CV Gilberto Carlos Gonzalez-Parra

Academic positions

2022 —— **Associate Professor**, *Department of Mathematics*, New Mexico Institute of Mining and Technology.
New Mexico USA

2017-2022 **Assistant Professor**, *Department of Mathematics*, New Mexico Institute of Mining and Technology.
New Mexico USA

2014-2017 **Research Associate, Full Time**, *Department of Physics*, Texas Christian University (TCU).
Fort Worth Texas USA

2014-2015 **Full Professor, Full Time**, *Department of Calculus*, School of Engineering, University of Los Andes.
Mérida Venezuela

2013-2014 **Visiting Professor for Research (during sabbatical)**, *Department of Mathematics*, University of Texas (UTA).
Arlington Texas USA

2009-2014 **Associate Professor, Full Time**, *Department of Calculus*, School of Engineering, University of Los Andes.
Mérida Venezuela

2005-2009 **Agr. Professor, Full Time**, *Department of Calculus*, School of Engineering, University of Los Andes.
Mérida Venezuela

2001-2005 **Assistant Professor, Full Time**, *Department of Calculus*, School of Engineering, University of Los Andes.
Mérida Venezuela

1996-1998 **Instructor Professor, Full Time**, *Department of Calculus*, School of Engineering, University of Los Andes.
Mérida Venezuela

1991-1994 **Teaching Assistant (Math courses)**, *Department of Mathematics*, School of Sciences, University of Los Andes.
Mérida Venezuela

Academic stays - Short Visits

- Researcher at the Polytechnic University of Valencia, Institute of Multidisciplinary Mathematics IMM, Spain, 2023-2024. Sabbatical year.
- Research Associate at Texas Christian University (TCU), Fort Worth, Texas, USA, 2017.
- Research Associate at Texas Christian University (TCU), Fort Worth, Texas, USA, 2016.
- Postdoctoral Research Associate at Texas Christian University (TCU), Fort Worth, Texas, USA, 2014-2015.
- Visitor Professor for Research at the University of Texas (UTA), Arlington, Texas, USA, 2013-2014.
- Visiting Professor (Spring, Fall, Ordinary Differential Equations and Linear Algebra, Calculus III) at the University of Texas (UTA), Arlington, USA, 2013.
- Academic stay for Research at the University of Texas (UTA), Arlington, USA, 2013-2014.

- Academic stay for Research at the University of Texas (UTA), Arlington, USA, October, 2012.
- Academic stay for Research at the Polytechnic University of Valencia, Institute of Multidisciplinary Mathematics, Spain, 2011.
- Academic stay for Research at the Polytechnic University of Valencia, Institute of Multidisciplinary Mathematics, Spain, 2010.
- Academic stay for Research at the University of Wyoming, working together with Ph.D: Benito Chen-Charpentier, 2008.

Education

Studies Doctorate

2005-2009 **Ph.D in Applied Mathematics**, *Polytechnic University of Valencia, Department of Mathematics, Institute of Multidisciplinary Mathematics*, Valencia, Spain.

Advisors Ph.D: Lucas Antonio Jódar Sánchez and Ph.D: Rafael Jacinto Villanueva Micó

Courses: Mathematical Modeling in Ecology, Advanced Numerical Methods, Modelization and Numerical Methods to value Europeans and American Options, Modeling Survivorship in Medical Sciences, Digital Imaging in Health Sciences, Optimization.

Master Studies

2005 **Master of Science, Applied Mathematics**, *School of Engineering, Universidad de Los Andes*, Merida, Venezuela.

Thesis *Genetic programming and randomized algorithms for estimating singular values of large dimension matrices*

Advisor Ph.D Jose Aguilar.

1996-1999 **Applied Mathematics Master's Program**, *School of Engineering, Universidad de Los Andes*, Merida, Venezuela.

Courses: Complex Variable, Numerical Methods, Dynamical Systems, Mathematical Equations of Physics, Solids, Fluid dynamics, Parallel Computation.

Undergraduate Studies

1995 **Systems Engineering** , *School of Engineering, Universidad de Los Andes*, Merida, Venezuela.

Thesis Multidimensional interpolation and approximation theory.

Advisor Prof. Carlos Domingo.

Area of research

- Mathematical Biology: Modeling of infectious diseases with deterministic models and stochastic models.
- Mathematical Modeling in Public Health.
- Mathematical modeling in virology and cell biology.
- Differential Equations: Dynamical systems and numerical solutions.
- Delay Differential Equations: Modeling, analysis and numerical solutions.
- Delay Differential Equations: Analytical solutions.
- Numerical Analysis: Numerical methods for differential equations, nonstandard finite difference techniques.
- Uncertainty Quantification: Monte Carlo methods, Polynomial Chaos, Markov Chain MC methods, Profile Likelihood, Mixed-effects models.
- Symbolic computation with Maple and Mathematica; Linear Algebra and ODE.
- Simulation: Modeling with stochastic differential equations.
- Intelligent techniques; Genetic programming and Artificial Neural networks.
- Mathematical Analysis: Existence of periodic solutions of DE systems.

- Mathematical Modeling in Economics.
- Mathematical Modeling using static and dynamical networks.

Teaching

Undergraduate Courses

- Calculus I, II, III, IV
- Differential Equations.
- Linear Algebra.
- Engineering Mathematics.
- Applied Linear Algebra.
- Mathematical Modeling.
- Numerical Linear Algebra.
- Systems of Differential Equations.
- Numerical Methods.
- Mathematical Biology.
- Complex Analysis.

Directed Research Courses

- Special Projects with Machine Learning.
- Complex Systems.

Graduate Courses and Contents

- Advanced Topics in Delay Differential Equations (DDEs).
- Mathematical Biology.
- Topics in Ordinary Differential Equations (ODEs).
- Topics in Delay Differential Equations (DDEs).
- Topics in Fractional Differential Equations (FDEs).
- Topics in Random, Stochastic and Delay Differential Equations.
- Special Topics in Applied Mathematics.
- Mathematical Modeling.
- Mathematical modeling of infectious diseases.
- Differential Equations.
- Nonstandard finite differences schemes (NSFD).
- Linear Algebra.
- Adomian and Differential Transformation Methods (ADM and DTM).

Graduate student supervisions

- Ogochukwu Ifeacho, 2025. Title of PhD thesis: Mathematical Modeling and Bifurcation Analysis of Socioeconomic System: Economic Growth, Corruption, Unemployment and Inflation, New Mexico Tech, 2021-2025.
- Bishop Cervantes (NMT), 2024-2025. MSc. mathematics. Independent Study: A Data-Driven Reassessment of Metal Contamination in the Animas River: Replication and Multivariate Analysis of Duval et al. (2020).
- Md Zakaria Hossain, 2024. MSc. mathematics. Independent Study: Changes in Calling Activity of Frogs and Birds after Highway Traffic Reduction Indicated by Overall Sound Level, New Mexico Tech, NM, USA. Co-advisor.
- Sharmin Sultana, 2023. Title of PhD thesis: Mathematical Modeling of Toxoplasmosis dynamics between hosts and within-host using differential equations, New Mexico Tech, NM, USA.
- Michelle Sherman, 2021–2023. Title of Master's thesis: Analytical-Numerical Solutions of Linear Delay Differential Equations and Applications, New Mexico Tech, NM, USA.
- Jesus Villegas, 2022-2023. Master in mathematics. Independent Study: Mathematical models for the characterization of the early COVID-19 pandemic in Chile, New Mexico Tech,NM, USA.

