

---

## Employment

- 2007–today **Associate Professor** at *Syracuse University*.
- 2004–2007 **Assistant Professor** at *Syracuse University*.
- 2003–2004 **Post-doctoral Fellow** at *University of Toronto*.
- 2000–2003 **Assistant Professor** at *University of Kansas*.
- 1995–2000 **Graduate Teaching Assistant** at *University of Nebraska–Lincoln*.

---

## Education

- 2000 **Ph.D.** *University of Nebraska–Lincoln*, Lincoln NE.  
Advisor: Roger Wiegand  
Dissertation: *Finite Cohen–Macaulay Type*
- 1997 **M.A.** *University of Nebraska–Lincoln*, Lincoln NE.
- 1995 **B.A.** *Reed College*, Portland OR.  
Advisor: V. Rao Potluri  
Thesis: *Galois cohomology and profinite groups*

---

## Grants and Funding

- 2013–2015 **NSA Grant 110927**, “Theory and applications of maximal Cohen-Macaulay modules”.
- 2013 **MSRI General Member** associated with semester-long program in *Non-commutative Algebraic Geometry*.
- 2010 **AMS Travel Grant** to attend *ICM in Hyderabad, India*.
- 2009–2013 **NSF Grant DMS-0902119**, “Topics in the Representation Theory of Local Rings”.
- 2006–2009 **NSF Grant DMS-0556181**, “Topics in the Representation Theory of Local Rings”.
- 2006 **AMS Travel Grant** to attend *ICM in Madrid, Spain*.
- 2004–2006 **NSA Young Investigator Grant**.
- 2003 **MSRI General Member** associated with year-long program in *Commutative Algebra*.
- 2000–2003 **NSF Mathematical Sciences Research Postdoctoral Fellowship** taken at the *University of Kansas*.
- 2000 **Clay Liftoff Mathematician** sponsored for summer research by *Clay Mathematics Institute*.

---

## Research Interests

- Commutative Algebra
- Representation Theory
- Non-commutative Algebraic Geometry
- Algebraic Geometry

## Publications

### Books

- [1] Srikanth Iyengar, GJL, Anton Leykin, Claudia Miller, Ezra Miller, Anurag Singh, and Uli Walther. *Twenty-four hours of local cohomology*, volume 87 of *Graduate Studies in Mathematics*. American Mathematical Society, Providence, RI, 2007. xviii+282 pages. ISBN: 978-0-8218-4126-6.
- [2] GJL and Roger Wiegand. *Cohen-Macaulay representations*, volume 181 of *Mathematical Surveys and Monographs*. American Mathematical Society, Providence, RI, 2012. xviii+367 pages. ISBN: 978-0-8218-7581-0. URL: <http://www.leuschke.org/research/MCMBBook>.

*articles available from [www.leuschke.org/Research/Papers/](http://www.leuschke.org/Research/Papers/)*

### Articles

- [1] GJL and Roger Wiegand. Ascent of finite Cohen-Macaulay type. *J. Algebra*, 228(2):pages 674–681, 2000. doi:10.1006/jabr.2000.8294.
- [2] GJL. Mixed characteristic hypersurfaces of finite Cohen-Macaulay type. *J. Pure Appl. Algebra*, 167(2-3):pages 225–257, 2002. doi:10.1016/S0022-4049(01)00044-5.
- [3] GJL. Gorenstein modules, finite index, and finite Cohen-Macaulay type. *Comm. Algebra*, 30(4):pages 2023–2035, 2002. doi:10.1081/AGB-120013229.
- [4] Craig Huneke and GJL. Two theorems about maximal Cohen-Macaulay modules. *Math. Ann.*, 324(2):pages 391–404, 2002. doi:10.1007/s00208-002-0343-3.
- [5] Craig Huneke and GJL. Local rings of countable Cohen-Macaulay type. *Proc. Amer. Math. Soc.*, 131(10):pages 3003–3007 (electronic), 2003. doi:10.1090/S0002-9939-03-07167-3.
- [6] Ian M. Aberbach and GJL. The  $F$ -signature and strong  $F$ -regularity. *Math. Res. Lett.*, 10(1):pages 51–56, 2003.
- [7] Craig Huneke and GJL. On a conjecture of Auslander and Reiten. *J. Algebra*, 275(2):pages 781–790, 2004. doi:10.1016/j.jalgebra.2003.07.018.
- [8] GJL and Roger Wiegand. Hypersurfaces of bounded Cohen-Macaulay type. *J. Pure Appl. Algebra*, 201(1-3):pages 204–217, 2005. doi:10.1016/j.jpaa.2004.12.028.
- [9] GJL and Roger Wiegand. Local rings of bounded Cohen-Macaulay type. *Algebr. Represent. Theory*, 8(2):pages 225–238, 2005. doi:10.1007/s10468-004-8319-5.
- [10] GJL. Appendix to “Tight closure theory and characteristic  $p$  methods”, by M. Hochster. In *Trends in commutative algebra*, volume 51 of *Math. Sci. Res. Inst. Publ.*, pages pages 181–210. Cambridge Univ. Press, Cambridge, 2004.
- [11] GJL. Endomorphism rings of finite global dimension. *Canad. J. Math.*, 59(2):pages 332–342, 2007. doi:10.4153/CJM-2007-014-1.
- [12] Ragnar-Olaf Buchweitz and GJL. Factoring the adjoint and maximal Cohen-Macaulay modules over the generic determinant. *Amer. J. Math.*, 129(4):pages 943–981, 2007. doi:10.1353/ajm.2007.0022.
- [13] David A. Jorgensen and GJL. On the growth of the Betti sequence of the canonical module. *Math. Z.*, 256(3):pages 647–659, 2007. doi:10.1007/s00209-006-0096-x.
- [14] Ragnar-Olaf Buchweitz, GJL, and Michel Van den Bergh. Non-commutative desingularization of determinantal varieties I. *Invent. Math.*, 182(1):pages 47–115, 2010. doi:10.1007/s00222-010-0258-7.

