

Curriculum Vitae

I. NAME: SEVERINO V. GERVACIO

• *Date of Birth*: 23 April 1944

• *Place of Birth*: Pasig City, Philippines

Spouse: Rosario Madrigal Children: Julius and Jasmin

II. COLLEGE AND DEPARTMENT:

Present Position: Professor Emeritus

Department of Mathematics

College of Science De La Salle University

• *Prof. Lecturer 3*: 1993–1994

• Associate Prof. 5: 1994–1995

• *Prof. 3*: 1995–1997

• Prof. 5: 1997-2001

• *Prof.* 6: 2001-2003

• Prof. 7: 2003–2005

• *Prof. 8*: 2005–2007

• Prof. 9: 2007–2008

• Prof. 10: 2008-2010

• *Professor Emeritus*: 2010–

Other Positions:

Professorial Lecturer, 2009–2013
De La Salle Canlubang
Santa Rosa City, Laguna

Professorial Lecturer, 2009–2012
Mapúa Institute of Technology
Intramuros, Manila

Professorial Lecturer, 2014–2018
Malayan Colleges Laguna
Cabuyao City, Laguna

 Professorial Lecturer, 2022—present Batangas State University Batangas City

III. ACADEMIC BACKGROUND:

School	Degree	Year Finished
Pasig Elementary School	graduated	1956
Rizal High School	graduated	1960
Mapúa Institute of Technology	BS Mech. Eng'g.*	1965
University of the Philippines	MS Mathematics	1971
Ateneo de Manila University	PhD Mathematics	1977

^{*} Board Examination passed, 1966.

IV. PROFESSIONAL EXPERIENCE*:

Position	School	Inclusive Dates
$Instructor \rightarrow Assistant Prof.$	UP at Los Baños	1968–1981
Prof. Lecturer	UP-Diliman	1997–1998
Prof. Lecturer	Ateneo de Manila University	1977-1988
Prof. $ o$ University Prof.	MSU-IIT	1981–1993
Assoc. Prof. \rightarrow Prof.	DLSU-Manila	1993–2009
Chairman	Math Dept, UPLB	1977-1980
Dean	Graduate School, MSU-IIT	1982–1986
Dean	CSM, MSU-IIT	1986–1988
Vice Chancellor (Res. & Ext.)	MSU-IIT	1988–1993
Prof. Lecturer	Mapua Institute of Technology	2009–2012
Prof. Lecturer	DLSU-Manila	2009-present
Prof. Lecturer	DLS-Canlubang (STC)	2009–2013
Prof. Lecturer	Mapúa Institute of Technology	2009–2012
Prof. Lecturer	Malayan Colleges Laguna	2014–2018

^{*} In addition, I have supervised several undergraduate theses, master's theses and doctoral dissertations.

V. SEMINARS/TRAININGS CONDUCTED*:

Seminar/Training	Venue	Date
Thesis Advising Seminar ¹	MSU-IIT	September 13–16, 1983
Number Theory/Graph Theory	NORMISIST	January 1989
Graph Theory Research Group	DLSU-Manila	AY2001–2002 Term s 1, 2, & 3
Graph Theory Research Group	DLSU-Manila	AY2002–2003 Terms 1, 2, & 3
Graph Theory Research Group	DLSU-Manila	AY2003–2004 Terms 1, 2, & 3
Graph Theory Research Group	DLSU-Manila	AY2004–2005 Terms 1, 2, & 3
Graph Theory Research Group	DLSU-Manila	AY2005–2006 Terms 1, 2, & 3
Graph Theory Research Group	DLSU-Manila	AY2006–2007 Terms 1 & 2
Graph Theory Research Group	DLSU-Manila	AY2007–2008 Terms 1 & 2
Graph Theory Research Group	DLSU-Manila	AY2008–2009 Terms 1, 2, & 3

¹ Seminar Director and Resource Person

^{*} In addition, I delivered one Professorial Chair Lecture every academic year starting AY 1993–1994 until AY 2008–2009.

