



### RODRIGO BAÑUELOS (PURDUE UNIVERSITY)

If at first you don't succeed, try again, and again, and again and again... Rodrigo Bañuelos was born in a farming community in the state of Zacatecas, Mexico. As a child, he did not attend school until he moved to the US, two months short of his 16th birthday.

Bañuelos received the Ph.D. from UCLA in 1984. He was a Bantrell Research Fellow at Caltech (1984-1986), an NSF Postdoctoral Fellow at the University of Illinois (1986-1987) and a recipient of the NSF Presidential Young Investigator Award in 1987. He moved to Purdue in 1987 as Assistant Professor and was promoted to Full Professor in 1992. He was head of the department from 2007 to 2011. He is a Fellow of the Institute of Mathematical Statistics, a Fellow of the American Mathematical Society, and a 2018 inaugural Fellow of the Association for Women in Mathematics. In 2004, he received the Blackwell-Tapia Prize at a conference held at IPAM.

His research is at the interface of probability, harmonic analysis, partial differential equations and spectral theory. He has authored or co-authored over 100 research articles, one book, and several lecture notes in probability and analysis. He has lectured widely on these topics worldwide. He has served on many editorial boards and scientific committees, including the United States National Committee for Mathematics, MSRI's Scientific Advisory Council, and IPAM's Board of Trustees.



### JESÚS DE LOERA (UNIVERSITY OF CALIFORNIA, DAVIS)

Jesús A. De Loera was born and raised in Mexico City. He is a professor of Mathematics and the graduate groups of Applied Mathematics and Computer Science at the University of California, Davis. His work includes over 80 papers and books in Combinatorics, Algorithms, Convex Geometry, Algebra, Optimization and other Applications. He received an Alexander von Humboldt Fellowship in 2004 and the 2010 INFORMS computer society prize. For his contributions to Discrete Geometry and Combinatorial Optimization he was elected fellow of the American Mathematical Society in 2014. For his mentoring and teaching, he received the 2013 Chancellor's award for mentoring undergraduate research and, in 2017, the Mathematical Association of America Golden Section Award. He has supervised twelve Ph.D students, and over 50 undergraduates' research projects. He is an associate editor for "SIAM Journal of Discrete Mathematics" and "SIAM journal of Applied Algebra and Geometry".



### ROCHELLE GUTIÉRREZ (UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN)

Dr. Rochelle Gutierrez is a professor of mathematics education at the University of Illinois at Urbana-Champaign. She obtained her Ph.D. in Curriculum and Instruction from the University of Chicago and her B.A. in Human Biology from Stanford University. Dr. Gutierrez' scholarship focuses on equity issues in mathematics education, paying particular attention to how race, class, and language affect teaching and learning. Through in-depth analyses of effective teaching/learning communities and longitudinal studies of developing and practicing teachers, her work challenges deficit views of students who are Latinx, Black, and/or Indigenous and suggests that mathematics teachers need to be prepared with much more than just content knowledge, pedagogical knowledge, or knowledge of diverse students if they are going to be successful. Her current research projects focus upon: developing in pre-service teachers the knowledge and disposition to teach powerful mathematics to urban students; the roles of uncertainty, tensions, and "Nepantla" in teaching; and the political knowledge (and forms of creative insubordination) that mathematics teachers need to effectively teach in an era of high-stakes education.



### RYAN HYND (UNIVERSITY OF PENNSYLVANIA)

Ryan Hynd is an assistant professor in the mathematics department at the University of Pennsylvania. He obtained his Ph.D. in mathematics from UC Berkeley and his B.S. in applied mathematics from Georgia Tech. His research is in a branch of mathematics called Partial Differential Equations (PDE). He has worked on PDE arising in mathematical models for fluid mechanics, control theory, finance, and with eigenvalue problems. He would like to share the following personal story:

"When I was a student at Palm Beach Community College (PBCC), I struggled mightily with my introductory calculus and physics courses. Nevertheless, I stuck with it and received a lot of encouragement from my physics professors. I was especially fortunate that Georgia Tech admitted me as a transfer student. My intended major was computer engineering. However, I found that I really liked learning about math, so I decided to change my major to mathematics. This was one of the best decisions I ever made.