- [15] Andrew Crabbe and GJL. Wild hypersurfaces. *J. Pure Appl. Algebra*, 215(12):pages 2884–2891, 2011. doi:10.1016/j.jpaa.2011.04.009.
- [16] David A. Jorgensen, GJL, and Sean Sather-Wagstaff. Presentations of rings with non-trivial semidualizing modules. *Collect. Math.*, 63(2):pages 165–180, 2012. doi:10.1007/s13348-010-0024-6.
- [17] GJL. Non-commutative crepant resolutions: scenes from categorical geometry. In S. Sather-Wagstaff et. al., editor, *Progress in commutative algebra 1: Ring Theory, Homology, and Decompositions*, De Gruyter Proceedings in Mathematics, pages pages 293–361. de Gruyter, Berlin, 2012.
- [18] GJL and Roger Wiegand. Brauer-Thrall theory for maximal Cohen-Macaulay modules. In I. Peeva, editor, *Commutative Algebra: Expository papers dedicated to David Eisenbud on the occasion of his 65<sup>th</sup> birthday*, pages 577–592. Springer Verlag, 2013.

### Articles in progress or in press

- [1] Ragnar-Olaf Buchweitz, GJL, and Michel Van den Bergh. Non-commutative desingularization of determinantal varieties, II: Arbitrary minors. Submitted, 2013. arXiv:1106.1833.
- [2] Ragnar-Olaf Buchweitz, GJL, and Michel Van den Bergh. On the derived category of Grassmannians in arbitrary characteristic. Submitted, 2013. arXiv:1006.1633.

### Other mathematical writing

- [1] GJL. Noncommutative resolutions. *Emissary: the newsletter of the Mathematical Sciences Research Institute*, 2013. URL: <http://www.msri.org/attachments/media/news/emissary/EmissarySpring2013.pdf>.

---

## Selected Invited Lectures, Last 7 Years

*notes and some videos available from [www.leuschke.org/Research/Talks/](http://www.leuschke.org/Research/Talks/)*

- 2013 Dec. “The derived category of Grassmannian varieties”, *Winter Meeting of the Canadian Mathematical Society*, Ottawa, Ontario, Canada.
- Sep. “The derived category of Grassmannian varieties”, *AMS Special Session, Louisville KY*.
- Feb. “Non-commutative desingularizations and maximal Cohen-Macaulay modules”, *MSRI Workshop: “Noncommutative Algebraic Geometry and Representation Theory”*, MSRI, Berkeley CA, series of two one-hour lectures.
- Jan. “What should a non-commutative desingularization be?”, *MSRI Workshop: “Connections for Women: Noncommutative Algebraic Geometry and Representation Theory”*, MSRI, Berkeley CA.
- 2012 May “Maximal Cohen-Macaulay modules and non-commutative desingularizations”, *Pan-American Advanced Studies Institute (PASI) Commutative Algebra and Its Interactions with Algebraic Geometry, Representation Theory, and Physics*, Guanajuato, Mexico, mini-course of four one-hour lectures.
- Apr. “The MCM McKay Correspondence”, *Maurice Auslander Distinguished Lectures and International Conference*, Woods Hole, MA.
- Mar. “Non-commutative desingularizations of determinantal varieties”, *AMS Special Session*, Lawrence, KS.
- 2011 Dec. “Non-commutative desingularizations of determinantal varieties”, *Winter Meeting of the Canadian Mathematical Society*, Toronto, ON, Canada.