VI. SOME SEMINARS/TRAINNGS ATTENDED*:

Seminar/Training	Venue	Date
Introduction to APL ¹	UP-Los Baños,	Mar 1978
Executive Course on Systematic Problem Analysis and Decision-Making ¹	UP-Los Baños,	Apr 17, 1980
Conf./Workshop on Policies and Standards and Standards for Basic Sciences and the Science Component of Teacher Education ²	PNC, Manila	Dec 9, 1986
Graph Theory Seminar ³	Konan Univ., Japan	1986
Graph Theory Seminar ³	Tokai Univ., Japan	1986
Discrete Mathematics Seminar ³	Keio Univ., Japan	1990
MSP Convention ⁴	Manila	1991
Graph Theory Seminar ³	Tokyo Science Univ.	1992
Mathematics Symposium ⁴	Quezon National High Sch.	Oct 1993
Science Symposium ⁴	Batangas National High Sch.	Nov 8, 1993
T _E X Seminar, T _E X Users Group-Phil. ⁵	DLSU-Manila	Jan 22, 1994
Math Teachers Education Conf. ⁴	Ateneo de Manila Univ.	Apr 1995
MSP Convention ³	Web-conference	May 2021
PCSMT Conference ⁵	Web-conference	August 2021
S. Canoy Jr. Conference $(60^{th} \text{ birthday})^5$	Web-conference	September 2021

¹ Trainee

Note: Local and International Mathematics Conference attended are not listed. In most of them, I have presented original research papers.

 $^{^2}$ Participant

³Paper Presentor

⁴Plenary Speaker

⁵Resource Speaker

^{*} In addition, I have presented papers in several international and local conferences such as the Annual Scientific Meetings of the NAST, Annual Conventions of the Mathematical Society of the Philippines, etc.

VII. AWARDS AND DISTINCTIONS RECEIVED:

A 1/D:	D	
Award/Distinction	Details	
UP-NSDB Graduate Scholarship	1966–1968	
	MS Mathematics, UP-Diliman	
UPLB Faculty Fellowship	1974–1977	
	PhD Mathematics, Ateneo de Manila University	
	July-August, 1976	
Research Fellowship	Lee Kong Chian Institute of Mathematics	
	and Computer Science	
	Nanyang University, Singapore	
Outstanding Mapúan	1981, Mathematics	
	National Association of Mapúa Alumni	
Outstanding Young Scientist	1981, Mathematics	
	National Academy of Science and Technology	
Evahanaa Cajantist ta Janan	March–June, 1986	
Exchange Scientist to Japan	October 1989 October 1992	
	DOST-JSPS	
Achievement Award	1992	
	National Research Council of the Philippines	
Professorial Chair	AY 1993–1994 until AY2008–2009	
(Mathematics)		
Outstanding Teacher	1997 Students Search for Outstanding Teachers	
Research Award	1999 Miguel Febres de Cordero Research Award	
University Fellow	1999–present	
(De La Salle University)	DLSU Society of Fellows	
Professor Emeritus	2009	
	De La Salle University-Manila	
Outstanding Teacher	2006 Students Search for Outstanding Teachers	
Outstanding Mapúa Alumnus	August 20, 2009	
	Mapua Institute of Technology*	
NRCP Member Emeritus	2024	
	National Research Council of the Philippines	

^{*} Awarded after my commencement speech during the commencement exercises of Mapúa Institute of Technology, August 20, 2009.

VIII. EXTRA-CURRICULAR/COMMUNITY INVOLVEMENT:

- President, Iligan City Bowlers Association, 1991-1993
- President, T_FX Users Group, Philippines, May 1993–September 1998
- Vice Chairman, NRCP Division II, 1997–1998
- Chairman, NRCP Division II, 1998–1999
- Member, Senior Citizens' Association of Laguna Bel Air, 2007–present
- President, Laguna Bel Air Home Owners' Association, Inc., 2007–2009

