

CURRICULUM VITAE

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EDUCATION:

University of Notre Dame, Notre Dame, IN

Ph.D., Mathematics, May 2004

Field: Partial Differential Equations, Several Complex Variables, Complex Geometry
Dissertation: Compactness and Subellipticity for the $\bar{\partial}$ -Neumann Operator on Domains with Minimal Smoothness

Advisor: Mei-Chi Shaw, Ph.D.

M.S., Mathematics, May 2002

Whitworth College, Spokane, WA

B.S., Mathematics, May 1999, Summa Cum Laude

B.A., Philosophy, May 1999

EMPLOYMENT:

University of Arkansas, Fayetteville, AR

Associate Professor, August 15, 2011-present

Assistant Professor, August 17, 2009-August 15, 2011

University of South Dakota, Vermillion, SD

Assistant Professor, August 15, 2004-May 21, 2009

TEACHING EXPERIENCE:

University of Arkansas:

- Advanced Calculus I, Fall 2011
- Mathematical Proof, Fall 2010, Spring 2011, Fall 2011
- Honors Discrete Mathematics, Fall 2009, Spring 2010
- Calculus II, Fall 2009, Fall 2010 (coordinator)

University of South Dakota:

- Linear Algebra, Fall 2006
- Survey of Calculus, Spring 2006

- Discrete Structures, Fall 2005
- Calculus II: Spring 2005, Fall 2005
- Complex Variables (graduate course): Spring 2005, Spring 2007
- Calculus I: Fall 2004, Fall 2006, Spring 2007, Fall 2007 (coordinator), Spring 2008 (coordinator), Fall 2008
- Real Variables I (graduate course): Fall 2004, Spring 2006, Fall 2007
- Real Variables II (graduate course): Spring 2008

University of Notre Dame:

- Teaching Assistant, Calculus I for Math and Engineering: Spring 2004
- Instructor, Calculus I for Business and Social Science: Fall 2003
- Teaching Assistant, Calculus I for Pre-Med and Biology: Fall 2001
- Instructor, Calculus II for Business and Social Science: Summer 2001, Spring 2002
- Teaching Assistant, Calculus II for Pre-Med and Biology: Fall 2000, Spring 2001

Whitworth College:

- Teaching Assistant, Introduction to Complex Analysis: Spring 1999

PUBLICATIONS:

Published:

- P. S. Harrington and A. Raich, *Regularity Results for $\bar{\partial}_b$ on CR-manifolds of Hyper-surface Type*, Comm. Partial Differential Equations. **36** (2011), 134-161.
- P. S. Harrington, *Sobolev Estimates for the Cauchy-Riemann Complex on C^1 Pseudoconvex Domains*, Math. Z. **262** (2009), 199-217.
- P. S. Harrington, *Property (P) and Stein Neighborhood Bases on C^1 Domains*, Illinois J. Math. **52** (2008), 145-151.
- P. S. Harrington, *The Order of Plurisubharmonicity on Pseudoconvex Domains with Lipschitz Boundaries*, Math. Res. Lett. **15** (2008), 485-490.
- P. S. Harrington and M.-C. Shaw, *The Strong Oka's Lemma, Bounded Plurisubharmonic Functions and the $\bar{\partial}$ -Neumann Problem*, Asian J. Math. **11** (2007), 127-139.
- P. S. Harrington, *A Quantitative Analysis of Okas Lemma*, Math. Z. **256** (2007), 113-138.
- P. S. Harrington, *Compact and Subelliptic Estimates for the $\bar{\partial}$ -Neumann Operator on C^2 Pseudoconvex Domains*, Math. Ann. **337** (2007), 335-352.

Accepted:

- P. S. Harrington, *Global Regularity for the $\bar{\partial}$ -Neumann Operator and Bounded Plurisubharmonic Exhaustion Functions*, to appear in Adv. Math.

In Preparation:

- P. S. Harrington and A. Raich, *Closed Range for $\bar{\partial}$ and $\bar{\partial}_b$ on Bounded Hypersurfaces in Stein Manifolds*, submitted.

