

November 2017

**CURRICULUM VITAE**  
**JOSEFINA “LOLINA” ALVAREZ**



On the Grand Ridge trail, Olympic Peninsula, Washington State,  
September 2017

**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 ...?), *Matemática*, i-MATH, Volume 7, No. 1, March 2011, <http://www.matematicalia.net/articulos/v7n1mar2011/jalvarez.pdf>.
2. (with Claudia Gómez) “Coloring by Numbers”, *Plus*, University of Cambridge, <http://plus.maths.org/colouring-numbers>.
3. (with Claudia Gómez) “Wankel y su motor” (Wankel’s engine), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 28, Spring 2012, pp. 20-26, <http://laberintos.itam.mx/numero-28>.
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>.
5. “Hablemos de series divergentes” (Let us talk about divergent series), *Materials Matemàtics*, Autonomous University of Barcelona, Volume of 2014, <http://www.mat.uab.cat/matmat/PDFv2014/v2014n05.pdf>.
6. (with Claudia Gómez) “¡Más no siempre es mejor!, primera parte” (More not always is better!, first part), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 35, Fall 2014, pp. 12-21, <http://laberintos.itam.mx/numero-35>.
7. (with Isabel Marrero) “Variaciones sobre el tema de las máquinas que calculan” (Variations on the theme of the calculating machines), *Materials Matemàtics*, Autonomous University of Barcelona, Volume of 2014, <http://www.mat.uab.cat/matmat/PDFv2014/v2014n07.pdf>.

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,  
<http://laberintos.itam.mx/numero-36>.
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,  
<http://laberintos.itam.mx/numero-37>.
10. “Want less traffic? Build fewer roads!”, *Plus*, University of Cambridge,  
<http://plus.maths.org/content/want-less-traffic-build-fewer-roads>.  
This page received over 13,000 visits between September 3 and September 23, 2015.
11. (with Stephen Locke) “Sumemos esta serie” (Let’s sum this series), *Lecturas Matemáticas*, Colombian Mathematical Society, Volume 36 (2) (2015) 181-194. See MR 3440477.  
<http://www.scm.org.co/index.php/publicaciones/lecturas/contenido>.
12. (with Larry Hughes) “El problema de las esposas y las llaves” (The problem of the spouses and the keys), *Miscelanea Matematica*, Mexican Mathematical Society, Volume 61 (2015) 31-42,  
<http://www.miscelaneamatematica.org/index.php?numero=61>.
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,  
<http://laberintos.itam.mx/numero-40>.
14. (with Martha Guzmán-Partida) “Nonlinear Initial Value Problems With Measure Solutions”, *Electronic Journal of Mathematical Analysis and Applications*, Vol. 5, No. 2 (July 2017) 69-88,  
[http://fcag-egypt.com/journals/ejmaa/Vol5\(2\)\\_July\\_2017.php](http://fcag-egypt.com/journals/ejmaa/Vol5(2)_July_2017.php).

15. (with Martha Guzmán-Partida) “About and Beyond the Lebesgue Decomposition of a Signed Measure”, *Lecturas Matemáticas*, Colombian Mathematical Society, Volume 37 (2) (2016) 79-103.  
<http://www.scm.org.co/index.php/publicaciones/lecturas-matematicas/lecturas-contenido>.
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>.
18. “Jean-Gaston Darboux y la Propiedad del Valor Intermedio” (Jean-Gaston Darboux and the Intermediate Value Property), *Laberintos e Infinitos*, Autonomous Technological Institute of Mexico, Volume 44, Fall 2017, pp. 14-20,  
<http://laberintos.itam.mx/wp/wp-content/uploads/2017/10/N44.pdf>.

## Preprints

1. “Notes on the Nemickiĭ Operator”, 9 pages.
2. (with Carolina Espinoza-Villalva and Martha Guzmán-Partida) “The Integrating Factor Method in Banach Spaces”, 16 pages, to appear in *Sahand Communications in Mathematical Analysis*.
3. (with Martha Guzmán-Partida) “The  $T(1)$  Theorem Revisited”, 38 pages.
4. “La Belleza de las Matemáticas” (The Beauty of Mathematics), 6 pages, to appear in *Laberintos E Infinitos*.

## 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.
- 2015: “Nonlinear Initial Value Problems With Measure Solutions”, invited lecture, *Analysis Meeting*, Institute of Mathematics, Cuernavaca, México.
- 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.
- 1976: Doctora (Ph.D.) in Mathematics, Universidad de Buenos Aires. Doctoral Advisor: Alberto P. Calderón.