IX. MATHEMATICS THESES AND DISSERTATIONS SUPERVISED

Name of advisee	MS Math Thesis	PhD Math Dissertation
Dr. Neil Mame		Generator subgraphs of
21/1 (011 1/101110		some classes of graphs, 2011
		A class of intersection graph
Dr. Elucila Sespeñe		of half-lines and of line
		segments in the plane, 2009
Dr. Romulo Guerrero	On topologies induced	On graph folding, 2002
	induced by graphs, 1986	0 1
Dr. Isagani Jos		On singular & nonsingular
		digraphs, 2000
Dr. Rowena Isla		On the dimension
21. Ito Wella lola		of graphs, 2000
Dr. Francis Campeña	On the fold thickness of some	
1	hboxfamilies of graphs, 2006	
Dr. Yvette Lim	Perfect graphs, 1999	Bounds for the badwidth
	9-1 G-1,	of some graphs, 1999
Gloria Alipan	Om generalized <i>n</i> -cubes,1995	
Mary Ann Ritzell Vega	Graph Folding, 1995	
Corazon Tejano	On self-complementary graphs, 1993	
Catherine Imasa	On the density of graphs, 1992	
Lourdes Fuscablo	Automorphism group of graphs, 1992	
Rhodelia Sojor	On graceful graphs, 1992	
Dr. Helen Rara		Singular and
21/110101111011		nonsingular graphs, 1991
Dr. Esperanza Arugay		Path chromatic number
1 0 7		of graphs, 1990
Dr. Joselito Uy	On the number of chordless	On the span of graphs, 1999
	cycles in a graph, 1989	
Dr. Zenaida Ababa	On chromatic polynomial	
	of graphs, 1985	
Rolando Panopio	Collecting autographs	
	signatures, 1980	

X. PUBLICATIONS/RESEARCH PAPERS PUBLISHED:

- [1] On Kernels of (n, k)-Graphs. Mathematics in the Philippines. Proceedings of the First International Summer Institute of Mathematics, Manila, 1975.
- [2] *On *-BD Graphs*. Research Report No. 29, Lee Kong Chian Institute of Mathematics and Computer Science, Singapore, 1976.
- [3] A Generalization of a Theorem of Lovasz. Research Report No. 30, Lee Kong Chian Institute of Mathematics and Computer Science, Singapore, 1976.
- [4] On(k,r)-BD Graphs. Research Report No. 31, Lee Kong Chian Institute of Mathematics and Computer Science, Singapore, 1976.
- [5] An Introduction to Graph Theory. Matimyas Matematika, vol. 1, no. 6, Philippines, 1977.
- [6] On Pythagorean Triples. Matimyas Matematika, Philippines, 1977.
- [7] On the Existence of Weak Direct Product of Algebras. Southeast Asian Bulletin of Mathematics, 1977.
- [8] *Block Design Graphs and Associated Hypergraphs*. Southeast Asian Bulletin of Mathematics, 1977.
- [9] A Note on Pythagorean Angles. Matimyas Matematika, Philippines, 1977.
- [10] Some Problems in Graph Theory–IV. Southeast Asian Bulletin of Mathematics, 1978.
- [11] On Magic Graphs. Matimyas Matematika, vol. 3, no. 3, Philippines, 1979.
- [12] Characterization of Magic Graphs. Matimyas Matematika, Philippines, vol. 3, No. 4, 1979.
- [13] On Graphs All of Whose Orientations Have Kernels. Southeast Asian Bulletin of Mathematics, Proceedings of the First FRANCO-Southeast Asian Mathematics Conference, 1979.
- [14] *Are Generalized Petersen Graphs Proper Autographs?* (co-author: R. G. Panopio), vol. 6, no. 4, Matimyas Matematika, Philippines, 1979.
- [15] *A Characterization of Bipartite Graphs Using Kernels*. Research Report, Ateneo de Manila University, 1979.
- [16] Full Graphs and Permutation Graphs. Nanta Mathematica, Singapore, vol. 13, no. 1, 1980.
- [17] Constructions of Experimental Designs from Block Design Graphs (coauthor: W. C. Lao), NRCP Research Bulletin, vol. 36, no. 2, Philippines, 1981.
- [18] *Difference Graphs*. Proceedings of the Second FRANCO-Southeast Asian Mathematics Conference, Manila, 1982.
- [19] Which Wheels are Proper Monographs? Southeast Asian Bulletin of Mathematics, 1983.
- [20] *Some Notes on Power Graphs* (co-author: R. C. Guerrero), Matimyas Matematika, vol. 6, no. 1, Philippines, 1982.
- [21] *Characterization of Power Graphs* (co-author: R. C. Guerrero), Matimyas Matematika, vol. 6. no. 2, Philippines, 1982.
- [22] *Graphs Induced by Topological Spaces*. Matimyas Matematika, vol. 7, nos. 1 & 2, Philippines, 1983.
- [23] *Cycle Graphs*. Asian Journal of Graph Theory and Combinatorics, Proceedings of the First Graph Theory Colloquium, Singapore, 1983.

