MATTHEW MACAULEY

Associate Professor
School of Mathematical & Statistical Sciences
O-325 Martin Hall
Clemson University
Clemson, SC, USA 29634-0975

EDUCATION

Ph.D., Mathematics. University of California, Santa Barbara, 2008.
M.A., Mathematics. University of California, Santa Barbara, 2005.
B.S., Mathematics. Harvey Mudd College, 2003.

PROFESSIONAL APPOINTMENTS

Clemson University. Clemson, SC.
- Associate Professor, Mathematical Sciences (2014-present).
- Assistant Professor, Mathematical Sciences (2008-14).
- Faculty member. Graduate Program in Environmental Toxicology (2016-present).

Anton de Kom University of Suriname. Visiting Lecturer, MSc program in Sustainable Management of Natural Resources (SMNR). 2019-20. Paramaribo, Suriname.

African Institute of Mathematical Sciences. Cape Town, WC, South Africa.
- Visiting Lecturer. 2017-present.

National Taipei University of Technology. Taiwan.
- Visiting Lecturer. Summer 2017.

University of Southern Denmark. Odense, Denmark.
- Visiting Faculty. Fall 2014.

Institute for Systems Biology. Seattle, WA.
- Visiting Scientist. Summer 2009.

Virginia Bioinformatics Institute. Virginia Tech. Blacksburg, VA.
- Postdoctoral Associate. 2008.
- Research Associate. 2005-08.

University of California, Santa Barbara.
- Teaching Assistant / Associate. 2003-07.

Los Alamos National Laboratory. Los Alamos, NM.
- Graduate Research Associate. Summer 2003, 2004.

GRANT FUNDING

"Southeast Center of Mathematics and Biology (SCMB)." NSF-Simons Research Centers. Simons Foundation Award #594594. Co-PI. (PI Svetlana Poznanovikj; transferred from Elena Dimitrova). 2019-2023 (50% of $198,970).

"Toric posets: theory and applications." Simons Foundation, Collaboration Grants for Mathematicians, Award #358242. Principal Investigator (sole PI), 2016-21 ($35,000).

NSF conference grant (Graduate Students Combinatorics Conference). Co-PI (PI Svetlana Poznanovikj), DMS-1600767, 2016–17 (50% of $16,000).

"Analysis and stability of dynamical system models over networks." National Science Foundation (DMS, Applied Mathematics). Principal Investigator (sole PI), 2012-14 ($85,026).

"Algebra, Biology & Combinatorics." Simons Foundation, Collaboration Grants for Mathematicians, Award #246042. Principal Investigator (sole PI), 2012-17 ($35,000). Award terminated by PI upon receipt of NSF grant.

HONORS AND AWARDS

Outstanding Service to Graduate Students. School of Mathematical and Statistical Sciences, Clemson University, 2023.
Professor for Affordable Learning (PAL) Award, sponsored by the Partnership for Academic Libraries of South Carolina (PASCAL), 2018.
Clemson University Watt Faculty Fellow. Inaugural group, 2018-19.
Clemson University Board of Trustees Award for Excellence, 2017-2018.
Project NExT Fellowship, Mathematical Association of America (2008-2009).
Mathematical Contest in Modeling. Highest distinction: "Outstanding," awarded to 11/494 entries nationally (2003).
Chavin Prize for best senior thesis. Department of Mathematics, Harvey Mudd College (2003).

CLASSES TAUGHT

Calculus I (UCSB, Clemson)
Calculus II (UCSB, Clemson, Taipei Tech)
Calculus for Life and Social Scientists (UCSB)
Multivariable Calculus (UCSB, Taipei Tech)
Differential Equations (UCSB, Clemson, Taipei Tech, University of Suriname)
Linear Algebra (UCSB, Clemson, Taipei Tech)
Introduction to Statistics (Taipei Tech)
Advanced Engineering Mathematics (Clemson)
Theory of Probability (Clemson)
Discrete Mathematical Structures (Clemson)
Abstract Algebra I & II (Clemson)
Advanced Calculus I & II (Clemson)
Mathematical Modeling (Clemson)
Topics in Geometry (Clemson)
Topology (Clemson)
Algebraic Biology (African Institute of Mathematical Sciences)
Graduate Linear Algebra (Clemson)
Graduate Abstract Algebra I & II (Clemson)
Combinatorial Computational Biology of RNA (Clemson)

PUBLICATIONS

Books

1. M. Macauley. *Visual Algebra*. In preparation. Approximately 800 pages.
2. R. Robeva and M. Macauley (editors). *Algebraic and combinatorial computational biology.* Academic Press, 2018.