I thoroughly enjoyed studying mathematics at Georgia Tech, and I encountered professors who recognized my abilities and who helped me prepare for graduate school in mathematics. While I was not the most talented Ph.D. student at UC Berkeley, I was just as excited about having the opportunity to do math as my peers, and I had a decent idea about what I needed to do to succeed. Moreover, I was lucky to find an excellent advisor in Craig Evans and a great mentor in Ted Hill. I cherish the time I spent at UC Berkeley, which set me up for a career in research and teaching in mathematics."



### LILY KHADJAVI (LOYOLA MARYMOUNT UNIVERSITY)

Lily Khadjavi is an Associate Professor of Mathematics at Loyola Marymount University in Los Angeles. She earned her bachelor's degree from Harvard University and her Ph.D. in Mathematics from the University of California, Berkeley, and she has been a Visiting Scholar at the University of Queensland, in Brisbane, Australia; U.C. Berkeley; and the John Jay College of Criminal Justice's Research and Evaluation Center in New York. She serves as a co-chair organizing the Infinite Possibilities Conference, which builds a community for women of color in the mathematical sciences. Since 2013, she has taught in Caltech's Freshman Summer Research Institute, working with underrepresented students, and the National Science Foundation has funded her work to support retention of underrepresented groups in mathematics, both for the Association of Women in Mathematics and for the Infinite Possibilities Conference. Dr. Khadjavi serves on the boards of Building Diversity in Science and the Harvard Gender and Sexuality Caucus.



### EDGAR LOBATON (NORTH CAROLINA STATE UNIVERSITY)

Dr. Edgar J. Lobaton has been a faculty in the Department of Electrical and Computer Engineering at North Carolina State University (NCSU) since 2011. Dr. Lobaton earned his B.S. in Mathematics and Electrical engineering from Seattle University in 2004. He completed his Ph.D. in Electrical Engineering and Computer Sciences from the University of California, Berkeley in 2009. He was awarded the NSF CAREER Award in 2016, and the 2009 Computer Innovation Fellows post-doctoral fellowships. His research focuses on the areas of topological data analysis and machine learning with applications to wearable technologies and autonomous systems.



### IVELISSE RUBIO (UNIVERSITY OF PUERTO RICO)

Ivelisse Rubio has a Ph.D. in Applied Mathematics from Cornell University and is Professor at the University of Puerto Rico, Río Piedras. Her research is in the area of finite fields. She co-founded the REUs SIMU (1998-2002) and MSRI-UP (2007-2015). In 2006, SIMU received the American Mathematical Society's inaugural award for Mathematics Programs that Make a Difference. Ivelisse has received a SACNAS Presidential Service Award and the Dr. Etta Z. Falconer Award. She was a member of the Editorial Board of the American Mathematical Monthly, and is currently a member of the US National Committee for Mathematics and a member at-large of the Executive Committee of the Association for Women in Mathematics.



### ANASTASIA CHAVEZ (UC DAVIS)

As a child, Anastasia Chavez's life aspirations centered around her love for sports, music, and writing. It was only later in high school and junior college that she found a passion for mathematics. After obtaining her A.S. from the Santa Rosa Junior College, Anastasia earned a B.S. in applied mathematics and M.A. in mathematics from San Francisco State University. She went on to complete her Ph.D. at the University of California, Berkeley. Currently, Anastasia is a President's postdoctoral fellow at the University of California, Davis and a recipient of an NSF Postdoctoral research fellowship at UC Davis. During her master's degree, Anastasia and her amazing husband welcomed their two incredible children into their lives. She attributes her desire to become a research mathematician and advocate for minority students to her daughters, whom she feels are her greatest teachers.



### DIEGO CIFUENTES (MAX-PLANCK INSTITUTE FOR MATHEMATICS IN THE SCIENCES)

Diego Cifuentes is a postdoctoral researcher at the Max-Planck Institute for Mathematics in the Sciences. He completed his Ph.D. in the Electrical Engineering and Computer Science department at MIT, under the supervision of Pablo Parrilo. He earned a B.S. in Mathematics and Electronics Engineering from Universidad de los Andes in Colombia. His research interests include semidefinite optimization, polynomial optimization, computational algebra, and their applications in sciences and engineering.



### SARA DEL VALLE (LOS ALAMOS NATIONAL LABORATORY)

Sara Del Valle is a scientist at Los Alamos National Laboratory. She earned a Ph.D. in Applied Mathematics and Computational Sciences from the University of Iowa in 2005. Her research focuses on using mathematical and computational approaches to improve our understanding of human behavior and its impact on disease spread. Most recently, she has been investigating the role of Internet data on monitoring and forecasting disease spread and disease-related behaviors.



