NAME

KRISTOFER DAVID JORGENSON

Title
Professor of Mathematics

Institution
Sul Ross State University

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Last updated: (Oct. 2016)

EDUCATION

Ph.D. Mathematics — New Mexico State University, Las Cruces, 1999
Thesis: *On Classes of Examples of Additive Group Actions on* $\mathbf{C}^4$
(Adviser: David R. Finston)
M.Ed. Mathematics — Texas State University - San Marcos, 1991
B.M. (Bachelor of Music) — Texas State University - San Marcos, 1985

PROFESSIONAL EXPERIENCE

May 2014-Present Professor of Mathematics, Sul Ross State University (SRSU), Alpine, Texas
May 2009-May 2014 Associate Professor of Mathematics, SRSU, Alpine, Texas
Aug. 2004-May 2009 Assistant Professor of Mathematics, SRSU, Alpine, Texas
2002-2004 Assistant Professor of Mathematics, University of the Incarnate Word (UIW), San Antonio, Texas
2000-2002 Mathematics Editor, LaurelTech Integrated Publishing Services, Redwood City, California, Edited mathematics textbooks and solution manuals for the college and high school levels
1999-2000 Visiting Assistant Professor of Mathematics, Texas Lutheran University (TLU), Seguin, Texas
Summer 1999 College Assistant Professor of Mathematics, New Mexico State University (NMSU), Las Cruces, New Mexico
1993-1999 Graduate Assistant, math instructor, Department of the Mathematical Sciences, NMSU
1993-1998 Instructor of self-paced mastery classes, tutor, and grader, Mathematics Learning Center, NMSU
1991-1992 Mathematics Instructor, Austin Community College (ACC), Rio Grande and Eastridge Campuses, Austin, Texas

1992 Teaching Assistant, lab sections for mathematics courses, tutor, Math-Science Tutoring Center, Parallel Studies Department, ACC
1988-1991 Instructional Assistant, tutor in Mathlab, grader, Texas State University - San Marcos

PROFESSIONAL ASSOCIATIONS
Mathematical Association of America

HONORS, AWARDS, AND LISTINGS
Awards—all Sul Ross State University
Recommended by Chair of Department and Dean for Meritorious ranking 2014
Recommended by Chair of Department and Dean for Meritorious ranking 2013
Recommended by Chair of Department and Dean for Meritorious ranking 2010
Recommended by Chair of Department and Dean for Meritorious ranking 2009
Recommended by Chair of Department and Dean for Meritorious ranking 2008

PUBLICATIONS
Refereed Journal Articles
Jorgenson, K.D. "The Rota Method for Solving Polynomial Equations: A Modern Application of Invariant Theory". *International Journal of Pure and Applied Mathematics*, Volume 89, No. 2 (2013) ISSN 1314-3395
http://dx.doi.org/10.12732/ijpam.v89i2.4 or
http://www.ijpam.eu/contents/2013-89-2/4/index.html

Jorgenson, K.D. "Applications of translations on $\mathbf{C}^3$ and $\mathbf{C}^4$ to motion in real space". *International Journal of Pure and Applied Mathematics*, Volume 47, No. 2 2008, 207-224 http://www.ijpam.eu/contents/2008-47-2/6/6.pdf

Jorgenson, K.D. "A note on a class of rings found as G_a-invariants for locally trivial actions on normal affine varieties". *Rocky Mountain Journal of Mathematics,* 2004, 34(4), 1343-1352. ISSN: 0035-7596;
http://dx.doi.org/10.1216/rmjm/1181069804

Jorgenson, K.D. "On twin-triangular additive group actions on $\mathbf{C}^4$." *Communications in Algebra***,** 2001, 29(8), 3559-3570. ISSN: 0092-7872;
http://dx.doi.org/10.1081/AGB-100105038

Co-Authored Journal Article
Usef Faghihi, Albert Brautigam, **Kris Jorgenson**, David Martin, Angela Brown, Elizabeth Measures, Sioui Maldonado-Bouchard "How Gamification Applies for Educational Purpose Specially with College Algebra" *Procedia Computer Science* , Volume 41, 2014, 182-187 BICA 2014, 5th Annual International Conference on Biologically Inspired Cognitive Architectures

RESEARCH AND PROFESSIONAL PRESENTATIONS

Papers Presented at Professional Meetings

Contributed lecture - Jorgenson, K.D. (2016, June). *Fibonacc-a Polynomials* Presented to the Northeastern Section of the Mathematical Association of America (MAA), University of New England--Biddeford Campus, Biddeford, Maine.

