Curriculum Vitae
Dr. Cathy Kriloff

Education

Ph.D. Mathematics, University of Michigan, 1995
Thesis title: Representations of Graded Hecke Algebras Associated to Noncrystallographic Root Systems
Advisor: Allen Moy
M.S. Mathematics, University of Michigan, 1992
B.S. Mathematics, University of Washington, 1990 (*cum laude*)

Professional Experience

Professor, Idaho State University	2008-to date
Mathematics Graduate Director, Idaho State University	2008-2011
Associate Professor, Idaho State University	2001-2008
Assistant Professor, Idaho State University	1997-2001
Visiting Assistant Professor, Oklahoma State University	1995-1997

Publications (students*)

Degree-one rational Cherednik algebras, with B. Foster-Greenwood, *Symmetry, Integrability, and Geometry: Methods and Applications (SIGMA)*, **17** (2021), 039, 35 pages.

A different perspective on H-like Lie algebras, with T. Payne, *Journal of Lie Theory*, **30** (2020), no. 4, 981–996.

Connectedness of two-sided group digraphs and graphs, with P. Chikwanda*, Y. T. Lee*, T. Sandow*, G. Smith*, and D. Yeroshkin, *Involve: A Journal of Mathematics*, **11** (2018), no. 4, 679–699.

Drinfeld orbifold algebras for symmetric groups, with B. Foster-Greenwood, *J. Alg.* **491** (2017), 573–610.

Spectra of Cayley graphs of complex reflection groups, with B. Foster-Greenwood, *J. Algebraic Combin.* **44** (2016), no. 1, 33–57.

Hamiltonian cycles in Cayley graphs of imprimitive complex reflection groups, with T. Lay. *Discrete Math.* **326** (2014), 50–60.

Dominant regions in noncrystallographic hyperplane arrangements, with Y. Chen, *J. Combin. Theory Ser. A* **114** (2007), no. 5, 789–808.

Representations of graded Hecke algebras, with A. Ram, *Represent. Theory* **6** (2002), 31–69.

Some interesting nonspherical tempered representations of graded Hecke algebras, *Trans. Amer. Math. Soc.* **351** (1999), no. 11, 4411–4428.

A classification of invertible subsets of affine root systems, with P. Check and D. Stephenson, *J. Pure Appl. Algebra* **131** (1998), no. 2, 133–142.

Refereeing

European Journal of Combinatorics, Journal of Algebraic Combinatorics, The American Mathematical Monthly, Rocky Mountain Journal of Mathematics, Discussiones Mathematicae Graph Theory, Journal of Physics A: Mathematical and Theoretical, and research grant proposals to the National Security Agency.

Math Reviews Reviewed 28 articles in Hecke algebras, representation theory, combinatorics, and graph theory for Math Reviews from 1998 to date. See https://mathscinet.ams.org/

Grant Reviews NSA-AMS Mathematical Sciences Grant Proposals 2008, 2015

Editing Citations

Classification of graded Hecke algebras for complex reflection groups, by A. Ram and A. Shepler, *Comment. Math. Helv.* **78** (2003), no. 2, 308–334.
Involved in discussions during preparation of paper.

Affine-like Hecke algebras and p-adic representation theory, by R. Howe, in *Iwahori Hecke Algebras and their Representation Theory*, Lectures from the C.I.M.E. Summer School held in Martina-Franca, June 28–July 6, 1999. Edited by M. Welleda Baldoni and Dan Barbasch. Lecture Notes in Math., 1804, (2002).
Prepared notes of lecture series for conference proceedings.

Schubert varieties and generalizations, by T. Springer, in *Representation Theories and Algebraic Geometry*, NATO ASI Series, **514** (1998), 413–440.
Edited text of lecture series for conference proceedings.

Standard Young Tableaux for Finite Root Systems, by A. Ram, 1998, later revised and published as Affine Hecke algebras and generalized standard Young tableaux, *J. Algebra* **260** (2003), no. 1, 367–415.
Provided extensive proofreading for original version.

Yang's System of Particles and Hecke Algebras, by G. Heckman and E. Opdam, *Ann. Math.* **145** (1997), 139-173.
Comparison of research results revealed an error.

The Langlands Classification for Graded Hecke Algebras, by S. Evens, *Proc. Amer. Math. Soc.* **124**, No. 4, (1996), 1285-1290.
Provided careful proofreading.

Students

Student research supported by ISU CPI funds 2011-2022
Davis Bolt (2022), Jacob Tolman (2020), Yun Teck Lee, Taylor Sandow, and Garrett Smith (2015-16), Jae Hui Lim and Michael Schultz (2013), Matthew Schroeder (2012), Patrick Chikwanda (2011-12)

Patreck Chikwanda, D.A. (Doctor of Arts) 2015
Thesis title: Connectedness of two-sided Cayley digraphs.

Michael Schultz, B.S. Honors thesis 2013
Thesis title: Characterizing integrality in musical graphs.
First undergraduate honors thesis in Mathematics at ISU.

Suzanne Lundeen, D.A. (Doctor of Arts) 2007
Thesis title: The Finite Reflection Group H_4
Expository thesis comparing several constructions of the reflection group of type H_4, its root system, and character table.

