July 2017

CURRICULUM VITAE

JOSEFINA “LOLINA” ALVAREZ

At 12,800 ft., on the Continental Divide Trail, Colorado, July 2016.

Current Position

- Emeritus Professor of Mathematics, New Mexico State University.

Current Interests

- Healthy cooking.
- Long distance hiking, snowshoeing and backpacking.
- Volunteering at the warehouse of The Food Depot, Northern New Mexico food bank.
- Reading books of crime fiction (Arthur Conan Doyle, Agatha Christie, Georges Simenon, Colin Dexter, Jill McGown, Lisa See, Robert Galbraith, etc.), and watching movies and series based on them.
- Writing and presenting mathematics, mainly for mathematics students and for general mathematical audiences.
Recent Publications

1. “¿Cuál es el camino más corto para llegar a ...?” (What is the shortest path to ...?), Matematicalia, i-MATH, Volume 7, No. 1, March 2011, http://www.matematicalia.net/articulos/v7n1mar2011/jalvarez.pdf.


4. (with Claudia Gómez) “La fórmula isoperimétrica se encuentra con Herón” (The isoperimetric formula meets Heron), Laberintos e Infinitos, Autonomous Technological Institute of Mexico, Volume 32, Fall 2013, pp. 12-18, http://laberintos.itam.mx/numero-32.


8. (with Claudia Gómez) “Más no siempre es mejor!, segunda parte” (More not always is better!, second part), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 36, Winter 2014, pp. 7-21,

9. (with Claudia Gomez) “Gastón Darboux y el Teorema del Valor Medio” (Gaston Darboux and the Mean Value Theorem), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 37, Spring 2015, pp. 19-25,

This page received over 13,000 visits between September 3 and September 23, 2015.


13. (with Martha Guzmán-Partida) “La Paradoja de Braess” (The Braess Paradox), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 40, Spring 2016, pp. 8-16,


16. (with Martha Guzmán-Partida) “Ortogonalidad en Espacios Normados” (Orthogonality in Normed Spaces), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 42, Fall 2016, pp. 6-11,

http://laberintos.itam.mx/numero-42.

17. “The Beauty of Maths is in the Brain of the Beholder”, *Plus*, University of Cambridge,

http://plus.maths.org/content/beauty-maths-brain-beholder.

Preprints


Recent Presentations

- 2010: “¿Cuál Es el Camino Más Corto Para Llegar A ...?” (What is the shortest path to ...?), invited lecture, *BoschFest*, Autonomous Technological Institute of Mexico.
• 2012: “Variaciones Sobre El Tema De Las Máquinas Que Calculan” (Variations On The Theme Of The Calculating Machines), invited lecture to celebrate the tenth anniversary of the student mathematics magazine *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico.

• 2012: “Hablemos De Series Divergentes” (Let’s Talk About Divergent Series), Colloquium Talk, Departamento de Matemática, Autonomous Technological Institute of Mexico.


• 2017: Invited to give a lecture to celebrate the fifteenth anniversary of the student mathematics magazine *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico.

**Prior Professional Interests**

• Research in Harmonic Analysis and in Functional Analysis.

• Curriculum development.

• Writing and presenting mathematics for mathematics students and for general mathematical audiences.

**Education**

• 1969: Licenciada (M.S.) in Mathematics, Universidad de Buenos Aires.


**Positions**

• 1970-1973: Ayudante (Teaching Assistant), Universidad de Buenos Aires.

• 1973-1976: Jefe de Trabajos Prácticos (Teaching Associate), Universidad de Buenos Aires.
• 1976-1979: Profesor Adjunto (Assistant Professor), University of Buenos Aires.

• 1979-1984: Profesor Asociado (Associate Professor), University of Buenos Aires.


• 1984-1985: Visiting Scholar, Department of Mathematics, Princeton University.

• 1986: Visiting Scholar, Department of Mathematics, University of Chicago.

• 1986-1990: Associate Professor, Florida Atlantic University, tenured in 1988.

• 1990-2010: Professor, tenured in 1991, member of the Graduate Faculty, New Mexico State University.

