

Bart Snapp

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Education

- University of Illinois at Urbana-Champaign, Ph.D. in mathematics, under the supervision of Sankar Dutta, 2007.
- University of Illinois at Urbana-Champaign, master of science in teaching mathematics, 2007.
- Ohio State University, bachelor of science with honors in the liberal arts and distinction in mathematics with a minor in physics, 2001.

Positions

- Bareis Lecturer, Ohio State University, 2009–present.
- Ross Mathematics Program Seminar Instructor, Ohio State University, summer 2010.
- Assistant Professor, Coastal Carolina University, 2007–2009.
- Visiting Assistant Professor, University of Nebraska-Lincoln, summer 2008.

Research

- Commutative algebra with emphasis in the homological conjectures.
- Computational questions in commutative algebra.
- Various undergraduate research topics.

Fellowships and Research Assistantships

- IMMERSE fellowship, University of Nebraska-Lincoln, summer 2008.
- Research assistant, University of Illinois, under the supervision of Dan Grayson, spring 2007.
- Research assistant, University of Illinois, under the supervision of Sankar Dutta, fall 2006.
- Research assistant, University of Illinois, under the supervision of Sankar Dutta, summer 2006.
- Research assistant, University of Illinois, under the supervision of Sankar Dutta, fall 2004.

- Participated in a REGS (Research Experience for Graduate Students) on the topic of computation in commutative algebra under the supervision of Sean Sather-Wagstaff, summer 2004.
- Participated in a REGS (Research Experience for Graduate Students) on the topic of regularity and Smoothness under the supervision of Sankar Dutta, summer 2003.

Activities

Teaching Awards and Professional Development

- Math department's Brahana TA instructional award, University of Illinois, spring 2006.
- Math department's candidate for the LAS award for excellence in undergraduate teaching by teaching assistants, University of Illinois, spring 2006.
- Graduate teaching certificate, University of Illinois, spring 2004.
- Honorable mention for the department TA instructional award, University of Illinois, spring 2004.

Course Development

- Redesigned the course *Mathematics for Architects*, Ohio State University, fall 2011. Online course notes:

<http://www.math.osu.edu/~snapp/1118/>

- Redesigned the course *Geometry and Measurement for Middle School Teachers*, Ohio State University, winter 2010. Online course notes:

<http://www.math.osu.edu/~snapp/109/>

- Redesigned the course *Number and Algebraic Structures for Middle School Teachers*, Ohio State University, fall 2009. Online course notes:

<http://www.math.osu.edu/~snapp/108/>

- Redesigned the course *Problem Solving for Middle School Teachers*, Coastal Carolina University, spring 2008.
- Helped develop the course *Ideas in Geometry*, fall 2005–present. Online course notes:

<http://www.math.uiuc.edu/Courses/math119/>

Student Mentoring

- Tim Tussing, a student earning a Masters in Mathematics for Educators, Ohio State University, spring 2011—present.
- Joo-Kyung Kim, CETI iPad eText Project, summer 2011. Co-mentored with Jim Fowler.
- Sam Colburn, Gus Coliadis, Will Mohr, and Jhovary Ruiz, computer science students, Ohio State University, CETI iPad eText Project, fall 2010. Note, this project won *Best Capstone Project* in their CSE 758 course.
- Greg Williams, a MAT student, Coastal Carolina University, fall 2008.

Service Experience

- Young Mathematician's Conference, coorganizer, Ohio State University, 2011.
- Woodrow Wilson Ohio Teaching Fellowship Program Advisory Board, Ohio State University, fall 2010—present.
- Math Circles at Ohio State University, with D. Shapiro and A. Yang, fall 2010—present.
- Innovate Curriculum Design Team for project ASPIRE, Ohio State University, spring 2010—present.
- College technology committee, Coastal Carolina University, fall 2008—spring 2009.
- University core assessment committee, Coastal Carolina University, spring 2007—spring 2009.
- Department curriculum committee, Coastal Carolina University, fall 2007—spring 2009.
- Chair of the departmental graduate teaching awards committee, University of Illinois, spring 2007.
- Department fall picnic committee, University of Illinois, fall 2006.
- Teaching mentor, worked with new graduate teaching assistants before and during the semester, University of Illinois, fall 2005.
- Course captain for Math 234: Business Calculus, University of Illinois, fall 2005.
- Undergraduate affairs committee, University of Illinois, fall 2004—spring 2005.
- Teaching awards committee, University of Illinois, fall 2003.
- Judged for the Illinois Council of Teachers of Mathematics State Math Contest, University of Illinois, spring 2002.
- Course Captain for the computer-based *Mathematica* sections, University of Illinois, fall 2002.

Professional Service

- Referee for *INTEGERS*.
- Referee for *The Journal of Integer Sequences*.
- Referee for *The Journal of Number Theory*.
- Reviewer for *Mathematical Reviews*.
- Consultant for Metallurgical Sensors Inc. Georgetown, South Carolina, 2008–2010.
- Consultant for Precision Graphics. Champaign, Illinois, 2001.