### GERMAN ENCISO RUIZ (UC IRVINE)

German Enciso Ruiz is an Associate Professor at the University of California, Irvine Mathematics Department, with a joint appointment in the Department of Developmental and Cell Biology. His research is in the area of systems biology at the interface between the mathematical and the biological sciences. Ruiz is interested in discovering design principles of cell signaling at the molecular level. In the past, he has collaborated with biologists to model information processing in the retina, signaling cascades involved in cell proliferation and cancer, and the regulation of cell cycle proteins.





### **LAURA ESCOBAR (UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN)**

Laura Escobar grew up in Bogotá, Colombia. She moved to the US in 2008 to work with Federico Ardila at a Master's program at San Francisco State University. She completed her Ph.D. in 2015 at Cornell University advised by Allen Knutson. She was an Einstein fellow at TU Berlin and a postdoctoral fellow during the fall 2016 Thematic Program in "Combinatorial Algebraic Geometry" at The Fields Institute for Research in Mathematical Sciences. She is now a JL Doob Research Assistant Professor at UIUC working with Alexander Yong. In the fall, Escobar will start as an Assistant Professor at Washington University in St. Louis. Her awards include an AMS Simons Travel Grant and an AWM Mentoring Travel Grant.



### **NICOLAS GARCIA TRILLOS (BROWN UNIVERSITY)**

Nicolas Garcia Trillos obtained his Ph.D. in Mathematical Sciences from Carnegie Mellon University in 2015 and his bachelor's degree in Mathematics from Los Andes University in Bogotá, Colombia, in 2010. He is currently at Brown University for his last year of a three-year post-doctoral position in the Division of Applied Mathematics. His research interests are in applied analysis, probability, and statistics. In his research work, he uses tools from mathematical analysis to study machine-learning problems.



### **ROSEMARY GUZMAN (UNIVERSITY OF CHICAGO)**

Rosemary Guzman's education began in the Chicago Public Schools, followed by Northwestern University, Loyola University, and a Ph.D. from University of Illinois at Chicago. Currently, she is a postdoctoral fellow in the Department of Mathematics at the University of Chicago, where she holds an American Academy of University Women (AAUW) Fellowship and receives support from the Research Training Grant (RTG) of her mentor, Benson Farb. Previous positions include an NSF Alliance Postdoctoral Fellowship at University of Iowa and Assistant Directorship at the University of Illinois Urbana-Champaign Illinois Geometry Lab for undergraduate research. Her work is in hyperbolic 3-manifolds and Kleinian groups (on a quest to learn more geometric group theory!), but broader topological questions have yielded exciting collaborations. LatMath and platforms promoting inclusivity align with her career objective to do the same through the mathematics she loves.



## PAMELA E. HARRIS (WILLIAMS COLLEGE)

Pamela E. Harris is a Mexican-American Assistant Professor in the department of Mathematics and Statistics at Williams College. She received her B.S. from Marquette University, and M.S. and Ph.D. in mathematics from the University of Wisconsin-Milwaukee. Her research interests are in algebra and combinatorics, particularly as these subjects relate to the representation theory of Lie algebras. Her recent research on vector partition functions and projects in graph theory has been supported through awards from the National Science Foundation and the Center for Undergraduate Research in Mathematics. Harris co-organizes research symposia and professional development sessions for the national conference of the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, and is an editor of the e-Mentoring Network blog of the American Mathematical Society. In 2016, she co-founded [www.Lathisms.org](http://www.Lathisms.org) an online platform that features prominently the extent of the research and mentoring contributions of Latin@s and Hispanics in the Mathematical Sciences.



## EMILIA HUERTA-SANCHEZ (UC MERCED)

Emilia Huerta-Sanchez is an Assistant Professor in the Department of Molecular Cell Biology at the University of California Merced. She received her Ph.D. in Applied Mathematics from Cornell University under the supervision of Carlos Bustamante and Rick Durrett. After her Ph.D., she was a postdoctoral fellow at the University of California Berkeley. Her current research interests involve analyzing genomes from the present and the past to study the evolutionary history of humans.