Contributed lecture - Jorgenson, K.D. (2013, April). *The Rota Method for Solving Polynomial Equations*: *A Modern Application of Invariant Theory* Presented to the Texas Section of the Mathematical Association of America (MAA), Lubbock, Texas.

Invited lecture - Jorgenson, K.D. (2008, August). *Applications of translations on* $\mathbf{C}^3$ *and* $\mathbf{C}^4$ *to motion in real space*. Presented to The Fifth International Conference of Applied Mathematics and Computing, Plovdiv, Bulgaria.

Contributed lecture - Jorgenson, K.D. (2003, January). *Translations of data points in* $\mathbf{R}^3$. Preliminary report. Presented to American Mathematical Society (AMS)-Mathematical Association of America (MAA) Joint National Conference, Baltimore, Maryland.

Contributed lecture - Jorgenson, K.D. (2001, January). *A note on a class of rings found as* G_a*-invariants of locally trivial actions on normal, affine varieties*. Presented to AMS-MAA Joint National Conference, New Orleans, Lousiana.

Contributed lecture - Jorgenson, K.D. (2000, August). *On twin-triangular additive group actions on* $\mathbf{C}^4$. Presented to MAA Mathfest 2000, Los Angeles, California.

CONSULTING AND OTHER INVITED PROFESSIONAL PRESENTATIONS

Projects in Mathematics Textbook Publishing

Editing, accuracy-checking text and back-of-book answers for textbook series in *College Algebra*, *Algebra and Trigonometry*, *Pre-Calculus*, *Trigonometry* by M. Sullivan and M. Sullivan, Prentice-Hall Publishing, while working for Laurel-Tech Integrated Publishing Services, Teri Lovelace, Project Manager 2000-2001

Editing, accuracy-checking of ancillaries (student solution manual and instructor resource guide) and back-of-book answers to the textbook series *Finite Mathematics*, *Calculus with Applications*, and *Finite Mathematics and Calculus with Applications*, by Lial, Greenwell, Ritchey, Addison-Wesley Publishers, while working with Laurel-Tech Integrated Publishing Services, Teri Lovelace, Project Manager 2001-2002

Editing, accuracy-checking of ancillaries (student solution manual and instructor resource guide) to the textbook *Understandable Statistics*, by Brase and Brase,

Houghton-Mifflin Publishers, while working for Laurel-Tech Integrated Publishing Services, Teri Lovelace, Project Manager 2001-2002

GRANTS RECEIVED

Grant Participation

Participant, Title V Computer Science Initiative, gaming technology concentration, mathematics course development for University Algebra (Math 1315) and Trigonometry (Math 1316), Summer 2012

Computer Science and Mathematics Departmental representative in USDA grant of the TexPREP program written by Rio Grande Research Center SRSU for the purpose of exposing local middle school students with mathematical aptitude to topics in science and mathematics Jan. 2007

Worked with SRSU grants coordinator in planning necessary details for the implementation of the TexPREP program 7-week term summer 2008 beginning Aug. 2007. This included recruiting the other instructor (in addition to myself) for the program and recruiting one of two Program Assistant Mentors to assist with students in the classroom.

Invited participant, MathNerds mathematics education tutoring program grant involving Lamar State University, Texas State University (TSU) - San Marcos, and Sul Ross State University, San Marcos 2006.

Invited participant of mathematics and education professors from the Texas State University System (TSUS) involved in the Texas Education Association Mathematics for English Language Learners (MELL) grant, San Antonio 2005

OTHER AFFILIATIONS AND INVOLVEMENT

Student Mathematics Presentations

(adviser) *The Arithmetic of Finite Fields* presented by Ben Ortiz April, 2016 Dept. of Computer Science and Mathematics Seminar, SRSU

(adviser) *Photo Warps and Morphs* presented by David Guerrero November, 2015 Dept. of Computer Science and Mathematics Seminar, SRSU

(adviser) *Take a Pick…Any Pick* --Seminar on the differential equations of bungee jumping, presented by Estefana Galindo April, 2013 Dept. of Computer Science and Mathematics Seminar, SRSU

(adviser) *Applications of Newton's Law of Cooling* presented by Brenda Delgado November, 2012 Dept. of Computer Science and Mathematics Seminar, SRSU

(adviser) *Applications of the Simplex Algorithm* Presented by Judith Loya, December, 2011 Dept. of Computer Science and Mathematics Seminar, SRSU