Refereed journal publications

1. M. Julian and M. Macauley. Fundamental motifs in the crystallographic point group Hasse diagram. Submitted (2024).
2. M. Macauley. Dihedralizing the quaternions. *Amer. Math. Mon.* **131**(84), (2024), 294–308.
3. M. Macauley. Cayley tables and lattices of finite rings. Submitted (2023).
4. C. Defant, M. Joseph, M. Macauley, A. McDonough. Torsors and tilings from toric toggling. Submitted (2023).
5. I. Deal[ugrad], M. Macauley, R. Davies. Boolean models of the transport, synthesis, and metabolism of tryptophan in *Escherichia coli*. *Bull. Math. Biol.* **85**(1), (2023), 29 pages.

6. I. Edhlund, M. Macauley, and C. Lee. PBTK Optimizer: An open source application for PBTK model parameter optimization in python. *J. Open Res. Softw*. **9**(1), (2021), 9 pages.
7. M. Macauley and N. Youngs. The case for algebraic biology: from education to research. *Bull. Math. Biol.* **82**(115), (2020), 16 pages.
8. M. Macauley and R. Robeva. Algebraic models, inverse problems, and pseudomonomials from biology. *Lett. Biomath.* **7**(1), (2020), 81–104.
9. S.-W. Chao and M. Macauley. Toric heaps, cyclic reducibility, and conjugacy in Coxeter groups. *Open J. Disc. Math*. **9**(4), (2019), 34 pages.
10. S. Chen, Y. Wu, M. Macauley, and X.-M. Sun. "Monostability and bistability of Boolean networks using Semi-tensor Products." *IEEE Trans. Control Network Syst*. **6**(4) (2019), 1379–1390.
11. A. Jenkins[grad] and M. Macauley. Bistability and asynchrony in a Boolean model of the L-arabinose operon in Escherichia coli. *Bull. Math. Biol*. **79**(8) (2017): 1778–1795.
12. D. Einstein, M. Farber[grad], E. Gunawan[grad], M. Joseph[grad], M. Macauley, J. Propp, and S. Rubinstein-Salzedo. Noncrossing partitions, toggles, and homomesies. *Electron. J. Combin.* **23**(3) (2016) #P3.52, 26pp.
13. Q. He[grad] and M. Macauley. Stratification and enumeration of Boolean functions by canalizing depth. *Physica D* **314** (2016), 1–8.
14. M. Macauley. Morphisms and order ideals of toric posets. *Mathematics* **4**(2), (2016), 31 pages.
15. M. Chan, D. Glass, M. Macauley, D. Perkinson, C. Werner, and Q. Yang[ugrad]. Sandpiles, spanning trees, and plane duality. *SIAM J. Discrete Math*. 29(1), (2015), 461–471.
16. M. Develin, M. Macauley, and V. Reiner. Toric partial orders. *Trans. Amer. Math. Soc.* **368** (2016), 2263–2287.
17. M. Macauley and H.S. Mortveit. An atlas of limit set dynamics for asynchronous elementary cellular automata. *Theor. Comput. Sci.* **504**, 26–37 (2013).
18. M. Macauley, B. Rabern[grad], and L. Rabern[grad]. "Dangerous reference graphs and semantic paradoxes." *J. Philos. Logic*. **41**(5), 727–765 (2013).
19. T. Boothby[grad], J. Burkert[ugrad], M. Eichwald[ugrad], D.C. Ernst, R.M. Green, and M. Macauley. "On the cyclically fully commutative elements of Coxeter groups." *J. Algebraic Combin*. **36**(1), 123–148, (2012).
20. L. Layne[grad], E. Dimitrova, and M. Macauley. "Nested canalyzing depth and network stability." *Bull. Math. Biol.* **74**(2), 422–433 (2012).
21. M. Macauley and H.S. Mortveit. "Posets from admissible Coxeter sequences." *Electron. J. Combin.* **18**(1), #R197, 18 pp. (2011).
22. M. Macauley and H.S. Mortveit. "Update sequence stability in graph dynamical systems." *Discrete Cont. Dyn. Sys. Ser. S,* **4**, 1533–1542 (2011).
23. M. Macauley, J. McCammond, and H.S. Mortveit. "Dynamics groups of asynchronous cellular automata." *J. Algebraic Combin.* **33**(1), 31–55 (2011).
24. E. Goldstein, A. Apolloni, B. Lewis[grad], J. Miller, M. Macauley, S. Eubank, M. Lipsitch, and J. Wallinga. "Distribution of vaccine / antivirals and the 'least spread line' in a stratified population." *J. Royal Soc. Interface*, **7**, 755–764 (2010).
25. M. Macauley and H.S. Mortveit. "Coxeter groups and asynchronous cellular automata." *Lect. Notes Comput. Sci.* **6350**, 409–418 (2010).
26. M. Macauley and H.S. Mortveit. "Cycle equivalence of graph dynamical systems." *Nonlinearity,* **22**, 421–436 (2009).
27. V.S.A. Kumar, M. Macauley, and H.S. Mortveit. "Limit set reachability in asynchronous graph dynamical systems." *Lect. Notes Comput. Sci.* **5796**, 217–232 (2009).
28. J. Chen, M. Macauley, and A. Marathe. "Network topology and locational market power." *Comput. Econ.* **34**, 21–35 (2009).