• 1997-2010: Member of the Honors College Faculty, New Mexico State University.

• 2010-: Emeritus Professor of Mathematics, New Mexico State University.

Articles on Harmonic Analysis and Functional Analysis


24. “\(H^p\) and weak \(H^p\) continuity of Calderón-Zygmund type operators”, *Fourier Analysis, Analytic and Geometric Aspects*, Marcel Dekker (1994) 17-34.


35. (with Martha Guzmán-Partida, Urszula Skórnik) “$S'$-convolvability with the Poisson kernel in the Euclidean case and the product domain case”, *Studia Mathematica* 156 (2003), 143-163.


**Preprints**


**Monographs and Lecture Notes**


** Supervision of Graduate and Post-Graduate Students **

**Master’s Theses:**


**Doctoral Dissertations:**


**Post-Doctoral Students:**

• 1997-1998: Martha Guzmán-Partida, Ph. D. Universidad Nacional Autónoma de México.

**Invited Presentations at Research Conferences**


• 1978: IV Escuela Latinoamericana de Matemática, Lima, Peru.

• 1979: Seminar on Fourier Analysis, El Escorial, Spain.

• 1981: X Congreso Latinoamericano de Matemática, Paipa, Colombia.

• 1981: Seminario Latinoamericano de Análisis, Santa Fe, Argentina.

• 1983: Seminar on Fourier Analysis, El Escorial, Spain.

• 1984: Julio R. Pastor Lecture, Annual Meeting of the Unión Matemática Argentina, Córdoba.

• 1985: Special Session on “Maximal functions in harmonic analysis,” 823rd Meeting American Mathematical Society, Columbia, MO.


• 1988: Mini Conference on Harmonic Analysis and Related Topics, Auburn University, AL.

• 1989: Topics in Pseudo-differential Operators, Oberwolfach, Germany.
• 1989: NSF-CBMS Regional Research Conference on Singular Integral Operators, Missoula, MT.


• 1991: Plenary address, 865th Meeting American Mathematical Society, Tampa, FL.

• 1991: X Latin American School of Mathematics, Córdoba, Argentina.

• 1992: Special Session on “Harmonic Analysis,” 872nd Meeting American Mathematical Society, Tuscaloosa, AL.

• 1992: Sixth International Workshop in Analysis and Its Applications, Orono, ME.

• 1993: Spring Lecture Series, University of Arkansas, Fayetteville, AR.

• 1994: International Conference in Honor of Mischa Cotlar, Caracas, Venezuela.

• 1995: Special Session on “Classical Harmonic Analysis”, 902nd Meeting American Mathematical Society, Burlington, VT.


• 1998: Special Session on “Fourier Analysis”, 935th Meeting American Mathematical Society, Chicago, IL.

• 1999: International Conference on Algebraic Analysis, Warsaw, Poland.

2002: Special Session on “Function Spaces, Singular Integrals and Applications to PDEs”, 982th Meeting American Mathematical Society, Orlando, FL.

2006: Special Session on “Structure of Function Spaces and Applications”, 1015th Meeting American Mathematical Society, Miami, FL.


2008: Special Session on “Nonlinear Analysis and Applications”, 1043th Meeting American Mathematical Society, Kalamazoo, MI.

Colloquium Talks

• 1976: Instituto Argentino de Matemática, Buenos Aires.

• 1978: Departamento de Matemáticas, Universidade Federal de Pernambuco, Brazil.

• 1981: Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil.

• 1984: Programa de Matemática Aplicada, Santa Fe, Argentina.

• 1985: University of Maryland, College Park.

• 1985: Southern Illinois University, Carbondale.

• 1985: Calderón-Zygmund Seminar, University of Chicago.

• 1985: Princeton University.

• 1986: Florida Atlantic University.

• 1986: Calderón-Zygmund Seminar, University of Chicago.

• 1986: Departamento de Matemática, School of Sciences, University of Buenos Aires, Argentina.

1988: Departamento de Matematicas, Universidade Federal de Pernambuco, Brazil.