- Nov. “The MCM McKay Correspondence”, *Northeastern University Representation Theory Seminar*, Boston, MA.
- Nov. “Non-commutative crepant resolutions”, *Northeastern University Colloquium*, Boston, MA.
- Oct. “Wild Hypersurfaces”, *AMS Special Session*, Lincoln, NE.
- Mar. “Wild Hypersurfaces”, *Homological Methods Seminar*, University of Toronto.
- 2010 Nov. “Wild Hypersurfaces”, *AMS Special Session*, Notre Dame, IN.
- Feb. “Wild Hypersurfaces”, *Mathematics Department Algebra Seminar*, University of Kansas, Lawrence, KS.
- 2009 Oct. “Semidualizing modules and Gorenstein presentations”, *AMS Special Session*, Boca Raton, FL.
- Jun. “Non-commutative desingularization of determinantal varieties”, *CIMPA-UNESCO-IPM School on Commutative Algebra and Applications to Combinatorics and Algebraic Geometry*, Tehran, Iran (cancelled for political reasons).
- Mar. “Semidualizing modules and Gorenstein presentations”, *AMS Special Session*, Urbana, IL.
- 2008 Dec. “Semidualizing modules and Gorenstein presentations”, *Winter Meeting of the Canadian Mathematical Society*, Ottawa, Ontario, Canada.
- Oct. “What should a non-commutative desingularization be?”, *Route 81 Conference #18*, Kingston, Ontario, Canada.
- Sep. “Non-commutative desingularization of determinantal varieties”, *Conference on interactions between representation theory and commutative algebra*, Barcelona, Spain.
- Sep. “What is a non-commutative desingularization?”, *Mathematics Department Colloquium*, University of Nebraska-Lincoln.
- Mar. “Non-commutative desingularizations of determinantal varieties”, *International Conference on Commutative Algebra*, Yokohama, Japan.
- 2007 Oct. “Non-commutative desingularization of the generic determinant”, *AMS Special Session*, Rutgers, NJ.
- Mar. “Factoring the adjoint and modules over the generic determinant”, *Mathematics Department Colloquium*, Georgia State University.
- Jan. “Non-commutative desingularization of the generic determinant”, *AMS Special Session*, New Orleans, LA.
- 2006 Nov. “Factoring the adjoint and modules over the generic determinant”, *Kent Regional Algebra Weekend*, Kent State University.
- Sep. “Non-commutative desingularization of the generic determinant”, *Joint meeting of the Canadian and Mexican Mathematical Societies*, Guanajuato Mexico.
- Aug. “Non-commutative desingularization of the generic determinant”, *Fields Institute Workshop on Computational and Combinatorial Commutative Algebra*, Toronto, Ontario, Canada.
- Apr. “Coxeter-Dynkin diagrams: A, D, and E”, *32nd Annual New York State Regional Graduate Mathematics Conference*, Syracuse University.
- Apr. “Non-commutative desingularization of the generic determinant”, *AMS Special Session*, San Francisco, CA.
- Feb. “Non-commutative desingularization of the generic determinant”, *Algebraic Geometry Seminar*, Queen’s University.

---

## Teaching

- 2004–today **Syracuse University.**  
Elements of Modern Mathematics, Calculus I, II, and III, Differential Equations, Second Course in Linear Algebra, Applied Linear Algebra, Intro to Abstract Algebra, Senior Seminar in Mathematics, Graduate Algebra I and II, Homological Algebra, Topics in Algebra: Combinatorial Commutative Algebra, Topics in Algebra: MCM Modules
- 2003–2004 **University of Toronto.**  
Calculus!
- 2000–2003 **University of Kansas.**  
Calculus I, Intro to Statistics, Special Topics: MCM Modules
- 1995–2000 **University of Nebraska–Lincoln.**  
College Algebra, Trigonometry, Precalculus, Recitations for Calculus I and II

---

## Service to the Institution

### Syracuse University Mathematics Department

- 2006–today **Preparing Future Faculty/Future Professoriate Program** *mentor for* Wei Ning, Derek Gustafson, Thomas Bleier, and Dayal Dharmasena.
- 2008–today **Social Media co-Guru** (*with L. Kovalev*), maintain and cultivate department's website and Facebook/Twitter presences.
- 2009–today **Colloquium Chair.**
- 2012–today **Editor** of *"The Archimedean"*, departmental newsletter.
- 2013–2014 **Graduate Committee** (*Chair*).
- 2011–2012 **Ad Hoc Hiring Committee** to fill tenure-track position in Combinatorics.
- 2011–2012 **Ad Hoc Committee** for the tenure case of Lixin Shen.
- 2011–2012 **Executive Committee.**
- 2009–2011 **Graduate Committee** (*Chair 2010–2011*).
- 2006–2008 **Undergraduate Committee.**

### **PhD Preliminary Exam Administrator.**

Jan 2007, Aug 2007, Jan 2009, Jan 2011, Jan 2012, Aug 2013.