29. K. Atkins, J. Chen, A. Kumar, M. Macauley, and A. Marathe. "Locational market power in network constrained markets." *J. Econ. Behav. Organ.* **70**, 416–430 (2009).
30. M. Macauley and H.S. Mortveit. "On enumeration of conjugacy classes of Coxeter elements." *Proc. Amer. Math. Soc.* **136**, 4157–4165 (2008).
31. M. Macauley, J. McCammond, and H.S. Mortveit. "Order independence in asynchronous cellular automata." *J. Cell. Autom.* **3**, 37–56 (2008).

Refereed conference proceedings

1. C. Defant[grad], M. Joseph, M. Macauley, and A. McDonough. "Torsors from toggling independent sets." 34th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC), *Discrete Math. Theor. Comput. Sci.* (July 2022).
2. L. David[ugrad], C. Defant[grad], M. Joseph, M. Macauley, and A. McDonough[grad]. Dynamical algebraic combinatorics, asynchronous cellular automata, and toggling independent sets. *Proceedings of the 27th International Workshop, AUTOMATA 2021.* Marseille, France. **90**, 5:1–5:16 (July 2021).
3. D. Einstein, M. Farber[grad], E. Gunawan[grad], M. Joseph[grad], M. Macauley, J. Propp, and S. Rubinstein-Salzedo. Noncrossing partitions, toggles, and homomesies. 28th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC), *Discrete Math. Theor. Comput. Sci.* pp. 419–430 (July 2016).
4. M. Macauley and H.S. Mortveit. "An atlas of limit set dynamics for asynchronous elementary cellular automata." *Proceedings of the 20th International Workshop, AUTOMATA 2014.* Himeji, Japan, pp. 64–76 (July 2014).
5. M. Macauley and G. Thomas[grad]. "Analysis and dynamics of bi-threshold functions." *Proceedings of the 20th International Workshop, AUTOMATA 2014.* Himeji, Japan, pp. 170–177 (July 2014).
6. J. Chen, M. Macauley, and A. Marathe. "Role of network and production capacity in allocating market power." *Proceedings of the Trans-Atlantic INFRADAY Conference on Applied Infrastructure Modeling and Policy Analysis*. University of Maryland. College Park, MD (November 2007).
7. K. Atkins, J. Chen, A. Kumar, M. Macauley, and A. Marathe. "Locational market power in network constrained markets." Proceedings of the 29th IAEE International Conference. Potsdam, Germany (June 2006).

