experimental and computational Life Sciences, 29<sup>th</sup> APAMS, July 13-15, 2009 Manila
44. Modeling concurrent systems: from cell phones to cell membranes, 29<sup>th</sup> APAMS, July 13-15, 2009
45. Santos L, Mendoza ER, Software tools for Systems Chronobiology, International Symposium on Shift Work and Health Research, July 31, 2009, Manila, Philippines
46. David MPC, Bantang, JY, Mendoza ER, Modeling atonal membrane reactions with the projective brane calculus PABM, 3<sup>rd</sup> MeCBIC Workshop, Sept 5, 2009 Bologna, Italy
47. Ruiz-Aguila MESD, Mendoza ER, Social Jet Lag and Shift Work: New Insights into the Human Circadian System, International Symposium on "The Future of Computational Biology", Sept 21-23, 2009, Berlin, Germany
48. Manansala K, Batista-Navarro RTB, Mendoza ER. Towards the Development of a Natural Product Ontology. Proceedings of the 6<sup>th</sup> National Natural Language Processing Research Symposium. Sept 25-26, 2009 at DLSU Manila.
49. Mendoza ER. The MIMeMP Proposal: Current Status. International Workshop on Mathematics and Informatics of membrane-mediated processes, Munich, Oct. 19-31, 2009.
50. Mendoza ER. Mathematics and Informatics of membrane-mediated processes. Invited talk at the Max Planck Institute of Mathematics in the Sciences, Leipzig, on Jan 19, 2010.
51. Mendoza ER. The EUCLIS Family. 4<sup>th</sup> Annual EUCLOCK Meeting, Frauenchiemsee, Germany. January 25-29, 2010.
52. Mendoza ER. Research Networks on Chronobiology and Shift Work. 1<sup>st</sup> Research Colloquium on Chronobiology and Shift Work, UP Manila, February 6, 2010.
53. Mendoza ER. Geometric modeling of biological processes. Plenary Lecture. Proceedings of 10<sup>th</sup> Philippine Computing Science Congress (PCSC 2010), March 5-7, 2010, Davao City, Philippines.
54. Mendoza ER: The global Bio-IT market: success stories and opportunities, 8<sup>th</sup> Philippine Youth Congress for Information Technology (Y4IT), Quezon City, Sept 14-17, 2010
55. Mendoza ER, From ClockWork to PhilSHIFT, 2nd Research Colloquium on Chronobiology and Shift Work, UP Manila, September 25, 2010.
56. Dobay MPD, Bantang JY, Mendoza ER. How many trimers? Modeling influenza A virus fusion yields a minimum aggregate size of six trimers, three of which are fusogenic. Workshop on Advanced Modeling and Simulation Techniques. International Conference on Systems Biology 2010. Edinburgh, UK.
57. Mendoza ER. Algorithmic Cell Biology – translating biological cartoons into computer programs. Invited Plenary Lecture, 6<sup>th</sup> Asian-Pacific Organization for Cell Biology Conference, Feb 25-28, 2011, Mandaluyong, Philippines
58. Mendoza ER. Towards an Information Platform for Natural Products Research. Keynote Lecture. Proceedings of 11<sup>th</sup> Philippine Computing Science Congress (PCSC 2011), March 4-5, 2011, Naga City, Philippines.
59. Mendoza ER. Algorithmic approaches to BioNanoInteractions. Invited Plenary Lecture. *Proceedings of IEEE 5<sup>th</sup> HNICEM Conference*, March 10-12, 2011, Manila