- David Martínez Rodríguez, 2021, PhD student from Universitat Politècnica de València, Spain. Summer research. April-July 2021. Online due to COVID.
- Miguel Saenz, 2023. Title of Master thesis in Mathematics: Estudio de la primera fase de la pandemia COVID-19 con Ecuaciones Diferenciales con Retardo Discreto, Universidad de Cordoba, Colombia. Co-advisor.
- Julio Miranda, 2023. Title of Master thesis in Mathematics: Aplicación de las ecuaciones diferenciales con retardos, para modelar y simular numéricamente la propagación del virus SARS-COV-2, Universidad de Cordoba, Colombia. Co-advisor.
- Gabriel Sepúlveda Morelo, 2022. Title of Master thesis in Mathematics: Un Modelo de Vacunación para el SARS-CoV-2 con Ecuaciones Diferenciales con Retardo Discreto, Universidad de Cordoba, Colombia. Co-advisor.
- Moises Bermudez, 2014. Title of Master thesis: Mathematical modeling of the transmission of disease transmitted by vectors in Venezuela population, University of Los Andes (ULA), Venezuela.
- Jorge Cayama, 2011. Title of Master thesis: Application of polynomial chaos to mathematical models based on differential equations, University of Los Andes (ULA), Venezuela.
- Jose Querales, 2012. Title of Master thesis: Predicting RSV epidemics using climate factors and Naive Bayes classifiers, University of Los Andes (ULA), Venezuela.
- Victor Comezaquira, 2011–. Proposed Title of Master thesis: Applications of fractional differential equations to economics, epidemiology and engineering problems, University of Los Andes (ULA), Venezuela.

Undergraduate student research supervisions

- Giulia Luebben (NMT university), 2022-2025. Title of research: Study of optimal vaccination strategies for the COVID-19 pandemic.
- Remy Mujynya (NMT university), 2025-2025. Title of research: Mathematical modeling of Texas-New Mexico measles 2025 outbreak. Title of research: Study of social contact matrix in the USA during the pre-vaccination phase COVID-19 pandemic.
- Annika Vestrand (NMT university), 2023-2025. Title of research: Study of optimal vaccination strategies for the COVID-19 pandemic.
- Nehemiah Lopez (NMT university), 2023. Title of research: Solution of systems of linear RDDEs and NDDEs.
- Jesus Villegas (NMT university), 2022-2023. Title of research: Mathematical model of the diffusion of SARS-CoV-2 in Chile using nonlinear systems of PDEs.
- Bishop Cervantes (NMT university), 2022–2023. Title of research: Study of optimal vaccination strategies for the COVID-19 pandemic.
- Samuel Fisher (NMT university), 2022–2023. Title of research: Study of optimal vaccination strategies for the COVID-19 pandemic using networks.
- Logan Forman (NMT university), 2022-2023. Title of research: Solving Allen-Cahn equations with periodic and nonperiodic boundary conditions using mimetic finite-difference operators and *pdepe* Matlab built-in function.
- Bhumika Bhakta (NMT university), 2022–2024. Title of research: Study of optimal vaccination strategies for the COVID-19 pandemic.

Previous Administrative Positions Held:

- 2017-present Member of the Faculty Senate at New Mexico Tech, USA.
- 2012-2014 Board Member of Research Center, Research Center of Applied Math (CIMA), Engineering Faculty, University of Los Andes, Mérida, Venezuela.
- 2010-2012 Coordinator Research Group, Multidisciplinary Mathematics Group (GMM), Engineering School, University of Los Andes, Mérida, Venezuela.
- 2004-2005 Department Chair, Calculus, Engineering Faculty, University of Los Andes, Mérida, Venezuela.

- 2002-2004 Coordinator, Calculus II, School of Engineering, University of Los Andes, Mérida, Venezuela.

Professional/Research activities

- Faculty advisor for the New Mexico Tech Student's Team for COMAP's (Mathematical Contest in Modeling/Interdisciplinary Contest in Modeling) 2025.
- Chaired session at Stochastic Modeling and Uncertainty Quantification (SMUQ) conference, Valencia, Spain, July, 2024.
- Co-Organizer of Minisymposium: Modeling with Differential and Difference Equations with Uncertainties at the International Conference on Mathematical Analysis and Applications in Science and Engineering-ICMASC'24, Porto, June, 2024.
- Poster Judge at the NM-INBRE Annual Meeting, Las Cruces, NM, USA, July-2024.
- Co-Organizer of Minisymposium: Infectious diseases Mathematical modeling in public health. Conference: Mathematical modelling in engineering and human behaviour, Valencia, Spain, July, 2023.
- Co-Organizer of SMB Epi-PDEE Mini-Conference "Joint meeting between the Mathematical Epidemiology and Population Dynamics, Ecology, & Evolution Subgroups". Society for Mathematical Biology, February 2023, virtual Conference.
- Faculty advisor for the New Mexico Tech Student's Team for COMAP's (Mathematical Contest in Modeling/Interdisciplinary Contest in Modeling) 2023.
- Special Issue Co-Editor for "Mathematical Foundations in Biological Modelling and Simulation", Mathematical Biosciences and Engineering, 2022.
- Co-Organizer of Minisymposia "Mathematical tools for understanding viral infections within-host and between-host" in the annual meeting of the Society for Mathematical Biology, June 2021, SMB2021 virtual Conference (U. California,Riverside).
- Special Issue Editor for "Mathematical Modeling for Understanding Viral Infections Within-Host and Between-Host", Epidemiologia Journal, 2021.
- Poster Judge of the annual meeting of the Society for Mathematical Biology, June 2021, SMB2021 virtual Conference.
- Co-Organizer of Minisymposia "Immune dynamics in health and disease, Part I and Part II", June-July 2020, Life Sciences SIAM Virtual Conference.
- Host coordinator from New Mexico Tech of SCUDEM IV (Mathematical Modeling Using Differential Equations) 2020.
- Poster Judge of the 2nd Annual Meeting of the SIAM Texas Louisiana Section, Nov 2019, Dallas, USA.
- Host coordinator from New Mexico Tech of SCUDEM IV (Mathematical Modeling Using Differential Equations) 2019.
- Member of scientific committee of XIV Congreso Iberoamericano de Ingeniería Mecánica, Nov. 2019, Cartagena, Colombia.
- Organizer of Minisymposia "Mathematical Modeling of Infectious Diseases under a variety conditions, Part I and Part II", July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.
- Member of Society for Industrial and Applied Mathematics (SIAM)(2016-2020), PA, USA.
- Member of International Association of Engineers (IAENG), Hong Kong.
- Member of Society for Mathematical Biology (2016-2021), USA.
- Member of scientific committee of III International Congress of Applied Mathematics, Universidad del Bosque, Bogotá, Colombia, 2018.
- Member of scientific committee of EATIS 2018 (10th Euro American Conference on Telematics and Information Systems), Brazil.
- Host coordinator from New Mexico Tech of SCUDEM II (Mathematical Modeling Using Differential Equations) 2018.
- Host coordinator from New Mexico Tech of SCUDEM III (Mathematical Modeling Using Differential Equations) 2018.

