

Department of Mathematics  
Weber State University  
1702 University Circle  
Ogden, UT 84408, USA  
*Phone:* (801) 626-7962  
*Email:* amahemuti@weber.edu  
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**EDUCATION**

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- Ph.D. in Mathematics, February 2008, University of Regina, Canada.  
Thesis title: A Joint Neighbour Bound for Primitive Digraphs  
Advisor: Professor Steve Kirkland
- M.Sc. in Applied Mathematics, July 1999, Xinjiang University, China.  
Thesis title: On Hamilton cycles of Cayley graphs on Abelian groups  
Advisor: Professor Meng Jixiang
- B.Sc. in Mathematics, July 1996, Xinjiang University, China.

**PROFESSIONAL EXPERIENCE**

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- Assistant Professor, July 2010-present,  
Department of Mathematics, Weber State University, Ogden, UT.
- Postdoctoral Fellow, January 2009-September 2009,  
Department of Mathematics, Texas State University - San Marcos, TX.
- Adjunct Faculty, September 2008-Dec 2008, September 2009-May 2010,  
Department of Mathematics, Weber State University, Ogden, UT.
- Graduate Teaching Assistant, September 2002-April 2008,  
Department of Mathematics and Statistics, University of Regina, SK, Canada.
- Lecturer, September 1999-July 2002,  
Department of Mathematics, Xinjing University, China.

**RESEARCH INTEREST**

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Combinatorics, Graph Theory, Matrix Theory, Computational Mathematics, Visual Analytics, and Mathematical Modeling.

**PUBLICATIONS**

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**Papers in Refereed Journals**

- *Smart Use of Technology in Mathematics*. International Journal of Technology, Knowledge and Society, Volume 8, 2012, with S. Fital-Akelbek.
- *A bound on the scrambling index of a primitive matrix using Boolean rank*, Linear Algebra Appl., 431 (2009) 1923-1931, with Jian Shen and Sandra Fital.
- *Primitive Digraphs with the Largest Scrambling Index*, Linear Algebra Appl. 430 (2009) 1099-1110, with Steve Kirkland.
- *Coefficients of Ergodicity and the Scrambling Index*, Linear Algebra Appl. 430 (2009) 1111-1130, with Steve Kirkland.

- *Hamiltonian properties of Cayley graphs on Abelian groups*, J. Xinjiang Univ. Natur. Sci. 20 (2003), 14-21.
- *Enumeration of Hamiltonian cycles in  $P_6 \times P_n$* , J. Xinjiang Univ. Natur. Sci. 19 (2002), 46-53.
- *On The number of Hamiltonian cycles in  $P_3 \times C_n$* , J. Xinjiang Univ. Natur. Sci. 17 (2000), 1-4.
- *Superconnected circulant digraphs*, J. Xinjiang Univ. Natur. Sci. 16 (1999), 14-19. With J.X. Meng, J.X. Xu, Y.J. Zhao.

### Papers in Conference Proceedings

- *Advantages and Disadvantages of Teaching Online Math Courses with Recorded Lectures*. In Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2011 (pp. 109-112). Chesapeake, VA: AACE., with S. Fital-Akelbek.
- *Analysis of passing rates of online math courses*. Proceedings of Society for Information Technology & Teacher Education International Conference 2011 (pp. 274-279). Chesapeake, VA: AACE., with S. Fital-Akelbek.
- *Exploring graph visualization with confluent drawings*, Dimacs Educational Module Series (2009), preprint. With O. Ortega, M.J. Pelsmajer, S. Tannouri, T.M. Washington.
- *Developing and delivering a successful online math course despite the limitations of cost efficient technology available to students*, Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2009 (pp. 33-36), with S. Fital-Akelbek.
- *Seismic prediction of reservoir parameters*, Proceedings of the Ninth PIMS Industrial Problem Solving Workshop, University of Calgary, May 2005, 59-77. With L. Bos, M. Braverman, G. Chen, L. Fishman, S. Fital, B. Russell, Y. Yin, Z. Zhang.
- *A Dynamical Model of Drill Efficiency*, Proceedings of the Eighth PIMS Graduate Industrial Math Modeling Camp, University of Lethbridge, May 2005, 11-24. With A. Amiraslani, C. Bose, R. Cysdale, H. Huang, X.P. Liu, N. Rezvani, S. Williams.

### TEACHING EXPERIENCE

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Weber State University, Utah, September 2008-present.

- Instructor, courses taught: MATH 1050 College Algebra (Fall 2008, Fall 2009, Spring 2010), MATH 1060 Trigonometry (Fall 2010), MATH 1040 Statistics (Fall 2010, Spring 2010), MATH 1210 Calculus I (Spring 2011), MATH 2010 Calculus III (Fall 2010, Spring 2011)

Texas State University, Texas, January 2009-August 2009.

- Postdoctoral fellow, courses taught: MATH 1319 Mathematics for Business and Administration (two sections)

University of Regina, Regina, Canada, September 2002-April 2008

- Teaching Fellow, courses taught: MATH 103 Calculus for the Social and Management Sciences, MATH 111 Calculus II, MATH 122 Linear Algebra I
- Teaching Assistant, MATH 110 Calculus I, MATH 111 Calculus II, MATH 221 Introduction to Proofs and Problem Solving, MATH 122 Linear Algebra I. Responsibilities include weekly one hour problem solving sessions for students, marking, proctoring and tutoring. Tutor in Math Help Center, helped undergraduate students with different levels of mathematics and statistics courses.

Xinjiang University, Urumqi, China, September 1999-August 2002

- Lecturer, courses taught: Linear Algebra, Calculus I, Calculus II, Abstract Algebra, Discrete Mathematics, Combinatorics. Designed new math courses, prepared and organized mathematical contests, carried out the responsibility for team work and academic knowledge, organized extracurricular activities for youth
- Mentor, worked with two students on research projects (Fall 2000), submitted one of the research papers for publication.

## **SEMINARS AND TALKS**

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- *On the scrambling index and the generalized scrambling index of a primitive digraphs*, 2012 Shanghai Conference on Algebraic Combinatorics, August 17 -22, 2012, Shanghai Jiao Tong University, Shanghai, China (Invited talk).
- *On the subdominant eigenvalues of stochastic matrix*, MAA Intermountain Section Spring Meeting, March 22-24, 2012, Westminster College, Salt Lake City, Utah.
- *Various bounds on the scrambling index and the generalized scrambling index*, The 3rd biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 31-June 3, 2011, University of Victoria, Victoria, BC, Canada.
- *On an Upper Bound on the Modulus of Subdominant Eigenvalue of a Stochastic Matrix*, SIAM Conference on Discrete Mathematics, Austin, Texas, June 14-17 2010.
- *Memoryless Communication System and the Scrambling Index*, Weber State University, March 2010.
- *An upper bound on the scrambling index by using Boolean rank*, The 10th Annual Meeting of Combina Texas , University of Houston, April 2009.
- *On the Scrambling Index of Primitive Digraphs* , Discrete Mathematics Seminar, Texas State University, February 2009.
- *Primitive digraphs with the largest scrambling index*, Western Canada Linear Algebra Meeting, Winnipeg, Canada, May 2008.
- *Coefficients of Ergodicity and Scrambling Index*, Western Canadian Conference for young Researchers in Mathematics, Calgary, Canada, May 2007.
- *A Joint Neighbour Bound for Primitive Digraphs*, Western Canada Linear Algebra Meeting, Victoria, Canada, June 2006.
- *On Ergodicity Coefficients of Nonnegative Matrices*, Graduate Student Seminar, University of Regina, April 2005.
- *On a Problem of Lewin*, University of Regina, November 2004.
- *Eigenvalues of Graphs*, University of Regina, December 2004.

## **CONFERENCES AND WORKSHOPS ATTENDED**

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- 2012 26th Annual Midwest Conference on Combinatorics, Cryptography & Computing, Southern Utah University, Cedar City, Utah, Oct 11-13
- Shanghai Conference on Algebraic Combinatorics, August 17 -22, Shanghai Jiao Tong University, Shanghai, China.
- The 24th International Conference on Formal Power Series and Algebraic Combinatorics, July 30-August 3, Nagoya University, Nagoya, JAPAN.
- MAA Intermountain Section Spring Meeting, March 22-24, Westminster College, Salt Lake City, Utah
- 2011 CURM (Center for Undergraduate Research in Mathematics) 2011 Research Conference, Brigham Young University, Utah, March 18-19.
- Linear Algebraic Techniques in Combinatorics/Graph Theory, BIRS, Canada, Jan 31-Feb 4.
- 2010 SIAM Conference on Discrete Mathematics, Austin, Texas, June 14-17.
- 2009 Analytical Methods in Combinatorics, Additive Number Theory and Computer Science, IPAM, Los Angeles, December, 2009.
- Visual Analytics and Applications, DIMACS, Rutgers University, August 2009.
- Workshop on Mathematical Biology and Numerical Analysis, University of Georgia, August 2009.
- The 10th Annual Meeting of Combina Texas, University of Houston, April 2009.
- Frontier Probabilily Days, University of Utah, Salt Lake City, March 2009.
- AMS Annual Meeting, Washington DC, January, 2009
- 2008 Western Canada Linear Algebra Meeting, University of Winnipeg, May 2008.
- 2007 Western Canadian Conference for young Researchers in Mathematics, University of Calgary, May 2007.
- 2006 Fourth Prairie Discrete Math Workshop, University of Lethbridge, August 2006.
- Western Canada Linear Algebra Meeting, University of Victoria, June 2006.
- 2005 12th International Linear Algebra Society Conference, Regina, June 2005.
- 9th PIMS-MITACS Industrial Problem Solving Workshop, University of Calgary, May 2005.
- MITACS 6th Annual Conference, University of Calgary, May 2005.
- 8th PIMS Graduate Mathematics Modeling Camp, University of Lethbridge, May 2005.
- 2004 Second Prairie Discrete Mathematics Workshop, University of Lethbridge, October 2004.
- Directions in Combinatorial Matrix Theory Conference, Banff, Alberta, May 2004.

## **AWARDS AND SCHOLARSHIPS**

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Hemingway Vitality Grants, Spring 2010, Weber State University.

Hemingway Vitality Grants, 2009-2010, Weber State University, with Dr. Fital-Akelbek.  
IPAM Travel Award, December 2009.  
DIMACS Travel Award, August, 2009.  
NSF Postdoctoral Travel Award, August, 2009.  
Graduate Teaching Fellowship, University of Regina, Spring 2007.  
Faculty of Graduate Studies Research Award, University of Regina, Summer 2003, Summer 2006.  
Faculty of Graduate Studies Scholarship, University of Regina, Fall 2003, Spring 2004, Fall 2004.  
Western Canadian Conference for Young Researchers in Mathematics Travel Award, May 2007.  
Pacific Institute for the Mathematical Science Travel Award, Aug 2006.  
MITACS (Mathematics of Information Technology and Complex Systems) Travel Award, May 2005.  
Young Scholars Research Grant, Xinjiang University, 2001.  
University Award for Academic Excellence, Xinjiang University 1994-1998.

## **REFEREE**

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- Linear and Multilinear Algebra,
- Linear Algebra and its Applications,
- Journal of Interconnection Network (JOIN)
- Discrete Mathematics,
- Ars Combinatoria,
- MR (Mathematical Review)

## **PROFESSIONAL AFFILIATIONS**

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- SIAM, 2009- Present
- American Mathematical Society, 2002- Present
- International Linear Algebra Society, 2004- Present

## **LANGUAGE AND COMPUTER SKILLS**

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- Fluent in English, Chinese, Kazakh.
- Proficient in Matlab, Mathematica, Latex, C, Pascal, HTML.
- Familiar with Maple, S-plus, R, Ggobi,

## **OTHER ACTIVITIES AND VOLUNTEER WORK**

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- Sigma Xi Society, College of Science, Weber State University, July 2010-present.
- Computing Committee, Department of Mathematics, Weber State University, July 2010-present.
- Quantitive Literacy Committee, Department of Mathematics, Weber State University, July 2010-present.
- Member of the Faculty of Science Committee, Graduate Student Representative, University of Regina, 2005-2007
- Volunteer with organization of Saskatchewan Mathematics Challenge, a provincial mathematics contest for students from grade 8 to grade 10 that is organized by the Saskatchewan Mathematics Teachers Society, March 2005, March 2007.
- Volunteer, Mathematics Enrichment Camp for students in grades 7 through 12 who are interested in exploring the infinite frontier of Mathematics beyond the school curriculum, September 2005, October 2006.
- Support in organization of 12th International Linear Algebra Society Conference in Regina, Saskatchewan, June 26-29, 2005.