## 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.
- 1980-1990: Investigador Independiente (Independent Researcher), CONICET (National Council of Sciences, Argentina).
- 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

1. “On the inversion of pseudo-differential operators”, *Studia Mathematica* 64 (1979) 25-32.
2. “Existence of a functional calculus on certain algebras of pseudo-differential operators”, *Journal of the Unión Matemática Argentina* 29 (1979) 55-76.

3. (with Alberto P. Calderón), “Functional calculi for pseudo-differential operators, I”, *Proceedings of the Seminar on Fourier Analysis held at El Escorial, Sociedad Matemática Española* 1 (1979) 1-61.
4. “Some facts about regularizing pseudo-differential operators”, *Proceedings of the IV Escuela Latinoamericana de Matemática*, Lima, Peru, (1979) 11-20.
5. “The distribution function in the Morrey space”, *Proceedings of the American Mathematical Society* 83 (1981) 693-699.
6. “The kernel of a regularizing operator”. *Journal of the Unión Matemática Argentina* 30 (1982) 110-114, volume in honor of Luis A. Santaló.
7. (with Alberto P. Calderón), “Functional calculi for pseudo-differential operators, II”, *Studies in Applied Mathematics* 8, Academic Press (1983) 27-72, volume in honor of Irving Segal.
8. “An algebra of  $L^p$ -bounded pseudo-differential operators”, *Journal of Mathematical Analysis and Applications* 84 (1983) 268-282.
9. “Functions of  $L^p$ -bounded pseudo-differential operators”, *Proceedings of the Seminar on Fourier Analysis, El Escorial, Spain*, North Holland (1985) 3-11.
10. (with Mario Milman), “ $H^p$  continuity properties of Calderón-Zygmund type operators”. *Journal of Mathematical Analysis and Applications* 118 (1986) 63-79.
11. (with Mario Milman), “Vector valued inequalities for strongly singular Calderón-Zygmund operators”, *Revista Iberoamericana de Matemática* 2 (1986) 205-226.
12. (with Mario Milman), “Interpolation of tent spaces and applications”, *Proceedings of the International Conference on Interpolation*, Lund, Sweden, 1986. *Lecture Notes in Mathematics*, No. 1302 (1987) 11-21, Springer-Verlag.
13. (with Ricardo Durán), “On the  $L^p$  continuity of pseudo-differential operators with discontinuous symbols”, *Proceedings of the American Mathematical Society* 104 (1988) 165-168.

14. “A remark on the  $H^1$ -BMO duality in product domains”, *Colloquium Mathematicum* 58 (1989) 39-42.
15. (with Mario Milman), “Carleson measures: Duality and interpolation”, *Arkiv för Matematik* 25 (1987) 155-174.
16. “Functional calculi for pseudo-differential operators, III”, *Studia Mathematica* 95 (1989) 53-71.
17. (with Jorge Hounie), “Estimates for the kernel of pseudo-differential operators and  $(L^p, L^q)$  continuity”, *Arkiv för Matematik* 28 (1990) 1-22.
18. “On the  $T(1)$  theorem on product domains”, *Journal d’Analyse Mathématique* 62 (1994) 155-167.
19. (with Jorge Hounie), “Spectral invariance and tameness of pseudo-differential operators on weighted Sobolev spaces”, *Journal of Operator Theory* 30 (1993) 41-67.
20. (with Mario Milman), “Calderón-Zygmund operators and Poisson like operators”, *Colloquium Mathematicum* 60-61 (1990) 361-378, volume in honor of Antoni Zygmund.
21. (with Richard Bagby, Douglas Kurtz, Carlos Pérez), “Weighted estimates for commutators of linear operators”, *Studia Mathematica* 104 (1993) 194-209.
22. (with Carlos Pérez), “Estimates with  $A_\infty$  weights for various singular integral operators”, *Bollettino Unione Mat. Italiana* (7) 8-A (1994) 123-133.
23. (with Jorge Hounie, Carlos Pérez), “A pointwise estimate for the kernel of a pseudo-differential operator, with applications”, Proceedings of the X Latin American School of Mathematics, Cordoba, Argentina, *Revista de la Unión Matemática Argentina* 37 (1993) 184-199.
24. “ $H^p$  and weak  $H^p$  continuity of Calderón-Zygmund type operators”, *Fourier Analysis, Analytic and Geometric Aspects*, Marcel Dekker (1994) 17-34.