1989: Department of Mathematics, Universidad Autónoma de Madrid, Spain.

1989: Department of Mathematics, Umeå University, Sweden.

1990: Department of Mathematical Sciences, New Mexico State University.

1990: Department of Mathematics, Bryn Mawr College.

1990: Department of Mathematics, University of New Mexico.


1992: Department of Mathematics, University of Texas at El Paso.

1996: Department of Mathematics, Universidad Autónoma de Madrid, Spain.

1996: Department of Mathematics, Universitat de Barcelona, Spain.

1996: Department of Mathematics, Université de Mons, Belgium.

1996: Department of Mathematics, Umeå University, Sweden.

1996: Joint Analysis Seminar, Royal Institute of Technology-Stockholm University, Sweden.

1997: Instituto de Matemática, Cuernavaca, Mexico.


2002: Department of Mathematics, Kansas State University.

2004: Departamento de Análisis Matemático, Universidad de La Laguna, Tenerife, Spain.
2005: Department of Mathematical Sciences, New Mexico State University.

2005: Departamento de Matemática, Universidad de Sonora, Mexico.

2007: Departamento de Matemática, Instituto Tecnológico Nacional de Mexico.

Organization of Research Conferences

- 1991: Organizer, Special Session on “Harmonic Analysis and Applications”, 865th meeting American Mathematical Society, Tampa, FL.

- 1993: Organizer, Special Session on “Harmonic Analysis and Applications”, 886th Meeting American Mathematical Society, College Station, TX.

- 1998-2003: Co-founder and co-organizer, New Mexico Analysis Seminar, supported by the National Science Foundation in 2001-2003.


- 2004: Co-organizer, Special Session on “Functional and Harmonic Analysis”, VI Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Houston, TX.


Articles on Educational Issues and for General Mathematical Audiences

   http://scholarship.claremont.edu/jhm/.


7. “Bordando Imágenes” (Embroidering Images), *Matematicalia*, i-MATH, Volume 1, No. 2, June 2005,
   http://www.matematicalia.net/
   index.php?option=com_content&task=view&id=68&Itemid=75.

   http://plus.maths.org/content/amazing-librarian.

9. (with César Luis García) “Secrets From A Bathroom Floor”, *Plus*, University of Cambridge,
   http://plus.maths.org/content/secrets-bathroom-floor.


Educational Activities

Presentations at Conferences, Schools and Universities:


- 1995: *Teaching Mathematics Appreciation*, colloquium talk, Department of Mathematical Sciences, New Mexico State University.

- 1997: *Mathematics Appreciation*, one-hour invited talk, Mathematical Association of America Regional Meeting, Grants, NM.

- 1997: *Designing a Terminal Mathematics Course for Non-Science Majors*, colloquium talk, Stephen Austin State University, Nacogdoches, Texas.

- 1998: *El Matemático Accidental*, colloquium talk, Departamento de Matemática, School of Sciences, University of Buenos Aires, Argentina.

2000: *La Tecnología en la Enseñanza de la Matemática*, invited one-hour lecture delivered as part of the activities in celebration of the XXXVI anniversary of the Instituto Tecnológico de Ciudad Juárez, Mexico.

2000: *Academic Careers*, presentation to first year McNair scholars, New Mexico State University.

2000: *The Sound of Mathematics*, Manasse Chair Award acceptance lecture, New Mexico State University.

2001: *Counting Infinite Sets*, two class presentations at Mayfield High School, Las Cruces, New Mexico.

2001: *Similarity and Self-Similarity*, two class presentations at Oñate High School, Las Cruces, New Mexico.

2001: *Going to College, Careers in Mathematics*, three class presentations at Mayfield High School, Las Cruces, New Mexico.

2001: *What Does it Take to be a Mathematician, What Do I Do as a Math Person at NMSU?*, Mayfield High School, Las Cruces, New Mexico.

2001: *Why is Animal Size so Important? All About King Kong*, two class presentations at Mayfield High School, Las Cruces, New Mexico.

2001: *Scaling Up and Down*, Las Cruces Prefreshman Engineering Program (PREP), New Mexico State University.

