

John Villalpando
Professor
Department of Mathematics
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Education

Clemson University

Ph.D., Mathematical Sciences, December 2002
Concentration: Algebra and Discrete Mathematics
Dissertation: "Graph Parameters: Channel Assignment as Related to $L(2,1)$ -Colorings."
(Advisor: Dr. Renu Laskar)

M.S., Mathematical Sciences, May 1999
Thesis: "Some Computing Aspects of Broadcasting and Gossiping." (Advisor: Dr. Renu Laskar)

Eckerd College

B.S., Eckerd College, May 1996
Mathematical Sciences and Visual Arts, with honors and minor in Computer Science

Teaching Experience

California Lutheran University, Associate Professor 2012 – present

Duties include teaching three undergraduate mathematics courses per semester, serving as chair of department, serving on departmental committees, participating in departmental activities, developing courses, conducting research, mentoring undergraduate research, serving on university committees and advising students. I have taught the following courses: Pre-Calculus, Discrete Mathematics, Applied Calculus, Calculus I, Calculus II, Mathematical Problem Solving, Differential Equations, Linear Algebra, Probability/Statistics, Operations Research, Complex Analysis, Graph Theory/Combinatorics, Capstone Prep, Capstone.

Gonzaga University, Associate Professor 2009 – 2012, Assistant Professor, 2003 – 2009

Duties include teaching three undergraduate mathematics courses per semester, serving on departmental committees, coordinating multi-sectional courses, participating in departmental activities, developing courses, conducting research, supervising undergraduate research, serving on university committees, and advising students. I have taught the following courses: Excursions in Mathematics, College Algebra, Introductory Statistics, Mathematical Analysis for Business, Survey of Calculus, Calculus I, Calculus II, Calculus III, Mathematics for Elementary Teachers, Discrete Structures, Linear Algebra, Operations Research, Numerical Analysis, Graph Theory/Combinatorics, Abstract Algebra I, Abstract Algebra II, Math Seminar, Senior Comprehensive.

Norwalk Community College, Adjunct Professor, 2003

Duties include teaching two courses in mathematics per semester. I have taught the following courses: Basic Math, Introductory Algebra.

Clemson University, Teaching Assistant, 1997 – 2002

Duties include teaching one course per semester. I have taught the following courses:
College Algebra, Introduction to Mathematical Analysis, Multivariable Calculus,
Introduction to Discrete Mathematics, Introduction to Probability, Calculus of One
Variable.

Publications in Mathematics

With V. Coufal, K. Fogel, A. Higgins, W. Higgins, and K. Yerion, Trees for Given Values of the Span, Caps and Icaps for $L(2,1)$ -Colorings, Congressus Numerantium **227** (2016), pp. 139–155. (refereed)

With V. Coufal, R. Ray, and K. Yerion, *The Cardinality of the Image of $L(2,1)$ -Colorings and Irreducible $L(2,1)$ -Colorings*, Congressus Numerantium **220** (2014), pp. 97–108. (refereed)

With R. Laskar and J. Jacob, *On the Irreducible No-hole $L(2, 1)$ Coloring of Bipartite Graphs and Cartesian Products*, Journal of Combinatorial Mathematics and Combinatorial Computing **78**(2011) , pp. 49-64. (refereed)

With R. Laskar, G. Matthews, and B. Novick, *On Irreducible No-Hole $L(2,1)$ -Coloring of Trees*, Networks **53**(2009) no. 2, pp. 206 – 211. (refereed)

With R. Jamison and G. Matthews, *Acyclic colorings of Products of Trees*, Information Processing Letters **99**(2006) no. 1, pp. 7 – 12. (refereed)

With R. Laskar, *Irreducibility of $L(2,1)$ -coloring and inh-colorability of unicyclic and hex graphs*, Utilitas Mathematica **69**(2006), pp. 65 – 83. (refereed)

With R. Laskar, *Parameters Concerning Cycle-Domination*, Congressus Numerantium **170**(2004), pp. 51 – 63. (refereed)

With R. Laskar, *Irreducibility of $L(2,1)$ -coloring and inh-colorability of some classes of graphs*. Electronic Notes in Discrete Mathematics. Vol. 15, 239-242, (2003). (indexed)

With S. Hedetniemi et al., *Gallai theorems involving domination parameters*, Congressus Numerantium **157**(2002), pp. 149 - 157. (refereed)

With R. Laskar, *Domination Parameters for weighted graphs*, Congressus Numerantium **148**(2001), pp. 103 – 111. (refereed)

Other Publications

With L. Kelly, B. Carney , S. Wendt , R. Haas , B. J. Ranieri and T, K, Berg, *Development of Actigraph GTIM Accelerometer cut-points for young children aged 12-36 months*. Journal of Athletic Enhancement **5:4** (2016). (refereed)

Presentations at Conferences and Seminars

Trees for Given Values of the Span and Icaps for $L(2,1)$ -colorings, presented at the Joint Mathematics Meetings, 2017.

