

DANIEL S. ROGALSKI

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Research Interests

- Noncommutative algebra, especially noncommutative projective geometry and interactions between algebraic geometry and noncommutative ring theory

Employment

- **University of California San Diego**—La Jolla, CA
2005-present
 - Assistant Professor 2005-2009
 - Associate Professor 2009-2015
 - Professor 2015-present
- **Massachusetts Institute of Technology**—Cambridge, Massachusetts
2002-2005 (*on leave* 2002-2003)
 - C.L.E. Moore Instructor and NSF postdoctoral fellow
- **University of Washington**—Seattle, Washington
2002-2003
 - NSF postdoctoral fellow

Education

- **University of Michigan**—Ann Arbor, Michigan
1997-2002
 - Ph.D. in Mathematics, May 2002
 - Dissertation: *Examples of Generic Noncommutative Surfaces*, advisor Professor J. T. Stafford.
- **State University of New York at Stony Brook**—Stony Brook, New York
1995-1997
 - M.M. in Piano Performance, May 1997
- **Yale University**—New Haven, Connecticut
1991-1995
 - B.A. in Mathematics, summa cum laude, May 1995.

Awards and Grants

- NSA grant, 2015-2017.
- One of the senior personnel on a NSF RTG grant, held by the members of the Algebra, Algebraic Geometry, and Number Theory groups at UCSD.
- NSF Standard Grant, 2012-2015.
- PI on NSF Conference grant, 2011, to support U.S. participant travel for the conference "New developments in Noncommutative Algebra and its Applications" Skye, Scotland, 2011.
- NSF Standard Grant, 2009-2012.
- NSF Standard Grant, 2006-2009.
- NSF Postdoctoral Research Fellowship, 2002-2005.
- Clay Mathematics Institute Liftoff Fellowship, Summer 2002.
- Sumner Myers Award, Michigan Department of Mathematics, 2002.

Publications and Articles in Press

- "Generic noncommutative surfaces," *Adv. Math* **184** (2004), no.2, 289-341.
- "Idealizer rings and noncommutative projective geometry," *J. Algebra* **279** (2004), no. 2, 791-809.
- (with D.S. Keeler and J. T. Stafford), "Naïve noncommutative blowing Up", *Duke Math. J.* **126** (2005), no. 3, 491-546.
- (with Z. Reichstein and J. J. Zhang), "Projectively simple rings," *Adv. Math.* **203** (2006), no. 2, 365-407.
- (with J. J. Zhang), "Canonical maps to twisted rings", *Math. Z.* **259** (2008), no. 2, 433-455.
- (with J. T. Stafford), "Naïve noncommutative blowups at zero-dimensional schemes", *J. Algebra* **318** (2007), no. 2, 794-833.
- "GK-dimension of birationally commutative surfaces", *Trans. Amer. Math. Soc.* **361** (2009), no. 11, 5921-5945.
- (with J. T. Stafford), "A class of noncommutative projective surfaces", *Proc. Lond. Math. Soc.* **99** (2009), no. 1, 100-144.
- (with J. Bell and S. J. Sierra), "The Dixmier-Moeglin equivalence for twisted homogeneous coordinate rings", *Israel J. Math.* **180** (2010), 461-507.
- "Blowup subalgebras of the Sklyanin algebra", *Adv. Math.* **226** (2011), no. 2, 1433-1473.
- (with J. Bell), "Free subalgebras of quotient rings of Ore extensions", *Algebra Number Theory* **6** (2012), no. 7, 1349-1368.
- (with S. J. Sierra), "Some noncommutative projective surfaces of GK-dimension 4", *Compositio Math.*, **148** (2012), no. 4, 1195-1237.
- (with J. J. Zhang), "Regular algebras of dimension 4 with 3 generators", *New trends in noncommutative algebra*, *Contemp. Math.*, **562** (2012), 221-241.
- (with J. Bell), "Z-graded simple rings", *Trans. Amer. Math. Soc.* **368** (2016), no. 6, 4461-4496.
- (with J. Bell), "Free subalgebras of division rings over uncountable fields", *Math. Z.* **277** (2014), no. 1-2, 591-609.

- (with S. J. Sierra and J. T. Stafford), "Algebras in which every subalgebra is noetherian", *Proc. Amer. Math. Soc.* 142, (2014), no. 9, 2983–2990.
- (with M. Reyes and J. J. Zhang), "Skew Calabi-Yau algebras and Homological Identities", *Adv. Math.* 264, (2014), 308–354.
- (with S. Sierra and J. T. Stafford), "Noncommutative blowups of elliptic algebras", *Algebr. Represent. Theory* 18, (2015), no. 2, 491–529.
- (with M. Reyes and J. J. Zhang), "Skew Calabi-Yau triangulated categories and Frobenius Ext-algebras", *Trans. Amer. Math. Soc.* 369 (2017), no. 1, 309–340.
- (with S. Sierra and J. T. Stafford), "Classifying orders in the Sklyanin algebra", *Algebra Number Theory* 9 (2015), no. 9, 2055–2119.
- (with G. Bellamy, T. Schedler, T. Stafford, M. Wemyss), "Noncommutative algebraic geometry", *Mathematical Sciences Research Institute Publications* 64, Cambridge University Press, 2016.
- (with S. Sierra and J. T. Stafford), "Ring-theoretic blowing down: I", to appear in *J. Non-commut. Geom.* arXiv:1603.08128.