## **SERVICE**

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- ARCC (Academic Resources and Computing Committee)
- College of Science Sigma Xi Committee,
- Math Factor- Faculty Advisor
- Hiring Committee hiring for Developmental Math Director
- Computing Committee, Department of Mathematics, Weber State University, July 2010-present.
- Quantitive Literacy Committee, Department of Mathematics, Weber State University, July 2010-present.
- Member of the Faculty of Science Committee, Graduate Student Representative, University of Regina, 2005-2007
- Volunteer with organization of Saskatchewan Mathematics Challenge, a provincial mathematics contest for students from grade 8 to grade 10 that is organized by the Saskatchewan Mathematics Teachers Society, March 2005, March 2007.
- Volunteer, Mathematics Enrichment Camp for students in grades 7 through 12 who are interested in exploring the infinite frontier of Mathematics beyond the school curriculum, September 2005, October 2006.
- Support in organization of 12th International Linear Algebra Society Conference in Regina, Saskatchewan, June 26-29, 2005.

## REFERENCES

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**Dr. Steve Kirkland**

Hamilton Institute, National University of Ireland Maynooth  
Phone: +353 (0)1 708 6797, email: [stephen.kirkland@nuim.ie](mailto:stephen.kirkland@nuim.ie)

**Dr. Jian Shen**

Department of Mathematics, Texas State University, San Marcos, TX, USA  
Phone: (512) 245-3740, email: [js48@txstate.edu](mailto:js48@txstate.edu)

**Dr. Paul Talaga**

Department of Mathematics, Weber State University, Ogden, UT, USA  
Phone: (801) 626-7038, email: [ptalagai@weber.edu](mailto:ptalagai@weber.edu)

# Julian D. Chan

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CONTACT INFORMATION	Weber State University Department of Mathematics 3848 Harrison Blvd. Room 513A Building 4 Ogden, UT 84404 USA	<i>Phone:</i> (206) 484-1624 <i>Office Phone:</i> (801) 626-6442 <i>E-mail:</i> juliandchan@gmail.com <i>Website:</i> <a href="http://faculty.weber.edu/julian">http://faculty.weber.edu/julian</a>
SUMMARY OF QUALIFICATIONS	<ul style="list-style-type: none"><li>• American citizen with good communication skills.</li><li>• Proven ability to find creative solutions to scientific problems.</li><li>• Strong leadership and interpersonal skills.</li><li>• Driven, positive, and highly motivated worker.</li></ul>	
EDUCATION	<b>Ph.D. Mathematics</b> , University of Utah, Salt Lake City, Utah, USA <b>M.S. Statistics</b> , University of Utah, Salt Lake City, Utah, USA <b>M.S. Mathematics</b> , University of Utah, Salt Lake City, Utah, USA <b>B.S. Mathematics</b> , University of Washington, Seattle WA, <b>Associates of Arts</b> , Seattle Central Community College, Seattle WA,	<b>May 2011</b> <b>May 2011</b> <b>May 2007</b> <b>June 2005.</b> <b>2003.</b>
PROFESSIONAL EXPERIENCE	<b>Assistant Professor of Mathematics</b> , Weber State University, Ogden, Utah, USA <b>Ph.D. Mathematics</b> , University of Utah, Salt Lake City, Utah, USA <ul style="list-style-type: none"><li>• Ph.D in mathematics is supervised by Anurag Singh. My research focus is on studying the Local Cohomology module.</li><li>• My reseach interests are Tight Closure, F-Rationality, F-Regularity, and the Finiteness propertities of the Cohomology module.</li><li>• M.S. Statistics is supervised by Lajos Horvath. My research is concerned with studying Panel Data.</li></ul>	
TEACHING EXPERIENCE	<b>Weber State University, Department of Mathematics</b> , Ogden, Utah, USA <i>Assistant Professor of Mathematics</i> <ul style="list-style-type: none"><li>• Math 3410: Probability and Statistics, <b>Spring 2012.</b></li><li>• Math 1080: Precalculus <b>Spring 2012.</b></li><li>• Math 1060: Trigonometry, <b>Fall 2011.</b></li><li>• Math 1210: Calculus I <b>Fall 2011.</b></li><li>• Math 1040: Introduction to Statistics <b>Fall 2011</b></li></ul> <b>University of Utah, Department of Mathematics</b> , Salt Lake City, Utah, USA <i>Graduate Teaching fellow</i> <ul style="list-style-type: none"><li>• Math 1030: Introduction to Quantitive Reasoning, <b>Spring 2010.</b></li><li>• Math 1100: Quantitative Analysis, <b>Fall 2009.</b></li><li>• Math 1060: Trigonometry, <b>Summer 2009.</b></li><li>• Math 1220: Calculus II, <b>Fall 2008.</b></li><li>• Math 1030: Introduction to Quantitive Reasoning, <b>Summer 2008</b></li><li>• Math 1090: College Algebra for Business and Social Sciences, <b>Spring 2008.</b></li><li>• Math 1210: Calculus I <b>Fall 2007.</b></li><li>• Math 1030: Introduction to Quantitative Reasoning <b>Summer 2007</b></li><li>• Math 1210: Calculus I <b>Spring 2007.</b></li><li>• Math 1100: Quantitative Analysis <b>Fall 2007</b></li><li>• Math 1040: Introduction to Statistics <b>Spring 2011</b></li></ul>	
Publications	<ul style="list-style-type: none"><li>• Julian Chan, Constructing arbitrary torsion elements for a local cohomology module, <i>Journal of Algebra</i> <b>370 (2012), 221-232</b></li><li>• Julian Chan, Lajos Horváth, and Marie Hušková , Darling–Erdős limit results for change-point detection in panel data, <i>JSPI</i>, Submitted.</li></ul>	



CONFERENCES  
ATTENDED

- "American Mathematical Association of Two-Year Colleges", 38<sup>th</sup> annual conference, Jacksonville, Florida, November 2012.
- "High frequency, extremes and multifractals", Paris France, June 2012.
- "Fall Western Section of the American Mathematical Society", Salt Lake City, UT, October 2011.
- "Mathematics Research Community on Commutative Algebra", Snowbird Utah, June 2010.
- "Frobenius Splitting", University of Michigan in Ann Arbor, May 2010.
- "Commutative Algebra and it's Connections to Geometry", Pan-American Advanced Study Institute, Olinda Brazil, August 2009.
- "GSU-USC Commutative Algebra Seminar", Atlanta Georgia, February 2009.
- "Combinatorial Algebra meets Algebraic Combinatorics", Memorial University of Newfoundland, Sr. John's, Canada, January 2009.
- "Conference in honor of Mel Hochster", University of Michigan in Ann Arbor, August 2008.

PRESENTATIONS  
AND TALKS  
GIVEN

- "Darling–Erdős limit results for change point detection in panel data", Statistical models for financial data III, Graz Institute of Technology, May 2012.
- "Darling–Erdős type statistics for panel data", Time Series, Models, Breaks, and Applications, Institute of Stochastics Karlsruhe Institute of Technology, February 2012.
- " Panel data", US Census Bureau, Washington D.C., April 2011.
- "Detecting changes in Panel Data", Graduate Student Colloquium, University of Utah, Salt Lake City, Ut, April 2011.
- "Zeros sets of Polynomials, and smooth surfaces", College of Science Seminar, Weber State University, Ogden, UT, Febuary 2011.
- "Zero sets, cohomology, and p-torsion", Graduate Student Colloquium, University of Utah, Salt Lake City, Ut, January 2011.
- "Embedding Groups into a Local Cohomology Module", Commutative Algebra Seminar, University of Utah, Salt Lake City, Ut, January 2011.
- "Torsion of Cohomology Modules", AMS Special Session on Local Commutative Algebra , Joint Meeting, New Orleans, LA, January 2011.
- "Introduction to Invariant theory", Graduate Student Colloquium, University of Utah, Salt Lake City, Ut, October 2008.
- "Using Algebraic Methods to Solve Counting Problems in Chess", Graduate Student Colloquium, University of Utah, Salt Lake City, Ut, February 2008.
- "Sicherman Dice", Graduate Student Colloquium, University of Utah, Salt Lake City, Ut, October 2007.
- "Introduction to Group Theory", Undergraduate Colloquium, University of Utah, Salt Lake City, UT, 13 September 2006..
- "Spatial Evolutionary Game Theory: Hawks and Doves revisited" Proc. R. Soc. Lond. B (1996), vol 263, pp. 1135-1144. Paper by Killingback and Doebeli. Journal club 1, University of Utah, Salt Lake City, UT. October 2005.

AWARDS AND  
HONNORS

- Hemingway grant, Weber State University, 2011
- Vertical Integration of Reseach and Education, University of Utah Department of Mathematics.
- Golden Key International Honour Society.
- Presidents List
- Dean's List
- NASA Space Grant, 2002.

LEADERSHIP  
ACTIVITIES

- Mathematics representative for College of Science at Weber State Orientation, Weber State University, August 24th, 2012.
- Learning outcomes for math 3410 and 3420 with Professor Cai, Weber State University, Spring-Fall 2012.
- Mathematics representative for College of Science at Weber State tailgate football event, Weber State University, September 2012.
- (Chair) Academic Computing department of mathematics, Weber State University, 2012-2013.
- Academic Computing College of Science, Weber State University, 2011-2012.
- BIS Committee for David Nelson, Weber State University, 2012.
- Research Scholarship and Professional Growth Committee, Weber State University, 2012-2015.
- College of Science orientation and information session, Weber State University, August 24th 2012.
- The National Conferences on Undergraduate Research, Weber State University, 2011-2012.
- Academic Computing, Weber State University, 2011-2012.
- New Faculty Retreat, Weber State University, August 2011.
- Curriculum Committee, Weber State University, 2011-2012.
- Graduate Student Advisory Retention, Promotion, and Tenure Committee, Mathematics Department, University of Utah, 2007-2008.
- Graduate Student Committee, Graduate Student Recruitment, Mathematics Department, University of Utah, 2009.
- Graduate Student Committee, Organizer Picnics and Social events , Mathematics Department, University of Utah.
- Women's Resource Center Volunteer, Go Girlz Program, University of Utah, Fall 2008.

VOLUNTEER  
ACTIVITIES

- Ogden Bike Collective, 2011.
- Salt Lake City Humane Society, 2010-2011.

COMPUTER  
SKILLS

R Maple 9.0 L<sup>A</sup>T<sub>E</sub>X

REFERENCES

**Anurag Singh Thesis Advisor**

Associate Professor of Mathematics

Department of Mathematics

University of Utah

155 South 1400 East, Room LCB 233

Salt Lake City, UT 84112-0090

singh@math.utah.edu

(801) 581-8647

**Lajos Horváth**

Professor of Mathematics and Statistics University of Utah

Department of Mathematics

155 S. 1400 E. JWB 222

Salt Lake City, UT

84112-0090 USA

horvath@math.utah.edu

(801) 581-8159

**Paul Talaga**

Professor of Mathematics Weber State University

Department of Mathematics

3848 Harrison Blvd.

Ogden, UT

84404 USA

ptalaga@weber.edu

(801) 626-7038

WEBER STATE UNIVERSITY  
Autobiographical Form

Date last updated 11/16/2011

Private

Instructions: This Autobiographical Form has been developed to provide candidates for promotion or tenure with the opportunity to present their qualifications in a concise and orderly manner. Candidates should include in this form, data which indicate how they have met the appropriate evaluative criteria. Supporting documentation, such as individual student evaluation forms, copies of publications, etc., should not be placed in the Professional File. These support documents should be maintained in a separate file by each candidate. All candidates are responsible for reviewing the ranking and tenure criteria to insure completeness of their files.