SCHOLARLY PRESENTATIONS:

International:

- “Global Regularity for the $\bar{\partial}$ -Neumann Operator”, The $\bar{\partial}$ -Neumann Problem: Analysis, Geometry and Potential Theory, Erwin Schrödinger Institute, November 2009
- “Bounded Plurisubharmonic Exhaustion Functions on Non-Smooth Pseudoconvex Domains”, Conference on Complex and CR Geometry, Partial Differential Equations and Invariant Theory, Prague, Czech Republic, July 2008
- “Bounded Plurisubharmonic Exhaustion Functions on Lipschitz Domains”, IV Workshop on Geometric Analysis of PDE and Several Complex Variables, Serra Negra, Brazil, August 2007
- “Property (P) and Okas Lemma”, International Conference in PDE, Complex Analysis, and Differential Geometry, University of Notre Dame, June 2006
- “Compactness and the $\bar{\partial}_b$ Problem”, Program in Complex Analysis, Operator Theory, and Applications to Mathematical Physics, Erwin Schrödinger Institute, November 2005

Regional:

- “Sobolev Estimates for the Cauchy-Riemann Complex on C^1 Pseudoconvex Domains”, AMS Sectional Meeting, Louisiana State University, Special Session on Harmonic Analysis and Partial Differential Equations in Real and Complex Domains, March 2008
- “ L^2 Solvability for the $\bar{\partial}_b$ Operator on Non-Smooth Domains”, AMS Sectional Meeting, Miami University, Special Session on PDE Methods in Several Complex Variables, March 2007
- “Pseudoconvex Exhaustions and Stein Neighborhood Bases”, AMS Sectional Meeting, University of Arkansas, Special Session on Boundary Operators in Real and Complex Domains, November 2006
- “Compact Solution Operators for $\bar{\partial}_b$ ”, AMS Sectional Meeting, University of New Mexico, Special Session on Several Complex Variables and CR Geometry, October 2004
- “Compact and Subelliptic Estimates for the $\bar{\partial}$ -Neumann Operator on Domains with Low Boundary Regularity”, Midwest Several Complex Variables Meeting, University of Western Ontario, April 2004

Colloquia and Seminars:

- “Global Regularity for the Bergman Projection”, Several Complex Variables Seminar, Texas A+M University, March 2010
- “Analysis on Corners”, Colloquium, University of Arkansas at Fort Smith, February 2010
- “Global Regularity for the $\bar{\partial}$ -Neumann Problem”, Analysis Seminar, University of Arkansas, November 2009

- “Stein Neighborhood Bases on Non-Smooth Domains”, Colloquium, University of Arkansas, November 2008
- “Bounded Plurisubharmonic Exhaustion Functions”, Analysis Seminar, University of Montana, August 2008
- “Bounded Plurisubharmonic Exhaustion Functions”, Department Seminar, University of South Dakota, February 2008
- “Bounded Plurisubharmonic Exhaustion Functions on Lipschitz Pseudoconvex Domains”, PDE, Complex Analysis, and Differential Geometry Seminar, University of Notre Dame, November 2007
- “The Cauchy-Riemann Equations on Domains with Corners”, Analysis Seminar, University of Montana, August 2007
- “An Introduction to the $\bar{\partial}$ -Neumann Problem”, Department Seminar, University of South Dakota, September 2006
- “The more the merrier: why several complex variables are better than one”, Department Seminar, University of South Dakota, September 2005
- “Walking in circles: adventures with non-commuting vector fields”, Department Seminar, University of South Dakota, February 2005
- “Local Properties of the $\bar{\partial}$ -Neumann Operator on Non-smooth Domains”, PDE, Complex Analysis, and Differential Geometry Seminar, University of Notre Dame, December 2003
- “Pseudoconvexity and Subellipticity”, Graduate Student Seminar, University of Notre Dame, September 2003
- “An Introduction to the $\bar{\partial}$ -Neumann Problem”, Graduate Student Seminar, University of Notre Dame, September 2002
- “Boundary Value of Holomorphic Functions”, Graduate Student Seminar, University of Notre Dame, February 2002
- “Integral Representations in Several Complex Variables”, Graduate Student Seminar, University of Notre Dame, October 2000

CONFERENCES ATTENDED:

- Midwest Several Complex Variables Conference, Washington University, St. Louis, May 2011
- Tenth Prairie Analysis Seminar, University of Kansas, October 2010
- Analysis and Boundary Value Problems on Real and Complex Domains, Banff International Research Station, July 2010
- The $\bar{\partial}$ -Neumann Problem: Analysis, Geometry and Potential Theory, Erwin Schrödinger Institute, November 2009
- Conference on Complex Analysis, Fribourg, Switzerland, July 2008
- Conference on Complex and CR Geometry, Partial Differential Equations and Invariant Theory, Prague, Czech Republic, June-July 2008
- AMS Sectional Meeting, Louisiana State University, March 2008
- IV Workshop on Geometric Analysis of PDE and Several Complex Variables, Serra Negra, Brazil, August 2007
- AMS Sectional Meeting, Miami University, March 2007
- AMS Sectional Meeting, University of Arkansas, November 2006

