

Scott F. Beaver

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EDUCATION:

- June 2004 **Doctor of Philosophy in Applied Mathematics**, University of California Davis, Davis, CA.
Advisor: Thomas Strohmer.
Dissertation Title: Banach Algebras of Integral Operators, Off-Diagonal Decay, and Applications to Wireless Communications.
- Aug. 1997 **Master of Science in Mathematics**, University of Arizona, Tucson, AZ.
Advisor: Doug Pickrell
Thesis Title: A Brief Review of Some Knot Invariants
- March 1994 **Bachelor of Science in Mathematics**, Auburn University at Montgomery, Montgomery, AL.
- June 1990 **Bachelor of Science in Engineering Physics**, Lehigh University, Bethlehem, PA.

PROFESSIONAL EMPLOYMENT AND RESEARCH:

- 2015-18 **Professor**, Western Oregon University Mathematics Department, Monmouth, OR.
- 2009-14 **Associate Professor**, Western Oregon University Mathematics Department, Monmouth, OR.
- 2005-09 **Assistant Professor**, Western Oregon University Mathematics Department, Monmouth, OR.
- 2004-05 **Teaching Postdoctoral Fellow**, University of New Mexico Department of Mathematics and Statistics, Albuquerque, NM. Taught Vector Analysis, Linear Algebra, Calculus II, and Elements of Calculus.
- 2000-04 **Research for Ph.D. in Applied Math**, Albuquerque, NM. Off-diagonal decay of 2n-dimensional integral operator kernels, pulse-shaping & lattice design for OFDM systems, and Gabor Analysis.
- Summer 2003 **Intern, Sandia National Laboratories**, Albuquerque, NM. Organized data on companies doing contemporary research in smart wireless networks.
- Summer 2002 **Assistant Instructor, NSF VIGRE Research Experience for Undergraduates (REU) in Applied and Computational Harmonic Analysis**, University of California Davis, Davis, CA.
- 1998-2000 **Graduate Teaching Assistant, Associate Instructor**, University of California Davis, Davis, CA.

PROFESSIONAL EMPLOYMENT AND RESEARCH (Continued):

1995-97 **Graduate Teaching Assistant**, University of Arizona, Tucson, AZ.

PUBLICATIONS:

Vol. “Teaching Linear Algebra: How We Can Assess More Efficiently by Staying Comfort-
25, Issue 7 ably Within \mathbb{Z} ,” in *PRIMUS (Problems, Resources, and Issues in Mathematics Under-*
(Aug. *graduate Studies)*.
2015)

Dec. 2011 “The Effect of Peer-Assessment on the Attitudes of Pre-Service Elementary and Middle
School Teachers about Writing and Assessing Mathematics” with Cheryl Beaver, in
Issues in the Undergraduate Mathematics Preparation of School Teachers: The Journal.

Vol. 21, “A Pre-Bridge Course: The Natural Role of Sequences and Series,” *PRIMUS (Problems,*
No. 6 *Resources, and Issues in Mathematics Undergraduate Studies)*.
(Aug.-
Sep.
2011)

Vol “A Weighted Wiener’s Lemma for Integral Operators With Schur-Type or Essential-
36, No. 1, Supremum Kernel Decay Conditions,” *The Houston Journal of Mathematics*.
2010

Oct. “Advanced Calculus I and II Tailored for Two Ten-Week Terms,” *The Journal of*
2008 *Inquiry-Based Learning in Mathematics*. (Submitted 2nd Edition, June 2010.)
(No. 9)

July 2003 “Optimal OFDM Design for Time-Frequency Dispersive Channels,” *IEEE Transactions*
on Communications, with Thomas Strohmer.

November “Optimal OFDM Pulse and Lattice Design for Doubly Dispersive Channels,” 35th
2001 Asilomar Conference on Signals, Systems, and Computers, with Thomas Strohmer.