Service and Professional Activities

- Co-organizer of the upcoming special session "Noncommutative algebraic geometry and related topics", Washington State University, April 2017.
- Co-organizer of the special session "Topics in noncommutative algebra and algebraic geometry", Michigan State University, March 2015.
- Co-organizer of the conference "New developments in noncommutative algebra and its applications" (in honor of Ken Brown and Toby Stafford), Skye, Scotland, June 2011; also co-editor of the associated proceedings volume.
- Organizer, Southern California Algebra Conference, a once or twice-yearly one-day meeting at UCLA, 2008-2013.
- Co-organizer of MSRI graduate student workshop, "Noncommutative Algebraic Geometry", June 2012. Gave one of four week-long lecture series, on the topic of noncommutative projective geometry.
- Co-organizer for three past special sessions at AMS meetings: "Noncommutative algebraic geometry", Miami University, March 2007; "Interactions between algebraic geometry and noncommutative algebra", San Diego CA, January 2008; and "Interactions between algebraic geometry and noncommutative algebra", UC Riverside, November 2009.
- Reviewer of grant applications for NSF, NSA, NSERC, European Research Council.
- Referee for journal articles for *Advances in Math.*, *Algebra and Number Theory*, *Algebras and Representation Theory*, *Communications in Algebra*, *Journal of Algebra*, *Mathematische Zeitschrift*, *Pacific Journal of Math*, *Proceedings of the AMS*, *Selecta Mathematica*, *Transactions of the AMS*.
- Committee service in UCSD math department including graduate advising, graduate admissions, algebra and number theory course coordination, multiple promotion review committees, Academic Personnel Committee

Graduate student advisees

- Amy Irwin Stout defended her dissertation, "Non-regular algebras of dimension 3", under my direction in May 2012. She is currently a high school teacher in Pasadena, California.
- James Berglund defended his dissertation, "Z-graded Maximal Orders of GK 3", under my direction in May 2012. He is currently employed with an insurance firm in Lansing, Michigan.
- Susan Elle defended her dissertation, "A study of dimension 5 Ore extensions", under my direction in May 2016. She is currently employed by Epic Systems in Madison, WI.
- Robert Won defended his dissertation, "The graded module category of a generalized Weyl algebra", under my direction in May 2016. He is currently a postdoctoral fellow at Wake Forest University in Winston-Salem, NC.
- My current PhD student Stephan Weispfenning is on track to graduate in the spring of 2018.

Postdoctoral advisees

- Henry Tucker is my current postdoctoral advisee at UCSD. He holds a three-year postdoctoral position under the auspices of the departments NSF RTG grant, from 2016-2019.
- I helped to advise Xingting Wang during the 2014-2015 academic year while he was a teaching visitor in the department. He is currently a postdoctoral fellow at Temple University.
- Manny Reyes worked with me as a postdoctoral advisee at UCSD from 2010-2011, under the auspices of a UC Presidents Postdoctoral Fellowship. He is now a tenure-track assistant professor at Bowdoin college.
- Jason Gaddis worked with me as a postdoctoral advisee at UCSD from 2013-2014, while he was a teaching visitor in the department. As of fall 2017 he will begin a tenure-track position at Miami University.

Invited lectures given

- "Algebra Extravaganza: A conference honoring Ellen Kirkman and Martin Lorenz", Temple University, Philadelphia, PA, July 2017 (planned).
- Linking noncommutative rings and Algebraic Geometry, Edinburgh, UK, June 2017 (planned).
- Invited address, "Noncommutative projective surfaces", at the AMS regional meeting in Pullman, WA, April 2017.
- AMS regional meeting in Denver, CO, October 2016, Special session "Quantum algebra".
- UCSD Algebra Seminar, February 2016.
- AMS Joint Meetings, January 2016, Special session "Interactions between noncommutative algebra, algebraic geometry, and representation theory".
- USA-Mexico Conference in Representation Theory and Non-Commutative Algebra, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, January 2015.
- Noncommutative Algebraic Geometry, Fudan University, Shanghai, China, August 2014.
- Interactions between Noncommutative Algebra and Algebraic Geometry, Oberwolfach, Germany, May 2014.