- Member of scientific committee of EATIS 2016 (8th Euro American Conference on Telematics and Information Systems), Colombia.
- Chaired session at XII Conference on Mathematical Modelling in Engineering and Human Behaviour , Medicine and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain, 2011.
- Member of Instituto Universitario de Matemática Multidisciplinar, Universitat Politècnica de València, Valencia, Spain.2007-2011
- Member and Professor of the Master Program in Applied Mathematics in Engineering, School of Engineering, University of Los Andes, Mérida, Venezuela

Honors and Awards

- 2025 Springer Nature Editor of Distinction Award.
- 2023-2024 Maria Zambrano Research Grant- Spain, Government, Polytechnic University of Valencia. (Ministry of Universities of Spain, and the European Union's Next-Generation EU). Awarded in 2022.
- 2019 SIAM Travel Award to attend the 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019), July 15-19, 2019 in Valencia, Spain. Funded by grant to SIAM from the U.S. National Science Foundation (NSF).
- 2018 Peer Review Award: Top 1% reviewer in Cross-Field, Publons.
- 2018 Peer Review Award: Top 1% reviewer in for Multidisciplinary, Publons.
- 2005-2009 Fellowship sponsored by Univ. de Los Andes, for PhD. in Multidisciplinary Mathematics at the Polytechnic University of Valencia, Valencia, Spain.
- 2009 Outstanding "Cum Laude" Ph.D. Thesis in Applied Mathematics at the Polytechnic University of Valencia, Valencia, Spain.
- 2007 Award recognition by the Applied Sciences and Engineering Commission of the National Promotion of Research Plan in Venezuela (PPI).
- 2009 Award recognition by the Applied Sciences and Engineering Commission of the National Promotion of Research Plan in Venezuela (PPI).
- 2011 Award recognition by the National Research Program of Venezuela (PPI).
- 2013 Award recognition by the National Research Program of Venezuela (PPI).
- 2015 Award recognition by the National Research Program of Venezuela (PPI).
- 2007 Award recognition as Researcher (PEI) by the Universidad de Los Andes, Mérida, Venezuela.
- 2009 Award recognition as Researcher (PEI) by the Universidad de Los Andes, Mérida, Venezuela.
- 2011 Award recognition as Researcher (PEI) by the Universidad de Los Andes, Mérida, Venezuela.
- 2013 Award recognition as Researcher (PEI) by the Universidad de Los Andes, Mérida, Venezuela.
- 1996-1997 Fellowship sponsored by University de Los Andes, for MSc. in Applied Mathematics at the Univ. de Los Andes, Mérida, Venezuela.
- Award "Gabor Markus" for representing the Olympic Spirit, International Triathlon Union (ITU), 1998.
- 1987 Finalist of XII Mathematical Olympiad of the República of Venezuela.

Other academic activities

- Doctoral Dissertation Committee member, "Mathematical Modeling and Bifurcation Analysis of Socioeconomic System: Economic Growth, Corruption, Unemployment and Inflation", Ogochukwu Ifeacho, Mathematics, New Mexico Tech, USA. 2021-2025.
- MSc. Thesis Committee member, "Dealing with class imbalance in machine learning: performance metrics and data balance", Yesar Oshan, Mathematics, New Mexico Tech, USA, May, 2024.

- MSc. Thesis Committee member, "K-H, a Novel Regulator of DNA Topoisomerase 1 in R-loop Homeostasis", Quinn Abfalterer, Chemistry, New Mexico Tech, USA, May, 2024.
- Doctoral Dissertation Committee member (Chair), "Dinámica de modelos determinísticos para la babesiosis bovina", Deccy J. Trejo Angel, Mathematics, University of Castilla-La Mancha, Spain. 2023.
- Doctoral Dissertation Committee member, "Mathematical Modeling of Toxoplasmosis dynamics between hosts and within-host using differential equations", Sharmin Sultana, Mathematics, New Mexico Tech, USA. 2020-2023.
- MSc. Thesis Committee member, "Analytical-Numerical Solutions of Linear Delay Differential Equations and Applications", Michelle Sherman, Mathematics, New Mexico Tech, USA. 2023.
- Doctoral Dissertation Committee member, "Electron Transport within Compound Semiconductors with an Emphasis on the Cubic Phase of Boron Nitride", John Chilleri, (Mathematics), Ph.D. awarded 04/2022, USA.
- Doctoral Dissertation Committe member, "Pseudospectral Methods for the Fractional Laplacian on R", Jorge E. Cayama Mendoza, (Mathematics), Ph.D. awarded 07/2020, Spain.
- Doctoral Dissertation Committee member, "Steklov methods for nonlinear stochastic differential equations", Saul Diaz-Infante, (Applied Mathematics), Ph.D. awarded 11/2015, Mexico.
- Doctoral Dissertation Committee member, "Discrete Modeling of an Aggresive-Invasive Cancer Under Chemotherapy", Sandra Delgadillo Aleman, (Applied Mathematics), Ph.D. awarded 10/2014, Mexico.
- Committee Member for the Evaluation of Professor's reclassification, University, South Africa
- Committee Member for the Evaluation of Professor's reclassification, Universidad de Los Andes, Venezuela.
- Committee Member for the Evaluation of projects submitted to Chilean National Science and Technology Commission (CONICYT - Chile)
- MSc. Thesis Committee member, "Mathematical modeling of the transmission of disease transmitted by vectors in Venezuela population", Moises Bermudez, (Applied Mathematics), MSc. awarded 2014.
- MSc. Thesis Committee member, "Predicting RSV epidemics using climate factors and Naive Bayes classifiers", Jose Querales, (Applied Mathematics), MSc. awarded 2012.
- MSc. Thesis Committee member, "Application of polynomial chaos to mathematical models based on differential equations", Jorge Cayama, (Applied Mathematics), MSc. awarded 2011.

Reviewer of Journals, Editorial Board Journals, Conferences, Professor promotion committee

- Reviewer for Mathematical Association of America (MAA).
- Reviewer of Mathematical Reviews Database (American Mathematical Society).
- Editorial Board of Journal Scientific Reports (Nature) (2023-).
- Associate editor of Journal Frontiers in Applied Mathematics and Statistics (2022-).
- Editorial Board of Revista Facultad Ciencias Basicas (2021-).
- Associate editor of International Journal of Computer Mathematics (2020-).
- Editorial Board of Journal Epidemiologia (2020-).
- Associate editor of Journal Revista Ciencia e Ingeniería (2007-2014).

- Co-guest editor for special issue in Journal Mathematical Biosciences and Engineering. Mathematical modeling of biological processes related to infectious diseases: Challenges and Current Developments.