### I. OVERVIEW

The candidates will provide a brief (two pages or fewer) summary of their work. Candidates should address the three areas, Teaching, Scholarship and Service. This summary should not just repeat the information contained in the autobiographical form, but should highlight the candidate's accomplishments in each area.

### II. DEMOGRAPHICS

Name Maomao Cai

Present Position Assistant Professor Date of Appointment July, 2008

College Science Department/Program Mathematics

Terminal degree in your field Ph. D.

#### Education

Institution	Discipline	Degree Earned	Dates
West Virginia University	Mathematics	M.A. & Ph.D.	08/2002– 05/2008
Hebei Normal University	Mathematics Education	B.A.	09/1993 – 07/1997

### III. TEACHING

#### A. Teaching Experience

Institution	Position & Description	From - To (Mo & Yr)
West Virginia University	Teaching Assistant	08/2004– 11/2007
Suncrest Middle School	Volunteer Tutor of Mathcounts Workshop (Intensive winter workshop for middle school students)	08/2002– 05/2003 10/2006– 11/2006
Affiliated Middle School of North China University of Technology (Beijing, China)	Teacher and Administrator	09/1997 – 04/2002

#### B. Other employment or academic experience which has contributed significantly to your position at Weber State University

Institution	Position & Description	From - To (dates)
The Methodist Hospital Research Institute, Weill Medical College of Cornell University	Research Internship	12/2007 – 05/2008
Brigham and Women’s Hospital, Harvard Medical School	Research Volunteer	06/2006– 08/2006
West Virginia University	Research Assistant	08/2003– 07/2004
Shi Jing Shan District School Board (Beijing, China)	Member of the National Education Research Group	09/2000– 07/2002

#### C. List of courses taught

Title	Institution	Dates
College Algebra (1050)	WSU	Fall 2011
Pre-calculus (1080)	WSU	Fall 2011
Probability and Statistics (3410)	WSU	Fall 2011
Trigonometry (1060)	WSU	Spring 2010

Pre-calculus (1080)	WSU	Spring 2010
Probability and Statistics (3420)	WSU	Spring 2010
Trigonometry (1060)	WSU	Fall 2009
Calculus II (1220)	WSU	Fall 2009
Calculus III (2210)	WSU	Fall 2009
Probability and Statistics (3410)	WSU	Fall 2009
College Algebra (1050)	WSU	Spring 2009
Linear Algebra and Differential Equations (2250)	WSU	Spring 2009
Calculus II (1220)	WSU	Spring 2009
Ordinary Differential Equations (2280)	WSU	Fall 2008
College Algebra (1050)	WSU	Fall 2008
Calculus I (1210)	WSU	Fall 2008
College Algebra (3 lectures+2 labs per week)	West Virginia University	Fall 2007
Calculus I (engineering section)	West Virginia University	
Calculus I (non-engineering section)	West Virginia University	~
Calculus II	West Virginia University	
Calculus III and Linear Algebra	West Virginia University	Fall 2002
Algebra	Affiliated Middle School	Spring 2002
Geometry	of North China University of Technology	~Fall 1997

D. Development of teaching through travel, participation in conferences, workshops, seminars, short courses, etc. (include dates).

<p>Joint Mathematics Meetings, CA, 2010  The Shenandoah Undergraduate Mathematics and Statistics (SUMS) Conference, VA, 2006  National Education Research Group, Shi Jing Shan District School Board, Beijing, China, 2000– 2002.</p>
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E. List evaluations, scholarships, awards, and other honors received in recognition of teaching (include dates).

<p>Outstanding Graduate Teaching Assistant, West Virginia University, 2007  The supplemental Teaching Fellowships, West Virginia University, 2006  Basic Teaching Skills Competition, Second Prize, Shi Jing Shan District School Board, Beijing, China, 2000  Excellent Teacher Awards, Affiliated Middle School of North China University of Tech, Beijing, China, 1998–2001</p>
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F. Teaching innovations (not merely updates) and/or developments (include dates).

<p>Layered teaching method, 1999– now</p>
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Group projects method, 2009– now  
Hybrid teaching method, Spring 2010, Fall 2011

G. Other teaching activities germane to your position (include dates).

#### IV. SCHOLARSHIP

A. Published books, articles, reviews, notes, etc. (use full reference notation: author(s) title, press, date).

Maomao Cai, Dening Li, An integro-differential equation for surface ocean waves with finite depth, *Nonlinear Analysis: Theory, Methods & Applications*, Vol. 74, 4581-4588, 2011

Taoyi Chen, Yong Zhang, Changhong Wang, Zhenshen Qu, Maomao Cai, Fei Wang, and Tanveer Syeda-Mahmood, Local Complex Phase Based Level Set And its Application to DIC Red Blood Cell Segmentation *IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI2011)*, Chicago, USA, 2011

Jill Donahue, Brady Griffin, Ryan Holt and Maomao Cai, Statistically Low Prices—A Statistical Analysis of Price Differences Between Walt-Mart and Target in Layton Utah, accepted by *Ergo: Undergraduate Research Journal*, Vol. 5, 6-12, 2011

Maomao Cai, Dening Li, Global Solutions for 2-Dimensional Coupled Kuramoto-Sivashinsky-KdV Equations, *Quarterly of Applied Mathematics*, Vol. 67, 477-488, 2009

Maomao Cai, Hong Zhao, Xiaobo Zhou, Yuan Wang, Stephen TC Wong, Mathematics Modeling of Drug Combination Effects Using Protein-Protein Interaction Sub-Networks, *IASTED International Conference on Modeling, Simulation, and Identification (MSI 2009)*, Beijing, China, 2009

Maomao Cai, Diathesis Education in Math Education, *Beijing Scientific Research in Education*, vol. 1, 6-10, 2001

Maomao Cai, Layered Teaching Method in Math Education, *Beijing Mathematics Education in Middle Schools*, vol. 257, 2-4, 2000

B. Unpublished manuscripts, thesis, dissertation, within-institution reports, etc. (author(s), title, date, intended future of the work).

Jeremy Kunz, Sahrish Khan, Xin Zhang and Maomao Cai, Analysis of Temperature Change in the United States Using a Linear Regression Model, submitted.

Solutions for 2-dimensional stabilized Kuramoto-Sivashinsky system, Ph.D. Thesis, West Virginia University, 2008.

C. Papers and/or addresses to professional groups (use full reference notation: author(s), title, organization, where presented, date). Note: only included addresses to professional groups, not community groups.

Maomao Cai, Dening Li and Chontita Rattanakul, Solutions for 2-Dimensional Coupled Kuramoto-Sivashinsky-KdVEquations, Joint Mathematics Meetings, San Francisco, CA, January 12-16, 2010

Maomao Cai, Hong Zhao, Xiaobo Zhou, Yuan Wang, Stephen TC Wong, Mathematics Modeling of Drug Combination Effects Using Protein-Protein Interaction Sub-Networks, IASTED International Conference on Modeling, Simulation, and Identification (MSI 2009), Beijing, China, October 12-14, 2009.

Maomao Cai, Presented twice at The Educational Symposium organized by National Education Research Group, Beijing, 2000-2002

D. Creative productions, e.g., painting, music, theater, etc., (include dates).

Not applicable

E. Research projects and grants (describe and indicate dates).

Hemingway New Faculty Grant recipient, Weber State University, Ogden, UT (2009 Summer)

Hemingway Faculty Vitality Grant recipient, Weber State University, Ogden, UT (2010 Spring Semester )

F. Post-terminal degree professional education and/or professionally related work experience.

Institution\Work	Description	Dates

G. Other scholarly activities (describe and include dates).

The undergraduate gene annotation program of the joint genome institute, Walnut Creek, CA, January 22-23, 2009.

Joint Mathematics Meeting, New Orleans, LA, January 5-8, 2007

SIAM Annual Meeting , Boston, MA, July 10-14, 2006

**V. PROFESSIONALLY RELATED SERVICE**

A. Departmental, college, university, administrative, academic, senate, committee assignments, etc. Note if position of chair was held.

Assignment	Dates

Department Faculty Hiring Committee	Fall 2008–Spring 2009
Department Math Education Committee	Fall 2008 – present
Department Recruitment & PR Committee (Chair for Fall 2011)	Fall 2008 – present
Department Curriculum Committee (Chair).	Fall 2009–Spring 2010
College of Science Curriculum Committee.	Fall 2009–Spring 2010

B. Academic or nonacademic administrative performance as program director, department chair, director of substantial grant, center director, or any position which involved supervision of human and/or financial resources (include dates).

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C. Positions held or membership in professional organizations.

Organization	Date

D. Professionally-related community service (include dates).

Volunteer Tutor of Mathcounts Workshop, Suncrest Middle School, 2006
--

E. Speech making to community (nonprofessional) groups in the area of the candidate's expertise (include dates and audience).

Title	Audience	Dates

F. Consulting and/or work experience (include dates).

Extracurricular activities advisor, Affiliated Middle School of North China University of Technology, Beijing, China. Fall 1997—Spring 1998
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G. Other professionally-related activities or service best described as public relations for the university that benefitted the university exclusive of Section E. Speechmaking (include dates).

Co-arranged the distance education meeting between educators from Beijing(china) and the President, Provost and Information Technology Division staffs from Weber State University. 2009
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## VI. RELEVANT ACTIVITIES NOT COVERED ELSEWHERE

Include here any pertinent information not adequately covered previously.

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# Mihail Cocos

Department of Mathematics ,1702 University Circle, Phone:801-626-6095  
Ogden, UT 84408-1702, USA Fax:801-626-6427  
E-mail:mihailcocos@weber.edu

## Education

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- September 1998 - May 2003  
Ph.D., University of British Columbia, Vancouver, Canada, 2003  
Area of interest: Geometric PDE, Differential Geometry
- January 1996 - May 1998  
Master of Science in Mathematics, University of New Mexico, USA, 1998
- October 1988 - June 1994  
Bachelor of Science in Mathematics, University of Bucharest, Romania, 1994

## Experience

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- July 2007-present Assistant Professor, Weber State University
- August 2003 - May 2007  
Postdoctoral Fellow, University of Minnesota  
Teaching linear algebra, differential equations and multivariable calculus
- May 2003 - August 2003  
Postdoctoral Fellow, University of British Columbia  
Teaching vector calculus
- September 1998 - May 2003  
University of British Columbia  
Teaching first year calculus. Marking and tutoring for various levels and subjects of university mathematics courses
- January 1996 - August 1998  
University of New Mexico  
Teaching first year algebra and calculus courses

## Publications

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- Mihail Cocos;Kent Kidman, *Musical modes, their associated chords and their musicality*,submitted
- Mihail Cocos;Micki Balaich, *Zero sets and factorization of polynomials of two variables*, submitted

- Mihail Cocos, *On the commutativity of an element and its derivative in a finite dimensional algebra*, International Journal of Algebra, Vol. 5, 2011, no. 32, 1597 - 1602
- Mihail Cocos; Shawn Fowers, *Music By Numbers*, International Journal of Applied Science and Technology Vol. 1 No.6, November 2011, pp. 62-67.
- Mihail Cocos, *Bounded harmonic 1-forms on complete manifolds*, Proc. Amer. Math. Soc. 137 (2009), 1459-1465.
- Mihail Cocos, *The deformation of flat connections and affine manifolds*, Geometriae dedicata Vol. 144(1), 2009 pp. 71-78.
- Mihail Cocos, *A note on symmetric connections*, Journal of Geometry and Physics 569(2006) 337-343
- Mihail Cocos, *Some new results on  $L^2$  cohomology of negatively curved Riemannian manifolds*, Canad.J.Math. Vol.57(2),2005 pp.251-226

