

LOREDANA LANZANI

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Department of Mathematics
Syracuse University
Syracuse, NY 13244-1150

RESEARCH INTERESTS

Harmonic Analysis; PDEs; One and Several Complex Variables.

EDUCATION

| | | |
|---------------------------|-----------------------|------|
| B.S. Mathematics (Laurea) | U. of Rome II (Italy) | 1989 |
| Ph.D. Mathematics | Purdue University | 1997 |

PROFESSIONAL EXPERIENCE

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|-----------------------------|------------------------|------------------------------|
| Professor | Syracuse University | 2014 – present |
| Program Director (Analysis) | NSF-DMS | 2011 – 2013 |
| Professor | University of Arkansas | 2008 – 2014 |
| Associate Professor | University of Arkansas | 2003 – 2008 |
| Assistant Professor | University of Arkansas | 1997 – 2003 |
| Teaching Assistant | Purdue University | 1990 – 1997 |
| Research Fellow | I.N.d'A.M. (Italy) | 1989 – 1990 |
| Visiting Positions | Princeton University | 2013; 2011; 2004; 2001; 1999 |
| | U. of Michigan | 2005; 2003 |
| | U. of New South Wales | 2004; 2003 |
| | CRM (Barcelona, Spain) | 2009; 2003 |
| | CRM (Pisa, Italy) | 2010; 2004 |
| | University of Kentucky | 2000 |
| | Courant Institute | 1997 |

AWARDS

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|---|-------------|
| PI, National Science Foundation Individual Research Award (DMS-1001304) | 2010 – 2015 |
| PI, National Science Foundation Individual Research Award (DMS-0700815) | 2007 – 2010 |
| PI, National Science Foundation Individual Research Award (DMS-0101212) | 2001 – 2006 |
| co-PI, <i>Arkansas Spring Lecture Series</i> NSF Conference Award (DMS-0751330) | 2009 |
| co-PI, <i>Arkansas Spring Lecture Series</i> NSF Conference Award (DMS-0751330) | 2008 |
| co-PI, <i>Arkansas Spring Lecture Series</i> NSF Conference Award (DMS-0100599) | 2001 |
| co-PI, <i>Arkansas Spring Lecture Series</i> NSF Conference Award (DMS-0070592) | 2000 |
| co-PI, <i>Arkansas Spring Lecture Series</i> NSF Conference Award (DMS-9971763) | 1999 |

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| <i>SILO/SURF Undergraduate Research Award</i> University of Arkansas (Students: Jill Crisler; Erin R. Mason ; Laura J. Fields) | 2011; 2003 2001 |
| <i>Fulbright College Research Semester</i> University of Arkansas | 2004 |
| <i>Fulbright College Research Summer</i> University of Arkansas | 2005; 2001 |
| <i>AWM Travel Mentoring Award</i> | 2001 – 2003 |
| <i>Arkansas Science And Technology Authority Research Award</i> | 1998 |
| <i>Student Travel Award</i> AWM | 1996 |
| <i>Research Foundation Graduate Research Award</i> Purdue University | 1994 |
| <i>I.N.d'A.M. Graduate Research Fellowship</i> University of Rome I (Italy) | 1989 – 1993 |

HONORS

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| <i>AWM Research Symposium</i> showcase lecture – section in Harmonic Analysis | 2013 |
| <i>AWM Colloquium</i> invited speaker UC San Diego | 2012 |
| <i>Mathematical Sciences Outstanding Alumnus</i> Purdue University | 2011 |
| <i>NSF-VIGRE Graduate Colloquium</i> Louisiana State | 2011 |
| <i>NSF-VIGRE Undergraduate Colloquium</i> Louisiana State | 2011 |
| <i>2010 Praire Seminar</i> (U. Kansas) senior speaker | 2010 |
| <i>Virginia L. Chatelain Memorial Lecture</i> (Kansas State) | 2009 |
| <i>Teaching Academy Award</i> (Student: Jessica L. Tush) | 2009 |
| <i>Robert C. & Sandra Connor Endowed Faculty Fellowship</i> U. of Arkansas | 2008 |
| <i>Kedy Award for Excellence in Teaching</i> Purdue University | 1996 |

Ph.D. STUDENTS

| | |
|---|-------------------------------------|
| Belen Espinosa | (Ph.D. 2013 University of Arkansas) |
| Jeanine Myers (<i>co-advised with A. Raich</i>) | (Ph.D. 2013 University of Arkansas) |
| Jennifer Paulk | (Ph.D. 2010 University of Arkansas) |

UNDERGRADUATE STUDENTS (Honors theses)