25. “Continuity of Calderón-Zygmund type operators on the predual of a Morrey space”, *Clifford Algebra in Analysis and Related Topics*, CRC Press (1996) 309-319.
26. “Continuity properties for linear commutators of Calderón-Zygmund Operators”, *Collectanea Mathematica* 49 (1998) 17-31.
27. (with Jorge Hounie) “An oscillatory singular integral operator with polynomial phase”, *Studia Mathematica* 133 (1999) 1-18.
28. (with Jorge Hounie) “Functions of pseudo-differential operators of non-positive order”, *Journal of Functional Analysis* 141 (1996) 45-59.
29. (with Christine Carton-Lebrun) “Optimal spaces for the  $S'$ -convolution with the Marcel Riesz kernels and the  $n$ -dimensional Hilbert kernel”, *Analysis of Divergence: Control and Management of Divergent Processes*, Birkhauser (1999) 233-248.
30. “Spectra of pseudo-differential operators in the Hörmander class”, *Analysis of Divergence: Control and Management of Divergent Processes*, Birkhauser (1999) 187-199.
31. (with Martha Guzmán-Partida, Joseph Lakey) “ Spaces of bounded  $\lambda$ -central mean oscillation, Morrey spaces, and  $\lambda$ -central Carleson measures”, *Collectanea Mathematica* 51 (2000) 1-47.
32. “The Weyl correspondence as a functional calculus”, Proceedings of the International Conference on Algebraic Analysis, Warsaw, Poland, September 1999, *Banach Center Publications* 53, Polish Academy of Sciences (2000) 79-88.
33. (with Magalí Folch-Gabayet, Salvador Pérez-Esteve) “Banach spaces solutions of the Helmholtz equation in the plane”, *Journal of Fourier Analysis and Applications* 7 (2001) 49-62.
34. (with Martha Guzmán-Partida) “The  $S'$ -convolution with singular kernels in the Euclidean case and the product domain case”, *Journal of Mathematical Analysis and Applications* 270 (2002) 405-434.
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.

36. (with Hamed Obiedat) “Characterizations of the Schwartz space  $S$  and the Beurling-Björck space  $S_w$ ”, *Cubo Journal* 6 (2004) 167-183.
37. (with Martha Guzmán-Partida, Salvador Pérez-Esteve) “ $N$ -harmonic extensions of weighted integrable distributions”, *Journal of Function Spaces and Applications* 4, No. 3 (2006), 305-327.
38. (with Martha Guzmán-Partida, Salvador Pérez-Esteve) “Harmonic extensions of distributions”, *Mathematische Nachrichten* 280, No. 13-14 (2007) 1443-1466.
39. (with Lloyd Moyo) “Optimal codomains for the Laplace operator and the product Laplace operator”, *Journal of Function Spaces and Applications* 5, No. 3 (2007) 269-285.
40. (with María Cristina Mariani) Extensions of the Nemytsky operator: Distributional solutions of nonlinear problems, *Journal of Mathematical Analysis and Applications* 338 (2008) 588-598.
41. (with Michael Eydenberg, Hamed Obiedat), “The action of operator semigroups on the topological dual of the Beurling-Björck space”, *Journal of Mathematical Analysis and Applications* 339 (2008) 405-418.

### Preprints

1. (with Michael Eydenberg, María Cristina Mariani) “The Nemytsky operator on vector valued measures”, 20 pages.
2. “A variable-coefficient version of Luzin’s theorem”, 12 pages.

### Monographs and Lecture Notes

1. “Distribuciones y Transformación de Fourier” (Distributions and Fourier Transform), *Cursos y Seminarios* 25, Universidad de Buenos Aires (1977) 85 pages.
2. “Temas de ecuaciones en derivadas parciales” (Topics in Partial Differential Equations), *Cursos y Seminarios* 27, Universidad de Buenos Aires (1979) 119 pages.