### **Presentations**

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- Mihail Cocos, 2011 Weber State University-Math Colloquium, Talk title: *What is the domain of a polynomial function*
- Mihail Cocos, 2009 Weber State University- Math Colloquium, Talk title: *How do we distinguish/classify 2-dimensional one-to-one linear transformations?*
- Mihail Cocos, 2008 University of Alba Iulia- Romanian Finish Seminar on Complex Analysis and related problems, Talk title: *Complex Manifolds in Physics*
- Mihail Cocos, 2007 Weber State University- Math Colloquium, Talk title: *What is curvature?*
- Mihail Cocos, 2007 Weber State University- Math Colloquium, Talk title: *Compact affine manifolds have Zero Euler Class*
- Mihail Cocos, 2006 University of Minnesota-Junior Colloquium, Talk title: *Hodge DeRham Theory for Complete and Open Manifolds*
- Mihail Cocos, 2005 University of Minnesota-Geometry Seminar, Talk title: *Hodge Theory and a classical conjecture of Hopf,*
- Mihail Cocos, 2004 University of Arkansas- Mid-West Geometry Conference, Talk title: *Harmonic forms on universal covers*
- Mihail Cocos, 2002 Universite de Laval- Canadian Mathematical Society Summer Meeting, Talk title: *Some new results on  $L^2$  cohomology of negatively curved manifolds*

# SANDRA A. FITAL–AKELBEK

Office Address:  
Department of Mathematics  
Weber State University  
1702 University Circle  
Ogden UT, 84408-1702  
Phone: (801) 626-6097  
e-mail: sfitalakelbek@weber.edu

Home Address:  
4269 Edgehill Dr.  
Ogden, UT 84403  
Phone: (801) 621-4007

## EDUCATION

### **Ph.D., Mathematics**

University of Regina, Regina, SK, Canada, 2008  
Dissertation: *Studies on Nonlinear Matrix Equations.*

### **M.Sc., Mathematics**

Adam Mickiewicz University in Poznan, Poland, 1995  
Specialization: Numerical Methods and Programming;  
Master Thesis: *Theories about fixed points and their applications.*

### **Post Graduate Certification of Education and University Certificate of Computer Science**

Adam Mickiewicz University in Poznan, Poland, 1995

### **Educational Research Courses**, University of Calgary, Canada, 2000

Introduction Interpretive Inquiry (EDER 603.01), Introduction to Performance Consulting (EDER 679.03),  
Telecommunication in Education (EDER 677), Spirituality Inspired Leadership (EDER 651.11)

## PUBLICATIONS

S. Fital-Akelbek, M. Akelbek, *Smart Use of Technology in Mathematics*, International Journal of Technology, Knowledge and Society, Volume 8, 2012

S. Fital-Akelbek, M. Akelbek, *Advantages and Disadvantages of Teaching Online Math Courses with Recorded Lectures*, In Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2011 (pp. 109-112). Chesapeake, VA: AACE.

S. Fital-Akelbek, M. Akelbek, *Analysis of passing rates of online math courses*, Proceedings of Society for Information Technology and Teacher Education International Conference 2011, pp. 274-279, Chesapeake, VA: AACE.

S. Akelbek, M. Akelbek, *Developing and Delivering a Successful Online Math Course despite the Limitations of Cost Efficient Technology Available to Students*, Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2009, Volume 2009, Number 1, (2009) pp. 3336, Chesapeake, VA: AACE.

S. Fital-Akelbek, Selected Nonlinear Matrix Equations - a book published by VDM Verlag, 2009

S. Fital, C.-H. Guo, *Convergence of the solution of a nonsymmetric matrix Riccati differential equation to its stable equilibrium solution*, J. Math. Anal. Appl., 318 (2006), pp. 648–657

S. Fital, C.-H. Guo, *A note on the fixed-point iteration for the matrix equation  $X + A^*X^{-1}A = I$* , Linear Algebra Appl., 429 (2008), pp. 2098-2112

O. Artoun, D. David-Rus, M. Emmett, L. Fishman, S. Fital, C. Hogan, J. Lim, E. Lushi, V. Marinov, *Seismic Imaging, One-Way Wave Equations, Pseudodifferential Operators, Path Integrals and all that Jazz*, AIP Conference Proceedings, Volume 834 (2006), Issue 1, pp. 286–295.

M. Akelbek, L.Bos, M. Braverman, G. Chen, L. Fishman, S. Fital, Y.Yin, Z. Zhang, B. Russell, *Seismic Prediction of Reservoir Parameters*, Proceedings of the Ninth PIMS Industrial Problem Solving Workshop PIMS IPSW 9, 2005, pp. 59–77

S. Fital, L.L. Thomas, M.L. Torres, *Calculus I for Distance Education* – manuscript, University of Regina, 2005

## SEMINARS AND TALKS

*Smart Use of Technology in Mathematics*, 8th International Conference on Technology, Knowledge and Society, Los Angeles (January 2012)

*Advantages and Disadvantages of Teaching Online Math Courses with Recorded Lectures*, E-Learn 2011 - World Conference on E-Learning in Corporate, Government, Healthcare and Higher Education, Honolulu (October 2011)

*Pros and Cons of teaching online math courses*, MAA Intermountain Conference, Southern Utah University, April 2011

*Developing and Delivering a Successful Online Math Course despite the Limitations of Cost Efficient Technology Available to Students*, E-Learn 2009 - World Conference on E-Learning in Corporate, Government, Healthcare and Higher Education, Vancouver (October 2009)

*On the Fixed-point Iteration for the Matrix Equations  $X \pm A^*X^{-1}A = I$* , Western Canada Linear Algebra Meeting, University of Manitoba, Canada (May 2008)

*On the matrix equation  $X - A^*X^{-1}A = I$* , Western Canadian Conference for Young Researchers in Mathematics, University of Calgary, Canada (May 2007)

*Convergence analysis of an iteration method approximating the maximal positive definite solution for the matrix equation  $X + A^*X^{-1}A = I$* , Graduate seminar at University of Regina, Canada (February 2007)

*Seismic Prediction of Reservoir Parameters*, 9th PIMS Industrial Problem Solving Workshop, University of Calgary, Canada (May 2005)

*Convergence of the solution of a nonsymmetric matrix Riccati differential equation to its stable equilibrium solution*, Graduate seminar at University of Regina, Canada (April 2005)

## GRANTS, AWARDS AND SCHOLARSHIPS

**Academic Resources and Computing Grant**, Improving and expanding online math courses, Spring 2010

**Hemingway Faculty Vitality Grant** to present a paper at SITE 2011 22nd International Conference of Society for Information Technology and Teacher Education, Fall 2010

**Hemingway Faculty Vitality Grant**, with M. Akelbek on Investigating the Upper Bounds on the Moduli Subdominate Eigenvalues of Stochastic Matrix by Using Scrambling Index, Fall 2009

Workshop on Mathematical Biology and Numerical Analysis, Athens, GA, 2009 - Partial Travel Award

**Dean's Scholarship**, Faculty of Graduate Studies and Research, University of Regina, Canada, 2006-2008

**Graduate Teaching Award**, Faculty of Graduate Studies and Research, University of Regina, Spring/Summer 2006

**Graduate Research Award**, Faculty of Graduate Studies and Research, University of Regina, Spring/Summer 2004 and Spring/Summer 2005

MITACS (Mathematics of Information Technology and Complex Systems), Travel Award, May 2005

PIMS Math Modeling and Industrial Problem Solving Workshop, University of Lethbridge and University of Calgary, Travel Award, May 2005

Western Canadian Conference for Young Researchers in Mathematics, University of Calgary, Travel Award, May 2007

Principal Award for Excellence in Teaching, Technical College, Poland, 1996

## PROFESSIONAL EXPERIENCE

**Weber State University**, UT, (USA) **Assistant Professor**, September 2008-present  
courses taught: in Fall 2008: Math 1050 College Algebra, Math 2270 Elementary Linear Algebra, Math 1220 Calculus II, in Spring 2009: Math 1050 College Algebra - online, Math 1210 Calculus I, Math 3350 Linear Algebra

supervised a student-teacher (major mathematics education for high school), designed, developed and delivered an online course - College Algebra, involved in research projects

**University of Regina** (Canada), Department of Mathematics and Statistics

**Postdoctoral Fellow**, January 2008–September 2008,

courses taught: Math 217 Vector Calculus, Math 110 Calculus I

**Lecturer**, September 2003–2005,

courses taught: Math 103 Calculus I for Social and Management Sciences (Fall 2005),

Math 212 Calculus III for Engineering and Science Students (Summer 2004),

Math 101 Introduction to Finite Mathematics (Winter 2004),

**Teaching Assistant**, Math 110 Calculus I (Fall 2003), Math 111 Calculus II (Winter 2005),

Drop-In Center (Fall 2003)

**Banbury Crossroads School**, Calgary, Canada, September 2001–July 2003

**Mathematics Instructor**, taught high school courses, and university transfer courses in Calculus, Linear Algebra and Statistics, designed math courses for gifted students and students with learning disabilities, provided

academic counseling, guidance and advice to learners

**Technical College**, T. Kosciuszko Group of Mechanical and Electrical Schools, Silesia, Poland, 1995–1998, **Lecturer**, taught several undergraduate courses like Calculus, Linear Algebra, Numerical Methods, Differential Equations, designed new math courses, prepared and organized mathematical contests, carried out the responsibility for team work and academic knowledge, organized extracurricular activities for youth

## RESEARCH INTERESTS

Numerical Linear Algebra  
Algebra  
Matrix Theory

Numerical Analysis  
Mathematics Education

## CONFERENCES AND WORKSHOPS

AMATYC 2012 - American Mathematical Association of Two-Year Colleges, Florida (November 2012)  
8th International Conference on Technology, Knowledge and Society, Los Angeles (January 2012)

E-Learn 2011 - World Conference on E-Learning in Corporate, Government, Healthcare and Higher Education, Honolulu (October 2011)

MAA Intermountain Conference, Southern Utah University, April 2011

11th Annual Conference of Utah Association of Mathematics Teacher Educators, BYU, March 2010

E-Learn 2009 - World Conference on E-Learning in Corporate, Government, Healthcare and Higher Education, Vancouver (October 2009)

Western Canada Linear Algebra Meeting, University of Manitoba, Canada (May 2008)

Western Canadian Conference for Young Researchers in Mathematics, University of Calgary, Canada, May 4–6 2007

12th International Linear Algebra Conference in Regina, SK, Canada, June 26–29, 2005

9th PIMS Industrial Problem Solving Workshop, University of Calgary, Alberta, Canada, May 15–19, 2005

8th PIMS Graduate Mathematics Modeling Camp, University of Lethbridge, Alberta, Canada, May 7–11, 2005

MITACS (Mathematics of Information Technology and Complex Systems), Calgary, Canada, 2005

## PROFESSIONAL MEMBERSHIPS

American Mathematical Society, 2003–present  
International Linear Algebra Society, 2004–present

## OTHER ACTIVITIES AND VOLUNTEER WORK

Served on Scholarship Committee for the Math Department Fall 2011, Spring 2012

Judge at the Ritchey Science and Engineering Fair Junior and Senior Fair, March 2011 and March, 2012

Served on the University Council of Teacher Education Assessment Subcommittee, 2010-2011

Chair of the Public Relation and Recruitment Committee for the Department of Mathematics, Weber State University, 2008-2009

Member of the Mathematics Education Committee, Weber State University, 2008-2012

Member of the Faculty of Science Committee, Graduate Student Representative, University of Regina, 2005-2007

Member of the PhD Committee, Student Representative, University of Regina, 2003-2004

Volunteer work for Saskatchewan Mathematics Challenge 2005 (a provincial contest that was held for Saskatchewan students from grade 8 to 10), University of Regina, March 2005

Support in organization of 12th International Linear Algebra Conference in Regina, Saskatchewan, June 26-29, 2005

## REFERENCES

Dr. Kent Kidman, Weber State University, Department of Mathematics Chair and Professor,  
(801) 626-7206, e-mail: [kkidman@weber.edu](mailto:kkidman@weber.edu)

Dr. Matt Ondrus, Weber State University, Department of Mathematics,  
(801) 626-6722, e-mail: [MattOndrus@weber.edu](mailto:MattOndrus@weber.edu)