Conferences Attended by Invitation

- *IMA Special Workshop: Macaulay2*, summer 2011.
- *Mathematics Research Communities: Commutative Algebra*, Snowbird, Utah, summer 2010.
- *MSRI Macaulay2 Workshop*, winter 2010.
- *PASI 2009: Commutative Algebra and its Connections to Geometry*, Olinda, Pernambuco, Brazil, summer 2009.
- *First Macaulay2 Conference*, Cornell University, spring 2008.
- *Homological Conjectures in Commutative Algebra; A Conference in Honor of Paul Roberts Sixtieth Birthday*, Snowbird, Utah, summer 2006.
- *Interactions between homotopy theory and algebra*, University of Chicago, summer 2004.
- *Mini-Course: Classical Problems in Commutative Algebra*, University of Utah, summer 2004.

Publications

Research

- *Ideals with larger projective dimension and regularity*. Co-authored with J. Beder, J. McCullough, L. Nunez, A. Seceleanu, and B. Stone. To appear in the *Journal of Symbolic Computation*.
- *A note on the variety of pairs of matrices whose product is symmetric*. In *Commutative Algebra and its Connections to Geometry (PASI 2009)*, A. Corso, C. Polini (eds.), Contemporary Mathematics, volume 555, American Mathematical Society. Co-authored with M. Majidi-Zolbanin.
- *Free summands of syzygies of modules over local rings*. *Journal of Pure and Applied Algebra* **214** (2010), no. 10, 1808–1811.

- *Generalized local cohomology and the canonical element conjecture*. Journal of Pure and Applied Algebra **212** (2008), no. 4, 941–954.

Research with Undergraduates

- *Monomials and the no-three-in-line problem*. In preparation. Working with A. Groot and D. Pandya.
- *The Collatz problem and analogues*. Journal of Integer Sequences. **11** (2008), no. 4, article 08.4.7. Co-authored with M. Tracy.

Educational/Popular Mathematics

- *Student's perspectives on connections in mathematics*. In preparation. Co-authored with B. McNeal.
- *Gaming the Law of Large Numbers*. Submitted. Co-authored with T. Hoffman. To appear in the *Mathematics Teacher*.
- *Automotive number theory*. Math Horizons. September 2009. Co-authored with C. Snapp.

Macaulay2 Packages

- `SpaceCurvesMultiplierIdeals.m2` co-authored with Claudiu Raicu and Zach Teitler.
- `PowerSeries.m2` co-authored with Chris Cunningham and Jason McCullough.
- `Depth.m2`
- `NoetherNormalization.m2` co-authored with Nat Stapleton.

Talks and Presentations

Research Talks

- MSRI Macaulay2 workshop: *The power series package*, winter 2010.
- Florida Atlantic University: 2009 AMS sectional meeting, special session on homological aspects of module theory, *A criterion for a ring to be Cohen-Macaulay and the canonical element conjecture*, fall 2009.
- University of Illinois: 2009 AMS sectional meeting, special session on local and homological methods in commutative algebra, *Free summands of syzygies and Cohen-Macaulay rings*, spring 2009.

- University of South Carolina: Georgia State University-University of South Carolina joint commutative algebra meeting, *Free summands of cokernels and syzygies*, fall 2008.
- Georgia State University: Georgia State University-University of South Carolina joint commutative algebra meeting, *Generalized local cohomology and the canonical element conjecture*, fall 2007.
- University of Illinois: Commutative ring theory seminar, organizer, fall 2006–spring 2007.
- University of Illinois: Commutative ring theory seminar, *Syzygies, cokernels, and the canonical element conjecture*, fall 2006.
- University of Illinois: Commutative ring theory seminar, *Cokernels and the canonical element conjecture*, fall 2006.
- University of Illinois: Commutative ring theory seminar, *Homological methods and the canonical element conjecture*, fall 2006.
- Wabash College: Wabash Summer Institute in Algebra, *Cohomology in commutative algebra*, summer 2006.
- University of Illinois: Graduate student computational—combinatorial—commutative algebra seminar, coorganizer and presenter, spring 2006.
- University of Illinois: Commutative ring theory seminar, *Artin’s approximation theorem*, fall 2005.
- University of Illinois: Introductory algebraic geometry seminar, coorganizer and presenter, summer 2005.
- University of Illinois: Commutative ring theory seminar, *Peskine and Szpiro’s proof of the intersection theorem part II*, fall 2004.
- University of Illinois: Commutative ring theory seminar, *Peskine and Szpiro’s proof of the intersection theorem*, fall 2004.
- University of Illinois: Commutative ring theory seminar, *Regularity and smoothness*, fall 2003.

Educational/Popular Presentations

- Coastal Carolina University: Department seminar, *Teaching future teachers through problem solving*, fall 2010.
- Ohio State University: Radical Pi undergraduate math club, *Moonlighting in applied mathematics*, winter 2010.
- Ohio State University: Radical Pi undergraduate math club, *The hailstone problem (almost)*, fall 2009.
- Ohio State University: Radical Pi undergraduate math club, *Dungeon geometry*, fall 2009.

- Coastal Carolina University: Engineering 101, *Engineering on the weekends*, fall 2008.
- Coastal Carolina University: Department seminar, *Nonsense and abstract nonsense*, fall 2007.
- University of Illinois: Teaching assistant orientation, *Giving a lecture*, fall 2006.
- University of Illinois: Participated in several panel discussions related to teaching during the math department graduate student orientation, fall 2005.
- University of Illinois: Teaching assistant orientation, *Preparing a lecture*, with Alison Ahlgren, fall 2004.
- University of Illinois: Teaching assistant workshop, *Use of technology in the classroom*, with Micah James, spring 2004.