- Co-guest editor for special issue in Journal Mathematical Biosciences and Engineering. Mathematical Foundations in Biological Modelling and Simulation.
- Co-guest editor for special issue in Journal Microorganismis. Mathematical Modeling of Viral Infections).
- Co-guest editor for special issue in Journal Epidemiologia. Mathematical Modeling for Understanding Viral Infections Within-Host and Between-Host.
- Co-guest editor for special issue in Journal Complexity.
- Reviewer of SMB Annual Meeting, 2023.
- Reviewer of SMB Epi-PDEE Mini-Conference 2023.
- Reviewer of Elsevier Books.
- Reviewer of Journal Nature Communications
- Reviewer of J. Communications in Nonlinear Science and Numerical Simulation.
- Reviewer of Journal PlosOne.
- Reviewer of Journal PLOS Global Public Health.
- Reviewer of Journal PLOS Computational Biology.
- Reviewer of Journal Infectious Disease Modelling
- Reviewer of Journal Scientific Reports Nature.
- Reviewer of Journal BMC Infectious Diseases
- Reviewer of Journal Mathematics and Computers in Simulation.
- Reviewer of Journal Ecological Modelling.
- Reviewer of Journal of Computer and Applied Mathematics.
- Reviewer of Journal of Computer and Mathematical Modelling.
- Reviewer of Journal of Tropical Medicine and Infectious Disease
- Reviewer of Journal of Mathematical Medicine & Biology
- Reviewer of Journal of Theoretical Population Biology.
- Reviewer of Journal Mathematics and Computers in Simulation.
- Reviewer of Journal of Difference Equations and Applications.
- Reviewer of Journal of Ecological Modelling.
- Reviewer of Journal of Computers and Mathematics with Applications.
- Reviewer of Journal of Mathematical and Computer Modelling.
- Reviewer of Journal of Advanced Research in Differential Equations.
- Reviewer of Journal of Wseas Transactions on Mathematics.
- Reviewer of Journal of Theoretical Population Biology.
- Reviewer of Journal of Applied Numerical Mathematics.
- Reviewer of Journal of Evaluation and Program Planning.
- Reviewer of Journal of Computers in Biology and Medicine.
- Reviewer of Journal of Computer Physics Communications.
- Reviewer of Journal of Computational and Applied Mathematics.
- Reviewer of Journal of the Royal Society Interface.
- Reviewer of Journal of Neural Computing and Applications.
- Reviewer of Journal of Epidemiology and Infection.
- Reviewer of Journal of International Journal of Computer Mathematics.
- Reviewer of Revista de la Facultad de Ingeniería-UCV.
- Reviewer of Journal of International Journal Mathematical Population Studies.
- Reviewer of J. Investigación y Ciencia de la Universidad Autónoma de Aguascalientes.
- Reviewer of Journal of American Journal of Public Health.
- Reviewer of Journal of Abstract and Applied Analysis.
- Reviewer of Journal of Nonlinear Dynamics.
- Reviewer of Journal of Applied Mathematical Modeling.
- Reviewer of Journal of King Saud University (Science).
- Reviewer of Revista do Instituto de Medicina Tropical de Sao Paulo.
- Reviewer of Journal Pathogens
- Reviewer of Journal Viruses
- Reviewer of Journal Frontiers in Immunology

- Reviewer of Journal of Epidemiology and Global Health.
- Reviewer of World Journal of Modeling and Simulation.
- Reviewer of Journal of Sports Research
- Reviewer of Journal Physica A.
- Reviewer of Journal Mathematical Methods in the Applied Sciences.
- Reviewer of Journal Revista Ingeniería y Ciencia. EAFIT.
- Reviewer of Journal Discrete Dynamics in Nature and Society.
- Reviewer of Journal Advances in Difference Equations.
- Reviewer of Journal Applied Mathematical and Computational Sciences.
- Reviewer of Electrónica Conocimiento Libre y Licenciamiento (CLIC).
- Reviewer of HSOA Journal of Infectious & Non-Infectious Diseases.
- Reviewer of Journal of Applied Mathematics Letters.
- Reviewer of Journal Virulence (Taylor and Francis).
- Reviewer of Journal International Research in Medical and Pharmaceutical Sciences.
- Reviewer of Journal of Chaos, Solitons & Fractals.
- Reviewer of 8th Euro American Conference on Telematics and Information Systems - EATIS 2016.
- Reviewer of Journal of Advances in Mechanical Engineering.
- Reviewer of Alexandria Engineering Journal.
- Reviewer of Future Virology.
- Reviewer of Revista CLIC, Venezuela.
- Reviewer of Journal Virulence.
- Reviewer of Journal of Appl. Math. Comput. Sci. (AMCOS).
- Reviewer of Journal of Infectious & Non-Infectious Diseases.
- Reviewer of Journal of Computational and Mathematical Methods in Medicine.
- Reviewer of Book "Diseño de Equipos de Rehabilitación y Órtesis".
- Reviewer of Journal International Journal of Non-Linear Mechanics.
- Reviewer of Journal British Journal of Mathematics & Computer Science.
- Reviewer of Journal Mathematical Biosciences.
- Reviewer of Journal Theory in Biosciences.
- Reviewer of Journal Theory in Biosciences.
- Reviewer of Journal Mathematical Biosciences and Engineering.
- International Journal of Information Technology & Decision Making.
- International Journal of Mathematics and Mathematical Sciences.
- Reviewer of Journal of Economical Modelling.
- Reviewer of Journal of Compuational Economics.
- Reviewer of Journal Current Bioinformatics.
- Reviewer of International Journal of Dynamical Systems and Differential Equations
- Reviewer of Journal Algorithms
- Reviewer of Journal Social Network analysys and Mining.
- Reviewer of International Journal of Difference Equations.
- Reviewer of Journal Mathematics.
- Reviewer of Journal Axioms.
- Reviewer of Journal Mathematical and Computational Applications.
- Reviewer of Journal Applied Math.
- Reviewer of Punjab University Journal of Mathematics.
- Reviewer of Journal Letters in Biomathematics.
- Reviewer of Journal Fractal and Fractional.
- Reviewer of Journal Computational and Mathematical Methods.
- Reviewer of Journal Symmetry.
- Reviewer of Journal Viruses.
- Reviewer of Journal Complexity.
- Reviewer of Journal Mathematical Problems in Engineering.
- Reviewer of Malaysian Journal of Mathematical Sciences.
- Reviewer of Journal Ecological Informatics.
- Reviewer of Journal Frontiers in Public Health.

- Reviewer of Journal Frontiers in Medicine.
- Reviewer of Journal Frontiers in Epidemiology.
- Reviewer of International Journal of Dynamics and Control.
- Reviewer of Journal TropicalMed.
- Reviewer of Journal Mathematical and Computer Modelling of Dynamical Systems.
- Reviewer of Journal Diseases.
- Reviewer of Parasitology International.
- Reviewer of International Journal of Dynamics and Control.
- Reviewer of Journal Qualitative Theory of Dynamical Systems.
- Reviewer of Journal NPJ vaccines.
- Reviewer of European Journal of Pure and Applied Mathematics.
- Reviewer of Journal Gates Open Research.
- Reviewer of Journal Electronic Research Archive
- Reviewer of International journal of numerical modelling
- Reviewer of Journal of Nonlinear, Complex and Data Science.
- Reviewer Intl. J. of Numerical Modelling: Electronic Networks, Devices and Fields.
- Reviewer of Journal Discover Applied Sciences.
- Reviewer of Journal Studies in Applied Mathematics.
- Reviewer of Journal Operational Research.
- Reviewer of Journal Mathematical Medicine & Biology.
- Reviewer of Journal The Lancet Global Health's.
- Reviewer Journal Computer Methods in Biomechanics and Biomedical Engineering.
- Reviewer of Journal Soft Computing.
- Reviewer of Journal Global Epidemiology.
- Reviewer of Journal Biomedicines.
- Reviewer of International Journal of Dynamics and Control.
- Reviewer of Journal Frontiers in Immunology, section Vaccines and Molecular Therapeutics.
- Reviewer of Journal Nature Health.
- Reviewer of Journal IEEJ Transactions on Electronics, Information and Systems.
- Reviewer of abstract for SMB Epi-PDEE Mini-Conference "Joint meeting between the Mathematical Epidemiology and Population Dynamics, Ecology, & Evolution Subgroups". Society for Mathematical Biology, February 2023.