In prep. “Löwdin Orthogonalization - A Natural Supplement to Gram-Schmidt.”

INVITED PRESENTATIONS:

October “The Wonderful (But Not Too Mysterious) World of Fourier,” Willamette University
2010 Mathematics Colloquium, Salem, OR.

March “An Optimal, Democratic Method of Orthogonalization from the Singular Value De-
2009 composition,” Humboldt State University Mathematics Colloquium, Arcata, CA.

INVITED PRESENTATIONS (Continued):

November 2006 “The Singular Value Decomposition in Symmetric (Löwdin) Orthogonalization and Data Compression,” Willamette University Mathematics Colloquium, Salem, OR.

PRESENTATIONS:

January 2014 “An IBL Approach to Advanced Calculus that Incorporates Proficiency,” AMS-MAA Joint Mathematical Meetings, Baltimore, MD.

January 2013 “The Flip Side of Linear Algebra,” AMS-MAA Joint Mathematical Meetings, San Diego, CA.

June 2012 “Reflections on a Self-Paced Complex Analysis Course,” 15th Annual Legacy of RL Moore Conference, Austin, TX.

June 2011 “A Modified Moore Method for Small Advanced Calculus Classes of Predominantly Future High School Teachers,” 14th Annual Legacy of RL Moore Conference, Washington, DC.

April 2010 “The Fourier Transform, $L^2(\mathbb{R})$, and the Riemann-Lebesgue Lemma,” at the MAA PNW Regional Meeting, Seattle, WA.

January 2010 “Does Peer Assessment Help Improve Mathematical Writing for Pre-Service Elementary and Middle School Teachers?,” with Cheryl Beaver, at the AMS-MAA Joint Mathematical Meetings, San Francisco, CA.

August 2009 “The Natural Role of the Sequences and Series Calculus Course,” at the MAA MathFest, Portland, OR.

July 2008 “Self-Reliant Students in WOU Advanced Calculus 2007-08,” at the 11th Annual Legacy of R.L. Moore Conference, Austin, TX.

June 2008 “Invertible Integral Operators and Subexponential Kernel Decay,” at the MAA PNW Regional Meeting, Helena, MT.

August 2007 “Seeing the Forest Through the Trees: How to Stop Students from Memorizing Proofs in Advanced Calculus,” at the MAA MathFest, San Jose, CA.

August 2007 “Assessing Student Presentations of New Material in Advanced Calculus,” at the MAA MathFest, San Jose, CA.

August 2007 “Probability and Statistics for Elementary Teachers at Western Oregon University,” at the MAA MathFest, San Jose, CA.

PRESENTATIONS (Continued):

- April 2007 “Strategies for Proof Compression in Advanced Calculus,” at the MAA PNW Regional Meeting, McMinnville, OR.
- January 2007 “Löwdin Orthogonalization - A Natural Supplement to Gram-Schmidt,” at the AMS-MAA Joint Mathematics Meetings, New Orleans, LA.
- February 2004 “Symmetry and Inverse-Closedness of Banach Algebras of Integral Operators Defined by Off-Diagonal Decay of the Kernels,” at the Combined Pure and Applied Mathematics Student Seminar, Department of Mathematics, University of California Davis, Davis, CA.
- November 2001 “Optimal OFDM Pulse and Lattice Design for Doubly Dispersive Channels,” at the 35th Asilomar Conference on Signals, Systems, and Computers; poster session.