Trees for Given Values of the Span, Caps and Icaps for $L(2,1)$ -Colorings, presented at the Forty Seventh Southeastern International Conference on Combinatorics, Graph Theory and Computing, 2016.

Modelling Constrained Optimization Problems, presented at the Math Teacher's Circle, California Lutheran University, 2016.

A Brief Introduction to Operations Research, presented at the California Lutheran University Math Seminar, 2015.

The Existence of Trees for given values of λ , κ and $\bar{\kappa}$ for $L(2,1)$ -Colorings and Irreducible $L(2,1)$ -Colorings, presented at the Joint Mathematics Meetings, 2015.

An Exploration of a Few Mathematical Algorithms, presented at the Math Teacher's Circle, California Lutheran University, 2016.

The Cardinality of the image of $L(2,1)$ -Colorings and Irreducible Colorings, presented at the Forty Fifth Southeastern International Conference on Combinatorics, Graph Theory and computing, 2014.

My Discrete Journey in Math, presented at the California Lutheran University Math Seminar, 2014.

Graph Labeling and the Channel Assignment Problem, presented at the California Lutheran University Math Seminar, 2013.

The minimum cardinality of the range of irreducible $L(2,1)$ Colorings, presented at the Joint Mathematics Meetings, 2013.

Irreducible no-hole colorings of grid graphs, hypercube and other bipartite graphs, presented at the Joint Mathematics Meetings, 2008.

Irreducibility of $L(2,1)$ Colorings, presented at the Joint Mathematics Meetings, 2005.

Inh-Colorings of Graphs, presented at the Spokane Regional Mathematics Colloquium, 2004.

Parameters Concerning Cycle-Domination, presented at the Thirty-Fifth Southeastern International Conference on Combinatorics, Graphs Theory, and Computing, 2004.

Graphs in Communications, presented at the Math Seminar at Eckerd College, 2003.

Irreducibility of $L(2,1)$ -Colorings and the inh-colorability of unicyclic and hex graphs, presented at DIMACS-DIMATIA-Renyi meeting on Graph Colorings at Rutgers University, 2003.

Graph parameters: channel assignment as related to $L(2,1)$ -colorings and domination parameters, presented at the Algorithm Seminar at Clemson University, 2002.

$L(2,1)$ -coloring parameters, presented at DCI 2002 Labelings and Numberings of Graphs, 2002.

Parameters of cycle-domination, presented at the Graduate Student Seminar at Clemson University, 2002.

Colorings and an application to the channel assignment problem, presented at the Thirty-Third Southeastern International Conference on Combinatorics, Graphs Theory, and Computing, 2002.

The channel assignment problem and $L(2,1)$ -colorings, presented at the Graduate Student Seminar at Clemson University, 2002.

$L(2,1)$ -colorings and its application to the channel assignment problem, presented at the Algebra and Discrete Math Seminar at Clemson University, 2002.

Degree weighted domination, presented at the Thirty-Second Southeastern International Conference on Combinatorics, Graphs Theory, and Computing, 2001.

Caratheodory number of the Pfaltz closure in king's graphs, presented at the Thirty-First Southeastern International Conference on Combinatorics, Graphs Theory, and Computing, 2000.

Caratheodory number of the Pfaltz closure in king's graphs, presented at the Algebra and Discrete Math Seminar at Clemson University, 2000.

Arc Length & Uniform Convergence, presented at the Mathematical Association of America Florida Section, 1996.

Surface Layer of a dielectric atmosphere in general relativity, presented at the National Conferences on Undergraduate Research, 1995.

Awards/Fellowships

Exemplary Faculty Award, Gonzaga University, 2008

ExxonMobil 2004-2005 Project NExT Fellow

Excellence in Teaching Award, Clemson University Mathematical Sciences Department 2002.

Excellence in Teaching Award, Clemson University Mathematical Sciences Department 2001.

MacDonald Graduate Fellowship, Clemson University, 1997-1998

National Merit Special Honors Scholarship, Eckerd College, 1992 – 1996.

Grants

Project Senior Personnel for National Science Foundation (NSF) , CISE – CPATH: The Northwest Distributed Computer Science Department. Co-PIs: Robert Bryant, Jenny Orr, and Scott Wallace.

Higher Education Math Faculty for Higher Education Coordinating Board – Improving Teacher Quality Grant (through NCLB authorization)