Grants/Projects/Awards

- **Grants (Awarded)**:

- 2023 Maria Zambrano Research Grant. From the Spain Ministry of Universities funded by the European Union-Next Generation EU., Polytechnic University of Valencia, 2023-2024.
- Title: *Sophomore Research Program at New Mexico Tech for undergraduate student Giulia Luebben. Academic year 2022-2023.*, $5,000, Research Advisor: Gilberto Gonzalez-Parra.
- Title: *Properties of the analytical and numerical solutions of some mathematical models of the transmission of infectious diseases and biological predator-prey*, 2020, Universidad del Bosque, Colombia, CO-PI: Gilberto Gonzalez-Parra.
- Title: *Application of diverse mathematical methodology for the analysis of epidemiological models.* CDCHTA-ULA, 2012. PI: Gilberto Gonzalez-Parra.
- Title: *Mathematical modeling for diseases from vector transmission and computation of the parameter* $\mathcal{R}0$. CDCHTA-ULA, 2012. PI: Gilberto Gonzalez-Parra.
- Title: *Methodologies for modeling and predicting the dynamics of RSV in the population.* CDCHTA-ULA, 2012. PI: Gilberto Gonzalez-Parra.
- Title: *Mathematical modeling for contagious diseases in the state of Merida.* CDCHTA-ULA, 2011. PI: Gilberto Gonzalez-Parra.

- Title: *Application of Polynomial Chaos for Models based on Differential Equations.* CDCHTA-ULA, 2012. PI: Gilberto Gonzalez-Parra.
- Title: *Use of intelligent techniques for estimating the singular values of matrices of large dimensions.* CDCHTA-ULA, 2005. PI: Gilberto Gonzalez-Parra.
- Title: *Use of adaptative grids in the solution of ordinary differential equations.* CDCHTA-ULA, 2001. PI: Gilberto Gonzalez-Parra.

- **NIH (related) submissions (Funded-Approved)**:

- Title: *INBRE NISE-PREP 2025 REU summer Program at New Mexico Tech for undergraduate student: Remy Mujynya*, $5,522, Advisor: Gilberto Gonzalez-Parra.
- Title: *Study of optimal vaccination strategies for the COVID-19 pandemic, 2024-2025, Program Title: NM-INBRE (extension) (funded by NIH), $12,458, PI: Gilberto Gonzalez-Parra*.
- Title: *INBRE NISE-PREP 2024 REU summer Program at New Mexico Tech for undergraduate student: Annika Vestrand*, $8,638, Advisor: Gilberto Gonzalez-Parra.
- Title: *Study of optimal vaccination strategies for the COVID-19 pandemic, 2023-2024, Program Title: NM-INBRE (funded by NIH), $26,525, PI: Gilberto Gonzalez-Parra.*
- Title: *Study of optimal vaccination strategies for the COVID-19 pandemic, 2022-2023, Program Title: NM-INBRE (funded by NIH), $25,329, PI: Gilberto Gonzalez-Parra.*
- Title: *INBRE NISE-PREP 2022 REU summer Program at New Mexico Tech for undergraduate student (Giulia Luebben)*, $5,000, Advisor: Gilberto Gonzalez-Parra.
- Title: *Mathematical modeling of the dynamics of Covid-19 pandemic, 2020, Program Title: NM-INBRE (funded by NIH), $23,681, CO-PI: Gilberto Gonzalez-Parra.*
- **NIH (related) submissions (Invited)**:
- Title: *Mathematical modeling of the dynamics of Covid-19 in different regions and within-host, 2020, Program Full-INBRE (funded by NIH), $210,348, PI/PD: Gilberto Gonzalez-Parra. Result: Invited. Submitted: 07/31/2020.*

- **NSF submissions (Unfunded)**:

- Title: *New Mexico Tech STEM racial equity summer camp*, Program Title: Racial Equity in STEM Ed, Division Of Graduate Education, 2021, $255,257, PI: Gilberto Gonzalez-Parra. Submitted: 7/13/2021.
- Title: *BPC-DP: New Mexico Tech Computing Summer Camp for High School Students*, Program Title: BROADENING PARTICIPATION IN COMPUTING, Division Of Computer and Network Systems, 2020, $202,871, PI: Gilberto Gonzalez-Parra. Submitted: 6/14/2021.
- Title: *Mathematical modeling of infectious diseases dynamics under climate change*, Program Title: MATHEMATICAL BIOLOGY, Division Of Mathematical Sciences, 2020, $507,973, PI: Gilberto Gonzalez-Parra. Submitted: 8/10/2020.
- Title: *Study of the dynamics of the spread of COVID-19 around the world*, Program Title: NSF RAPID COVID19 (NSF 20-052), Division Of Mathematical Sciences, 2020, NSF-RAPID proposal, PI: Gilberto Gonzalez-Parra. Submitted: 3/27/2020.
- Title: *Modeling technology diffusion in the New Mexico regional innovation system, 2018, Program Title: SciSIP-Sci of Sci Innovation Policy, Division/Area of Science: SBE Of Multidisciplinary Activities, $150,289, Co-PI.*
- Title: *Mathematical modeling of infectious diseases dynamics under global climate change*, Program Title: MATHEMATICAL BIOLOGY, Division Of Mathematical Sciences, 2018, $406,126, PI.

- Title: *Big fish in a big pond? A study of biomedical innovation made by American universities*, Program Title: SciSIP-Sci of Sci Innov Policy, Division/Area of Science: SBE Of Multidisciplinary Activities, $316,791, Co-PI.

Institutional Service

- Volunteer at the New Mexico Science Olympiad, New Mexico Tech, February 2023.
- Member of Quality Improvement Initiative Task Force, Subcommittee Co-curricular programs, New Mexico Tech, USA, 2022.
- Member of hiring Tenure-track committee for Lecturer position in the Mathematics Department, New Mexico Tech, USA, 2022.
- Member of the Faculty Senate at New Mexico Tech, USA. 2017-present
- Member of hiring Tenure-track committee for Tenure-Track Assistant Professor position in the Mathematics Department, New Mexico Tech, USA, 2019-2020.
- Member of Education & Research Efficiency Committee, New Mexico Tech, USA 2021-2025. Chair 2022-2025.
- Member of Sabbatical Committee, New Mexico Tech, USA 2019-2021.
- Faculty Advisor for New Mexico Tech (NMT) Society of Hispanic Professional Engineers, 2019-2023
- Advisor of undergraduate and graduate students in Mathematics, New Mexico Tech.
- Faculty Advisor of the New Mexico Tech swimming club.
- Member of the New Mexico Tech mountain bike club (MTB).
- Advising undergraduate students for Registration and Orientation, New Mexico Tech.
- Talks for the seminars of the Mathematical Department, New Mexico Tech.
- Talks for the seminar of the Mechanical Department, New Mexico Tech.
- Member for the Evaluation of Professor's reclassification Committee, Universidad de Los Andes, Venezuela.
- Coordinator of Calculus 20, 2001-2004, Universidad de Los Andes, Venezuela.