Book chapters

1. M. Macauley and B. Stigler. "Inferring interactions in molecular networks via primary decompositions of monomial ideals." In *Algebraic and combinatorial computational biology.* Eds., R. Robeva and M. Macauley. Academic Press, 2018. Pages 89–146.
2. M. Macauley, A. Jenkins, and R. Davies. "The regulation of gene expression by operons and the local modeling framework." In *Algebraic and combinatorial computational biology.* Eds., R. Robeva and M. Macauley. Academic Press, 2018. Pages 175–211.
3. A. Jenkins[grad] and M. Macauley. "Section 20.4, Genome Assembly." In *CRC Handbook for Discrete Mathematics*, Ed.: K. Rosen. CRC Press, 2017.
4. Q. He[grad], M. Macauley, and S. Poznanovikj. "Section 20.5, RNA Folding." In *CRC Handbook for Discrete Mathematics*, Ed.: K. Rosen. CRC Press, 2017.
5. Q. He[grad], M. Macauley, and R. Davies. "Dynamics of complex Boolean networks: canalization, stability, and criticality." In *Algebraic and discrete mathematical methods for modern biology.* Eds., R. Robeva. Academic Press, 2015. Pages 93–119.
6. Q. He[grad], M. Macauley, and R. Davies. "RNA secondary structure: combinatorial models and folding algorithms." In *Algebraic and discrete mathematical methods for modern biology.* Eds., R. Robeva. Academic Press, 2015. Pages 321—345.

PRESENTATIONS

Colloquium talks

1. *University of Cape Town*. Department of Mathematics. Colloquium. Cape Town, WC, South Africa. March 2018.
2. *University of the Western Cape*. Department of Mathematics. Colloquium. Bellville, WC, South Africa. April 2017.
3. *Stellenbosch University*. Department of Mathematical Sciences. Colloquium. Stellenbosch, WC, South Africa. April 2017.
4. *University of Southern Denmark*. Department of Mathematics and Computer Science (IMADA). Odense, Denmark (November 2014).
5. *University of Turku*. Department of Mathematics and Statistics. Turku, Finland (October 2014)
6. *Northern Arizona University*. Department of Mathematics and Statistics. Flagstaff, AZ (April 2014).
7. *Plymouth State University*. Department of Mathematics. Plymouth, NH (April 2011).
8. *Johns Hopkins University*. Department of Applied Mathematics and Statistics. Baltimore, MD (April 2010).
9. *Clemson University*. Department of Mathematical Sciences. Clemson, SC (October, 2007).

Conference talks

1. Workshop on Algebraic Biology. African Institute for Mathematical Sciences. Cape Town, WC, South Africa. April 2024.
2. MAA Southeast Sectional. Special session: Beyond Mathematics: Interdisciplinary Collaborations. University of Tennessee, Knoxville, TN. March 2024.
3. MAA Southeast Sectional. Special session: Active learning in undergraduate mathematics. University of Tennessee, Knoxville, TN. March 2024
4. AMS Sectional Meeting. Special session: Enumerative combinatorics. Creighton University, Omaha, NE. October 2023.
5. SIAM Conference on Applied Algebraic Geometry. Special Session: Algebraic Methods in Biological Systems. Eindhoven University of Technology, Netherlands. July 2023.
6. Workshop on Discrete and Topological Models in Molecular Biology (DTMB). University of South Florida, Tampa, FL. May 2022.
7. AMS Sectional Meeting. Special session: Algebra, combinatorics, and topology in biological structures. University of South Alabama (moved virtually). November 2021.
8. Workshop on Automata Networks (Eric Goles' 70th birthday conference). CIRM, Marseille, France. July, 2021.
9. Society for Mathematical Biology (SMB) Annual Meeting. Minisymposium on Generalized Boolean network models and the concept of canalization. Virtual conference. June 2021.
10. Applied and Computational Mathematics in the Americas 2020. University of Miami, FL. June 2020 [*canceled due to COVID*]
11. SIAM Conference on the Life Sciences. Minisymposium on Combinatorics and algebra in biological structures. Garden Grove, CA. June 2020. [*canceled due to COVID*]
12. Third International Conference on Mathematics and Statistics (AUS-ICMS). American University of Sharjah, United Arab Emirates. February 2020.
13. International Workshop on Boolean Networks (IWBN 2020). Universidad de Concepción, Chile. January 2020.
14. International Symposium on Biomathematics and Ecology Education and Research (BEER). University of Wisconsin, La Crosse, WI. October 2019.