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|------------------|----------------------------------|
| Jill Crisler | (BS 2011 University of Arkansas) |
| Samantha Meadors | (BS 2010 University of Arkansas) |
| Jessica Tush | (BS 2009 University of Arkansas) |
| Erin Mason | (BS 2003 University of Arkansas) |
| Rebecca Caldwell | (BS 2002 University of Arkansas) |
| Laura J. Fields | (BS 2001 University of Arkansas) |
| Zane Chrisman | (BS 1998 University of Arkansas) |

RESEARCH

Articles

18. Lanzani L., Myers J. and Raich S. A., *Taylor Series of Conformal Mappings onto Symmetric Quadrilaterals*, Cplx. Vbls & Ellipt. Eqns., to appear.
17. Lanzani L. and Stein E. M., *The Cauchy Integral in \mathbb{C}^n for domains with minimal smoothness*, Adv. Math. **264** (2014) 776 – 830.
16. Lanzani L. and Stein E. M., *Cauchy-type integrals in several complex variables*, Bull. Math. Sci. **3** (2) (2013), 241-285. DOI: 10.1007/s13373-013-0038-y.
15. Lanzani L. *Higher Order analogues of the exterior derivative complex*, Bull. IMAS (New Series) **8** (3) (2013) 389 – 398.
14. Lanzani L. and Raich A. S. *On Div-Curl for higher order*, Advances in Analysis: the Legacy of E. M. Stein, Princeton U. Press (2013), ISBN: 9780691159416.
13. Lanzani L. and Stein E. M. *The Bergman projection in L^p for domains with minimal smoothness*, Illinois J. of Math. (invited submission) **56** (1) (2013) 127 – 154.
12. Barrett, D. E. and Lanzani L., *The Leray transform on weighted boundary spaces for convex Reinhardt domains*, J. Funct. Analysis **257** (9) (2009), 2780-2819.
11. Koenig, K. and Lanzani, L. *Bergman vs. Szegő via Conformal Mapping*, Indiana Univ. Math. J. **58**, no. 2 (2009), 969-997.
10. Lanzani, L. *Cauchy Integrals for non-smooth domains: \mathbb{C}^n vs. \mathbb{C} – the effect of dimension*, Oberwolfach Reports **32** (2008), 55-60.
9. Brown, R., Capogna, L. and Lanzani, L. *On the Mixed Boundary Value Problem for Laplace's Operator on Lipschitz Planar Domains*, Math. Annalen, **342** (2008), 91-124.
8. Lanzani, L. and Mendez, O. *The Poisson Problem for the Laplacian with Robin Boundary Condition in Non-Smooth Domains*. Revista Mat. Iberoamer. **22** (2006) 181-204.
7. Lanzani, L. and Stein, E. M. *A note on Div-Curl inequalities*, Mathematics Research Letters **12** (2005), 57-61.
6. Lanzani, L. Shen, Z., *On the Robin Problem for the Laplace Equation in C^1 and Lipschitz Domains in \mathbb{R}^n* , Comm. Part. Diff. Eq. **29** (2004), 91-109.
5. Lanzani, L. and Stein, E. M., *Szegő and Bergman Projections on Non-Smooth Planar Domains*. J. Geom. Anal. **14** (2004), 63-86.
4. Bernstein, S. and Lanzani, L., *Szegő Projections for Hardy Spaces of Monogenic Functions and Applications*. Int. J. of Math. and Math. Sc., **29** (2002), 613-627.
3. Lanzani, L. *The Cl_n -Valued Robin Boundary Value Problem on Lipschitz Domains in \mathbb{R}^n* , Clifford Analysis and its Appl. NATO ARW Series (2001), Kluwer, 183-192.
2. Lanzani, L. *Cauchy Transform and Hardy Spaces for Rough Planar Domains* Contemp. Math., **251** (2000), 409-428.
1. Lanzani, L., *Szegő Projection Versus Potential Theory For Non-Smooth Planar Domains* Indiana Univ. Math. J. **48** (1999), 537-556.

Books

Capogna, L., Kenig, C., Lanzani, L., *Recent Progress in Harmonic Measure: the Geometric and the Analytic Points of View*, AMS University Lecture Series (book), **35** (2005), ISBN: 0821827286.

co-Editor, *Harmonic Analysis and Boundary Value Problems: Selected Papers from the 25th University of Arkansas Spring Lecture Series*, Contemp. Math. **277** (2001).