3. “Existence of functional calculi over some algebras of pseudo-differential operators and related topics”, *Notas de Curso* 17, Universidade Federal de Pernambuco, Brazil (1979) 94 pages.
4. (with Julio E. Bouillet), “Temas de ecuaciones en derivadas parciales, Primera parte” (Topics in Partial Differential Equations, First Part), *Cursos y Seminarios* 30, Universidad de Buenos Aires (1982) 74 pages.
5. “Continuity properties of some pseudo-differential operators”, *Monografías de Matemática* 2, Universidad Autónoma de Madrid, Spain (1982) 43 pages.
6. (with Jorge Zilber), “Cálculos funcionales en álgebras de Banach” (Functional Calculi in Banach Algebras), *Cursos y Seminarios* 31, Universidad de Buenos Aires (1984) 134 pages.
7. “Lecture Notes on the T(1) theorem”, *Notas de Curso* 29, Universidade Federal de Pernambuco, Brazil (1989) 50 pages.
8. (with Julio E. Bouillet), “Temas de ecuaciones en derivadas parciales, Segunda parte” (Topics in Partial Differential Equations, Second Part), *Cursos y Seminarios* 30, Universidad de Buenos Aires (1992) 54 pages.
9. “Distributions and Fourier Transform”, *Cuadernos de Matemática y Mecánica, Serie de Cursos y Seminarios* 7, International Center for Computational Methods and Applied Mathematics Institute, Argentina (2000) 89 pages, in its second edition.
10. “La Geometría de los Espacios de Hilbert” (The Geometry of Hilbert Spaces), *Material Didáctico* No. 10, Departamento de Matemáticas, University of Sonora, México (2005) 39 pages.

## Supervision of Graduate and Post-Graduate Students

### Master’s Theses:

- 1976-198: eleven theses, School of Sciences, University of Buenos Aires, Argentina.
- 1977: one thesis, School of Mathematics, Physics and Astronomy, University of Cordoba, Argentina.

### **Doctoral Dissertations:**

- 1984: Cristina Zorko, *Los espacios de Morrey*, School of Sciences, University of Buenos Aires, Argentina.
- 1998: David Emery, *Pseudo-differential Operators with Non-Isotropic Symbols*, New Mexico State University.
- 2005: Hamed Obiedat, *Topological Characterizations of the Schwartz Space and the Beurling-Björck Space*, New Mexico State University.
- 2006: Lloyd Moyo, *Maximal Codomains for the Laplace Operator and the Product Laplace Operator*, New Mexico State University.
- 2009: Michael Eydenberg, *Kernel Methods on  $\Omega$ -Ultradistributions*, New Mexico State University.

### **Post-Doctoral Students:**

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

### **Invited Presentations at Research Conferences**

- 1972, 1976-1983: Annual Meeting of the Union Matemática Argentina.
- 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: Conference on Harmonic Analysis and its Applications, Mathematical Sciences Research Institute, Berkeley, CA.
- 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.
- 1989: Special Session on “Harmonic Analysis,” 853rd Meeting American Mathematical Society, Los Angeles, CA.
- 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.
- 1995: Special Session on “Functional and Harmonic Analysis”, II Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Guanajuato, Mexico.
- 1997: Seventh International Workshop in Analysis and its Applications, Orono, Maine.
- 1997: Special Session on “Functional and Complex Analysis”, III Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Oaxaca, Mexico.

- 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 in Harmonic Analysis and PDEs”, I Joint Meeting American Mathematical Society-Canadian Mathematical Society, Montreal, Canada.
- 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 “Harmonic Analysis, Partial Differential Equations and Related Topics”, I Joint Meeting, American Mathematical Society-Brazilian Mathematical Society, Rio de Janeiro, Brazil.
- 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.
- 1986: Instituto Argentino de Matemática, Buenos Aires.
- 1988: Departamento de Matemáticas, 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.
- 1991: Instituto Argentino de Matemática, Buenos Aires, Argentina.
- 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.
- 1998: Programa de Matemática Aplicada, Santa Fe, Argentina.
- 1998: Instituto Argentino de Matemática, Buenos Aires.

- 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.
- 1999: Co-organizer, Special Session on “Functional Analysis and Applications”, IV Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Denton, Texas.
- 2001: Co-organizer, Special Session on “Functional and Harmonic Analysis”, V Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Morelia, Mexico.
- 2004: Co-organizer, Special Session on “Functional and Harmonic Analysis”, VI Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Houston, TX.
- 2007: Co-organizer, Special Session on “Functional and Harmonic Analysis in Memory of Mischa Cotlar”, VII Joint Meeting American Mathematical Society-Sociedad Matemática Mexicana, Zacatecas, Mexico.