Dr. Douglas Farenick, University of Regina, Department of Mathematics and Statistics,  
(306) 585-4425, e-mail: [Doug.Farenick@uregina.ca](mailto:Doug.Farenick@uregina.ca)

Dr. Shaun Fallat, University of Regina, Department of Mathematics and Statistics,  
(306) 585-4107, e-mail: [sfallat@math.uregina.ca](mailto:sfallat@math.uregina.ca)



# VITA

**Name:** Afshin Ghoreishi (U.S. Citizen)

**Address:** 1702 University Circle, Ogden, UT 84408-1702  
**Phone:** 801-626-6096 (W), 801-476-3426 (H)  
**Web Page:** <http://www.weber.edu/aghoreishi/>  
**E-Mail:** [aghoreishi@weber.edu](mailto:aghoreishi@weber.edu)

**Education:** Ph.D., *Applied Mathematics*, Kansas State University, 1990  
(In addition, a number of graduate level Industrial Engineering courses were completed)

M.A., *Mathematics*, Marshall University, 1984  
(Course work included several statistics courses)

B.S., *Mechanical Engineering*, Oregon State University, 1982

**Positions:** July 92 - Present, *Assistant, Associate, and Full Professor*, Weber State University

July 90 - July 92, *Assistant Professor*, Bowdoin College and NC A&T State University

**Publications:** **Textbook:** *Intermediate Algebra*, Coauthored with Franklin Richards, Harcourt Brace Custom Publisher, ISBN 0-03-0774128-7

**Papers:** *Positive Solutions to a System of Periodic Partial Differential Equations*, Joint paper with Roger Logan, *Diff. & Int. Equ.*, Vol 9, No 3, May 1996, 607-618

*On Positive Solutions of General Nonlinear Elliptic Symbiotic Systems*, Joint paper with Lige Li, *Appl. Anal.*, Vol 40, 1991, 281-295

*Positive Solutions of a Class of Biological Models in a Heterogeneous Environment*, Joint paper with Roger Logan, *Bull. Austral. Math. Soc.*, Vol 44, 1991, 79-94

**Teaching:** Have taught a wide range of courses. Have consistently been rated above average by students and also rated Excellent in department/university reviews. Courses most recently taught:

- Probability and Statistics sequence
- Ordinary and Partial Differential Equations sequence
- Number Theory
- Foundations of Geometry
- Calculus sequence
- Pre-Calculus, College Algebra, Trigonometry, Intermediate Algebra

**Projects:** **Director and Developer,** *Multimedia Intermediate Algebra: A CD-ROM Based Approach.* A \$347,120 grant from Utah System of Higher Education, 1995-1999

Responsibilities:

- Development of curriculum, audio, video, software.
- CD-ROM design and creation.
- Recruitment, coordination and joint work with several faculty members.
- Hiring, training and supervision of a full-time multimedia programmer and several student programmers.

**Curriculum Development:** Have developed 4 other curriculum projects both jointly and individually with grants ranging from \$1,500 to \$5,000, 1992-1996.

**Talks:** Have given several research and expository talks at universities and conferences.

**Workshops:** Have attended and been a selected participant in several workshops and conferences in areas of research and education ranging at length from one day to three weeks.

**Service:** Have successfully chaired and/or served on a number of departmental, college and university wide committees.

- Developed and run a university wide mathematics contest, 1993-1995.
- Faculty advisor for Mathematical Contests in Modeling, 1993 and 1994.
- Advisor to several students including Senior Project advisement.
- Provide support to both personal and laboratory computer systems.

**Memberships:** Mathematical Association of America, MAA

## Matthew J. Ondrus

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- CONTACT INFORMATION      Mathematics Department      *Phone:* (801) 626-6722  
Weber State University      *email:* mattondrus@weber.edu  
1702 University Circle      *Web:* <http://faculty.weber.edu/mattondrus/>  
Ogden, UT 84408
- CITIZENSHIP      USA
- EDUCATION      **University of Wisconsin – Madison**, Madison, WI  
Ph.D. in Mathematics, May 2004  
M.A. in Mathematics, May 2002  
**Ripon College**, Ripon, WI  
B.A. in Mathematics, May 1999
- EMPLOYMENT HISTORY      **University of Arizona**, Tucson, AZ  
2004–2007, Teaching Post-Doc  
2005–2007, CEMELA Fellow  
**Weber State University**, Ogden, UT  
2007–present, Assistant Professor
- PUBLICATIONS
  - “A Parametric Family of Subalgebras of the Weyl Algebra I. Structure and Automorphisms,” with G. Benkart and S. Lopes (submitted for publication).
  - “Whittaker categories for the Virasoro algebra,” with E. Wiesner, to appear in *Comm. Algebra*.
  - “A generalization of even and odd functions,” with M. Balaich, *Involvement* **4**, (2011), no.1, 91–102. (M. Balaich was a WSU undergraduate student at the time.)
  - “Algebraic and Geometric Representations of Perimeter with Algebra Blocks: Professional Development for Teachers of English Language Learners,” with C. Anhalt, chapter in *Latinos and Mathematics Education: Research on Learning and Teaching in Classrooms and Communities - Tllez, Moschkovich, and Civil (Eds.)* (2011).
  - “Whittaker modules for generalized Weyl algebras,” with G. Benkart, *Represent. Theory*, **13** (2009), 141–164.
  - “Whittaker modules for the Virasoro algebra,” with E. Wiesner, *J. Algebra Appl.*, **8** (2009), no. 3, 363–377.

PUBLICATIONS  
(CONTINUED)

- “Issues of language: Insights from middle school teachers’ participation in a mathematics lesson in Chinese,” with C. Anhalt and V. Horak, *Mathematics Teaching in the Middle School*, **13** (2007), 18–23.
- “Tensor products and Whittaker vectors for quantum groups,” *Comm. Algebra*, **35** (2007), no. 8, 2506–2523.
- “Whittaker modules for  $U_q(\mathfrak{sl}_2)$ ,” *J. Algebra*, **289** (2005), no. 1, 192–213.

SELECTED  
TALKS &  
PRESENTATIONS

- Participant in panel discussion regarding the public perception of science, Weber State Teaching and Learning Symposium, February 2012.
- Participant in panel discussion: “Leadership for the future of the mathematics education of Latinos,” at University of North Carolina, Charlotte May 2011.
- “Modules for the Virasoro algebra that are locally finite over certain subalgebras,” AMS Eastern Sectional Meeting, Special Session on Lie Algebras and Representation Theory, Oct 2010.
- Participant in panel discussion: “Practitioners and researchers learning together: A national conference on the mathematics teaching and learning of Latinos/as,” Tucson, AZ, Mar 2010.
- M. Ondrus, “The Noetherian problem,” Mathematics Department Seminar, Weber State University, Nov 2009.
- “An outreach project in the Mathematics Department,” Faculty Forum, Weber State University, Oct 2009.
- “Generalizing even and odd functions,” Mathematics Department Seminar, Weber State University, Sept 2009.
- “Some geometric aspects of soccer and chemistry,” Mathematics Department Seminar, Weber State University, Feb 2009.
- “Whittaker modules for various Lie algebras and associative algebras,” Representation Theory Seminar, University of Utah, Oct 2008.
- “Representations of algebras with a triangular decomposition,” Algebraic Lie Theory Seminar, University of Colorado, Nov 2008.

SELECTED  
TALKS  
(CONTINUED)

- “Math 1010, Lie Theory, and Weyl Algebras,” Mathematics Department Seminar, Weber State University, Apr 2008.
- “An introduction to modern research in algebra,” Faculty Forum, Weber State University, Oct 2007.
- “A Mathematics Educator-Mathematician Partnership for Educating Teachers at Arizona” (with C. Anhalt), Invited plenary presentation at workshop Critical Issues in Education: Teaching Teachers Mathematics, Mathematical Sciences Research Institute, Berkely, CA, June 2007.
- “Algebraic concepts for middle school teachers of English language learners: A professional development course taught by a mathematician and a mathematics educator” (with C. Anhalt), Invited presentation at workshop Mathematics Courses for Teacher Education, Institute for Mathematics and Education, Tucson, AZ, March 2007.

PROFESSIONAL  
SERVICE

- Proposal reviewer for National Security Agency, Mathematical Sciences Grant Program, spring 2012.
- Abstract reviewer and moderator for the National Conference on Undergraduate Research (NCUR), Weber State University, March 2012.
- Article reviewer (referee), *Frontiers of Mathematics in China*, spring 2011.
- Member of Ph.D. Thesis Committee for students at the University of Utah.
  - Casey Johnson (May 2010)
  - Ben Trahan (March 2011)
  - Matthew Housley (June 2011)
- Mathematics Advisory Board at Utah State Office of Education (Summer and Fall, 2010). This committee was charged with creating a plan for implementation of the mathematics portion of the Common Core State Standards in Utah.
- Article reviewer (referee), *Journal of Algebra*, fall 2009, spring 2007, fall 2007, and fall 2006.

## OUTREACH

- Host of the “Countdown Round” portion of the Northern Utah Mathcounts competition, Feb 2012.
- Weber State Math Circle, exploratory mathematical problem solving sessions for area middle school students, fall 2007 – spring 2012.
- “Using Mathematics to Study Fish,” Activity-based talk for North Layton Jr. High MESA Club, Feb 2011.
- “A Mathematical Escape from Prison with Connections to Car Repair,” Talk given for S4 Science Speaker Series, Mar 2009.
- Utah State Science Olympiad, Event Coordinator (Technical Problem Solving), Apr 2009.
- Bountiful Middle School Science Day – Activity Leader, Mar 2008.

## COURSES TAUGHT AT WSU

- Math 1010, Intermediate Algebra
- Math 1050, College Algebra
- Math 1080, Precalculus
- Math 1210, Calculus I
- Math 1220, Calculus II
- Math 2010, Mathematics for Elementary Teachers I
- Math 2110, Foundations of Algebra
- Math 2120, Euclidean Geometry
- Math 2410, Foundations of Probability and Statistics
- MTHE 4010, Capstone Mathematics for High School Teachers
- Math 4110, Modern Algebra I
- Math 4120, Modern Algebra II

## FUNDING

- “TI n-Spire CX CAS and Teacher Software for Math Methods,” funded by Academic Resources and Computing Committee, May 2012.
- “Travel to Support Research on Lie Algebras and Related Algebras,” New Faculty Grant (Weber State University), May 2008.

## Vita

### Kent Owen Kidman

Present Position: Professor of Mathematics, Weber State University  
(Chair from from July 1, 1994 to June 30, 2009)

#### Education

<u>Institution</u>	<u>Discipline &amp; Degree</u>	<u>Dates</u>	
		<u>From</u>	<u>To</u>
University of California at Santa Barbara	Mathematics	9/78	6/83
	Ph.D. (June 1983)		
	M.A. (March 1980)		
Weber State College	Mathematics (Physics minor)	9/75	6/78
	B.A. (June 1978)		

Areas: Linear and Multilinear Algebra, Matrix Theory, Geometric Algebras, java programming.

#### Teaching and Administrative Experience

<u>Institution</u>	<u>Position and Description</u>	<u>Dates</u>	
		<u>From</u>	<u>To</u>
Weber State University	Professor of Mathematics	7/97	Present
Weber State University	Interim Director, Developmental Math	7/11	6/2012
Weber State University	Chair, Department of Mathematics	7/94	6/2009
Weber State University	Associate Professor of Mathematics	7/92	6/1997
Weber State University	Assistant Professor of Mathematics	7/90	6/1992
(College)		9/85	6/1987
University of California	Teaching Associate	8/80	6/1983
at Santa Barbara	Teaching Assistant	9/78	8/1980

#### Other employment

<u>Institution</u>	<u>Position and Description</u>	<u>Dates</u>	
		<u>From</u>	<u>To</u>
TRW, Ogden, Utah	Member of the Technical Staff (Test software, nuclear safety, documentation)	6/87	8/90
Hughes Aircraft Company	Member of the Technical Staff and Group Head	8/83	8/85
Radar Systems Group El Segundo, California	(Writing support and tactical software for radar computers, and managing such work)		
University of California at Santa Barbara	Research Assistant (microcomputer applications of teaching mathematics)	6/81	9/81

#### Publications

1. Musical modes, their associated chords and their musicality (with Mihail Cocos), submitted.
2. Distributions of the Ranks of Hadamard Powers (with J. Foster and F. B. Richards), *Linear and Multilinear Algebra* 35 (1993), 299-312.
3. Unitarily Invariant Generalized Matrix Norms and Hadamard Products, *Linear and Multilinear Algebra* 16 (1984), 197-213 (with M. Marcus and S. Sandy).