(adviser) *Congruency Proof of Fermat's Little Theorem and Other Contributions of Leonhard Euler to Number Theory* Presented by Jaime Gonzalez, April 20, 2007 Dept. of Computer Science and Mathematics Seminar, SRSU

Independent Study

Ben Ortiz—Error-Correcting Codes and the Arithmetic of Finite Fields (Math 4303) Spring 2016

Rodney Joye—Topics in Calculus and Differential Equations (Math 4303) Summer 2013

Andrew Kennedy—Differential Equations (Math 3320) Spring 2013

Brenda Delgado— Topics in Calculus and Differential Equations (Math 4303) Summer 2012

Heather Thompson— Topics in Calculus and Differential Equations (Math 4303) Summer 2010

Assisted David Martin's Independent Study course by supplying course materials for Heather Thompson Spring 2010

Courses Taught and Prepared

Sul Ross State University

Course	Title (content)
Math 4360	Complex Variables
Math 4330	Modern Algebra I
Math 4331	Modern Algebra II
Math 4320	Introduction to Real Analysis I
Math 3350	Math History
Math 3340	Foundations of Higher Mathematics
Math 3330	Number Theory and Cryptography
Math 3320	Differential Equations
Math 3301	Geometry
Math 3415	Calculus III
Math 2414	Calculus II (integral calculus)
Math 2413	Calculus I (differential calculus)
Math 2330	Linear Algebra (now Math 2318)
Math 2310	Foundations of Elementary Mathematics I
Math 2311	Foundations of Elementary Mathematics II
Math 1342	Statistics
Math 1325	Business Calculus
Math 1316	Trigonometry
Math 1315	University Algebra (now Math 1314 College Algebra)
Math 1310	Introduction to University Mathematics (now Math 1332 Contemporary Mathematics)

TexPREP Program Taught math/science courses to middle school students during the first half of a 7-week term as part of the summer TexPREP program

which exposes local middle school students to science and mathematics topics, SRSU June, July 2008

University of the Incarnate Word

Course	Title (content)
Math 6311	Advanced Abstract Algebra I (group theory)
Math 6312	Advanced Abstract Algebra II (ring theory)
Math 4399	Selected Topics course in Linear Programming
Math 3325	Abstract Algebra and Number Theory
Math 2313	Calculus II (integral calculus)
Math 2322	Linear Algebra (linear systems, matrices, vectors)
Math 1304	College Algebra

Texas Lutheran University

Course	Title (content)
Math 133	College Algebra
Math 138	Elementary Functions (pre-calculus)
Math 136	Business Calculus

New Mexico State University

Course	Title (content)
Math 142G	Calculus for Biological and Management Sciences I
Math 191	(Engineering) Calculus I
Math 230	Linear Algebra (linear programming)
Math 235	Calculus I for the Engineering Technical Student

Austin Community College

Course	Title (content)
M 1643	Math for Business and Economics (finite math)
M 1423	Intermediate Algebra

Mathematics Seminar Lectures Presented

* *The Birthday Problem, Murphy's Law, and Other Counterintuitive Problems in Probability* , SRSU Computer Science/Mathematics Seminar, Oct. 2016
* *The story of how solving cubics having only real solutions put non-real complex numbers on firm ground as valid mathematical quantities*, SRSU Computer Science/Mathematics Seminar, Feb. 2016
* *A Brief History of Relativity and Gravity from Galileo and Newton to Einstein in Honor of the Centennial Year of His General Theory*, SRSU Computer Science/Mathematics Seminar, Sept. 2015
* *Mark Your Calendar…and other Math Magic Tricks*, SRSU Computer Science/Mathematics Seminar, Spring 2015, Fall 2010
* *The Mathematics Behind Applications of Parabolic Reflection* SRSU Computer Science/Mathematics Seminar, October 2014
* *A Modern Application of Invariant Theory to Solving Polynomial Equations* SRSU Computer Science/Mathematics Seminar, March 2014