Refeered Journal Publications

[1] Sharmin Sultana, Luis Fernando Chaves, and Gilberto González-Parra. Analysis of within-host mathematical models of toxoplasmosis in the presence of free parasites. *International Journal of Dynamics and Control*, 13(5):1–24, 2025.

[2] Carlos Andreu-Vilarroig, Gilberto González-Parra, and Rafael J Villanueva. Mathematical modeling of influenza dynamics: Integrating seasonality and gradual waning immunity. *Bulletin of Mathematical Biology*, 87(75):1–30, 2025.

[3] Gilberto González-Parra, Cristina-Luisovna Pérez, Marcos Llamazares, Rafael-J. Villanueva, and Jesus Villegas-Villanueva. Challenges in the mathematical modeling of the spatial diffusion of SARS-CoV-2 in Chile. *Mathematical Biosciences and Engineering*, 22(7):1680–1721, 2025.

[4] Gilbert Kerr and Gilberto González-Parra. A new higher-order convergence Laplace–Fourier method for linear neutral delay differential equations. *Mathematical and Computational Applications*, 30(2):37, 2025.

[5] Saulo Orizaga, Gilberto González-Parra, Logan Forman, and Jesus Villegas-Villanueva. Solving Allen-Cahn equations with periodic and nonperiodic boundary conditions using mimetic finite-difference operators. *Applied Mathematics and Computation*, 484:128993, 2025.

[6] Ogochukwu Ifeacho and Gilberto González-Parra. Impact of delayed decaying corruption effects on a socioeconomic system with economic growth and unemployment. *Mathematics*, 13(11), 2025.

[7] Ogochukwu Ifeacho and Gilberto González-Parra. Mathematical model for economic growth, corruption and unemployment: Analysis of the effects of a time delay in the economic growth. *AppliedMath*, 5(2), 2025.

[8] Ogochukwu Ifeacho and Gilberto González-Parra. Mathematical modeling of economic growth, corruption, employment and inflation. *Mathematics*, 13(7):1102, 2025.

[9] Ogochukwu Ifeacho and Gilberto González-Parra. Hopf bifurcations in a mathematical model for economic growth, corruption, and unemployment: Computation of economic limit cycles. *Axioms*, 14(3):173, 2025.

[10] Ever Medina, Myladis R Cogollo, and Gilberto González-Parra. Prescriptive temporal modeling approach using climate variables to forecast dengue incidence in Córdoba, Colombia. *Mathematical Biosciences and Engineering*, 21(12):7760–7782, 2024.

[11] Abraham J Arenas, Gilberto González-Parra, and Miguel Saenz Saenz. Qualitative analysis of a COVID-19 mathematical model with a discrete time delay. *Mathematics*, 13(1):120, 2024.

[12] Gilberto González-Parra and Hana M Dobrovolny. Editorial: Mathematical foundations in biological modelling and simulation. *Mathematical Biosciences and Engineering*, 21(9):7084–7086, 2024.

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[14] Gilberto Gonzalez-Parra, Md Shahriar Mahmud, and Claus Kadelka. Learning from the COVID-19 pandemic: a systematic review of mathematical vaccine prioritization models. *Infectious Disease Modelling*, 2024.

[15] Gilberto González-Parra, Javier Villanueva-Oller, Francisco J Navarro-González, Josu Ceberio, and Giulia Luebben. A network-based model to assess vaccination strategies for the COVID-19 pandemic by using Bayesian optimization. *Chaos, Solitons & Fractals*, 181:114695, 2024.

[16] Julio C Miranda, Abraham J Arenas, Gilberto González-Parra, and Luis Miguel Villada. Existence of traveling waves of a diffusive susceptible–infected–symptomatic–recovered epidemic model with temporal delay. *Mathematics*, 12(5):710, 2024.

[17] Gilbert Kerr, Nehemiah Lopez, and Gilberto González-Parra. Analytical solutions of systems of linear delay differential equations by the laplace transform: Featuring limit cycles. *Mathematical and Computational Applications*, 29(1):11, 2024.

[18] Sharmin Sultana, Gilberto González-Parra, and Abraham J Arenas. Analysis of within-host mathematical models of toxoplasmosis that consider time delays. *Mathematics*, 11(21):4469, 2023.

[19] Sharmin Sultana, Gilberto González-Parra, and Abraham J Arenas. Mathematical modeling of toxoplasmosis in cats with two time delays under environmental effects. *Mathematics*, 11(16):3463, 2023.

[20] Michelle Sherman, Gilbert Kerr, and Gilberto González-Parra. Analytical solutions of linear delay-differential equations with Dirac delta function inputs using the Laplace transform. *Computational and Applied Mathematics*, 42(6):268, 2023.

[21] Michelle Sherman, Gilbert Kerr, and Gilberto González-Parra. Analytic solutions of linear neutral and non-neutral delay differential equations using the Laplace transform method: featuring higher order poles and resonance. *Journal of Engineering Mathematics*, 140(1):12, 2023.

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[23] Sharmin Sultana, Gilberto González-Parra, and Abraham J. Arenas. A generalized mathematical model of toxoplasmosis with an intermediate host and the definitive cat host. *Mathematics*, 11(7), 2023.

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[25] Gilberto González-Parra and Abraham J Arenas. Mathematical modeling of SARS-CoV-2 Omicron wave under vaccination effects. *Computation*, 11(2):36, 2023.

[26] Gabriel Sepulveda, Abraham J Arenas, and Gilberto González-Parra. Mathematical modeling of COVID-19 dynamics under two vaccination doses and delay effects. *Mathematics*, 11(2):369, 2023.

[27] Michelle Sherman, Gilbert Kerr, and Gilberto González-Parra. Comparison of symbolic computations for solving linear delay differential equations using the Laplace transform method. *Mathematical and Computational Applications*, 27(5):81, 2022.

[28] Sharmin Sultana, Gilberto González-Parra, and Abraham J Arenas. Dynamics of toxoplasmosis in the cat's population with an exposed stage and a time delay. *Mathematical Biosciences and Engineering*, 19(12):12655–12676, 2022.

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[31] Gilbert Kerr and Gilberto González-Parra. Accuracy of the Laplace transform method for linear neutral delay differential equations. *Mathematics and Computers in Simulation*, 197:308–326, 2022.

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[33] Gilberto González-Parra, Myladis R Cogollo, and Abraham J Arenas. Mathematical modeling to study optimal allocation of vaccines against COVID-19 using an age-structured population. *Axioms*, 11(3):109, 2022.

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Presentations/Symposia/Invited Lectures/Professional meetings/Workshops/Talks.

- F.J. Navarro-González (speaker), Gilberto González-Parra, Juan Carlos Cortés, Rafael J. Villanueva, Josu Ceberio, Aplicación de Bayesian Optimization over Permutation Spaces with Heuristics para determinar la estrategia de vacunación óptima contra el COVID-19 a partir de que se dispusieran dosis de la vacuna en EEUU, XVI Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados,Spain,May,2025.

- G. González-Parra (plenary speaker), "Mathematical modeling and optimization techniques to analyze a variety of COVID-19 vaccination strategies". Semana de Matemática (online), Universidad Nacional Autónoma de Honduras, Sept., 2024.