4. Products of Elementary Doubly Stochastic Matrices, *Linear and Multilinear Algebra* 15 (1984), 331-340 (with M. Marcus and M. Sandy).

Have also written many reviews for *Mathematical Reviews*.  
Working on software for finite field evaluation.

### **Presentations**

1. "Analysis of Algorithms," Mathematics Department Colloquium, 10/2012.
2. "Geometric Algebra for Undergraduates" at the Mathematics Department Colloquium, March 4, 2009.
3. "A little fun with special relativity," Mathematics Department Colloquium, 11/8/06.
4. "Introduction to Geometric Algebra," Mathematics Department Colloquium, 11/05.
5. "Introduction to Object Oriented Programming", Mathematics Department Colloquium, 10/01.
6. "Partitions and applications to graphs, Mathematics Department Colloquium, Spring 99.
7. "Group Representation Theory", Mathematics Department Colloquium, 11/98.
8. "Quadratic Forms and Optimization, Mathematics Department Colloquium, Spring 97.
9. "Introduction to Multilinear Algebra", Mathematics Department Colloquium, May 1996.
10. "Primitive Matrices and Graph Cycle Lengths: Bringing Together Number Theory, Graph Theory and Matrix Theory", (work done with Cynthia Wyels), Mathematics Department Colloquium, 1/24/96.
11. "Structured Linear Population Models with Migration", (work done with Lee Badger), Mathematical Association of America Intermountain Section Meeting, Westminster College, 4/9/94.
12. "Distributions of the Ranks of Hadamard Powers", (coauthored with J. Foster and F. B. Richards), Mathematical Association of America Intermountain Section Meeting, Weber State University, 4/11/92.

### **Unpublished works**

1. Structured Linear Population Models with Migration, (with Lee Badger), April 1993.
2. Stochastic Matrices and Unitarily Invariant Norms, June 1983, Ph.D. thesis.
3. FORTTRAN Tutorial for Apple Microcomputers, 1981. (This was written for use in the Microcomputer laboratory at the University of California at Santa Barbara.)

### **Other experience:**

Have served on several department, College of Science, and university committees over the years;

Participated in Complete College Utah Academy at Zermatt in March 2012;

Was outside member of tenure committee for a faculty member at University of New Mexico, Gallup, Jan. 2012;

Head organizer of Intermountain Section Meeting of the Mathematical Association of America (MAA), held at Weber State University, spring 2002;

Active in MAA Intermountain Section Leadership;

Currently department liaison for MAA;

Have attended many Math Majors meetings, organized by the regents;



Member of Organizing Committee for the Southern California Matrix Theory Conference at the University of Utah on November 12, 1994. Also chaired some sessions at this conference.

Department of Mathematics  
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Layton, Utah, 84040 USA

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**EDUCATION**

<u>Institution</u>	<u>Discipline</u>	<u>Degree Earned</u>	<u>Dates</u>
University of New Mexico	Applied mathematics	Ph.D.	07/1998
Tbilisi State University	Mathematics	Candidate of Physical- -Mathematical Sciences	01/1989
Georgian Technical University	Mathematics	M.S.	12/1987
Tbilisi State University	Mathematics	B.S.	06/1984

**EMPLOYMENT**

<u>Institution</u>	<u>Position</u>	<u>Dates: Mo &amp; Yr</u>	
		<u>From</u>	<u>To</u>
Weber State University Ogden, USA	Professor	7/2005	- present
Weber State University Ogden, USA	Associate Professor	7/2000	- 7/2005
Weber State University Ogden, USA	Assistant Professor	7/1998	- 7/2000
The University of New Mexico Albuquerque, USA	Teaching Assistant	8/1993	- 7/1998

The Institute Of Fundamental Sciences Georgian Technical University Tbilisi, Georgia	Deputy Director	8/1991 - 7/1993
Nanjing University Nanjing, China	Visiting professor	9/1990 - 7/1991
Georgian Technical University Tbilisi, Georgia	Assistant Professor	2/1989 - 8/1993

## HONORS and AWARDS

H. Aldous Dixon Award Nomination, Crystal Crest Master Teacher of the year Nomination	- 2012;	Weber State University
Crystal Crest Master Teacher of the year Nomination	- 2011;	Weber State University
Crystal Crest Master Teacher of the Year Nomination	- 2010;	Weber State University
Outstanding Teaching Assistant	- 1996;	Department of Mathematics, University of New Mexico
Award for Outstanding Academic Achievement	- 1994;	The office of International Programs, University of New Mexico
Red Diploma (Equivalent of Summa Cum Laude)	- 1984;	Tbilisi State University

## SCHOLARSHIP

### Publications

1. Approximation of the discontinuities of a function by its classical orthogonal polynomial Fourier coefficients, *Mathematics of Computation*, **79** (2010), 2265 - 2285.
2. *A note on singularity approximation*, *Mathematical and Computer Modelling*, **44** (2006), 138 - 143.

3. *Approximating the jump discontinuities of a function by its Fourier-Jacobi coefficients*, *Mathematics of Computation*, **73** (2004), 731-751.
4. *Uniform convergence of Fourier-Jacobi series*, *Journal of Approximation Theory*, **117** (2002), 207-228.
5. *Approximation of the singularities of a Bounded Function by the Partial Sums of its Differentiated Fourier Series*, *Applied and Computational Harmonic Analysis*, **11** (2001), 439-454.
6. *Detecting the singularities of a function  $V_p$  class by its integrated Fourier series*, *Computers and Mathematics with Applications*, **39** (2000), 25-43.
7. *Locating discontinuities of a bounded function by the partial sums of its Fourier series*, *Journal of Scientific Computing*, **4** (1999), 301-327.
8. *Determination of the jumps of a bounded function by its Fourier Series*, *Journal of Approximation Theory*, **92** (1998), 167-190.
9. *Locating the discontinuities of a bounded function by the partial Sums of its Fourier series I: periodical case*, *ICOMP Report No. 97-13*, (1997). (With T. Hagstrom and H. Shapiro)
10. *Uniform convergence of Lagrange Interpolation based on Jacobi nodes*, *Journal of Approximation Theory*, **87** (1996), 179-192.
11. *On uniform convergence of Fourier-Jacobi series*, *Bulletin of Academy of Science of Georgian SSR*, **137** (1990), 257-259.
12. *On convergence of Fourier-Jacobi series*, *Reports of the extended seminar of I. N. Vekua Institute Of Applied Mathematics*, Vol. 5, pp. 67-70, Tbilisi, 1990.
13. *On uniform convergence of Fourier-Jacobi series*, *Reports of the extended seminar of I. N. Vekua Institute Of Applied Mathematics*, Vol. 3, pp. 45-48, Tbilisi, 1988.
14. *On absolute convergence of Fourier-Legendre series*,

Bulletin of Academy of Science of Georgian SSR, **130** (1988), 33-35.

15. *On uniform convergence of Fourier-Legendre series*,  
Bulletin of Academy of Science of Georgian SSR, **127**  
(1987), 257-259.

## Conferences

1. *Approximating the singularities of a function by means of its Fourier-Jacobi coefficients: An enhanced power method*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Minneapolis, Minnesota, 2012.
2. *Approximation of the discontinuities of a function by its classical orthogonal polynomial Fourier coefficients*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Denver, Colorado, 2009.
3. *Approximation of the singularity curve of a piecewise constant function of two variables by its Fourier-Jacobi coefficients*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Boston, Massachusetts, 2006.
4. *Recovering the singularities of a function by its Fourier Coefficients with respect to classical Orthogonal polynomials*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
New Orleans, Louisiana, 2005.
5. *A power method for singularity approximations*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Portland, Oregon, 2004.
6. *Locating the singularities of functions with unbounded domains*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Philadelphia, Pennsylvania, 2002.
7. *Approximation of the discontinuities of a bounded function by means of its Fourier-Jacobi coefficients*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
San Diego, California, 2001.
8. *Uniform convergence of Fourier-Jacobi series*,  
Mathematical Association of America Regional Meeting,  
Rexburg, Idaho, 2001.

9. *Recovering discontinuities of a bounded function by means of spectral methods*,  
Mathematical Association of America Regional Meeting,  
Cedar City, Utah, 2000.
10. *Approximation of the singularities of a function of  $V_p$  class  
By the tails of its integrated Fourier series*,  
Mathematical Association of America/American Mathematical Society  
Annual Meeting,  
Baltimore, Maryland, 1998.
11. *Reconstruction of a bounded function by its sums of Fourier  
series*,  
Society of Industrial and Applied Mathematics Annual Meeting,  
Kansas City, Missouri, 1996.
12. *Uniform convergence of Lagrange interpolation and  $\alpha$ -variation*,  
Chinese 5th Conference of Functional Analysis,  
Nanjing, China, 1990.
13. *On convergence of Fourier-Jacobi series*,  
Extended seminar of I. N. Vekua Institute of Applied Mathematics,  
Tbilisi, Rep. Of Georgia, 1990.
14. *On uniform convergence of Fourier-Jacobi series*,  
Extended seminar of I. N. Vekua Institute of Applied Mathematics,  
Tbilisi, Rep. of Georgia, 1988.
15. *On convergence of Fourier-Legendre series*,  
Third Saratov Winter School on the Theory of Functions and  
Approximations,  
Saratov, Russia, 1986.
16. *On uniform convergence of Fourier-Legendre series*,  
11<sup>th</sup> Conference of Mathematicians of the Universities and Colleges  
of Georgian SSR,  
Kutaisi, Rep. of Georgia, 1986.

### **Colloquia and seminars**

1. *Cauchy condensation test and its generalizations*,  
Math Factor, Department of Mathematics, Weber State University,  
March 2012.
2. *Cauchy condensation test, its generalizations, and open questions*,  
Math Factor, Department of Mathematics, Weber State University,  
March 2011.
3. *Singularity detection spectral methods*, Research Projects for  
Undergraduate Students, Department of Mathematics, Weber State  
University, September 2009.

4. *Approximation of the singularity curve of a piecewise constant function of two variables by its Fourier-Jacobi coefficients*, Weber State University, January 2009.
5. *Approximation of the discontinuities of a function by its classical orthogonal polynomial Fourier coefficients*, Weber State University, March 2008.
6. *Recovering the singularities of a function by its Fourier coefficients with respect to orthogonal polynomials*, Weber State University, November 2006.
7. *A power method for singularity approximations*, Weber State University, September 2004.
8. *New techniques of edge detection*, Tbilisi State University, June 2003.
9. *Locating the singularities of functions with unbounded domains*, Weber State University, October 2002.
10. *Edge detecting by spectral methods*, Georgian Technical University, February 2002.
11. *Approximating the singularities by Fourier-Jacobi coefficients*, Weber State University, September 2001.
12. *Uniform convergence of Fourier Jacobi series*, Weber State University, September 2000.
13. *Approximation of singularities of a function of  $V_p$  class by means of its integrated Fourier series*, Weber State University, October 1999.
14. *Locating the discontinuities of a bounded function by a spectral method*, Weber State University, February 1999.

In addition 10 talks have been given outside of Weber State University. These include presentations at the University of New Mexico, Tbilisi State University, A. Razmadze Mathematics Institute, I. V. Vekua Institute of Applied Mathematics, Georgian Technical University, (all in Tbilisi, Rep. of Georgia), The Institute of Mathematics and Mechanics (Sverdlovsk, Russia) and Nanjing University (Nanjing, China).

## Grants

1. National Science Foundation, RUI, Computational Mathematics      Singularity approximating methods for piecewise smooth data, 2003 - 2006 (not funded).
2. National Science Foundation, RUI, Computational Mathematics      Singularity approximating methods for piecewise smooth data, 2002 - 2005 (not funded).
3. Research, Scholarship & Professional Growth Grant, Weber State University      Develop a new method of reconstruction of a discontinuous function with respect to a non-periodic basis. 1999-2000.