## JOSE ISRAEL RODRIGUEZ (UNIVERSITY OF CHICAGO)

Jose Israel Rodriguez is a proud product of public school education. He received his bachelor's degree from the University of Texas at Austin in pure mathematics in 2010. Afterwards, he went to UC Berkeley with the intention of studying number theory for his Ph.D. Instead, he found interest in algebraic statistics and numerical methods in algebraic geometry. His thesis work was a culmination of three research projects titled "Numerical algebraic geometry for maximum likelihood estimation." He is now a postdoc at the University of Chicago.



### CHRISTIAN LAING (NAVIGATE BIOPHARMA)

Christian Laing started his career in mathematics by working on problems in molecular entanglement of biopolymers. After receiving his Ph.D. from Florida State, he moved to NYU to work on the RNA folding problem. Later, as a faculty at Wilkes University, Christian worked with students on searching for completely new bacteriophages, and finding methods to analyze and classify their entire genomes. Christian eventually moved into the industry to work on mathematical applications to molecular medicine and oncology.

Christian's interdisciplinary research interests in mathematical applications allowed him to make contributions on DNA topology, RNA structure prediction and analysis, neuroscience, microbiology, NGS sequencing, and oncology. Throughout his career, his work has been highly collaborative, highly interdisciplinary, and resulted in multiple publications and patents.



### FABIOLA MANJARREZ (UNAM)

Fabiola Manjarrez Gutiérrez is an Associate Researcher at the Institute of Mathematics UNAM-Cuernavaca. She received a B.S. degree in mathematics from Universidad Juárez Autónoma de Tabasco and the M.S. in mathematics from Centro de Investigación en Matemáticas (CIMAT) in Guanajuato.

She earned her Ph.D. in mathematics from UC Davis, under the supervision of Abigail Thompson. Fabiola held two postdoctoral positions, one at UNAM and the other one at CIMAT. She has been active in the area of low dimensional topology, specifically she has been working with Morse functions on 3-manifolds and knots. Fabiola enjoys teaching and supervising students.



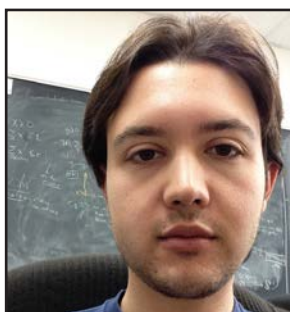
### ANGÉLICA OSORNO (REED COLLEGE)

Angélica Osorno received her B.S. in 2005 and her Ph.D. in 2010, both from MIT. After spending three years at the University of Chicago as an L.E. Dickson instructor, she joined the faculty of the Department of Mathematics at Reed College, where she is now an Assistant Professor. Her awards include an MSRI Postdoctoral Fellowship, an NSF Research Grant, a Simons Collaboration Grant, and a Woodrow Wilson Career Enhancement Fellowship for Junior Faculty. She has been a project leader and mentor for the two iterations of the Women in Topology Workshop (one of the AWM-sponsored Research Networks), and is currently organizing the third edition.



## JOSE PEREA (MICHIGAN STATE UNIVERSITY)

Jose Perea is an active researcher in the field of computational topology and topological data analysis. Broadly speaking, his work entails applications and adaptations of ideas from algebraic and geometric topology to the study of high-dimensional and complex data. Perea received his B.S. in mathematics from Universidad del Valle in 2006 (summa cum laude and valedictorian), a Ph.D. in mathematics from Stanford University in 2011, and held a postdoctoral position as a visiting assistant professor in the department of mathematics at Duke University (2011 to 2015). In spring of 2014, he was a member of the Institute for Mathematics and Applications at the University of Minnesota, during the annual thematic program on scientific and engineering applications of algebraic topology. He has been at Michigan State University since 2015 as an assistant professor with appointments in the Department of Computational Mathematics, Science and Engineering (CMSE) and the Department of Mathematics.



## PABLO SOBERÓN (NORTHEASTERN UNIVERSITY)

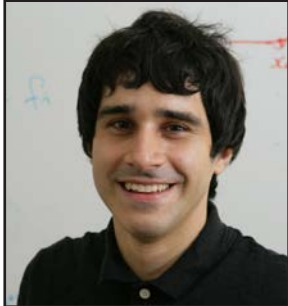
Pablo Soberón is an Andrei Zelevinsky Research Instructor at Northeastern University. He received his undergraduate degree at UNAM in Mexico and obtained his Ph.D. in 2013 at University College London, under the supervision of Imre Bárány and Keith Ball. Previously, he was a Postdoctoral Assistant Professor at the University of Michigan. His research lies at the intersection of Discrete Geometry, Combinatorics and Topology.