2001: *Tecnología Educativa (El uso de recursos existentes en el Internet en la enseñanza de la matemática)*, invited one-hour talk, Primer Symposium Internacional de Ingeniería y Ciencias Económico-Administrativas, Instituto Tecnológico de Ciudad Juárez, Mexico.

2001: *Doubling Processes*, presentation to the mathematics education majors, College of Education, New Mexico State University.
2001: Moderator of the panel discussion *Women in Science, Mathematics and Engineering*, New Mexico Alliance for Graduate Education and the Professoriate Conference, New Mexico State University.

2002: *Drawing Over the Phone*, two class presentations at Mayfield High School, Las Cruces, New Mexico.

2002: *Letting It Go Tightly*, presentation at a panel of Honors faculty on teaching practices, Conroy Honors Center, New Mexico State University.


2002: *Teaching Discrete Mathematics in K-12*, presentation at the Fifth Annual Mathematics Education Institute, New Mexico State University.


2004: *Careers in Mathematics*, Las Cruces Prefreshman Engineering Program (PREP), New Mexico State University.

2005: *The Mathematics of Color and Shape*, presentation to the NMSU chapter of Pi Mu Epsilon, Mathematics Honor Society.

2005: *The Geometry of Hilbert Spaces*, three one-hour lectures presented in the Department of Mathematics, University of Sonora, Mexico.

2005: *Bernstein Polynomials: From classical analysis to computer aided design*, one-hour invited lecture, XXXVIII Annual Meeting of the Sociedad Matemática Mexicana, Mexico City, Mexico.

**Curriculum Development:**

- 2001: *Materials for a Course on Discrete Mathematics for High School Teachers, Secondary Mathematics Education Majors, and Mathematics Education Graduate Students*, New Mexico State University, supported by the National Science Foundation through the New Mexico Collaborative on Excellence in Teacher Preparation.
• 2001: (with M. Kingery), *Mathematics by Inquiry*, packet for participants in a workshop for mathematics high school teachers, Fall Conference of the New Mexico Collaborative for Excellence in Teacher Preparation, National Science Foundation, Ruidoso, 96 pages.


**Course Offerings:**

• I have designed and taught courses at all levels, for instance, Freshman Year Experience, College Algebra, Mathematics Appreciation (including an Honors version), Calculus, Advanced Calculus, Linear Algebra, History of Mathematics, Ordinary Differential Equations, Discrete Mathematics, Mathematics for Engineering, Mathematics for Physics, Partial Differential Equations, Real Analysis, Complex Analysis, Functional Analysis, and Special Topics Courses at various levels. In many cases, I acted as coordinator for large, multisection courses.

**Advising and Mentoring:**

• 2000, 2001: Advisor, Honors students oral and poster presentations at the Undergraduate Research and Creative Arts Symposium, New Mexico State University.

• 2000-2003: Mentor, EXITO! retention program for high school and freshman undergraduate students, New Mexico State University, funded by the Kellogg Foundation.

• 2001-2006: Mentor, NSF-ADVANCE Program, New Mexico State University, funded by the National Science Foundation.

• Advisor to numerous undergraduate mathematics majors.

• Member of numerous Master’s and doctoral committees.

• 2003-2008: Judge, *Southern New Mexico Science Fair.*

**Organization of Workshops and Special Sessions:**

- 1989: Coordinator, *Facing Choices After High School*, program for high school students and teachers in Palm Beach and Broward Counties, Florida.


- 1997: *Teaching Mathematics Appreciation to Non-Science Majors*, Chautauqua Course, Science Education Center, College of Education, University of Texas, Austin, supported by the National Science Foundation.


- 1998: *An Integrated Approach to the Precalculus/Calculus Curriculum*, Chautauqua Course, Alliance for Minority Participation, Resource Center for Science and Engineering, University of Puerto Rico, supported by the National Science Foundation.

- 2000: *Tutoring in Calculus*, training workshop for mathematics tutors, Student Support Services, New Mexico State University.