### **Specialty Exam Committees.**

Adam McCaffrey, Thomas Bleier, Kosmas Diveris, Jeremy Entner

### **PhD Dissertation Defense Committees.**

Markus Reitenbach, Sebastian Burciu, Philip Lynn, Allen Pelley, Christina Graves, Thomas Bleier, Marju Purin, Kosmas Diveris

### Syracuse University College of Arts & Sciences

- 2010–2011 **Search Committee for Mathematics Department Chair** charged by Mathematics Department and Dean Langford to formulate and implement procedures to select new Chair.
- 2009–2010 **First-Year Advisor** help incoming first-year students from across the college.
- 2007–2008 **Curriculum Committee** supervise courses and curricular programs.

## Other

2010–today **Faculty advisor** for SU Bowling Club.

## Current PhD Students

**Joshua Stangle** *Syracuse University*, PhD expected Spring 2016.

---

## Service to the Profession

### Editorial

- 2001–today **co-Founder, Designer, and co-Webmaster** of *www.commalg.org*, with Moira McDermott and Sean Sather-Wagstaff. A website for the commutative algebra community, including conference announcements, news, and links of interest to commutative algebraists.
- 2007–today **Associate Editor** for *Journal of Commutative Algebra*.
- 2012–today **Associate Editor** for *Communications in Algebra*.

### Conferences Organized

- 2016 Aug. **Workshop and International Conference on Representations of Algebras (ICRA XVII)** with *D. Zacharia*, Syracuse NY.
- 2013 Oct. **23rd annual Route 81 Conference on Commutative Algebra and Algebraic Geometry** with *S. P. Diaz* and *C. Miller*, Syracuse NY.
- 2012 Apr. **Interactions between Commutative Algebra and Representation Theory: A conference in honour of Ragnar-Olaf Buchweitz** with *S. Iyengar*, *C. Miller*, and *D. Zacharia*, Syracuse NY. Funded by the National Science Foundation.
- 2010 Oct. **AMS Special Session on Commutative Algebra and Algebraic Geometry (proxy for 20th Route 81 Conference)** with *A. Geramita*, *C. Miller*, and *M. Stillman*, Syracuse NY.
- 2010 Jan. **AMS Special Session on Commutative Algebra** with *S. Cooper* and *S. Sather-Wagstaff*, San Francisco CA.
- 2009 Oct. **19th Annual Route 81 Conference on Algebraic Geometry and Commutative Algebra** with *S. P. Diaz* and *C. Miller*, Syracuse NY.
- 2006 Dec. **CMS Special Session on Commutative Algebra and Algebraic Geometry** with *R.-O. Buchweitz* and *G. G. Smith*, Toronto, Ontario, Canada.
- 2006 Sep. **16th Annual Route 81 Conference on Algebraic Geometry and Commutative Algebra** with *S. P. Diaz* and *C. Miller*, Syracuse NY.
- 2005 Aug. **Minnnowbrook Workshop on Commutative Algebra** with *S. Iyengar*, *C. Miller*, and *A. Singh*, Minnowbrook Adirondack Conference Center, NY. Funded by Syracuse University and the National Security Agency.
- 2004 May **AMS Special Session on Commutative Algebra** with *S. Iyengar*, Houston TX.
- 2001 Oct. **AMS Special Session on Commutative Algebra** with *S. Loepp*, Williamsown MA.

### Other Service to the Mathematical Community

2013–2016 **AMS Committee on Meetings and Conferences** *Member at Large*.

ongoing **Referee** for the following journals.

- Acta Mathematica Sinica
- Advances in Mathematics
- Algebra and Representation Theory
- American Journal of Mathematics
- American Mathematical Monthly
- Arabian Journal of Mathematics
- Bulletin of the American Mathematical Society
- Bulletin of the Brazilian Mathematical Society
- Compositio Mathematica
- Czechoslovak Mathematical Journal
- Communications in Algebra
- Duke Mathematical Journal
- Geometriae Dedicata
- Illinois Journal of Mathematics
- Indian Journal of Pure and Applied Mathematics
- International Mathematics Research Notices
- Inventiones Mathematicae
- Journal of Algebra
- Mathematica Scandinavica
- Mathematical Research Letters
- Mathematische Annalen
- Mathematische Zeitschrift
- Nagoya Mathematical Journal
- Osaka Journal of Mathematics
- Pacific Journal of Mathematics
- Proceedings of the American Mathematical Society
- Proceedings of the London Mathematical Society
- Rocky Mountain Journal of Mathematics
- Selecta Mathematica
- Transformation Groups

ongoing **Reviewer** for NSF and NSA grant proposals.

ongoing **Reviewer** for Mathematical Reviews, 38 articles.