## Articles on Educational Issues and for General Mathematical Audiences

1. (with David. Finston, Mai. Gehrke, Patrick Morandi), “Calculus Instruction at New Mexico State University Through Weekly Themes and Cooperative Learning”, Proceedings of the Harvard Conference on the Teaching of Calculus, *Primus* 3 (1993) 83-93.
2. “Teaching mathematics appreciation to non-science majors”, *Humanistic Mathematics Network Journal*, (currently *Humanistic Mathematics Journal*), Claremont Center for the Mathematical Sciences, Volume 16, November 1997,  
<http://scholarship.claremont.edu/jhm/>.
3. “Mathematics Appreciation” in *“Inspiring students: Case studies in motivating the learner”*, Kogan Page, London (1999) 103-111.
4. “Loving Math Infinitely”, *The Chronicle of Higher Education*, January 19, 2001, B14. Reviewed in *Math in the Media Archive*, American Mathematical Society,  
<http://www.ams.org/mathmedia/archive/02-2001-media.html#loving>.
5. (with Martha Guzmán-Partida), “El desarrollo de la integral desde Cauchy a Lebesgue” (The development of the integral from Cauchy to Lebesgue), *Arenario* 1 (2001) 127-139.
6. Impossible Tilings, *Function* 28 (2004) 93-102.
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://www.matematicalia.net/index.php?option=com_content&task=view&id=68&Itemid=75).
8. “The Amazing Librarian”, *Plus*, University of Cambridge, *New Writers Award* Runner-Up, 2008,  
<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>.

10. (with César Luis García) “Contando Lo Incontable, o El Arte Del Emparejamiento” (Counting The Uncountable, or The Art of Pairing), *Matematicalia*, i-MATH, Volume 4, No. 5, December 2008,  
[http://www.matematicalia.net/index.php?option=com\\_wrapper&Itemid=443](http://www.matematicalia.net/index.php?option=com_wrapper&Itemid=443).
11. “Del Análisis Armónico Al Funcional: Un Viaje Redondo” (From Harmonic Analysis to Functional Analysis: A Round Trip), *Miscelánea Matemática*, Mexican Mathematical Society, Volume 48 (2009) 103-117,  
<http://www.miscelaneamatematica.org/index.php?numero=48>.

## Educational Activities

### Presentations at Conferences, Schools and Universities:

- 1986: Participant in the panel discussion *Women in Mathematics: An International Perspective*, International Congress of Mathematicians, Berkeley, CA.
- 1991: Participant, *Start Graduate School Workshop*, Women Studies Program, New Mexico State University.
- 1992: *Teaching Mathematics Courses with Themes*, presentation at the Harvard Conference on the Teaching of Calculus, Cambridge, MA.
- 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.

- 1998: *La Evolución Histórica del Teorema Fundamental del Cálculo*, invited one-hour talk, Instituto Argentino de Matemática.
- 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 Simposium 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: *Cross-Stitching in the News*, one-hour presentation to mathematics education majors, College of Education, New Mexico State University.
- 2002: *Life of Lolina*, invited talk, Distinguished Women in Engineering and Science Lecture Series, Kansas State University.
- 2002: *Teaching Discrete Mathematics in K-12*, presentation at the Fifth Annual Mathematics Education Institute, New Mexico State University.
- 2004: *Los Matemáticos Accidentales*, Module in the interdisciplinary course *Sociedad, Ciencia, Tecnología y Matemática*, Universidad de La Laguna, Tenerife, Spain.
- 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.

- 2007: *The Miraculous Librarian: The role of linear algebra and analysis in Google's PageRank algorithm*, one-hour invited lecture, XL Annual Meeting of the Sociedad Matemática Mexicana, Monterrey, Mexico7.

### **Curriculum Development:**

- 1992-1993: (with David Finston, Mai Gehrke, Patrick Morandi.) *Themes for a First Semester Calculus Course*, New Mexico State University.
- 1994-1997, 2002, 2005: *Materials for a Course on Mathematics Appreciation for Non-Science Majors*, New Mexico State University.
- 1997, 2005: *Materials for an Introductory Course on Real Analysis*, New Mexico State University.
- 1997-2001: *The Accidental Mathematician* (HON 210G), Honors Program course development, New Mexico State University.
- 1998-1999: *Materials for a First Semester Calculus Course for Engineering Technology Majors*, New Mexico State University.
- 1998-1999: *Materials for a First Semester Calculus Course for Life Science and Management Science Majors*, New Mexico State University.
- 1998-1999: *Materials for a Graduate Course on Complex Analysis*, New Mexico State University.
- 1998-2000, 2004-2005: *Materials for a Graduate Course on Functional Analysis*, New Mexico State University.
- 2000-2002: *Materials for a Graduate Course on Real Analysis*, New Mexico State University2.
- 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.
- 2002, 2003, 2004: *Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers*, packet for participants in three minicourses presented at the National Meetings, with the sponsorship of the Mathematical Association of America, 78 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*.