- [24] On Cycle Graphs. Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1984.
- [25] Graph Theory. NRCP Research Bulletin, vol. 39, No. 2, 1984 and vol. 40, No. 2, 1985.
- [26] A Study of Topological Graphs. NRCP Research Bulletin, February 1984.
- [27] On Topological Graphs. Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1985.
- [28] *Some Properties of Difference Graphs*. (co-author: R. B. Eggleton) Ars Combinatoria, Canada, 1985.
- [29] *n-cycle Block Design Graphs*. Transactions, Nat. Acad. of Sci. & Tech., Philippines 1985.
- [30] *Generalization of Chromatic Number*. Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1986.
- [31] *Characterization of Topologal Graphs* (co-author: R. C, Guerrero), Matimyas Matematika, Philippines, 1987.
- [32] *On the Lexicographic Order of the n-Permutations*. Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1987.
- [33] Score Sequences: Lexicographic Enumeration and Tournament Construction. Proceedings of the First Japan Conference in Graph Theory and its Applications, Hakone, Japan, June 1986, Discrete Mathematics, vol. 72, 1988.
- [34] Extension of Congruence to the Field of Rational Numbers. Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1988.
- [35] *On Paley Graphs*. (co-author: J. M. Bernaldez) Very Often Graphs, Ateneo de Manila University, No. 3, 1988.
- [36] *Scheduling Round-Robin Tournaments*. Very Often Graphs, Ateneo de Manila University, No. 4, 1988.
- [37] *Path Chromatic Numbers of Graphs*. (co-authors: J. Akiyama, H. Era, M. Watanabe) Journal of Graph Theory, vol. 13, No. 5, 1989.
- [38] *Tournament Score Sequences*. Proceedings of the First China-US Conference in Graph Theory, Jinan, China, 1986. Annals of the New York Academy of Sciences, vol. 576, 1989.
- [39] *Topologies Induced by Graphs*. (co-author: R. Guerrero) Matimyas Matematika, Philippines, 1989.
- [40] *Non-singular Trees* (co-author: H. Rara). Very Often Graphs, Ateneo de Manila University, No. 5, 1989.
- [41] *Minimizing the Maximum Difference Between Integer Labels of Adjacent Vertices in a Graph.* Transactions, Nat. Acad. of Sci. & Tech., Philippines, 1989.
- [42] *Disjoint Subsets of Integers Having Constant Sum.* (co-authors: K. Ando and M. Kano) Discrete Mathematics, 82, 1990, North Holland.
- [43] Necessary Conditions for Cycle Graphs. (co-author: E. L. Tan) Matimyas Matematika, Philippines, 1990.
- [44] Which Bipartite Graphs are Singular?, to appear in Transactions.
- [45] *A Study of Singular Bipartite Graphs*, NRCP Research Journal, vol. 1, no. 1, January–March 1992.
- [46] Minimizing the Maximum Difference Between Integer Labels of Adjacent Vertices in a Graph–II, Discrete Mathematics, 1991