AWARDS, GRANTS, AND RECOGNITION:

- May 2013 Attended Emerging Leaders Day (invite-only) at the State Capitol; nominated by AFT-Oregon.
- April 2011 Received Treasurer’s Award for 2010-11 by AFT-Oregon.
- April 2010 Received Treasurer’s Award for 2009-10 by AFT-Oregon.
- May 2008 Selected as a Pacific Northwest NExT Fellow.
- May 2007 Inducted into Pi Mu Epsilon, National Mathematics Honor Society.
- 2017-18 WOU Faculty Development Category I Travel Grant, to attend the AMS-MAA Joint Mathematical Meetings for CTUM committee meeting, San Diego, CA.
- 2016-17 WOU Faculty Development Category I Travel Grant, to attend the AMS-MAA Joint Mathematical Meetings for CTUM committee meeting, Atlanta, GA.
- 2015-16 WOU Faculty Development Category I Travel Grant, to attend the AMS-MAA Joint Mathematical Meetings for CTUM committee meeting, Seattle, WA.
- 2014-15 Two WOU Faculty Development Category I Travel Grants, to attend MAA MathFest, and to attend the AMS-MAA Joint Mathematical Meetings for CTUM committee meeting, San Antonio, TX.
- 2013-14 WOU Faculty Development Category I Travel Grant, to attend and present a talk at the AMS-MAA Joint Mathematical Meetings, Baltimore, MD.
- 2012-13 WOU Faculty Development Category I Travel Grant, to attend and present a talk, and moderate a session at the AMS-MAA Joint Mathematical Meetings, San Diego, CA.

AWARDS, GRANTS, AND RECOGNITION (Continued):

Spring 2012	WOU Faculty Development Category IV Grant, to research off-diagonal decay inheritance of factors of bi-infinite matrices.
2011-12	WOU Faculty Development Category I Travel Grant, to attend and present a talk at the 15 th Annual Legacy of RL Moore Conference in Austin, TX.
2010-11	WOU Faculty Development Category I Travel Grant, to attend and present a talk at the 14 th Annual Legacy of RL Moore Conference in Washington, DC.
2009-10	WOU Faculty Development Category I Travel Grant, to attend and present a talk at the Joint AMS/MAA Meetings in San Francisco, CA.
2008-09	WOU Faculty Development Category I Travel Grant, to attend and present a talk at the Joint AMS/MAA Meetings in Washington, DC. (declined)
2007-08	WOU Faculty Development Category I Travel Grant, to attend and present a talk at the PNW Section Meeting of the MAA in Helena.
2006-07	WOU Faculty Development Category I Travel Grant, to attend and present three talks at the MAA MathFest in San Jose.
2006-07	WOU Division of Natural Sciences and Mathematics Travel Grant, to attend and present a talk at the Joint AMS/MAA Meetings in New Orleans.
2006-07	WOU Faculty Development Category II Travel Grant, to attend the MAA MathFest in Knoxville.

COURSES TAUGHT AT WOU:

MTH 496/596	Problem Solving for Middle School Teachers	Su 2007
MTH 493/593	Experimental Probability & Statistics for Middle School Teachers	Su 2009
MTH 441	Linear Algebra II	Sp 2011, 2017
MTH 416	Complex Analysis	Sp 2006, 2008, 2010, 2012
MTH 410	Fourier Analysis & Applications (Special Topics)	W 2007
MTH 403/4	Senior Project I & II	W-Sp 2010, 2011, 2012
MTH 402	Topology Independent Study	Sp 2015, 2017

COURSES TAUGHT AT WOU (Continued):

MTH 393	Probability and Statistics for Elementary Teachers	F 2005-08, 2011, 2015
MTH 354	Discrete Mathematics for Computer Science	Sp 2006, W 2008, 2009, 2014
MTH 341	Linear Algebra	F 2005, 2010-16, Sp 2015-16
MTH 314	Differential Equations	Sp 2006, W 2014
MTH 313	Advanced Calculus III	Sp 2007, Sp 2009
MTH 311, 312	Advanced Calculus I-II	F-W 2005-15
MTH 280	Introduction to Proof	Sp 2014, F 2015-17, Sp 2016-17
MTH 254	Multivariate Calculus	Sp 2007-09, F 2009
MTH 253	Calculus III: Sequences and Series	W 2006, Sp 2006, W 2008, 2015-17, Sp 2008-10, 2015
MTH 252	Calculus II	W 2012, Sp 2014, W 2015-16 F 2015-16
MTH 251	Calculus I	W 2011, F 2016
MTH 243	Introduction to Probability and Statistics	F 2008, Sp 2016, F 2018
MTH 231	Elements of Discrete Mathematics	W 2006, F 2007
MTH 211, 212, 213	Foundations of Elementary Mathematics I-III	F 2006-Sp 2007
MTH 112	Elementary Functions	F 2012, W 2013, Sp 2017
MTH 111	College Algebra	F 2009, W 2010, F 2010