- 2001: (with Michael Kingery), *Mathematics by Inquiry*, workshop for mathematics high school teachers, Fall Conference of the New Mexico Collaborative for Excellence in Teacher Preparation, National Science Foundation, Ruidoso, New Mexico.


• 2004: *Cross-Stitching in the News (The mathematics of computer aided design)*, workshop, Mathematical Association of America, Regional Meeting, Flagstaff.

• 2005: Special session organizer: *A sample of mathematics-centered educational and outreach activities at New Mexico State University*, Annual Meeting of the Southwestern Section of the Mathematical Association of America, El Paso.

• 2006: *Griddy Mathematics: The mathematics and the art of grids*, presentation in the Special Session on Mathematical Connections in the Arts, National Joint Meetings, San Antonio.

Awards

• 1983: *Premio Coca-Cola En Las Artes Y Las Ciencias* (Coca-Cola In Arts And Sciences Award) for mathematical research, Argentina.

• 1998: *El Paso Energy Foundation Faculty Achievement Award*.

• 2002-2004: *First Manasse Chair Award*, College of Arts and Sciences, New Mexico State University.


Grants And Contracts

• 1973: Fellowship, Scuola Normale Superiore de Pisa, Italy.


• 1986: Research appointment, Department of Mathematics, University of Chicago.

• 1988: Grant (with Fernando Cobos, Mario Milman, Fernando Soria) U.S.-Spain cooperation program, National Science Foundation.
• 1988: Travel Grant, CNPq National Council of Sciences, Brazil, for research collaboration.

• 1990: Florida Atlantic University Summer Research Fellowship (with Nurgen Erdol and Galina Pajunen, Department of Electrical Engineering), for an interdisciplinary research project.

• 1994: Travel Grant, Instituto de Matemáticas, Universidad Nacional Autónoma de México, to present a series of lectures.

• 1996: Travel Grant, Universidad Autónoma de Madrid, Spain, to present a lecture and conduct research.

• 1996: Travel Grant, Universitat de Barcelona, Spain, to present a lecture and conduct research.

• 1996: Travel Grant, Université de Mons, Belgium, 1996, for research collaboration.

• 1996: Travel Grant, Umeå University, Sweden, to present a series of lectures.

• 1996: Travel Grant, Royal Institute of Technology, Sweden, to present a colloquium talk.

• 1998: Travel Grant, Programa de Matemática Aplicada, Santa Fe, Argentina, to present a series of lectures.

• 1999: Minigrant, Research Center, College of Arts and Sciences, New Mexico State University, for research collaboration.

• 2001-2003: Grant, National Science Foundation (with Joseph Lakey and Cristina Pereyra), to organize the New Mexico Analysis Seminar.

• 2001-2002: Contract, New Mexico Collaborative for Excellence in Teacher Preparation, National Science Foundation, to develop and teach a course on Discrete Mathematics for in-service and pre-service teachers.

• 2002-2004: Travel Grants, Mathematical Association of America, to present three minicourses at the National Mathematics Meetings.
2004: Travel Grant, Universidad de La Laguna, Spain, 2004, to present a course module on computer aided design, to lecture at the Semester in Harmonic Analysis forum, and for a meeting of the Editorial Board of *Matematicalia*, i-MATH, (http://www.matematicalia.net).

2004: Contract, NSF-ADVANCE Program at NMSU, National Science Foundation, to support research activities.

2005: Travel Grant, University of Sonora, México, to present three lectures on the geometry of Hilbert spaces to advanced undergraduate students, graduate students and faculty.

2005: Travel Grant, Sociedad Matemática Mexicana, to present a one-hour invited lecture at its annual meeting in Mexico City.

2008: Grant (with Erica Voges), College of Arts and Sciences, New Mexico State University, to develop writing assignments for a calculus course for Life Sciences and Business students.