Invited talks

- 2015: East China Normal U.; BIRS-CMO (Mexico); Cornell U.; ESI (Austria).
- 2014: Virginia Commonwealth U.; Syracuse U.; CUNY-Lehman College; Indiana U.; George Mason U.; Academia Sinica (Taiwan); U. Bologna (Italy).
- 2013: Rutgers U.; Workshop in SCV and PDE, Serra Negra (Brazil); U. British Columbia; George Washington U.; UC Santa Clara; UC Irvine; AMS meeting #1093; UPenn; Joint Mathematics meeting (San Diego); U. Kentucky; UMass - Boston; Princeton U.; Northeastern U.
- 2012: Academia Sinica (Taiwan); U. Addis Ababa (Ethiopia); U. Minnesota; UC-Irvine; UC-San Diego; AMS meeting #1081; Georgetown U.; George Washington U.
- 2011: Columbia U.; Washington U.; Workshop in PDE and SCV (Brazil); Purdue U.; Louisiana State U.
- 2010: CRM Pisa (Italy); Brown U.; Marrakech (Morocco); U. Kansas; Harmonic Analysis conference, Gargnano (Italy).
- 2009: AMS meeting #1047; U. Virginia; Trento (Italy); CRM Barcelona (Spain); Rouen (France); Kansas State U.; ESI (Austria); CMS (Canada).
- 2008: U. Kentucky; Ohio State U.; Oberwolfach (Germany).
- 2007: Calderon-Zygmund Seminar (Chicago); AMS meeting #1025; Georgia Tech; SCV Fest (Ann Arbor); Washington U.; Workshop in PDEs and SCV (Brazil); Banach Center (Poland); U. Rome II (Italy); AMS meeting # 1031.
- 2006: Midwest PDE Seminar (UIC); AMS meeting # 1015; U. of Notre Dame; Banff International Research Station (Canada);
- 2005: AMS meeting #1004; ESI (Austria); Oberwolfach (Germany); U. Western Ontario;
- 2004: Centro De Giorgi (Pisa, Italy); U. of Toronto; AMS meeting #1000;
- 2003: U. of Barcelona (Spain); U. of New South Wales; U. of Michigan.
- 2002: U. of Kentucky; U. of Wisconsin; AMS Meeting #982.
- 2001: Oklahoma State; U. of Michigan; CMFT, Aveiro (Portugal); Workshop on PDE, S. Paulo (Brasil); AMS meetings: #964; #967; #972.
- 2000: NATO Advanced Research Workshop, Prague; AMS meeting #953; Weimar Bauhaus Universitat (Germany).
- 1999: ANU (Canberra); Rutgers; Temple; AMS meetings: #939; #945; #946.
- 1998: U. of Kansas; AMS meeting #933.

Graduate mini-courses

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| Academia Sinica (Taiwan) | | 2012 |
| <i>Singular Integral Techniques in Several Complex Variables</i> | | |
| International Workshop in SCV and PDEs, Serra Negra (Brazil) | | 2011 |
| <i>The L^p-regularity problem for the Bergman Projection</i> | | |

SYNERGISTIC ACTIVITIES

Editorial Boards

Associate Editor: *Complex Analysis and its Synergies*, a Springer journal.

Service for the American Mathematical Society

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| <i>Centennial Fellowship</i> | Member, Selection Committee | 2009–2011 |
| <i>Southeastern Sectional Meetings</i> | Member, Invited Address Selection Committee | 2006–2008 |

Service for the National Science Foundation

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| <i>Division of Mathematical Sciences</i> | Program Director (Analysis) | 2011–2013 |
| <i>Office of International Science and Engineering</i> | Member, Committee of Visitors | 2011 |
| <i>Division of Mathematical Sciences</i> | Panelist, Disciplinary Panels | 2002–2009 |
| <i>Division of Education and Human Resources</i> | Panelist, Disciplinary Panels | 2004–2011 |

Outreach

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| Post-Doc Committee | | 2015– |
| <i>Women in Science & Engineering (WiSE) Syracuse University Chapter</i> | | |
| Co-Advisor with C. Miller | | 2014– |
| <i>Syracuse Women in Mathematics (SWiM)</i> | | |
| Faculty advisor of student registered organization | | 2002–2014 |
| <i>Arkansas Women in Statistics and Mathematics</i> (AWSM, pronounced “awesome”) http://www.uark.edu/rso/aws/ | | |
| Speaker, <i>Career Options for Women in the Mathematical Sciences</i> | | 2013 |
| IMA Special Workshop | | |
| Panelist, <i>Panel on Careers for Women in the Mathematical Sciences</i> | | 2012 |
| IMA Workshop for Women in Analysis and PDE | | |
| Panelist, <i>Panel on Mentoring, Collaborating and Writing</i> | | 2011 |
| Conference Honoring Eli Stein, Princeton University | | |
| Expository talks; outreach events sponsored by student registered organizations | | |
| CUNY-Lehman College | (<i>HRM Workshop Talk</i>) | 2013 |
| UC-San Diego | (<i>AWM colloquium</i>) | 2012 |