* *Harmony, the Harmonic Series, and Torricelli's Trumpet* SRSU Computer Science/Mathematics Seminar, November 2013
* *Fun Math*: *Problems with 2 Solutions, 2 Problems with 1 Solution, Magic, a Card Trick, Vanishing Areas, Vanishing Elves, Problems with Pennies, Dollars, Amortization, a Monkey and Coconuts* , SRSU Computer Science/Mathematics Seminar, February 2013
* *Natural Appearances of the Harmonic Mean* , SRSU Computer Science/Mathematics Seminar, Fall 2012
* *Mathematics: The Crown of Creation: Folding to the Sun* School of Arts & Sciences 2012 Spring Lecture, April 19, 2012, SRSU
* *Applications of Elliptic Curves to Cryptography* , SRSU Computer Science/Mathematics Seminar, February 2012
* *An Historic View of Polynomial Equations*, SRSU Computer Science/Mathematics Seminar, Fall 2011
* *Enjoyable Areas of Math…And Other Applications of Trigonometry*, SRSU Computer Science/Mathematics Seminar, Spring 2011
* *A Brief History of Relativity Till 1905—In honor of the centenary year of Einstein's Special Theory*, SRSU Computer Science/Mathematics Seminar, Spring 2005 repeated Spring 2007 and Fall 2010
* *Using Vectors to Find Curves of Best Fit and Other Applications,* SRSU Computer Science/Mathematics Seminar, Spring 2010
* *Generalizations of the Fibonacci Sequence and the Golden Ratio Used to Find Dense Sets of Real Numbers,* SRSU Computer Science/Mathematics, Fall 2009
* *Applications of translations on* $\mathbf{C}^3$ *and* $\mathbf{C}^4$ *to motion in real space* SRSU Computer Science/Mathematics Seminar, Spring 2009
* *The Postage Stamp Problem and Diophantine Equations,* SRSU Computer Science/Mathematics Seminar, Fall 2008 and Fall 2005
* *Geometric Constructions and Non-Constructible Numbers* SRSU Computer Science/Mathematics Seminar, Spring 2008 and Fall 2004
* *A Hidden Connection Between Euler's Phi Function and the Chinese Remainder Theorem,* SRSU Computer Science/Mathematics Seminar, Fall 2007
* *A New Application of Invariant Theory,* SRSU Computer Science/Mathematics Seminar, Spring 2007
* *Math Magic: The Principle of Concealed Distribution*, SRSU Computer Science/Mathematics Seminar, Fall 2006
* *Things I Learned in Math 1310,* SRSU Computer Science/Mathematics Seminar, Spring 2006
* *Nonfinitely generated rings of* G_a*-invariants*, Algebra Seminar, New Mexico State University (NMSU) 1999
* *Can a normal domain be constructed with an ideal for which the ideal-transform is a nonfinitely generated ring of invariants*?, Graduate Seminar, NMSU 1997
* *Cohen-Macaulay partially-ordered sets* (part of study series), Algebra Seminar, NMSU 1996
* *Primality Testing*, Algebra Seminar, NMSU 1996

* *The phi number system*, Graduate Seminar, NMSU 1996
* *Hilbert's finite basis theorem*, Graduate Seminar, NMSU 1995
* *The Alexander horned-sphere* (second of two-part study series), Graduate Seminar, NMSU 1995
* *Counting covers of analytic functions*, Graduate Seminar, NMSU 1994
* *Non-constructible numbers*, Graduate Seminar, NMSU 1994

PROFESSIONAL ACTIVITIES

Attendance at Professional Meetings and Professional Development

Northeastern Section of the MAA conference at University of New England—Biddeford Campus, Biddeford, Maine June 3-4, 2016 presented paper

Texas Section of the MAA conference in San Antonio, Texas April, 2015 served as judge and moderator of an undergraduate geometry session

Texas Section of the MAA conference in Laredo, Texas April, 2014 took student

Texas Section of the MAA conference in Lubbock, Texas April 11-13, 2013 presented paper

MAA Teaching Workshop in Inquiry-Based Learning, University of Texas at Austin, lead by Michael Starbird May 23-28, 2010

Texas Section of the MAA conference in Abilene, Texas April 8-10, 2010

Fifth International Conference Of Applied Mathematics and Computing, Plovdiv, Bulgaria, August 2008

Meeting concerning MathNerds mathematics education tutoring program grant involving Lamar State University, Texas State University (TSU) - San Marcos, and Sul Ross State University, in San Marcos, August 2006

MELL (Math for English Language Learners) Conference TSU - San Marcos campus, July 2006

AMS-MAA International Conference, San Antonio January 2006

International Mathematics and Education Conference, subject: Mathematics for English Language Learners (MELL), San Antonio, July 2005

Meeting of mathematics and education professors from the Texas State University System (TSUS) regarding Texas Education Association MELL grant in San Antonio, May 2005.