- International Conference in PDE, Complex Analysis, and Differential Geometry, University of Notre Dame, June 2006
- Conference on Complex Analysis, University of Wisconsin, March 2006
- Program in Complex Analysis, Operator Theory, and Applications to Mathematical Physics, Erwin Schrödinger Institute, November 2005
- AMS Sectional Meeting, University of New Mexico, October 2004
- Midwest Several Complex Variables Meeting, University of Western Ontario, April 2004
- Midwest Several Complex Variables Meeting, Syracuse University, October 2003
- Midwest Several Complex Variables Meeting, University of Notre Dame, March 2003
- Conference on Several Complex Variables and Complex Geometry, Princeton University, September 2002
- Midwest Several Complex Variables Meeting, University of Michigan, October 2001
- Midwest Several Complex Variables Meeting, Purdue University, October 2000

GRANTS:

External grants and support:

- NSF Grant: DMS 0856672 transferred to DMS 1002332, August 2009-July 2012, \$85,366

Intramural grants and support:

- Dean's Travel Award, Fulbright College of Arts and Sciences, University of Arkansas, Fall 2009, \$1000
- Investment Travel Program, Office of Research and Graduate Education, University of South Dakota, Fall 2005, \$500

ACADEMIC SERVICE:

University of Arkansas:

- Co-organizer 2013, 2014 Spring Lecture Series, Department of Mathematical Sciences
- College Representative to Faculty Senate, Fall 2011-Spring 2013
- Member of Undergraduate Committee, Department of Mathematical Sciences, Fall 2010-Spring 2013
- Faculty Adviser to Math Club, Department of Mathematical Sciences, Fall 2010-present

University of South Dakota:

- Chair for Math and Science on College of Arts and Sciences Advisory Committee, College of Arts and Sciences, Fall 2008-Spring 2009
- General Education Requirements Committee, University Senate, Fall 2008-Spring 2009
- Chair of Undergraduate Program Committee, Department of Mathematical Sciences, Fall 2008-Spring 2009
- Coordinator of Algebra II Exam, Merten Hasse Math Competition, Department of Mathematical Sciences, Spring 2008

- Multiple Section Coordinator, Calculus I, Department of Mathematical Sciences, Spring 2008
- Multiple Section Coordinator, Calculus I, Department of Mathematical Sciences, Fall 2007
- Member of Search Committee for Instructor, Department of Mathematical Sciences, Spring 2007
- Chair of Calculus Textbook Selection Committee, Department of Mathematical Sciences, Spring 2007
- Advisor for Sioux Falls, Department of Mathematical Sciences, Fall 2006-Spring 2009
- Coordinator of Calculus Exam, Merten Hasse Math Competition, Department of Mathematical Sciences, Spring 2006
- Vice-Chair for Math and Science on College of Arts and Sciences Advisory Committee, College of Arts and Sciences, Fall 2005-Fall 2006
- Harrington Lecture Nominating Committee, College of Arts and Sciences, Fall 2005-Fall 2006
- Chair of Calculus Textbook Selection Committee, Department of Mathematical Sciences, Spring 2005
- Coordinator of Calculus Exam, Merten Hasse Math Competition, Department of Mathematical Sciences, Spring 2005
- Member of Departmental Assessment Committee, Department of Mathematical Sciences, Fall 2004-Spring 2009
- Chair of Committee for Promotion from Instructor to Assistant Professor, Department of Mathematical Sciences, Fall 2004
- Member of Graduate Program Committee, Department of Mathematical Sciences, Fall 2004-Spring 2009
- Seminar coordinator, Department of Mathematical Sciences, Fall 2004-Spring 2009

Consulting:

- AP Calculus Reader, Educational Testing Service, June 2008, June 2009
- Reviewer, Mathematical Reviews, Spring 2007-present
- Referee for Cubo, Illinois J. Math., conference proceedings, and Trans. Amer. Math. Soc.

University of Notre Dame:

- Graduate student representative on search committee for Vice-President of Graduate Studies and Research, Spring 2001

AWARDS:

- New Faculty Commendation for Teaching Commitment, Wally Cordes Teaching and Faculty Support Center, University of Arkansas, August 2010
- Outstanding Graduate Student Teacher Award for Excellence in Teaching, University of Notre Dame, April 2004
- Arthur J. Schmitt Fellowship, Fall 1999-Spring 2003
- Whitworth College Presidential Scholarship, Fall 1995-Spring 1999

PROFESSIONAL MEMBERSHIPS:

- American Mathematical Society, 2004-present
- Mathematical Association of America, 2004-2009
- Sigma Xi, The Scientific Research Society, 2007-2009