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| LA State University | (<i>VIGRE undergraduate colloquium</i>) | 2011 |
| LA State University | (<i>VIGRE graduate colloquium</i>) | 2011 |
| Purdue University | (<i>AWM chapter event</i>) | 2011 |
| Introduced and organized the <i>Lunch for Women in Mathematics</i> as one of two showcase outreach activities at the Arkansas Spring Lecture Series in the Mathematical Sciences | | 2002–2014 |
| Introduced the <i>Evening Public Lecture</i> as one of two showcase outreach activities at the Arkansas Spring Lecture Series in the Mathematical Sciences | | 2000–2014 |
| <i>Why I became a mathematician: essay to appear in I, Mathematician</i> (book), S. Krantz Ed., Mathematical Association of America (2015). | | |

Conference Organization

Lead Organizer, *Workshop in Real Analysis, Complex Analysis and Boundary Value problems*, Banff International Research Station (2010).

Co-organizer with S. Tabachnikov and V. Retakh of the 1999 *Arkansas Spring Lecture Series* (principal speakers: M. Lyubich and J. Milnor).

Co-organizer with L. Capogna of the *Arkansas Spring Lecture Series* for the years: 2000 (principal speaker: C. Kenig); 2001 (principal speakers: L. Caffarelli and R. de la Llave), 2002 (principal speaker: M. Christ), 2008 (principal speaker: A. Chang), 2009 (principal speaker: M. Lacey).

Co-organizer with P. Harrington of the 2013 *Arkansas Spring Lecture Series* (principal speaker: C. Fefferman).

Co-organizer with Z. Shen of a Special Session on *Harmonic Analysis and Partial Differential Equations in Real and Complex Domains*, AMS meeting #1037 (March 2008).

Co-organizer with D. Barrett of a Special Session on *Boundary Operators in Real and Complex Domains*, AMS meeting #1022 (October 2006).

Service for Syracuse University (highlights)

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| <i>Mathematics Department</i> | Member, Calculus Coordination Committee | 2015 |
| <i>Mathematics Department</i> | Chair, Faculty Search Committee | 2014 |
| <i>Mathematics Department</i> | Chair, Hiring Committee | 2014 |

Service for the University of Arkansas (highlights)

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| <i>Fulbright College of Arts & Sciences</i> | Member, Core Curriculum Review Committee | 2008 |
| <i>Sponsored Research Office</i> | Member, SRO Evaluation Committee | 2007 |
| <i>Fulbright College of Arts & Sciences</i> | Member, 5-Year Strategic Plan Committee (Subcomm. on Diversity & Programs abroad) | 2006 |
| <i>Mullins Library</i> | Broker, MathSciNet Subscription | 1998 |

Department of Mathematical Sciences:

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| Personnel Document Committee | 2010 |
| Departmental Website Developer and Editor | 2004; 2009; 2010 |
| Undergraduate Committee | 2009; 2010 |
| Graduate Committee | 1998; 1999; 2000; 2001 |
| Hiring Committee | 1999; 2000; 2007; 2008 |
| Advisor to Tenure and Promotion Committee | 2010 |
| Tenure and Promotion Committee | 2009 |
| Chair, Department Chair Selection Committee | 2008 |
| <i>Survey of Math Grad. Programs at the 50 Benchmark Institutions</i> Task Force | 2007 |
| Pre-Tenure Review Committee | 2005; 2006 |
| Chair, Arkansas Spring Lecture Series Committee | 2000 – present |
| Arkansas Spring Lecture Series Committee | 1997; 1998; 1999 |
| Chair, <i>Vision for 2010</i> Committee | 2002 |
| Graduate Program Review Committee | 2001 |
| Course coordinator for Math 3404 | 1998 – 2004 |
| Course coordinator for Math 2116 | 2000 – 2010 |
| <i>Math News from Around the World</i> Bulletin Board Developer and Manager | 2002 – present |
| Organizer, Analysis Seminar | 1997 – 2007 |
| Colloquium Fund Committee | 2001 |

Reviewer:

I routinely serve as reviewer for several professional journals, including *Communications in Partial Differential Equations*, *Duke Mathematical Journal*, *Journal of Functional Analysis*.