Undergraduate Honors Contracts Supervised 2018-2020
Jacob Tolman (Abstract Algebra, Spring 2020), Caleb Hannula (Visual Approach to Group Theory, Fall 2019), Tony Lemos (Singular Value Decomposition, Spring 2018)

Funding	**ISU CoSE Internal Research Grant** (travel funds)	2014, 2016, 2017
	Rocky Mountain Math Consortium Workshop (travel funds)	2013
	Conference Board Math. Sciences Conference (travel funds)	2012
	Idaho Math & Science Partnership Grant (Co-PI, $339,000)	2008-10
	NSF ADVANCE/ISU WeLEAD Travel Award ($1,300)	2010
	American Institute of Mathematics (AIM) (travel funds)	2007
	NSF ADVANCE/ISU WeLEAD Research Award ($7,822)	2007
	NSF ADVANCE Grant (Co-PI, $499,908)	2006-09
	American Institute of Mathematics (AIM) (travel funds)	2005
	AWM/NSA Sonia Kovalevsky Day Grant(Co-PI, $4,566)	2004, 2005
	Association of Women in Mathematics (AWM) (travel funds)	2005
	IAS/Park City Mathematics Institute (travel funds)	Summer 2004
	ISU Release Time Grants from Faculty Research Committee and Research Coordinating Council ($11,572 total)	2000-01, 2004
	NSA Young Investigators Research Grant ($34,514)	2003-2004
	Consultant on NSF Grant #9981007	2001
	NSF/AWM Mentoring Travel Grant ($3,500)	2000-2001
	International Mathematical Summer Center (CIME)	Summer 1999
	IAS/Park City Mathematics Institute (travel funds)	Summer 1998
	Project NExT Fellow	1996-1997
Other Grant Activity	**NSF S-STEM Grant proposal** ($1M, not funded)	2017
	HHMI Inclusive Excellence Grant pre-proposal ($1M, not advanced)	2016
Co-organizer	**AMS Section Meeting, Salt Lake City, UT** - Special Session Reductive Groups and Hecke Algebras, with D. Ciubotaru and P. Trapa.	2011
Invited Talks	**Boise State University** - TATERS Research Seminar	2021
	California State Polytechnic University, Pomona - Colloquium	2018
	AMS Section Meeting, Denton, TX - Special Session	2017
	MAA Section Meeting, Ogden, UT - Plenary Talk	2017
	CMS Summer Meeting, Edmonton, AB - Special Session	2016
	AMS Section Meeting, Lubbuck, TX - Special Session	2014
	University of Utah - Seminar	2011

	Idaho State University - Graduate Student Association talk	2010
	AMS Section Meeting, St. Paul, MN - Special Session	2010
	AMS Section Meeting, Baton Rouge, LA - Special Session	2008
	University of Minnesota - Minneapolis - Seminar	2007
	University of Utah - Seminar	2003
	AMS Section Meeting, Madison, WI - Special Session	2002
	Institute for Advanced Study - Seminar	1998
	University of Montana - Colloquium	1997
	University of Toronto - Seminar	1996
	University of Oklahoma - Seminar	1996
	AMS-MAA Joint Meetings, Orlando, FL - Special Session	1996
	University of Chicago - Seminar	1995
Contributed Talks	**Idaho State University** - Colloquium	2018
	MAA MathFest, Oregon - Conference Talk	2014
	Rocky Mtn. Math Consortium, Wyoming - Conference Talk	2013
	CBMS Conference, U. Mass. Boston - Conference Talk	2012
	Idaho State University - Colloquium	2007, 2010
	ISU WeLEAD Research Symposium - Poster	2010
	University of Minnesota - Duluth - Conference Talk	2007
	University of Utah - MAA Sectional Meeting Talk	2007
	ISU WeLEAD Research Symposium - General audience talk	2007
	Park City Mathematics Institute - Research Program talk	2004
	CIME Summer School, Martina Franca, Italy - Seminar	1999
	Idaho State University - Numerous seminar and colloquium talks	
	Idaho State University - Numerous Math/CS Club talks	

Courses Taught

6691, Representation Theory of Finite Groups
6631-2, Abstract Algebra
4408/5508, Modern Algebra
4407/5507, Modern Algebra
4406/5506, Advanced Linear Algebra
3391, (Honors Seminar) The Power of Mathematical Thinking*
3343, Modern Geometry
3326, Elementary Analysis

2287, Foundations of Mathematics
2240, Introduction to Linear Algebra
2275, Calculus III
1175, Calculus II
1170, Calculus I
1144, Trigonometry
1143, College Algebra
1127, Language of Mathematics
1123, (Honors general education course) Symmetry*
1123, Math in Modern Society

*Proposed and developed course.

Honors and Fellowships

ISU Outstanding Public Service Award	2013, 2014
Associated Students of ISU Advisor of the Year Award	2010
Zonta Woman of Achievement Award	2008
Alfred P. Sloan Doctoral Dissertation Fellowship	1994-1995
NSF Graduate Research Fellowship	1990-1992, 1993-1994
Phi Beta Kappa	1989

Memberships

American Mathematical Society
Mathematical Association of America
Association for Women in Mathematics
American Association of University Women