SERVICE:

2017-19 President, Western Oregon University Federation of Teachers

SERVICE (Continued):

- 2015-18 Member, Mathematical Association of America Committee on the Teaching of Undergraduate Mathematics
- 2015-16 Member, NSM Division PRC
- 2013-15 Chair, WOU Mathematics Department
- 2014-17 WOU Mathematics Department Willamette Promise Representative, MTH 111/112 PLC
- 2014, 2018 Judge, Student Poster Session, AMS-MAA Joint Mathematics Meetings, Baltimore, MD
- 2013 Moderator, General Contributed Paper Session on Interdisciplinary Topics, AMS-MAA Joint Mathematics Meetings, San Diego, CA
- 2012 Invited Paid Reviewer, John Wiley & Sons, "The Elements of Cantor Sets," by Robert Vallin
- 2011-12, 2013-14 Chief Negotiator and Bargaining Team Chair, Western Oregon University Federation of Teachers
- 2008-09, 2014-17 Member, Western Oregon University Federation of Teachers Collective Bargaining Team
- 2012 Committee Member, Statewide Oregon SB 242 Optional Retirement Plan Committee
- 2011-12 Faculty Adviser to Dr. Lin Lin, Visiting Scholar from Shenyang, China
- 2011-16 Western Oregon University PURE Executive Committee Member
- 2010 Northwest Undergraduate Mathematics Symposium Student Presentation Judge, at Oregon State University
- 2010-12 Session Chair (Mathematics Senior Project Presentations), WOU Academic Excellence Showcase
- 2009-10 Chair, WOUFT-Faculty Senate Joint Committee on Evaluations
- 2009-10 WOU Faculty Senate Vice-President
- 2007-11 WOU Math Softball Team (ϵ -Ballers) Coach and Player
- 2009-10 Member, WOU Faculty Senate Committee on Committees
- 2008-09 At-Large Member, WOU Faculty Senate Executive Committee

SERVICE (Continued):

- 2008-11 Treasurer, Western Oregon University Federation of Teachers
- 2008-11 Faculty Advisor, William Lowell Putnam Math Competition Team
- 2008 Member, WOU First-Year Experience Committee
- 2007-08 Secretary, WOU Faculty Senate
- 2007-08 Secretary, Western Oregon University Federation of Teachers
- 2007-08 Member, WOU Finance and Budget Advisory Committee
- 2007-08,
2011 WOU Prof Chat
- 2006-10 NSM Representative, WOU Faculty Senate
- 2006-10 Member, NSM Technology Committee
- 2005-13 Technology Liaison, Mathematics Department
- 2006-10 Math Club Advisor, Mathematics Department
- 2005-07,
2011-13,
2015-17 Library Liaison, Mathematics Department

COMMUNITY:

- 2017 Head Coach, Valley District JBO Junior National Baseball, Monmouth, OR
- 2016 Head Coach, Central Youth Sports Minors Baseball, Monmouth, OR
- 2013-15 Assistant Coach, Central Youth Sports Rookies and Minors Baseball, Monmouth, OR
- 2011-17 Set construction, sound tech, and voice coaching volunteer, Applebox (formerly Mid-Valley Community) Children's Theater, Monmouth, OR

PROFESSIONAL ORGANIZATION MEMBERSHIPS:

- MAA (Mathematical Association of America)
- NCTM (National Council of Teachers of Mathematics)