- Regularity and Rigidity of Noncommutative Algebras, UW, Seattle, WA, March 2014.
- Colloquium, Bowdoin College, Brunswick, ME, December 2013.
- Undergraduate Colloquium (Math 196), UCSD, October 2013.
- Graduate Colloquium (Math 296), UCSD, October 2013.
- Noncommutative Algebraic Geometry and Related Topics, RIMS, Kyoto, Japan, July 2013.
- Southeastern Lie Theory Workshop, LSU, Baton Rouge, Louisiana, May 2013.
- Interactions between Noncommutative Algebra, Representation Theory, and Algebraic Geometry, MSRI workshop, April 2013.
- Weekly seminar series at MSRI, March 2013.
- Interactions between Noncommutative Algebra and Algebraic Geometry, BIRS, Banff, Alberta, Canada, November 2012.
- Algebra Seminar, UCSD, November 2012.
- Noncommutative Algebraic Geometry Workshop, University of Manchester, Manchester, U.K., August 2012.
- AMS Regional Meeting, University of Hawaii at Manoa, Special session on Noncommutative algebra and geometry, March 2012.
- AMS Regional Meeting, University of Utah, October 2011.
- UCSD Algebra Seminar, October 2011.
- Noncommutative Algebraic Geometry, Fudan University, Shanghai, September 2011.
- UCSD Algebra Seminar, February 2011.
- University of Washington Algebra Seminar, November 2010.
- New Trends in Noncommutative Algebra, conference in honor of Ken Goodearl, August 2010.
- Southern California Algebraic Geometry Seminar, UCSD, April 2010.
- USC Algebra Seminar, March 2010.
- RIMS, Kyoto, Japan, Noncommutative algebraic geometry and related topics conference, August 2009.
- Banff International Research Station, Interactions between noncommutative algebra and algebraic geometry, October 2008.
- U. British Columbia, AMS regional meeting, October 2008.
- PIMS Alberta/British Columbia algebra conference, Simon Fraser University, Vancouver BC, April 2008.
- Algebra seminar, U.C. Santa Barbara, November 2007.
- Trends in noncommutative geometry conference, Newton Institute, Cambridge, U.K., December 2006.
- Southern California algebra conference, UCLA, November 2006.
- Fudan University, Shanghai, China, Conference on noncommutative geometry, September 2006.

- Oberwolfach Institute, Germany, Conference on interactions between algebraic geometry and noncommutative algebra, May 2006.
- U. C. San Diego, Algebra seminar, December 2005.
- University of Oregon, AMS regional meeting, November 2005.
- U. C. San Diego, New Faculty Seminar, October 2005.
- Banff International Research Station, Interactions between noncommutative algebra and algebraic geometry, September 2005.
- U.C. Santa Barbara, AMS regional meeting, April 2005.
- Western Kentucky University, AMS regional meeting, March 2005.
- Wayne State, Colloquium, January 2005.
- Kansas State, Colloquium, January 2005.
- M.I.T., Infinite Dimensional Algebra Seminar, December 2004.
- U. C. San Diego, Algebra Seminar, November 2004.
- Warwick Maths Institute, U.K., Workshop on noncommutative algebra and algebraic geometry, June 2004.
- University of Massachusetts at Amherst, Valley Geometry Seminar, February 2004.
- Mittag-Leffler Institute, Sweden, Workshop on noncommutative algebraic geometry, January 2004.
- Mittag-Leffler Institute, Institute Seminar, January 2004.
- University of Washington, Algebra Seminar, May 2003.
- University of Michigan, Sumner Myers award talk, March 2003.
- AMS Joint Meetings, Baltimore, special session “Actions, Algebras, and Algorithms”, January 2003.
- University of Washington, Algebra Seminar, April 2002.

Teaching 2005-present

- 2016-2017: Math 109 (Mathematical Reasoning), Math 200a (Graduate Algebra I), Math 31CH (Honors Calculus III), Math 201a (Topics in Algebra: Homological Algebra)
- 2015-2016: Math 140a (Real Analysis I), Math 100a (Algebra I), Math 201a (Topics in Algebra: Representations of Quivers), Math 100c (Algebra III)
- 2014-2015: Math 200a-c (Graduate Algebra I-III), Math 109 (Mathematical Reasoning)
- 2013-2014: Math 142a-b (Advanced Calculus I, II), Math 201a (Topics in Algebra: Lie Algebras), and Math 103b (Modern Algebra II)
- 2012-2013: Math 103a (Modern Algebra I) and Math 200a (Graduate Algebra).
- 2011-2012: Math 200a-b-c (Graduate Algebra), and Math 207a (Topics in Algebra: Noncommutative Ring Theory).
- 2010-2011: Math 200b-c (Graduate Algebra), and Math 207c (Topics in Algebra: Representations of Quivers).

- 2009-2010: Math 100a-b (Abstract Algebra I, II), Math 109 (Mathematical Reasoning), and Math 20c (Multivariable Calculus).
- 2008-2009: Math 200a,c (Graduate Algebra), Math 20b (Integral Calculus), and Math 201b (Topics in Algebra: Polynomial Identity Rings).
- 2007-2008: Math 103a-b (Modern Algebra I, II), Math 20b (Integral Calculus), and Math 20d (Differential Equations).
- 2006-2007: Math 103a (Modern Algebra I), Math 109 (Mathematical Reasoning), Math 207a (Topics in Algebra: Noncommutative Projective Geometry), and Math 207b (Topics in Algebra: Representations of Quivers).
- 2005-2006: Math 103a-b (Modern Algebra I, II) and Math 109 (Mathematical Reasoning).