60. Mendoza ER. Coordination Perspectives for PhilSHIFT. 3<sup>rd</sup> PhilSHIFT Research Colloquium, Manila, March 11, 2011
61. Mendoza ER. Modeling the dopamine system in mammalian kidneys. Contributed talk to the 12<sup>th</sup> International Conference on Molecular Systems Biology, May 8-12, 2011, Lleida, Spain.
62. Mendoza ER. Evolving an information infrastructure for the global chronobiology community. Invited Lecture, EUCLOCK Final Symposium, June 8-9, 2011, Berlin, Germany.
63. Mendoza ER. PhilSHIFT: Translating Chronobiology Research into health risk reduction and productivity improvement in the philippine BPO industry. Contributed talk at 31APAMS, National Institute of Physics, Diliman QC, June 15-17, 2011
64. Mendoza ER. Towards a standards- based architecture for philippine Biodiversity Information Systems. 1st National Biodiversity & Environmental Management Conference, University of San Carlos, Cebu City June 23-24, 2011
65. Mendoza ER. The PhilBIS Architecture. 1<sup>st</sup> Philippine Biodiversity Informatics Workshop at CIDS UP Diliman, July 19, 2011.
66. Mendoza ER. Engineering better medicines, in vivo <-> in silico. Invited talk at CSP Workshop on Grand Challenges in Computing, UP Diliman July 28-29, 2011.
67. Mendoza ER. New insights on influenza via stochastic brane algebra. Invited talk at the Golden Anniversary Conference of the Ateneo Math Department, July 31, 2011..
68. Mendoza ER. (How) can New Sequencing Technologies help Algorithmic Systems Biology? Invited talk at the 2<sup>nd</sup> Conference on Systems Biology and New Sequencing Technologies, Nov 2-4,2011. Trieste, Italy
69. Mendoza ER. Modeling nanoparticle.cell Interactions with stochastic process algebras. Invited talk at the 6th International Jagna Workshop, Jan 4-7, 2012
70. Mendoza ER. Computational approaches to enhance nanosafety and advance nanomedicine. Invited talks at Ateneo de Manila Chemistry Department (Jan 20, 2012) and UP Diliman Institute of Biology (Feb 6, 2012)
71. Mendoza ER. Learning new Science & Technology via networking. Invited talk at the Philippine Science High School Annual Science Fair. Quezon City, Jan 26, 2012.
72. Mendoza ER. Why Physicists should talk to Computer Scientists (and vice versa). Keynote talk at the Opening Program of UPM Science Week 2012 (Jan 30, 2012)
73. Mendoza ER. Basic chronobiology for shift work research. Chronobiology and Shift Work Research Workshop, CIDS, Feb 10, 2012.
74. Mendoza ER. The First Decade of Systems Biology – Achievements, Pinoy Contributions and Challenges. Institute of Biological Sciences, UPLB, Nov. 9, 2012.
75. Mendoza ER. Mathematical Systems Biology – an Emerging Discipline. Institute of Mathematical Sciences and Physics, UPLB, Nov. 28, 2012.
76. Mendoza ER. Metabolic aspects of Alzheimers Disease. Institute of Biology, UP Diliman. Dec. 3, 2012.
77. Mendoza ER, Applications of process algebra for Nanosafety and Nanomedicine, invited Lecture of the Graduiertenkolleg, University of Rostock, Germany , January 30, 2013.
78. Villar JJ, Lubenia PN, **Arceo CPP**, Talaue CNO, Escaner JM IV, Mendoza ER. Construction and Structural Analysis of Models of Dopamine Synthesis and D1 Receptor Trafficking in Renal Proximal Tubule Cells. Poster presentation at the “Frontiers in Systems and Synthetic Biology” Conference, Atlanta (March 23-25, 2013)
79. **Cortez JV**, Carreon-Jose E, Cadiz NM, Mendoza ER. Construction and Structural Analysis of a Chemical Reaction Network Model of Brassinosteroid Signaling. Presentation at the 2<sup>nd</sup> Asian Regional Conference on Systems Biology (ARCSB 2013). Kuala Lumpur, October 8-9, 2013.
80. **Nazareno A**, Carreon-Jose E, Dionisio-Sese M, Mendoza ER. Continuous Logical Modeling of the Submergence Regulatory Network in Rice. Presentation at the 2<sup>nd</sup> Asian Regional Conference on Systems Biology (ARCSB 2013). Kuala Lumpur, October 8-9, 2013.
81. **Villar JJ**, Arceo CPP, Mendoza ER. Construction and Structural Analysis of a Model of Dopamine D1 Receptor Trafficking in Renal Proximal Tubule Cells. Presentation at the 2<sup>nd</sup> Asian Regional Conference on Systems Biology (ARCSB 2013). Kuala Lumpur, October 8-9, 2013.
82. **Mariano SMT**, Talaue CNO, Mendoza ER. Model Construction and Analysis of Ketone Body Metabolism in the Brain. Presentation at the 2<sup>nd</sup> Asian Regional Conference on Systems Biology (ARCSB 2013). Kuala Lumpur, October 8-9, 2013.

Program Director/Principal Investigator (Last, First, Middle):

83. Mendoza ER. The First Decade of Systems Biology in the Philippines. Invited talk at the 2<sup>nd</sup> Asian Regional Conference on Systems Biology (ARCSB 2013). Kuala Lumpur, October 8-9, 2013.
84. Mendoza ER. Chemical Reaction Network Theory – from Chemical Engineering to Systems Biology and beyond. Invited talk at the Department of Chemical Engineering, ETH (Swiss Federal Institute of Technology) Zürich, April 30, 2014.

#### **D. Presentations on Mathematics**

1. Mendoza ER. Lectures on Bianchi Groups. UP Diliman Institute of Mathematics, Sept 22 and 29, 2010.
2. Mendoza ER. Lecture on “Group geometry and the minima of Hermitian forms” at Ateneo de Manila Math Dept (Feb 3 2012) and at the Institute of Mathematics (Feb 6, 2012)
3. Mendoza ER. Lectures on “Chemical Reaction Network Theory – from Chemical Engineering to Systems Biology” at the Mathematics Institutes of UP Diliman (Oct 11, 2013), UP Los Baños (Oct 17, 2013) and De la Salle Manila University (Oct 18, 2013)