## PABLO SOLIS (STANFORD UNIVERSITY)

Pablos Solis graduated with an undergraduate degree in mathematics and physics from the Massachusetts Institute of Technology (MIT) in 2008. He went on to get his Ph.D. in mathematics from UC Berkeley in 2014. From 2014-17, he was a postdoctoral fellow at Caltech. He has taught mathematics courses at all levels and ran a summer REU program at UC Berkeley. Solis specializes in algebraic geometry, which studies how to associate geometry to the set of solutions to an algebraic equation. He is currently a postdoc at Stanford University.





### JOSEPH TERAN (UCLA)

Joseph Teran is a professor of applied mathematics at UCLA. His research is focused on numerical methods for partial differential equations arising in classical physics. This includes computational solids, computational fluids, multi-material interactions, fracture dynamics and computational biomechanics. One very exciting example of this research is virtual surgery. These techniques allow a surgeon to practice a given procedure on the computer rather than on a cadaver or patient with full confidence that the physical behavior of the patient in the virtual world will match the physics of the real patient. Other exciting applications include computer graphics and movie special effects at Walt Disney Animation.

Professor Teran was a recipient of a 2011 Presidential Early Career Award for Scientists and Engineers (PECASE) and a 2010 Young Investigator award from the Office of Naval Research. In 2008, Discover Magazine named him one of the 50 “Best Brains in Science” which lauded him and other young scientists as “young visionaries who are transforming the way we understand the world”. Also, his postdoctoral and graduate research was supported by National Science Foundation Mathematical Sciences Postdoctoral Research and Graduate Research Fellowship awards.



### BIANCA THOMPSON (HARVEY MUDD COLLEGE)

Bianca Thompson is a visiting assistant professor at Harvey Mudd College. She is a graduate of University of Hawai'i at Manoa (Ph.D. in mathematics) and Wellesley College (B.A. in mathematics). Her research is at the intersection of number theory and discrete dynamical systems. She would like to share the following personal story:

“I grew up in El Paso, Texas with my family and extended family. I wanted to move somewhere for college that was different from where I'd grown up. I went to Wellesley College in Massachusetts where I tried out many courses before settling on becoming a math major. I decided to go straight to graduate school at University of Hawai'i at Manoa because they had number theorists in the faculty. UH Manoa was a great school where I found the area of number theory that I truly enjoyed working on-- arithmetic dynamics. After graduating in 2015, I have been a post doc at Smith College and then Harvey Mudd College.”



## **LUIS VALDEZ-SANCHEZ (UNIVERSITY OF TEXAS AT EL PASO)**

Luis Valdez-Sanchez completed his high school education in Ciudad Juarez, Mexico in 1983. Shortly thereafter, he enrolled at the University of Texas at El Paso to pursue a Bachelor's degree in Mathematics. In 1987, he began his Ph.D. studies in the Mathematics Department at the University of California at Berkeley, where under the direction of A. Casson, he studied properties of certain 3-manifolds constructed by C. Gordon and J. Luecke in their proof of Tietze's knot complement conjecture. Valdez-Sanchez joined the faculty of the Department of Mathematical Sciences at the University of Texas at El Paso in 1995. He has continued to work on topological questions related to exceptional surgeries on knots in the 3-sphere.



## **ANTHONY VARILLY-ALVARADO (RICE UNIVERSITY)**

Anthony Varilly-Alvarado was born and raised in Costa Rica and moved to the US when he was 19 to pursue an undergraduate degree at Harvard University. He earned his Ph.D. in 2009 at UC Berkeley, under Bjorn Poonen, and has been at Rice University since then, first as a G. C. Evans Instructor (mentored by Brendan Hassett), later promoted to a tenure-track position. Varilly-Alvarado is currently an Associate Professor at Rice University, where he has the privilege of working with immensely talented undergraduates and graduate students. His research is at the intersection of Algebraic Geometry and Number Theory.



### CARLOS CASTILLO-CHAVEZ (ARIZONA STATE UNIVERSITY)

Carlos Castillo-Chavez is a Regents Professor, a Joaquin Bustoz Jr. Professor of Mathematical Biology, a Distinguished Sustainability Scientist and the Founding Director of the Simon A. Levin Mathematical and Computational Modeling Sciences Center (SAL-MCMSC) at Arizona State University (ASU) who has co-authored over 250 publications and a dozen books, textbooks, research monographs and edited volumes.

