

Aaron J. Peterson

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MATHEMATICAL INTERESTS

Several Complex Variables, Partial Differential Equations, Harmonic Analysis, Sub-Riemannian Geometry

EDUCATION

Ph.D. Mathematics , (<i>Advisor: Alexander Nagel</i>), <i>University of Wisconsin–Madison</i>	14
M.A. Mathematics , <i>University of Wisconsin–Madison</i>	11
B.A. Mathematics (<i>Minor: Music</i>), <i>Summa cum laude</i> , <i>Luther College</i>	09

APPOINTMENTS

Charles Deering McCormick Distinguished Professor of Instruction , <i>Northwestern University</i>	23–
Associate Professor of Instruction , <i>Northwestern University</i>	20–
Assistant Professor of Instruction , <i>Northwestern University</i>	16–20
Postdoctoral Lecturer , <i>Northwestern University</i>	14–16

TEACHING EXPERIENCE

Northwestern University:

MATH 382-0: Complex Analysis for ISP [□]	W16, W19, W23
MATH 344-2: Introduction to Topology (Algebraic)	S20
MATH 334-0: Linear Algebra: A Second Course	S19, S24
MATH 325-0: Complex Analysis	S15, S16
MATH 320-1,2,3: Real Analysis	16–17, WS21, 21–22
MATH 291-1,2,3: MENU Intensive Linear Algebra and Multivariable Calculus [#]	WS21, 21–22
MATH 290-1,2,3: MENU Linear Algebra and Multivariable Calculus [#]	14–15, 15–16
MATH 230-0: Differential Calculus of Multivariable Functions	F18
MATH 226-0: Sequences and Series	W23
MATH 224-0: Integral Calculus of One Variable Functions	W18
MATH 220-2: Single-Variable Integral Calculus	F19, F20, F22
MATH 220-1: Single-Variable Differential Calculus	F23
MATH 220-0: Differential Calculus of One Variable Functions	F14, W15, F15, F16
MATH 212/3/4-0: Single Variable Calculus I,II,III	17–18

[#] MENU is a flexible program of challenging courses designed to provide qualified undergraduates with a thorough foundation in mathematics suitable for advanced study in mathematics and its applications across a wide range of disciplines.
[□] The Integrated Science Program is a challenging honors program which integrates mathematics and the sciences.

MINI-COURSES AND SPECIAL TERM

Differentiating the Non-Differentiable, *Summer Northwestern Analysis Program, NU* 07/24/17–07/28/17

Pre-Calculus (6-Week), *Engineering Summer Program**, UW-Madison 11, 12, 13

Pre-Calculus (7-Week), *Summer Collegiate Experience†*, UW-Madison 11

* The Engineering Summer Program is a six-week residential program for high school students from groups traditionally under-represented in STEM fields, and is offered through the College of Engineering at UW-Madison.

† The Summer Collegiate Experience is an intensive summer program for a diverse group of entering first-year students, and is designed to solidify basic mathematical skills before the start of the academic year.

CURRICULUM DEVELOPMENT

New Courses Designed:

First Offered:

MATH 228-1: Multivariable Differential Calculus for Engineering	F19
MATH 226-0: Sequences and Series	F19
MATH 220-2: Single-Variable Integral Calculus	F19
MATH 220-1: Single-Variable Differential Calculus	F19
MATH 218-3: Single-Variable Calculus with Precalculus	S20
MATH 218-2: Single-Variable Calculus with Precalculus	W20
MATH 218-1: Single-Variable Calculus with Precalculus	F19

HONORS & AWARDS

Named Charles Deering McCormick Distinguished Professor of Instruction , NU	23
ASG Faculty Honor Roll , NU	19, 20, 22
Arts and Sciences Alumni Teaching Award , WCAS, NU	18
Departmental Excellence in Teaching Award , NU	16
College of Letters and Science Teaching Fellow , UW–Madison	13–14
Mathematics Graduate Teaching Award , Math Department, UW–Madison	11
University Housing Honored Instructor , UW–Madison	10, 11(x2), 12
Phi Beta Kappa , Luther College	09
Trjitzinsky Award , AMS	08
Carl Strom Prize in Mathematics , Luther College	08

PAPERS & PREPRINTS

- [5] *A Holomorphic Mean Value Theorem with Volume Estimates for Model Domains*, in preparation.
- [4] *Estimates for the Szegő Projection on Uniformly Finite-Type Subdomains of \mathbb{C}^2* , Rev. Mat. Iberoam., 34(1), 111–193, 2018.
- [3] With E. Dlugie, *On Uniform Large-Scale Volume Growth for the Carnot-Carathéodory Metric on Unbounded Model Hypersurfaces in \mathbb{C}^2* , Involve, 11(1), 103–118, 2018.
- [2] $\bar{\partial}_b$ on Uniformly Finite-Type Domains, PhD thesis, University of Wisconsin–Madison, 2014.
- [1] *Carnot-Carathéodory metrics in unbounded subdomains in \mathbb{C}^2* , Arch. Math., 102(5), 437–447, 2014.