- G. González-Parra,"Structured mathematical models to study the optimality of vaccination strategies for COVID-19 pandemic", NM-INBRE Annual Symposium, Las Cruces, NM, USA, July-2024.

- G. González-Parra, A. Arenas, Myladis Cogollo, "Mathematical modeling of COVID-19 pandemic using stochastic differential equations", Conference: Stochastic Modelling and Uncertainty Quantification (SMUQ 2024), Valencia, Spain, July, 2024.

- Carlos Andre-Villaroig, Rafael J. Villanueva, J.C. Cortes, G. González-Parra, "Analysis of the structural and practical identifiability of an antibiotic resistance model that depends on antibiotic consumption", Conference: Stochastic Modelling and Uncertainty Quantification (SMUQ 2024), Valencia, Spain, July, 2024.

- Cristina-Luisovna (speaker), G. González-Parra, Marcos Llamazarez, Rafael J. Villanueva, "Modeling COVID-19 Spread in Chile: Integrating Spatial Population Dynamics within the SIR Framework". XXVI Conference: Mathematical modelling in engineering and human behaviour, Spain, July, 2024.

- G. González-Parra,"Mathematical modeling approaches of COVID-19 vaccination strategies: challenges", Coloquio Virtual Latinoamericano, March, 2024.

- G. González-Parra (plenary speaker), R. Villanueva, G. Luebben, Bhumika Bhakta, B. Cervantes, "Utilización de modelos matemáticos para el análisis de las estrategias de vacunación para el COVID-19". II Simposio Internacional de Matemáticas y Estadística Aplicada (online), Universidad del Norte, Barranquilla, Colombia. Nov. 2023.

- J. Miranda (speaker), A. Arenas, G. González-Parra, "Análisis de soluciones de onda de un modelo de difusión unidimensional para un modelo Covid-19". II Simposio Internacional de Matemáticas y Estadística Aplicada (online), Universidad del Norte, Barranquilla, Colombia. Nov. 2023.

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- G. González-Parra, G. Luebben, Bhumika Bhakta, B. Cervantes, "Age-structured Mathematical Models Based on Nonlinear ODEs to Study the Optimality of Vaccination Strategies for COVID-19". IMACS2023 21st IMACS World Congress, University La Sapienza, Roma, Italy. Sept. 2023.

- G. González-Parra, G. Luebben, Bhumika Bhakta, B. Cervantes, "Mathematical modeling of COVID-19 vaccine allocation". Conference: Mathematical modelling in engineering and human behaviour, Spain, July, 2023.

- A. Arenas (speaker), J. Miranda, G. González-Parra, Determining the impact of the initial phase of the COVID-19 pandemic with delay differential equations, Conference: Mathematical modelling in engineering and human behaviour, Spain, July, 2023.

- G. González-Parra (plenary speaker), G. Luebben, B. Cervantes, "Study of optimal vaccination strategies for the COVID-19 pandemic using mathematical models". Fourth BYMAT Conference: Bringing Young Mathematicians Together, Valencia, Spain, 9-11th November, 2022.

- G. González-Parra, G. Luebben, B. Cervantes, "Mathematical modeling to study the optimal vaccination strategies for the COVID-19 pandemic". BCES Biology Seminar (online), Northern New Mexico College, La Espanola, NM, Sept. 2022.

- G. González-Parra, G. Luebben, B. Cervantes, "Mathematical approaches to study the optimal vaccination strategies for the COVID-19 pandemic". Symposium "New Mexico INBRE 2022 Symposium", Santa Fe, NM, July 2022.

- G. González-Parra, "Uncertainty Analysis for the COVID-19 Pandemic". Minisymposia "Deterministic and Stochastic Models in Ecology and Epidemiology", July 2022, Life Sciences SIAM Conference.

- G. González-Parra, *Análisis de estrategias de vacunación para el SARS-COV-2 utilizando un modelo matemático por edades*. IV Congreso Internacional de Matemáticas Aplicadas (IV-CIMA), UNAD, Bogotá, Colombia, Sept. 2021.

- G. González-Parra, "Mathematical modeling of COVID-19 pandemic under social behavior uncertainty" in the annual meeting of the Society for Mathematical Biology, June 2021, SMB2021 virtual Conference (U. California, Riverside).

- G. González-Parra, "Mathematical tools to model and understand RSV dynamics within-host and between-host". I CONGRESO INTERNACIONAL DE CIENCIAS BÁSICAS (Virtual), Colombia, 2020.

- G. González-Parra, "Mathematical Approaches and Challenges in Viral Dynamics Incorporating Immune System". Minisymposia "Immune dynamics in health and disease, Part II", June-July 2020, Life Sciences SIAM Virtual Conference.

- G. González-Parra, "Mathematical Modeling of Infectious Diseases at Macro and Micro Level Taking into Account Uncertainty". Dec 2019, Computational Science Research Center San Diego State University, USA.

- G. González-Parra, "Mathematical modeling of viral dynamics including immune system and uncertainty factors". Nov 2019, 2nd Annual Meeting of the SIAM Texas Louisiana Section, Dallas, USA.

- G. González-Parra, *Mathematical models based on systems of fractional order differential equations. Applications on different fields* at the Mechanical Department Seminar, New Mexico Tech, September 2019.

- G. González-Parra, *Uncertainty in the mathematical modeling of viral processes* at the Mathematics Department Colloquium, New Mexico Tech, September 2019.

- G. González-Parra, "Mathematical modeling of control strategies against Chikungunya virus spread". July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.

- A. Arenas (co-speaker), G. González-Parra (co-speaker), "Mathematical modeling and analysis of the spread of RSV". July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.

- A. Arenas (speaker), G. González-Parra, "Mathematical modeling of toxoplasmosis considering environment and multiple hosts". July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.

- B. Chen-Charpentier (speaker), G. González-Parra, "Parameter estimation for a Chikungunya epidemic model". July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.

- G. González-Parra, "Mathematical modeling of viral dynamics under different uncertainty factors". July 2019, Industrial Congress on Industrial and Applied Mathematics, Valencia, Spain.

- G. González-Parra, "A nonstandard finite difference scheme to solve a viral diffusion mathematical model". July 2019, Mathematical Modelling in Engineering & Human Behaviour 2019, Valencia, Spain.

- G. Gonzalez-Parra, "Mathematical models in life sciences", Central New Mexico College, Albuquerque, NM, USA. April 2019.

- G. González-Parra, *Mathematical modeling of diffusion processes using differential equations: Trends and perspectives* at the Mathematics Department Colloquium, New Mexico Tech, September 2019.

- G. González-Parra (plenary speaker), *Epidemic models with time delay*. Sept. 2018, III International Congress of Applied Mathematics, Universidad del Bosque, Bogotá, Colombia.

- G. González-Parra (plenary speaker), "Mathematical modeling based on diffusion processes in different fields". Sept. 2018, III International Congress of Applied Mathematics, Universidad del Bosque, Bogotá, Colombia.

- G. Gonzalez-Parra, Diego Aranda, Tommaso Benincasa, Deccy Trejos, "Mathematical Modeling of Zika in Colombia Considering Mutation", 2018 SIAM Conference on the Life Sciences, Minneapolis, USA.

- Lubna Pinky(speaker), G. Gonzalez-Parra, H.M. Dobrovolny, "Mechanisms of Virus-virus Coexistence in the Human Respiratory Tract", 2018 SIAM Conference on the Life Sciences, , USA.