**Editorial Activities**


**Editorials**

Reviewing Activities

Articles refereed for:

- Mathematical and Computing Modelling.
- Proceedings of the American Mathematical Society.
- Proceedings of the American Mathematical Society.
- Journal of Mathematical Analysis and Applications.
- Proyecciones, Revista de Matemática de la Universidad Católica del Norte, Chile.
- Forum Mathematicum.
- Constructive Approximation.
- Rocky Mountain Journal of Mathematics.
- Mathematische Nachrichten.
- Collectanea Mathematica.
- International Journal of Mathematics.
- Colloquium Mathematicum.
- Revista de la Sociedad Matemática Colombiana.
- Studia Mathematica.
- Georgian Mathematical Journal.
- Indagationes Mathematicae.
- Nonlinearity.
- Cubo Journal of the University of Pernambuco, Brazil.
- Czechoslovak Mathematical Journal.
- Communications in Mathematical Analysis.

**Articles and books reviewed for:**

- Mathematical Reviews.
- Zentralblatt für Mathematik.

**Proposals reviewed for:**

- National Science Foundation.
- U.S. Civilian Research and Development Foundation.

**Also:**

- Numerous book manuscripts reviewed for several publishers, among them, the American Mathematical Society, Freeman, John Wiley, Brooks/Cole, etc.

**Translations Into Spanish**

1. “A Review of the 2006 Bridges Conference Held at the University of London, August 4-9, 2006”, by B. Lynn Bodner. *Matematicalia*, i-MATH, Volume 2, No. 4, October 2006,


**Selected Service**

- 1977-1979: Graduate Advisor, School of Sciences, University of Buenos Aires.
- 1984: Assistant Chair, Department of Mathematics, School of Sciences, University of Buenos Aires.
- 1987-1989: Elected member, University Senate, Florida Atlantic University.
- 1990: American Mathematical Society representative to the Meeting of the National Board for Professional Teaching Standards, Miami, FL.
- 1991-1995: Chair, Undergraduate Curriculum Committee, Department of Mathematical Sciences, New Mexico State University.
- 1992-1995: Member, Western Section Program Committee, American Mathematical Society.
- 1995-1998: Chair, Distinguished Visiting Professorship Committee, New Mexico State University.
- 1995, 1997, 1998, 2005: Elected member and chair, Promotion to Professor Subcommittee, Department of Mathematical Sciences, New Mexico State University.

- 1997-1998: Elected member and chair, Department Head Search Subcommittee, Department of Mathematical Sciences, New Mexico State University.

- 1997-1999: Colloquium Chair, Department of Mathematical Sciences, New Mexico State University.

- 1997-2002: Chair, Graduate Studies Committee, Department of Mathematical Sciences, New Mexico State University.

- 1998-1999: Member, Publications and Communications Board, Associated Students, New Mexico State University.


- 1999-2002: Chair, Committee on Committees, American Mathematical Society.

- 1999-2000: Elected member and chair, Hiring Long Term Planning Committee, Department of Mathematical Sciences, New Mexico State University.

- 1999-2005: Member of the proposal writing team and member of the Steering Committee, New Mexico Alliance for Graduate Education and the Professoriate (NM-AGEP), statewide program supported by the National Science Foundation.

- 2001-2003: Elected member, Graduate Council, New Mexico State University.

- 2002-2003: Elected member and chair, Tenure and Promotion to Associate Professor Subcommittee, Department of Mathematical Sciences, New Mexico State University.

- 2002-2006: Member of the Recruitment Committee, NSF-ADVANCE program, New Mexico State University.

- 2004-2010: Elected member, Faculty Affairs Committee, College of Arts & Sciences, New Mexico State University.
• 2004: Member, Nomination and Feedback Committee for the selection of the Associate Dean for Research and Director of the Research Center, College of Arts and Sciences, New Mexico State University.

• 2005-2007: Member, Liaison Committee, Department of Mathematical Sciences, New Mexico State University.

• 2006-2009: Chair, Undergraduate Majors and Minors Committee, Department of Mathematical Sciences, New Mexico State University.

Consulting

• 1997: Stephen Austin State University, Nacogdoches, Texas. In site consulting on the design of a terminal mathematics course for non-science majors. The course was successfully implemented in 1998 and it has been offered ever since.


• 2003, 2004: Kansas State University’s Targeted Excellence Project, External reviewer.