INVITED TALKS

Calculus Curriculum and Placement at Northwestern, <i>AMS Workshop, JMM</i>	04/07/22
Webinar: How to Switch Between Online and In-Person Grading, <i>EDUCAUSE</i>	02/07/22
Special Session on PDE in Several Complex Variables, AMS Sectional Meeting, <i>UARK</i>	11/03/18
(Panel) Learning, Teaching, and Assessment Forum, <i>NU</i>	10/19/17
Special Session on Several Complex Variables and PDEs, AMS Sectional Meeting, <i>WSU</i>	04/22/17
Special Seminar, <i>NU</i>	01/22/16
Several Complex Variables and CR Geometry Seminar, <i>UIUC</i>	10/06/15
VIII Workshop in PDEs and Several Complex Variables, Serra Negra, Brazil	08/07/15
Analysis Seminar, <i>NU</i>	03/02/15
Informal Geometric Analysis Seminar, <i>NU</i>	02/13/15
39th Spring Lecture Series: Multiparameter Geometry and Analysis, <i>UARK</i>	04/11/14
Analysis Seminar, <i>UW–Madison</i>	03/25/14

UNDERGRADUATE TALKS

The Faà di Bruno Formula via Umbral Calculus, <i>NUMS</i>	05/12/22
Fireside Chat: STEM and Brewing, <i>Ayers CCI</i>	10/08/20
Commuters and Commutators: The Mathematics of Parallel Parking, <i>NUMS</i>	05/30/18

CONFERENCE ORGANIZATION

Co-Director , <i>Dynamics: Classical, Modern and Quantum (REU), NU</i>	06/20/23–08/11/23
Local Organizer , <i>24th Annual Chicago Symposium, NU</i>	05/05/22
Co-Organizer , <i>Special Session: Undergraduate Student TAs in Mathematics, AMS/MAA JMM</i>	01/16/19
Member , <i>Organizing Committee, Summer Northwestern Analysis Program, NU</i>	06/24/17–08/11/17
Local Organizer , <i>19th Annual Chicago Symposium, NU</i>	04/13/17

MENTORSHIP

New Teachers:

Faculty Teaching Mentor , <i>NU</i>	16–
Faculty Mentor , <i>Teaching Certificate Program, Searle Center, NU</i>	
Kaitlyn Loyd	22–23
Shuyi Weng	18–19
Co-Organizer , <i>New TA Orientation Program, NU</i>	16–19
Facilitator/Mentor , <i>Instructional Excellence Program, UW–Madison</i>	F13
Teaching Assistant Coordinator , <i>UW–Madison</i>	F10, F11, F13

Undergraduate Research Supervision:

Ali Alzergani, <i>NU</i>	22
Ethan Dlugie, <i>NU</i>	16
Evan Wilson, <i>NU</i>	14–15

REU Project Assistant , <i>UW–Madison</i>	Su13, Su14
Other:	
Fellow , <i>Ayers College of Commerce and Industry, NU</i>	18–
Organizer , <i>New Faculty Orientation for Department of Mathematics, NU</i>	16–
Faculty Mentor , <i>Chancellor's Scholarship Program, UW–Madison</i>	12–14
Tutor/Mentor , <i>Educational Talent Search, Luther College</i>	05–07

PROFESSIONAL SERVICE

Reviewer , <i>AMS Mathematical Reviews</i> (13)	18–
Member , <i>Chicago Symposium Series Planning Board, University of Illinois at Chicago</i>	16–
Visiting Fellow , <i>Course and Exam Development for AP Calculus, College Board</i>	22–23
Reviewer , <i>Cengage</i> (1), <i>Pearson</i> (2), <i>Springer</i> (3)	19–23
Visiting Fellow , <i>Assessment of AP Calculus, College Board</i>	Su21
Referee , <i>Geom. Funct. Anal.</i> (1), <i>J. Funct. Anal.</i> (1)	16, 18
Grant Review Panelist , <i>Simons Foundation</i>	18
Copy Editor , <i>Communications in Mathematical Sciences</i>	10–14

DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE

Associate Chair , <i>Department of Mathematics, NU</i>	23–
Member , <i>Space Committee, NU</i>	21–
Member , <i>LMS and LA Steering Subcommittee (LTAC), NU</i>	W19–
Member , <i>Academic Support & Learning Advancement Advisory Board, NU</i>	W18–
Chair , <i>Lecturer Hiring Committee, NU</i>	20–23
Member , <i>MENU Committee, NU</i>	21–22
Director , <i>MENU, NU</i>	20–21
Member , <i>Undergraduate Committee, NU</i>	17–21
Member , <i>Affordable Instructional Resources (AIR) Committee, NU</i>	W19–20
Director , <i>Calculus, NU</i>	17–20
Member , <i>Associate Director Hiring Committee, AccessibleNU, NU</i>	F19
Member , <i>Lecturer Hiring Committee, NU</i>	17–19
Member , <i>Curricular Review Committee, WCAS, NU</i>	16–19
Member , <i>Teaching Track Hiring Committee, NU</i>	17–18
Multisection Course Coordinator , <i>NU</i>	
MATH 230-0: Differential Calculus of Multivariable Functions	F18
MATH 224-0: Integral Calculus of One Variable Functions	W18
MATH 220-2: Single-Variable Integral Calculus	F19, F20, F22
MATH 220-1: Single-Variable Differential Calculus	F23
MATH 220-0: Differential Calculus of One Variable Functions	F15, F16
Graduate Student Member , <i>Teaching Assistant Evaluation Committee, UW–Madison</i>	S13–S14