- |   |  |
|---|--|
| 4. Research, Scholarship & Professional Growth Grant, Weber State University          | Develop a new singularity capturing methods in spectral analysis, 1998-1999. |
| 5. Research, Project, and Travel Grant, University of New Mexico                      | Purchase PC for research, 1996.  |
| 6. Research, Project, and Travel Grant, The State Department of Education of the USSR | Visit and conduct research at Nanjing University, Nanjing, China, 1990-1991. |

## **PROFESSIONALLY RELATED SERVICE**

Volunteered for *Gear Up* program, WSU. Was involved in organizing *Math Lab* at Ogden high school, 2011.

Actively involved (Director during 2007-2008) in *Bridging the Gap* program, which was designed to improve skills of middle and junior high school teachers, 2002-2008.

Helped organizing the State Math Contest, 2003-2004.

Reviewed a National Science Foundation grant proposal, 2001.

Reviewed manuscripts for suitable publication for various professional journals, 2000-2012.

Judged Sterling Scholar Mathematics competition, Park City, 1999.

## **Languages**

Georgian, Russian, English.





## CURRICULUM VITAE

### JAMES E. PETERS

Dept. of Mathematics  
Weber State University  
Ogden, UT 84408-1702

**EDUCATION:** *Ph.D.* Applied Mathematics, Georgia Institute of Technology, June, 1988.  
*M.S.* Applied Mathematics, Michigan State University, June 1982  
*B.S.* Mathematics, Michigan State University, June 1979.

**EXPERIENCE:** *Associate Professor* - Weber State University, 9/88 - pres.  
*Instructor* - Georgia Institute of Technology, 6/88 - 8/88  
- Northwest Missouri State University, 9/82 - 6/84.  
*Graduate Assistant* - Georgia Inst. of Technology, 9/84 - 6/88  
- Michigan State University, 1/80 - 6/82.

### COURSES

**TAUGHT:** numerical analysis, boundary value problems, differential equations, statistics, linear algebra, foundations of geometry, calculus 1,2,3,4,5, trigonometry, college & intermediate algebra, finite mathematics.

**PUBLICATIONS:** "Graphing Calculator Calculus Lab Manual" (to accompany "Calculus in a Real and Complex World" by Frank Wattenberg), PWS Publishing, 1995.

Applications of the Group of the Equations of Motion of a Polytropic Gas,  
International Journal of Non-Linear Mechanics, Vol. 28, No. 6, 1993.

Group Properties of the Non-Linear Dynamic Equations of Elastic Strings,  
International Journal of Non-Linear Mechanics, Vol. 25, No. 1, 1990.

Symmetry and Semi-Symmetry Reduction in Wave Propagation and Lubrication, (with W. F. Ames & M. Abell) Proceedings of the Annual Seminar, Canadian Mathematical Society on Lie Theory, Diff. Eq. and Representation Theory, 1989.

### PROFESSIONAL

#### ACTIVITIES:

- Attended Joint Meetings of the American Math. Society/ Mathematical Assoc. of America, 1988, 1989, 1990, 1993, 1994.
- Served as faculty advisor to Weber State University team, COMAP National Mathematical Contest in Modeling.
- AP Calculus Reader (Table Leader) 1991 - present.
- TICAP participant 1992, Clemson University.
- Demanna/Waites graphing calculator mini-course, 1993.
- Judge for Ritchey Science Fair 2005 – present.
- Custom edition for WSU of College Algebra by Gustafson and Frisk with improved exercise sets ( used 2005 – 2008 )
- ARCC grants for various departmental computer equipment 1997 – present.
- developed online course materials for Math 1030 and Math 1050 and have offered these courses online ( 1998 – present )

## Curriculum Vitae

Timothy H. Steele

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Citizenship: USA

Resident of the Comune of Talla, Province of Arezzo.

### Education

Graduate: University of California, Santa Barbara, CA (1991 - 1994). Ph.D. in Mathematics. Advisor: Andrew M. Bruckner.

Undergraduate: United States Military Academy, West Point, NY (1982 - 1986). B.S. in Mathematics.

### Employment History

Professor, Weber State University (April 2003 - present).

Associate Professor, Weber State University (July 1998 - April 2003).

Assistant Professor, Weber State University (July 1994 - July 1998).

### Teaching

#### Summary

1. I teach a broad range of courses in the Department of Mathematics, including precalculus, calculus, upper division and mathematics education courses.
2. I taught a doctoral level course in discrete dynamical systems at the Università degli Studi di Napoli "Federico II" while in residence there as a visiting professor.
3. I have taught overload reading courses on 12 occasions in order to accommodate student needs.
4. I co-directed the regional Mathematical Association of America meeting held at Weber State University in March 2004.
5. I co-directed a workshop for in-service secondary teachers of geometry held at Weber State University during the 1999-2000 academic year. The workshop was funded by an Eisenhower Professional Development Grant.
6. I have supervised student teachers and developed course materials for the mathematics education program.

### Courses Taught

Trigonometry; College Algebra; Precalculus; Calculus I, II and III; Calculus of Several Variables; Mathematics for Elementary School Teachers I and II; Foundations of Algebra; Number Theory; Differential Equations; History of Mathematics; Topology; Modern Algebra I and II; Complex Analysis; Real Analysis I and II.

### Teaching Oriented Conference and Workshop Participation

Regional Meetings of the Mathematical Association of America -

Idaho State University, April 1995 and March 2005; Mesa State College, April 1996; Utah State University, April 1997; Brigham Young University, April 1998; Southern Utah University, March 2000; Brigham Young University - Idaho, April 2001; Westminster College, October 2002; University of Utah, April 2007.

Annual Meetings of the Utah Academy of Arts, Sciences and Letters -

Utah Valley State College, April 1996; Weber State University, April 1997; Brigham Young University, April 1999.

Ninth International Conference for Technology in Collegiate Mathematics, Reno, November 1996.

### Scholarship

#### Summary

1. I have had 21 refereed research articles either published or accepted for publication, and I have submitted three more. Papers have appeared in the Transactions of the American Mathematical Society, Aequationes Mathematicae, Journal for Mathematical Analysis and Applications, Nonlinear Analysis, Mathematica Slovaca, International Mathematical Journal, Real Analysis Exchange, International Journal of Mathematics and Mathematical Sciences, and the Journal of the Utah Academy.
2. I have been a Visiting Professor at the Università degli Studi di Napoli "Federico II" and the Mathematics Institute at the Silesian University

(Czech Republic).

3. I have given 15 talks to the Mathematics Department at Weber State University. These talks have dealt with my research interests as well as mathematics education.

4. I have given 29 talks outside of Weber State University's Department of Mathematics. These include presentations at the Università degli Studi di Napoli, Seconda Università degli Studi di Napoli (Caserta), Charles University (Prague), Silesian University (Czech Republic), Oxford University (UK), University of Virginia, University of Tennessee, Auburn University, University of California, Clarkson University, University of North Texas, and the University of Windsor in Ontario, Canada.

Refereed Publications

1. The Lipschitz structure of continuous self-maps of generic compact sets, A.M. Bruckner and T.H. Steele, *Journal of Mathematical Analysis and Applications* 188 (1994), 798-808.
2. The topological structure of attractors for differentiable functions, *Real Analysis Exchange* 21 (1995/96), 181-193.
3. Chaotic properties of one dimensional dynamical systems, T. H. Steele and C. J. Wyels, *Journal of the Utah Academy* 73 (1996), 48-67.
4. Towards a characterization of omega-limit sets for Lipschitz functions, *Real Analysis Exchange* 22 (1996/7), 201-212.
5. An omega-limit set for a Lipschitz function with zero topological entropy, *Real Analysis Exchange* 23 (1997/8), 281-286.
6. Iterative stability in the class of continuous functions, *Real Analysis Exchange* 24 (1998/9), 765-780.
7. A note on periodic points and commuting functions, *Real Analysis Exchange* 24 (1998/9), 781-790.
8. The set of continuous functions with zero topological entropy, *Real Analysis Exchange* 24 (1998/9), 821-826.
9. Continuity structure of  $f \rightarrow \bigcup w(x,f)$  and  $f \rightarrow \{w(x,f):x \text{ in } I\}$ , *Real Analysis Exchange* 25 (1999/2000), 421-429.
10. The essential point set of a continuous function, *Real Analysis Exchange* 26 (2000/01), 201-216.
11. The persistence of omega-limit sets under perturbation of the generating function, *Real Analysis Exchange* 26 (2000/01), 963-974.
12. Notions of stability for one dimensional dynamical systems, *International Mathematical Journal* 1 (2002), 543-555.
13. Stability of asymptotically stable sets for continuous functions, R.A. Mimna and T. H. Steele, *Journal of Mathematical Analysis and Applications* 276 (2002), 279-291.
14. A continuously differentiable function for which the omega-limit points are not contained in the closure of the periodic points, Emma D'Aniello and T. H. Steele, *Transactions of the American Mathematical Society* 355 (2003), 2545-2556.
15. Chaos and the recurrent set, *Real Analysis Exchange* 29 (2003/04), 79-88.
16. Asymptotically stable sets for semi-homeomorphisms, R. A. Mimna and T. H. Steele, *Nonlinear Analysis* 59 (2004), 849-855.
17. Dynamical stability of the typical continuous function, *Mathematica Slovaca* 55 (2005), 503-514.
18. Continuity and chaos in discrete dynamical systems, *Aequationes Mathematicae* 71 (2006), 300-310.
19. Asymptotically stable sets and the stability of omega-limit sets, Emma D'Aniello and T. H. Steele, *Journal of Mathematical Analysis and Applications* 321(2006), 867-879.
20. Continuity of the maps  $f \rightarrow \bigcup w(x,f)$  and  $f \rightarrow \{w(x,f):x \text{ in } I\}$ , *International Journal of Mathematics and Mathematical Sciences* 2006 (2006), Article ID 82623, 15 pages.
21. Approximating omega-limit sets with periodic orbits, Emma D'Aniello and T. H. Steele, *Aequationes Mathematicae* (to appear).
22. Stability of dynamical structures under perturbation of the generating function, Jaroslav Smital and T. H. Steele (submitted).
23. Prevalence and structure of adding machines for cellular automaton, Emma D'Aniello and T. H. Steele (submitted).
24. Solenoids and typical continuous functions, Emma D'Aniello, Udayan Darji, and T. H. Steele (submitted).