AMS-MAA International Conference, Phoenix January 2004

Brian Greene, Theoretical Physicist Professor at Columbia University, lecture, St. Mary's University, San Antonio April 14, 2003

Technology Workshops on Respondus, Web Design, and Power Point, UIW Jan.-Feb., 2003

AMS-MAA International Conference, Baltimore January 2003 presented preliminary report

Blackboard Technology Workshops, Sept. 13, 2002; Dec. 17-20, 2002

AMS-MAA International Conference, New Orleans January 2001 presented different paper than Aug. 2000

MAA Mathfest 2000, Los Angeles August 2000 presented paper

AMS-MAA International Conference, Washington, D.C. January 2000

AMS-MAA International Conference, San Antonio January 1999

AMS Southeast Regional Meeting, Section on Group Actions on Affine Space, Louisville, KY March 1998

Algebra Seminar, New Mexico State University 1994-1999

SERVICE

University Service

Member of the Teaching Council 2010-2015, Chair 2016
Member of the Budget Oversight Council 2016
Member of the Curriculum Council, SRSU beginning Fall 2007-Fall 2016
Co-chair, secretary 2011-12; Chair AYs 2012-16
Member of College (previously School) of Arts and Sciences tenure and promotion committee (representative of Dept. of CS/Math) 2009-2012, 14, 15
Member of Job Search Committee for tenure-track mathematics position, 2014, 2012(Chair 2012), 2009, and 2006.
Member of Job Search Committee for tenure-track computer science position Summer, Fall 2012
Chair of Dept. of CS/Math tenure and promotion committees 2010-2012.
Member of Dept. Biology tenure and promotion committee 2009.
Member of the Safety and Accident Prevention Committee, SRSU 2007-2010
Presented student awards for achievement in mathematics, SRSU Student Awards Convocation Spring 2006 and 2007, 2014-2016
Volunteer mathematics tutor for MathNerds online tutoring website, Spring 2007

Recruited mathematician Lloyd Moyo for full-time position, SRSU July 2006

Hosted guest speaker, Dr. David R. Finston, from New Mexico State University, Las Cruces, for Sul Ross CS/Math Departmental Seminar, March 2006

Have written letters of reference for students and colleagues 2005-2014.

Conducted National Mathematics Problem-Solving Competition at SRSU, 2005-2006

Helped administer and grade UIL competition mathematics tests: calculator test, number sense, and general mathematics, SRSU Decembers, 2004, 2005, 2006, 2007, 2008, 2012

Helped with Sully Super Saturday (renamed Sully Showcase 2013) Sul Ross student recruitment weekend, February 2006, 2010, 2011, 2012, April 2013, 2016 in which prospective students visit Sul Ross campus to learn about life at Sul Ross from faculty members and current students.

Peace Day Committee, UIW 2003-2004; Earth Day Committee, UIW 2003-2004

Web Access Task Force, UIW, Fall 2002

Community Service

Led service, planned sermon, music for the Unitarian Universalists of the Big Bend 2014-2016, August 18, 2013; July 29, 2012, Aug. 7, 2011; Sept. 26, 2010; Jan. 2010; August 16, 2009; and June 8, 2008. In Aug. 2013, title of sermon was

> "Two Boses, Jagadis Chandra and Amar: Unraveling Nature's Mysteries in Bio-Electricity, Radio, and Audio Reproduction"

Performed on upright bass with music trio in recital at SRSU Nov. 2006

Performed on upright bass, guitar, and/or sang at Unitarian Universalists of the Big Bend several times 2006-2016, including original music and songs.

OTHER

Hardware/software Experience

Mupad, Maple, Mathematica, Macaulay computer algebra systems, TeX and Scientific Word mathematical type-setting, Texas Instruments graphing calculators (models TI-83, 84, 85, 86, 89), MacIntosh, PC's, Unix computers, VAX/VMS: Fortran

Fields of Special Interest within Discipline

Algebra: commutative algebra, algebraic geometry, invariant theory, mathematical magic and mathematically educational songs and games.

Areas of Ph.D. qualifying examinations
algebra, topology, complex analysis

Student Awards
School of Science Award for Academic Excellence, Texas State University (TSU) - San Marcos (SM), April 1992
School of Science Award for Academic Excellence, TSU - SM, April 1991
School of Science Award for Academic Excellence, TSU - SM, April 1990

REFERENCES

David R. Finston, Ph.D. (emeritus)
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New Mexico State University
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Las Cruces, NM 88011
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Reza O. Abbasian, PhD
Professor and Chair, Dept of Math&CS
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