- [47] Singular and Non-singular Regular Graphs with Arbitrarily Large Order, (co-author: E. P. Agpalza), NRCP Research Journal, vol. 5, January–December 1998
- [48] On Path-chromatically Unique Graphs, (co-author: E. B. Arugay), Discrete Mathematics, 1991
- [49] Construction of Tournaments with a Given Score Sequence, SEA Bull. Math., 1992.
- [50] Singular Graphs: The Cartesian Product of Two Graphs, accepted for presentation in the annual scientific meeting of NAST, 1992.
- [51] On Triangles with Congruent Angle Bisectors—A Tough Problem, Matimyas Matematika, vol. 16, no. 1, January 1993.
- [52] Folding a Graph, Journal of Mindanao Mathematics, vol. 1, no. 1, September 1992.
- [53] Some Applications of Graph Theory, Journal of Mindanao Mathematics, vol. 1, no. 1, 1992.
- [54] *Trees with Diameter Less than 5 and Nonsingular Complement*, Discrete Mathematics, vol. 151, 1996, pp 91–97.
- [55] *The Bandwidth of a Tree with k leaves is at most* $\lceil \frac{k}{2} \rceil$, (co-authors: Kiyoshi Ando, Atsusi Kaneko), Discrete Mathematics, vol. 150, 1996, pp 403–406.
- [56] *On the Chromatic Number of Graphs*, (co-author: Esperanza Arugay), Discrete Mathematics, 1996.
- [57] *Unit Graphs: Dimension and Span,* (co-author: B. P. Raposa), NRCP Research Journal, 1998.
- [58] *Construction of r-regular Singular Graphs*, (co-author: L. A. Ruivivar), Indian Journal of Pure and Applied Mathematics, 2000
- [59] Regular Singular and Nonsingular Graphs of Arbitrarily Large Order Exist, accepted for publication, NRCP Research Journal, 1998.
- [60] *Unit Graphs*, in: Proceedings of the 1998 Annual Meeting of the National Research Council of the Philippines.
- [61] Subdividing a Graph Toward a Unit Distance Graph in the Plane, (co-author: Hiroshi Maehara), European Journal of Combinatorics, 2000.
- [62] A Teacher's Nomograph, (co-author: Sonia Y. Tan), The Manila Journal of Science, 1999.
- [63] Folding Wheels and Fans, (co-authors: Romulo C. Guerrero & Helen M. Rara), Graphs and Combinatorics, 2000.
- [64] Subdivision Number of Large Complete Graphs and Large Complete Multipartite Graphs. In: Akiyama J., Baskoro E.T., Kano M. (eds) Combinatorial Geometry and Graph Theory. IJCCGGT 2003. Lecture Notes in Computer Science, vol 3330. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-30540-8_10
- [65] *Non-connectivity concept: How does it relate to convexity in graphs?*, (with G. Cagaanan, S. Canoy Jr.), Journal of Research in Science and Engineering, 1(2003), No. 1, 11–17.
- [66] Rational Sines and Cosines, Journal of Research in Science, Computing, and Engineering, Aug 2005.
- [67] A note on convex basic graphs, (with S. Canoy Jr.), Mindanao Forum, 19(2005), No. 1, 106–116.
- [68] *Convexity, geodetic, and hull numbers of the join of graphs,* (with G. Cagaanan, S. Canoy Jr.), Utilitas Mathematica, 71(2006), 143–159.