Presentations

In addition to 15 talks given to the Mathematics Department at Weber State University, I have made the following presentations:

1. Omega-limit sets and continuous functions with controlled growth, Summer Symposium in Real Analysis, University of Virginia, July 1994.
2. Omega-limit sets and Lipschitz maps, Joint Meeting of the American Mathematical Society and the Mathematical Association of America, San Francisco, January 1995.
3. On the chaotic behavior of one parameter families of functions, Meeting of the Intermountain Section of the Mathematical Association of America, Idaho State University, April 1995.
4. Chaotic properties of one dimensional dynamical systems, Utah Academy of Sciences, Utah Valley State College, April 1996.
5. Stability properties for the collection of a function's attractive sets, Joint Meeting of the Intermountain and Rocky Mountain Sections of the Mathematical Association of America, Mesa State College, May 1996.
6. Attractors for sequences of functions, Summer Symposium in Real Analysis, University of Windsor (Canada), July 1996.
7. Iterative stability in the class of continuous functions, Utah Academy of Sciences, Weber State University, April 1997.
8. Stability in the set of omega-limit sets for continuous self-maps of the interval, Meeting of the Intermountain Section of the Mathematical Association of America, Utah State University, April 1997.
9. Iterative stability in the family of continuous self-maps of the interval, Summer Symposium in Real Analysis, University of Tennessee - Chattanooga, June 1997.
10. Periodic points and commuting functions, Meeting of the Intermountain Section of the Mathematical Association of America, Brigham Young University, April 1998.
11. Two functions from iteration theory, Summer Symposium in Real Analysis, University of California, Santa Barbara, June 1998.
12. Essential point set for continuous self maps of the interval, Miniconference in Real Analysis, Auburn University, March 1999.
13. Stability in the class of continuous self-maps of the interval, Utah Academy of Sciences, Brigham Young University, April 1999.
14. Notions of stability for one dimensional dynamical systems, Regional Meeting of the American Mathematical Society, University of Utah, September 1999.
15. Chaos and stability, Intermountain Section of the Mathematical Association of America, Southern Utah University, March 2000.
16. Chaos and stability in dynamical systems, Clarkson University, April 2000.
17. The semicontinuity of  $f \rightarrow \{w(x,f): x \in I\}$ , Summer Symposium in Real Analysis, University of North Texas, May 2000.
18. Stability of attractors, Meeting of the Intermountain Section of the Mathematical Association of America, Brigham Young University - Idaho, April 2001.
19. Stability of chaotic systems, Utah State University, April 2001.
20. Chaos and symbolic dynamics, Università degli Studi di Napoli, November 2001.
21. Stability in discrete systems, Università degli Studi di Napoli, November 2001.
22. Stability notions for discrete dynamical systems, Winter School in Real Analysis, Charles University (Prague), January 2001.
23. Notions of stability, Silesian University (Czech Republic), March 2002.
24. Stability in chaotic systems, Seconda Università degli Studi di Napoli (Caserta), April 2002.
25. Notions of stability for discrete dynamical systems, Summer Symposium in Real Analysis, Silesian University (Czech Republic), May 2003.
26. Continuity and chaos via the map  $(x,f) \rightarrow w(x,f)$ , Convegno di Analisi Reale e Teoria della Misura, Ischia (NA), July 2004.
27. An analysis of continuity and chaos, Meeting of the Intermountain Section of the Mathematical Association of America, Idaho State University, March 2005.
28. Periodic points and omega-limit sets, Convegno di Analisi Reale e Teoria della Misura, Ischia (NA), July 2006.
29. An ode to chain recurrence, Summer Symposium in Real Analysis, Oxford

University (UK), August 2007.

Service

Summary

1. I directed two international conferences in real analysis and one regional meeting of the Mathematical Association of America.
2. I serve as a referee for several journals and regularly produce mathematical reviews.
3. I chaired college and department committees and served in Weber State's Academic Senate.

Professional Service

Director of the Twenty-fifth Summer Symposium in Real Analysis, held at Weber State University. This conference brought approximately 70 mathematicians to Weber State University for five days in May 2001.

Director of the Twenty-second Summer Symposium in Real Analysis, held at the University of California at Santa Barbara, June 23-28, 1998. We received a \$5000 grant from the University of California, a \$19,000 grant from the National Science Foundation for which I was a PI/PD, and a grant from TRW to fund the publication of the symposium's proceedings. This conference had over one hundred registered participants.

Co-director of the regional Mathematical Association of America meeting held at Weber State University in the spring of 2004.

Recently refereed articles for the Transactions of the American Mathematical Society, the Real Analysis Exchange, Journal of Difference Equations and Applications, Indian Journal of Mathematics, and Discrete and Continuous Dynamical Systems.

Review articles in real functions, measure theory and dynamical systems for the American Mathematical Society's Mathematical Reviews. These articles may be in French and Italian as well as English.

University Service

Served as chair of the department's Upper Division Committee, Curriculum Committee and Faculty Search Committee. Served as director of the department's colloquium series and as faculty advisor to the Mathematics Club.

Chaired the College of Science Academic Resources and Computing Committee and served on both the college Curriculum Committee and Committee for Undergraduate Research.

Represented the College of Science in the Faculty Senate.

References

Lee Badger

Professor Emeritus of Mathematics

Department of Mathematics

Weber State University

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Relationship: Departmental colleague, 1994 - 2007.

Andrew Bruckner

Professor Emeritus of Mathematics

University of California, Santa Barbara

910 Mission Canyon Road

Santa Barbara CA 93105

Home: (805) 682-4469

E-mail: [bruckner@math.ucsb.edu](mailto:bruckner@math.ucsb.edu)

Relationship: Ph.D. Advisor.

Paolo De Lucia

Professor of Mathematics

Dipartimento di Matematica e Applicazioni

Università degli Studi di Napoli

Via Cintia

Monte Sant'Angelo

80126 Napoli

Office: 0816 75709

E-mail: [padeluci@unina.it](mailto:padeluci@unina.it)

Relationship: Director of the Convegni di Analisi Reale e Teoria della Misura and my host at the Università degli Studi di Napoli.

Paul Humke

Professor of Mathematics

Department of Mathematics

St. Olaf College  
Northfield MN 55057  
Office: (507) 786-3580  
E-mail: [humke@stolaf.edu](mailto:humke@stolaf.edu)

Relationship: Managing Editor of the Real Analysis Exchange, the primary sponsor of the Summer Symposia in Real Analysis, and Director of Budapest Semesters in Mathematics.

## VITA

DR. PAUL TALAGA

November, 2012

### EDUCATION

Ph.D. Mathematics	University of Colorado	1978
M.A. Mathematics	University of Colorado	1974
B.S. Applied Mathematics/ Electrical Engineering	University of Colorado	1969

### EMPLOYMENT HISTORY

Chair, Math Department	Weber State University	2009-present
Professor	Weber State University	1980-present
Visiting Professor	Arizona and Idaho State University	1978-80
Adjunct Professor	University of Northern Colorado	1/78 - 6/78
Teaching Assistant	University of Colorado	1971-77

### PUBLICATIONS

1. Existence of invariant solutions and the Hukuhara-Keneser property for systems of parabolic partial differential equations with Neumann type boundary conditions, Thesis, directed by J. Bebernes, University of Colorado, 1978.
2. The Hukuhara-Kneser Property for Parabolic Systems with Non-linear Boundary Conditions, JMAA, Vol. 79, No. 2, February 1981.
3. NUSAT 1 Attitude Determination, NASA CP2438, October 1986.
4. NUSAT 1 Methods for Radar Field Strength Measurements, NASA CP2438, October 1986
5. The Hukuhara-Kneser Property for Quasilinear Parabolic Equations, Journal of Nonlinear Analysis, TMA, Vol. 12, No. 3, pp. 231-245, 1988.
6. The Measurement of a Large Antenna Using a Spacecraft as a Receiver, IEEE Transactions on Antennas and Propagation, Vol. 38, No. 6, June 1990.
7. Nonlocal Problems Modeling Shear Banding, Communications on Applied Nonlinear Analysis, Vol.3 (1996), No. 2, 79-103; with J. Bebernes.
8. Single-point blowup for nonlocal parabolic problems, PHYSICA D 134 (1999) 48-60, with J. Bebernes, C Li

### TECHNICAL REPORTS

1. Invariant sets, existence theorems, and the Hukuhara-Keneser property for semilinear parabolic systems with Neumann type boundary conditions, Technical Report No. 17, Arizona State University, November 1978.
2. Stability Properties of Satellites, CAST Technical Report, 5/87.
3. Horizon Sensor Design Considerations, CAST Technical Report, 11/87.
4. NUSAT II Attitude Configurations, CAST Technical Report, 3/88.
5. Aerodynamic Torque Estimates for NUSAT II, CAST Technical Report, 3/88.



## CONFERENCE AND COLLOQUIUM LECTURES

1. The Hukuhara-Kneser Property for Parabolic Systems, Colloquium, Arizona State University, November 1978.
2. The Cone Condition for Semilinear Equations, Colloquium, Idaho State University, March 1980.
3. Cone Properties of Parabolic Systems, Colloquium,, Weber State College, May 1980.
4. Compact Schemes for LU Decomposition, Numerical Methods Conference, Idaho State University, February 1982.
5. The Cone Property for Quasilinear Systems, MAA Regional Meeting, Ricks College, April 1984.
6. Mathematical Problems of NUSAT 1, MAA Regional Meeting, Weber State College, April 1985.
7. Mathematics in use for NUSAT 1, WSC Math Club Presentation, April 1986.
8. Invariant Sets and the Hukuhara - Kneser Property for Quasilinear Systems, Utah State University, Miniconference on Applied Functional Analysis, June, 1988.
9. Solution Set Properties of Differential Equations, WSC Math Club Presentation, April 1989.
10. The Putzer Algorithm (Avoiding the Jordan Canonical Form in Discussing Linear Systems of DE's), Seminar Series, Math Dept, WSU, February, 1989.
11. The Iterated Functions System Approach to Fractals, Seminar Series for WSU, May, 1991.
12. Seminar Series on Topological Degree, Math Dept, WSU, Winter Quarter, 1993.
13. Connections Between Combustion and a Nonlocal Problem in Shear Banding, Colloquium, Math. Dept., WSU, Oct. 11,1995.
14. A Nonlocal Problem in Shear Banding, MAA Regional Meeting, Mesa College, Grand Junction, Colorado, April 19&20 1996.

## GRANTS

1. Computer Graphics for Mathematics Instruction, Instructional Scientific Equipment Program, NSF, 2/81, unfunded.
2. Grant Award from CAST funding five hours per quarter release time for NUSAT I data analysis and NUSAT II attitude control design, 6/86
3. Grant Award from WSC Research, Scholarship and Professional Growth Committee for Publication of Paper on Methods of NUSAT I, 12/89
4. Computer Algebra Systems for an Enhanced Conceptual Learning Environment, College Science Instrumentation Program, NSF, submitted 11/90, unfunded.
5. Grant Award from WSU Research, Scholarship and Professional Growth Committee for "Chaos and Fractals", \$1840 for release time to develop a course on Fractals, 11/91.
6. Grant Award from WSU Research, Scholarship and Professional Growth Committee for "Chaotic Dynamical Systems", \$500 for software, 12/92.

## CONFERENCES ATTENDED

Applications of Topological Methods in Ordinary and Partial Differential Equations, Charles Conley, University of Colorado, June, 1976.  
Regional Conference on Nonlinear Diffusion, Donald Aronson, University of Houston, 6/76.  
SIAM Fall Meeting, Denver, Colorado, November, 1979.  
Matrix Theory, Idaho State University, April, 1980.  
Statistical Distributions, Idaho State University, April, 1981.  
MAA Regional Meeting, Brigham Young University, May, 1981.  
Bifurcation and Symmetry Breaking, David Sattinger, University of Florida, December, 1981.  
Numerical Methods Conference, Idaho State University, February, 1982.

AMS Regional Meeting, University of Utah, March, 1983.  
SIAM National Meeting, Denver, Colorado, June, 1983.  
Numerical Computations and Software for Microcomputers, SIGNUM (Association for Computing Machinery-Special Interest Group on Numerical Mathematics), Boulder, Colorado, March, 1984.  
MAA Regional Meeting, Ricks College, Rexburg, Idaho, April, 1984.  
SIAM Conference on Numerical Optimization, Boulder, Colorado, June, 1984.  
MAA Regional Meeting, Weber State College, April, 1985.  
Symposium on Partial Differential Equations, Mathematics Research Center, University of Wisconsin, October, 1985.  
Conference on Nonlinear Partial Differential Equations, University of Utah, February, 1986.  
Approximation Theory Conference, Idaho State University, April, 1986.  
MAA Regional Meeting, Mesa College, Grand Junction, Colorado, April, 1986.  
AMS Meeting, Utah State University, October, 1986.  
Applications of Functional Analysis in Differential and Integral Equations, Idaho State University, April, 1987.  
MAA Regional Meeting, Utah State University, April, 1988  
USU MiniConference on Applied Functional Analysis, 6/88  
International Conference on Differential Equations and Applications to Biology and Population Dynamics, Harvey Mudd College, 1/90  
Continuum Models for Phase Transitions, Fronts and Interfaces, University of Utah, 1/90.  
SIAM Conference on Applications of Dynamical Systems, October 1992, Snowbird, Utah.  
Miniconference on Nonlinear Analysis and Partial Differential Equations 4/23/94, Univ. of Utah.  
MAA Regional Meeting, Mesa College, Grand Junction, Colorado, April 19,20 1996.