- G. Gonzalez-Parra, "Interesting applied mathematics in the real world", Central New Mexico College, Albuquerque, NM, USA. November 2018.

- G. Gonzalez-Parra, "Applications of different types of mathematical models in different areas: Current trends and perspectives", Central New Mexico College, Albuquerque, NM, USA. February, 2018.

- G. González-Parra, *Different topics in applied mathematics related to mathematical modeling* at the Mathematics Department Colloquium, New Mexico Tech, September 2017.

- G. Gonzalez-Parra, H.M. Dobrovolny, "Modeling the linking of a partial immune response and RSV A2 in human populations." Society for Mathematical Biology, Salt Lake City, Utah, USA,July 17-21, 2017.

- H.M. Dobrovolny (speaker), G. Gonzalez-Parra, "Dynamical differences of RSV infections in vitro and in vivo." International Symposium on Respiratory Viruses, Berlin, Germany, June 22-25, 2017.

- G. González-Parra, Modeling Treatment of RSV with TMC353121. 2016, July, 2016 SIAM Conference on the Life Sciences, Boston, USA.

- G. Gonzalez-Parra, F. De Ridder, A. Vermeulen, G. Ispas, H.M. Dobrovolny (speaker), "Comparison of in vitro influenza and RSV kinetics parameters", 2nd Workshop on Virus Dynamics, Toronto, ON, July 17-18, 2015 Toronto, Ontario, Canada.

- G. González-Parra, Mathematical Modeling of Infectious Diseases in different type of Populations. 2015, October, University of Texas at Arlington Chapter of SIAM, Department of Mathematics.

- G. González-Parra (plenary speaker), Aplicaciones de distintos tipos de modelos matemáticos en diferentes áreas: actualidad y perspectivas. 2013, September, I Congreso de Matemáticas y Estadística Aplicadas, Bogotá, Colombia.

- G. González-Parra, Modelos matemáticos basados en sistemas de ecuaciones diferenciales de orden fraccional. aplicaciones en finanzas, epidemiologia e ingeniería. 2013, September, I Congreso de Matemáticas y Estadística Aplicadas, Bogotá, Colombia.

- G. González-Parra, Miguel Diaz-Rodriguez, V. Comezaquira. A nonstandard finite difference scheme for an epidemic model of fractional order. 2012, XI Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas, Porlamar Venezuela.

- Miguel Diaz-Rodriguez, G. González-Parra. Forward position problem of a 2r1t parallel robot using gröbner basis. 2012, XI Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas, Porlamar Venezuela.

- J. Cayama, G. González, I Peña. Caos polinomial utilizando polinomios de legendre aplicado a ecuaciones diferenciales aleatorias. 2012, XI Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas, Porlamar Venezuela.

- M. Bermudez, G. González-Parra. Cálculo y análisis del número básico de reproducción Ro para modelos matemáticos epidemiológicos mediante computación simbólica. 2012, XI Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas, Porlamar Venezuela.

- Modeling adaptative social behaviour on epidemics with dynamical networks. 2011, XII Conference on Mathematical Modelling in Engineering and Human Behaviour , IMM, Polytechnic University of Valencia, Valencia, Spain.

- A nonstandard numerical scheme for a nonlinear option pricing model in illiquid markets. 2011, XII Conference on Mathematical Modelling in Engineering and Human Behaviour , Medicine and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Solución de ecuaciones diferenciales aleatorias utilizando caos polinomial. 2011, XXIV Jornadas Venezolanas de Matemáticas, Barquisimeto, Venezuela.

- Comparación del metodo de monte carlo y caos polinomial en modelos con incertidumbre. 2011, XXIV Jornadas Venezolanas de Matemt́icas, Barquisimeto, Venezuela.

- Modeling dynamics of workers and retirees populations under different retirement age social policies. 2010, International Conference on Applied Mathematics and Informatics - ICAMI 2010, Isla San Andres, Colombia.

- Low cost computing and reliable simulation for nonlinear differential system models (Poster). 2010, International Conference on Applied Mathematics and Informatics - ICAMI 2010, Isla San Andres, Colombia.

- Nonstandard numerical schemes for epidemic models using matrices. 2010, International Conference on Applied Mathematics and Informatics - ICAMI 2010, Isla San Andres, Colombia.

- Approaches to model dynamics of H1N1 influenza virus in selected regions. 2010, XII Conference on Mathematical Models in Addictive Behaviour, Medicine and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Nonstandard numerical schemes for biological systems. 2009, XI Conference on mathematical Models in Life Sciences, Business and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Analytical-numerical solution of a Michaelis-Menten enzyme reaction model. 2009, XI Conference on mathematical Models in Life Sciences, Business and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Dynamical analysis of the transmission of seasonal diseases using differential transformation method. 2008, X Conference on mathematical Models in Life Sciences and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- An efficient way to estimate the parameters of a stochastic differential model. Application to a stochastic model for obesity. 2008, X Conference on mathematical Models in Life Sciences and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Random modeling of obesity population dynamics by Monte Carlo method. 2008, 10th WSEAS International Conference on AUTOMATIC CONTROL MODELLING and SIMULATION (ACMOS '08), Istanbul, Turkey.

- A stochastic model to forecast the evolution of infant obesity. 2008, IX Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas "CIMENICS 2008", Venezuela.

- Mathematical model for the evolution of toxoplasmosis disease. 2007, IX Conference on mathematical Models in Life Sciences and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Modeling dynamics of obesity in the region of Valencia, Spain. 2007, IX Conference on mathematical Models in Life Sciences and Engineering, IMM, Polytechnic University of Valencia, Valencia, Spain.

- Modelización matemática de la obesidad infantil en la Comunidad Valenciana. VIII Conference on mathematical Models in Life Sciences and Engineering, IMM, 2006, Polytechnic University of Valencia, Valencia, Spain.

- Encuentro de Medios deportivos, 2006, Universidad Politécnica de Valencia, Gandia, España. (Ponente).

- Data Extrapolation Using Genetic Programming to Matrices Singular Values Estimation. 2006, Evolutionary Computation, 2006. CEC 2006. IEEE Congress on Vancouver, Canadá.

- G. González, J. Aguilar. Genetic Programming and Randomized Algorithms for Estimation of Singular Values of Large Matrices. The International Conference of Numerical Analysis and Applied Mathematics 2005 (ICNAAM 2005), Rhodes, Greece.

Other Publications/Non-Refereed Journals/Technical Reports

- Technical Report: *An Accurate Nonstandard Scheme of Predictor-Corrector Type for a SIR Epidemic Model*, 2009-01, Mathematical Preprint Series, University of Texas, Arlington, USA
- Technical Report: *Dynamical graphs and formation of subgraphs from individual behavior related to infectious diseases*, 2012, Universidad de Los Andes, Mérida, Venezuela.
- Non-Refereed Journal: González-Parra, Gilberto, et al. "Mathematical modeling of physical capital using the spatial Solow model." arXiv preprint arXiv:1504.04388 (2015).
- Non-Refereed Journal: Rosa Flores and Gilberto González-Parra, *Mecánica de la brazada de Nado Crol en Triatletas Venezolanos*, Revista de Biomecánica del Ejercicio y los Deportes, 1(2), 2010.