- [69] *A Partial Order on a Family of k-subsets of a Partially Ordered Set*, (c0-author: Hiroshi Maehara), Discrete Mathematics, 306, pp. 413–419, 2006
- [70] Rational Sines, Cosines, and Tangents of Rational Multiples of 2π , Journal of Research in Science, Computing, and Engineering, 2006.
- [71] *Integral Embedding of Complete Graphs in the Euclidean Plane*, Journal of Research in Science, Computing, and Engineering, 2006.
- [72] Economical Integral Representation of the Complete Graph in the Euclidean Plane, Proceedings of the Eighth Osaka University-De La Salle University Science Research Workshop, 2006.
- [73] Solvable Powers of Paths and Cycles, Proceedings of the Eighth Osaka University-De La Salle University Science Research Workshop, 2006.
- [74] A Family of Cusped Cubic Bézier Curves, Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [75] Lights Out Puzzle: Number of Solvable States of Graphs, (co-author: Yvette F. Lim), Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [76] Subdividing the Complete Bipartite Graph Toward a Unit-Distance Graph in 3-Dmensional Space, (co-author: Ernita R. Calayag), Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [77] The Euclidean Dimension of the Power of a Path, (co-author: Alana H. Hernandez), Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [78] *The Three-Way Lights Out Puzzle*, (co-authors: Leonor A. Ruivivar and Bladimir Ocampo), Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [79] *Universal and Primitive Graphs*, (co-author: Neil M. Mame), Proceedings of the Ninth Osaka University-De La Salle University Academic Research Workshop, 2007.
- [80] *The Euclidean Dimension of the Join of Two Cycles*, (co-author: Isagani B. Jos), Discrete Mathematics, 308, pp. 5722–5726, 2008.
- [81] *Planar Unit-Dstance Graphs with Planar Unit-Distance Complement*, (co-authors: Yvette F. Lim, Hiroshi Maehara), Discrete Mathematics, 308, pp. 1973–1984, 2008
- [82] *Solvable Trees*, (co-authors: Yvette F. Lim and Leonor A. Ruivivar), Lecture Notes in Computer Science, 4535, pp. 79–84, 2008.
- [83] *Resistance Distance in Graphs*, Proceedings of the 10th Osaka University-De La Salle University Academic Research Workshop, 2009.
- [84] *Generator Subgraphs of p-power of a Cycle,* (co-author: Neil M. Mame), Proceedings of the Gervacio International Conference on Graph Theory and Combinatorics, The DLSU Mathematics Inbox, special issue, p. 98, 2009.
- [85] Searching for Other Generator Subgraphs of Fans and Wheels, Proceedings of the Gervacio International Conference on Graph Theory and Combinatorics, The DLSU Mathematics Inbox, special issue, p. 101, 2009.
- [86] A Note on Lights Out Puzzle–Parity-State Graphs, (co-author: Hiroshi Maehara), Graphs and Combinatorics, 2010.

- [87] *Resistance Distance in Complete n-Partite Graphs*, Journal of Educational Development, Tokai University, vol. 6, 2010, p. 111–119.
- [88] *Resistance Distance in Complete n-Partite Graphs*, The Mindanawan Journal of Mathematics, vol. 3, issue no. 1, May 2012, 1–19.
- [89] Characterization and Construction of Permutation Graphs, (co-authors: Teofina Rapanut, Phoebe Chloe Ramos), Open Journal of Discrete Mathematics, accepted October 2012, published January 2013, (3) 33–38.
- [90] *Resistance distance in complete n-partite graphs*, Discrete Applied Mathematics, 203 (2016) 53–61. http://dx.doi.org/10.1016/j.dam.2015.09.017
- [91] On the span and extent of unit-distance graphs in the plane, co-authors: Hiroshi Maehara and Joselito A. Uy, Applied Mathematical Sciences, vol 10, 2016 no. 33, 1611-1618. http://dx.doi.org/10.12988/ams.2016.512728
- [92] Complete tripartite graphs with spanning maximal planar subgraphs, co-authors: Velimor Almonte and Emanuel Natalio, International Journal of Computer and Information Engineering, 4 (2) 2017.
- [93] *A note on the generator subgraph of a graph,* (with Neil M. Mame), Electronic Journal of Graph Theory and Applications, (8) (1) (2020) 17–27.
- [94] *On the fold thickness of graphs*, (with Francis Joseph H. Campenña), Arabian Journal of Mathematics, volume 9, pages 345–355 (2020)
- [95] Score sequences of bitournaments, Indian J. of Discrete Math., vol. 7, no.2 (2021) 103–112, https://doi.org/10.48550/arXiv.2102.01337
- [96] *On cycle graphs*, (co-authors: S. Vargese & A. Vijayakumar), Asian-European Journal of Mathematics, Vol. 1, No. 1 (2022) 1–16.
- [97] Graph folding and chromatic number, (co-author Francis Joseph H. Campeña), Proyecciones J. Math., vol. 42, no. 4, 957–965, Aug. 2023. https://www.semanticscholar.org/reader/6509297bb63bcc490452287708f12477ac8b0e89
- [98] Path graph of a graph, to appear: Lecture Notes in Computer Science, 2025.
- [99] A fundamental theorem on graph operators, https://doi.org/10.48550/arXiv.2412.11083.

Prepared by:

Severino V. Gervacio

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