

CONTACT
INFORMATION

Department of Mathematics
University of California - Riverside
900 University Ave.
Riverside, CA 92521
email: jmccullo@math.ucr.edu
webpage: <http://www.math.ucr.edu/~jmccullo>
phone: (951) 201-2592

ACADEMIC
EXPERIENCE

Visiting Assistant Professor
University of California, Riverside (2009 - present)

Graduate Teaching Assistant / Research Assistant
University of Illinois at Urbana-Champaign (2006 - 2009)

EDUCATION

Ph.D., Mathematics, 2009
University of Illinois at Urbana-Champaign
Dissertation Title: On the Strong Direct Summand Conjecture
Advisor: Sankar Dutta

M.S. in Teaching Mathematics, 2008
University of Illinois at Urbana-Champaign

B.S. in Mathematics with High Honors, 2003
B.S. in Computer Science with High Honors, 2003
Michigan State University

RESEARCH
INTERESTS

Commutative algebra, homological algebra, computational algebra, coding theory.

PUBLICATIONS
AND PREPRINTS

1. *Bounds on Projective Dimension*, in preparation. (with A. Seceleanu)
2. *Lifting Splittings and the Strong Direct Summand Conjecture*, in preparation.
3. *A Polynomial Bound on the Regularity of an Ideal in Terms of Half of the Syzygies*, to appear in *Math. Res. Ltrs.*
4. *Ideals with Large Projective Dimension and Regularity*, *Journal of Symbolic Computation* 46 (2011) pp. 1105-1113 (with J. Beder, L. Nunez, A. Seceleanu, B. Snapp, B. Stone)
5. *A Family of Ideals with Few Generators in Low Degree and Large Projective Dimension*, *Proc. Amer. Math. Soc.* 139 (2011), no. 6, 2017-2023.

PUBLICATIONS
(CONT.)

6. *On the Strong Direct Summand Conjecture*, PhD thesis, University of Illinois, 2009
7. *A Note on the Strong Direct Summand Conjecture*, Proc. Amer. Math. Soc. 137 (2009), no. 9, 2857–2864.
8. *SRPT Optimally Uses Faster Machines to Minimize Flow Time*, ACM Transactions on Algorithms vol. 5 no. 1 (2008), 1-25 (with E. Torng)
An outline of this paper was published in the conference proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA) (2004), 350-358
9. *A Generalized Floor Bound on the Minimum Distance of Geometric Goppa Codes*, Journal of Pure and Applied Algebra 207 (2005), 155-164. (with B. Lundell)

TEACHING
EXPERIENCE

University of California, Riverside:		
Topics in Commutative Algebra	Math 260	Fall 10, Winter 11
Intermediate Analysis	Math 150A	Spring 11
Geometry	Math 133	Winter 11
Linear Algebra 1	Math 131	Winter 12
Optimization	Math 120	Spring 12
Calculus for Business	Math 22	Fall 09
Intro to Discrete Structures	Math 11	2 times
First-Year Calculus (Series)	Math 9C	5 times
First-Year Calculus (Integration)	Math 9B	4 times
Intro to Coll. Math for the Sci.	Math 8B	2 times
University of Illinois:		
Vector Calculus w/Mathematica	Math 241	Spring 08, Fall 08
Calculus 1 w/Mathematica	Math 220	Spring 07
Calculus 1	Math 220	Fall 06
Elementary Linear Algebra	Math 125	Summer 08

TEACHING
EVALUATIONS

Available at <http://www.math.ucr.edu/~jmccullo/pi.html>

SELECTED
HONORS AND
AWARDS

2012	AMS-MRC Travel Grant - \$2250
2009	Brahana TA Instructional Award Winner
2009	Irving Reiner Memorial Award in Algebra
2009	Trijtzinsky Memorial Fellowship
2005–2006	University Fellowship
2003–2005	NSF VIGRE Fellowship

HONORS AND
AWARDS (CONT.)**Undergraduate**

2003	Board of Trustees GPA Award, Michigan State University
2002	Director's Summer Program (Cryptologic Mathematics for Exceptional Undergraduates) - National Security Agency
2002	College of Engineering Lawrence von Tersch Scholarship
2002	Golden Key Scholarship
2002	Math Dept. L.C. Plant Scholarship
2001	Widick Memorial Scholarship
2000, 2002	Herzog MSU Math Competition Prize Winner
1999–2001	Putnam Math Competition – top quartile
1999–2001	Honors College Professorial Assistantship
1999	Robert C. Byrd Scholarship
1999	Alumni Distinguished Scholarship
1999	Honors College State Scholarship
1998	National Merit Scholar

INVITED/CONF.
TALKS

Bounding Projective Dimension and Regularity, Department Colloquium, University of California Riverside, Riverside, CA. (January 2012)