- 2002-2009: Judge, *Graduate Research and Creative Arts Symposium*, New Mexico State University.

### **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.
- 1995: *Evaluating Group Work*, Project NEXT (New Experiences in Teaching) Summer Workshop, Burlington, VT.
- 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.
- 1997: *Teaching Mathematics Appreciation to Non-Science Majors*, workshop, Stephen Austin State University, Nacogdoches, Texas.
- 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.
- 2002: *Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers, I*, Minicourse sponsored by the Mathematical Association of America, National Joint Meetings, San Diego.
- 2003: *Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers, II*, Minicourse sponsored by the Mathematical Association of America, National Joint Meetings, Baltimore.

- 2004: *Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers, III*, Minicourse sponsored by the Mathematical Association of America, National Joint Meetings, Phoenix.
- 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.
- 2008: *New Writers Award*, Runner-Up, *Plus*, University of Cambridge, <http://plus.maths.org/>.

### Grants And Contracts

- 1973: Fellowship, Scuola Normale Superiore de Pisa, Italy.
- 1984-1986: Fellowship, National Council of Sciences, Argentina.
- 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 Nurgun 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 *Matemática*, 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

- 2002-2007: Editor, Rocky Mountain Journal of Mathematics.
- 2003-2005: Member of the Advisory Board, *Matemática*, i-MATH, <http://www.matematicalia.net>.
- 2005-2011: Editor and Contributing Editor, *Matemática*, i-MATH, editor of the column *Qué pasaría si ...?* (What if ...?), <http://www.matematicalia.net>.

### Editorials

- “De Truenos y Relámpagos” (Of Thunder and Lighting). *Matemática*, i-MATH, Volume 2, No. 5, December 2006, [http://www.matematicalia.net/index.php?option=com\\_content&task=view&id=322&Itemid=194](http://www.matematicalia.net/index.php?option=com_content&task=view&id=322&Itemid=194).

## 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.
- Journal of the London Mathematical Society.
- Mathematische Nachrichten.
- Collectanea Mathematica.
- Journal of Differential Equations.
- 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.
- African Diaspora Journal of Mathematics.
- 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,  
[http://www.matematicalia.net/index.php?option=com\\_content&task=view&id=323&Itemid=196](http://www.matematicalia.net/index.php?option=com_content&task=view&id=323&Itemid=196).
2. (with Isabel Marrero) “The Frieze Patterns of Seville’s Real Alcázar”, by B. Lynn Bodner. *Matematicalia*, i-MATH, Volume 4, No.1, February 2008,  
[http://www.matematicalia.net/index.php?option=com\\_content&task=view&id=444&Itemid=268](http://www.matematicalia.net/index.php?option=com_content&task=view&id=444&Itemid=268).
3. “Encounters with Mischa Cotlar”, by John Horváth. *Bulletin*, Mexican Mathematical Society, Volume 15, No.1 (2009).

4. “Darwin: Which mathematics?”, by Deborah Lacitignola. *Matematicalia*, i-MATH, Volume 6, No. 2, June 2010,  
[http://www.matematicalia.net/index.php?option=com\\_wrapper&Itemid=554](http://www.matematicalia.net/index.php?option=com_wrapper&Itemid=554).
5. “Israel Moiseevich Gelfand”, by Vladimir Retakh. *Matematicalia*, i-MATH, Volume 6, No.3, September 2010,  
[http://www.matematicalia.net/index.php?option=com\\_wrapper&Itemid=566](http://www.matematicalia.net/index.php?option=com_wrapper&Itemid=566).

### **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, Committee on Academic Freedom, Tenure, and Employment Security, American Mathematical Society.
- 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.
- 1996-1997: Chair, American Mathematical Society-Mathematical Association of America Joint Program Committee.

- 1997-1998: Member, American Mathematical Society-Sociedad Matemática Mexicana Joint Program Committee.
- 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.
- 1999-2006: Liaison for the Unión Matemática Argentina.
- 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.
- 2002, 2004: New Mexico Teacher Assessment Passing Score Review, National Evaluation Systems, Inc., Albuquerque, NM.
- 2003, 2004: Kansas State University's Targeted Excellence Project, External reviewer.