He was born in Mexico City, immigrating to the USA in 1974. Castillo-Chavez received his bachelor's, master's and Ph.D. degrees from three campuses of the University of Wisconsin Stevens Point, Milwaukee and Madison, respectively. He reached the rank of full professor at Cornell University in 1997 where he spent 18 years before moving to ASU in 2004. Over his 30 years in academia, he has mentored 25 postdoctoral students. His 46 Ph.D. students include 21 women, 26 from US underrepresented groups and 7 from Latin America. He has been a research co-mentor to nearly 500 undergraduates. According to the mathematics genealogy project, Castillo-Chavez is among the top 200 mentor of Ph.D. students in the history of mathematics.

His research lives at the interface of disease evolution, behavioral epidemiology, social dynamics, homeland security, epidemiology, addiction and sustainability. He is the inaugural recipient of the Dr. William Yslas Outstanding STEM Award from the Victoria Foundation, which was co-sponsored by the Pasqua Yaqui Tribe of Arizona (2015).



### DAGAN KARP (HARVEY MUDD COLLEGE)

Dagan Karp is Associate Dean for Diversity and Associate Professor of Mathematics at Harvey Mudd College. He arrived at Mudd in the fall of 2008 from the Department of Mathematics at UC Berkeley where he was first an NSERC Postdoctoral Fellow, and later an NSF RTG Visiting Assistant Professor. Dagan received his Ph.D. in Mathematics at the University of British Columbia, and he received both his MSc in Mathematics and BS double major in Mathematics and Physics from Tulane University.

Prof Karp's research is centered in algebraic geometry. He is interested in questions related to theoretical physics, and problems which admit combinatorial description; these include Gromov-Witten theory, toric and tropical geometry. And he is passionate about collaborating with undergraduate researchers.

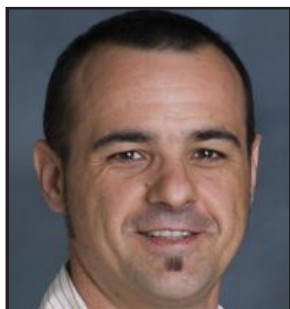
Prof Karp is also dedicated to broadening participation in mathematics and to working for social justice in and through mathematics. This includes activities at the local and national levels to promote equity centered pedagogy, support those historically and currently marginalized and minoritized in mathematics, and to build communities centered in diversity, inclusion, and equity.



### TALITHA WASHINGTON (HOWARD UNIVERSITY)

Dr. Talitha Washington is a tenured Associate Professor of Mathematics at Howard University. She joined the National Science Foundation (NSF) in August of 2017 as a Program Officer in the Division of Undergraduate Education, and is a co-lead on the Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program). Washington is interested in the applications of differential equations to problems in biology and engineering, as well as the development of nonstandard finite difference schemes to numerically solve dynamical systems.

Washington completed her undergraduate studies in mathematics at Spelman College and studied abroad at the Universidad Autónoma de Guadalajara, Mexico. She earned her master's and doctoral degrees in mathematics from the University of Connecticut. She was a VIGRE Research Associate in the Department of Mathematics at Duke University. She held assistant professorships at The College of New Rochelle and the University of Evansville, and most recently, an associate professorship at Howard University.



### JORGE BALBÁS (INSTITUTE FOR PURE AND APPLIED MATHEMATICS)

Jorge Balbás grew up in Madrid, Spain. He moved to the US in 1992 for professional flight training. While working as a commercial pilot and flight instructor in Southern California, he obtained a Bachelor's and a Master's degree in Applied Mathematics at UCLA in 2000, and a Ph.D. in Mathematics in 2004, also at UCLA. He spent the next three years at the University of Michigan in Ann Arbor as a post-doc, and returned to Southern California in 2007 to join the mathematics department at California State University, Northridge, where he is an Associate Professor. He is currently an Associate Director at the Institute for Pure and Applied Mathematics (IPAM). Balbás' research is in Scientific Computing and Numerical Analysis. His work focuses in the development of numerical methods for solving PDEs and the simulation of physical phenomena such as astrophysical flows (e.g., MHD) and shallow-water flows along channels. He also has an interest in heuristic optimization algorithms for scheduling and timetabling problems.