Bounding Projective Dimension and Regularity, Department Colloquium, University of Louisville, Louisville, KY. (January 2012)

Epsilons and Deltas with GeoGebra, MAA Session on Effective Use of Dynamic Mathematical Software, Joint Math Meetings, Boston, MA. (January 2012)

Ideals with Large Projective Dimension and Stillman's Question, AMS Sectional Meeting, Salt Lake City, UT. (October 2011)

Ideals with Large Projective Dimension and Regularity, Computational and Commutative Algebra Seminar, Cornell University, Ithaca, NY. (April 2011)

Projective Dimension and Free Resolutions or What is a Syzygy?, Reed College Colloquium, Portland, OR. (April 2011)

Lifting Splittings and the Strong Direct Summand Conjecture, AMS Special Session, Joint Math Meetings, New Orleans, LA. (January 2011)

Bounding Regularity and Projective Dimension, Mathematical Research Community, Snowbird, UT. (June 2010)

The Strong Direct Summand Conjecture and Related Homological Problems, Graduate Student Commutative Algebra Seminar, Purdue University. (April 2009)

On the Strong Direct Summand Conjecture, AMS Sectional Meeting, Urbana. (March 2009)

TALKS (CONT.)

Homological Conjectures and Invariant Theory, Department Colloquium, University of Louisville. (February 2009)

A Generalized Floor Bound on the Minimum Distance of Geometric Goppa Codes, MAA-AMS Joint Math Meeting, Atlanta. (January 2005)

CONFERENCES

ATTENDED

- 2012 AMS-MAA Joint Math Meeting, Boston, Massachusetts
- 2011 Midwest Commutative Algebra and Algebraic Geometry Conference, Urbana, Illinois
AMS Fall Sectional Meeting, Salt Lake City, Utah
Relating Test Ideals and Multiplier Ideals Workshop, AIM
AMS-MAA Joint Math Meeting, New Orleans, Louisiana
- 2010 Macaulay2 Workshop, Colorado Springs, Colorado
Mathematical Research Community, Snowbird, Utah
AMS West Sectional Meeting, Albuquerque, New Mexico
Macaulay2 Workshop, MSRI
- 2009 PASI: Commutative Algebra and its Connections to Geometry honoring Wolmer Vasconcelos, Olinda, Brazil
AMS Spring Sectional Meeting, Urbana, Illinois
2nd Bluegrass Algebra Conference, Lexington, Kentucky
AMS-MAA Joint Math Meetings, Washington, D.C.
- 2008 Conference in honor of Mel Hochster, Ann Arbor, Michigan
Conference in honor of Luchezar Avramov, Lincoln, Nebraska
A Macaulay2 Conference, Ithaca, New York
- 2006 Homological Conjectures in Commutative Algebra in honor of Paul C. Roberts, Snowbird, Utah
- 2005 Conference in honor of Phillip Griffith, Urbana, Illinois
AMS-MAA Joint Math Meeting, Atlanta, Georgia

PROFESSIONAL

ACTIVITIES

- 2011 **Putnam Team Coach**, UCR
Referee for Communications in Algebra
Co-organizer of Special Session on Commutative Algebra - Joint Math Meetings, New Orleans, LA
Organizer of Topics in Commutative Algebra Seminar, UCR
- 2010 **Putnam Team Coach**, UCR
Organizer of Topics in Commutative Algebra Seminar, UCR
- 2008 Math 241 **Course Captain**, UIUC
- 2007 **Organizer** Commutative Ring Theory Seminar, UIUC
- 2006 **Organizer** Combinatorial Comm. Algebra Seminar, UIUC
- 2006 New Graduate Student Orientation, UIUC
- 2005 **Member** of Department Graduate Affairs Committee, UIUC

PROFESSIONAL

MEMBERSHIPS

AMS, MAA

REFERENCES

Professor Sankar Dutta
Department of Mathematics
University of Illinois at Urbana-Champaign
1409 W. Green Street (MC-382)
Urbana, Illinois 61801
email: s-dutta@illinois.edu

Professor Michael Stillman
Malott Hall, Mathematics Dept
Cornell University
Ithaca, NY 14853, USA
email: mike@math.cornell.edu

Professor L. J. Ratliff
Department of Mathematics
University of California, Riverside
900 University Ave
Riverside, CA 92521
email: ratliff@math.ucr.edu

TEACHING
REFERENCES

Professor Julia Bergner
Department of Mathematics
University of California, Riverside
900 University Ave
Riverside, CA 92521
email: jbergner@math.ucr.edu

Professor Gerhard Gierz
Department of Mathematics
University of California, Riverside
900 University Ave
Riverside, CA 92521
email: gerhard.gierz@ucr.edu