15. AMS Sectional Meeting. Special session: Algebraic and Discrete Methods in Mathematical Biology. Auburn University, Auburn, AL. March 2019.
16. International Symposium on Biomathematics and Ecology Education and Research (BEER). Arizona State University, Tempe, AZ. October 2018.
17. Midwest Mathematical Biology Conference. University of Wisconsin, La Crosse, WI. May 2018.
18. International Symposium on Biomathematics and Ecology Education and Research (BEER). College of Charleston, SC. October 2016.
19. SIAM Conference on the Life Sciences. Minisymposium: "Combinatorics and algebra in biological structures." Boston, MA. July 2016.
20. AMS Sectional Meeting. Special session: Topological combinatorics. University of Memphis, TN. October 2015.
21. Society for Mathematical Biology (SMB) Annual Meeting. Minisymposium on Computing-Intensive Modeling in Biomathematics: Regulatory Networks. Georgia State University, Atlanta GA. July 2015.
22. Automata 2014 (2 talks). Himeji, Japan (July 2014).
23. Saganfest (Bruce Sagan's 60th birthday conference). University of Florida. Gainesville, FL (April 2014).
24. Workshop for Young Researchers in Mathematical Biology. Mathematical Biosciences Institute, Ohio State University. Columbus, OH (August 2013).
25. Special session on Applications to the Life and Physical Sciences. SIAM meeting on Applied Algebraic Geometry. Colorado State University. Fort Collins, CO (August 2013).
26. Special session on Algebraic and Geometric Combinatorics. AMS Central Sectional meeting. Iowa State University. Ames, IA (April 2013).
27. Special session on Discrete Methods and Models in Mathematical Biology." AMS Central Sectional meeting. Iowa State University. Ames, IA (April 2013).
28. Special session on Mathematical Models of Complex Biological Systems. International Symposium on Biomathematics and Ecology Education and Research. St. Louis, MO (November 2012).
29. Special session on Algebraic and Combinatorial Aspects of Mathematical Biology. SIAM Annual Meeting. Minneapolis, MN (July 2012).
30. Mini Conference—Research and Collaboration Forum for Southeastern Researchers in Mathematical Modeling of Biological Systems. Georgia Health Sciences University. Augusta, GA (March 2012).
31. Special session on Combinatorics of Coxeter Groups. AMS Eastern Sectional meeting. College of the Holy Cross. Worcester, MA (April 2011).
32. Budapest Semesters in Mathematics 25th Anniversary Reunion and Conference. Alfréd Rényi Institute of Mathematics. Budapest, Hungary (June 2010).
33. 41st Southeastern International Conference on Combinatorics, Graph Theory, and Computing. Florida Atlantic University. Boca Raton, FL (March 2010).
34. AMS Central Sectional meeting. Baylor University. Waco, TX (October, 2009).
35. Reachability Problems 2009. École Polytechnique. Palaiseau, France (September, 2009).
36. AMS/SMS Joint Mathematics Meetings (Contributed paper). Washington, DC (January, 2009).
37. AMS/SMS Joint Meeting (2 talks). Shanghai, China (December, 2008).
38. Automata 2007. The Fields Institute. Toronto, Ontario (August, 2007).

<u>Seminar talks</u>

1. "What Is…A Seminar?" online seminar. December 2021.
2. "Talk Math With Your Friends (TMWYF)" online seminar. October 2021.

3. Georgia Tech, School of Mathematics. Mathematical Biology Seminar. November 2019.
4. University of Kentucky, Department of Mathematics. Applied Mathematics Seminar. October 2016.
5. University of Kentucky, Department of Mathematics. Discrete CATS seminar. October 2016.
6. Research Seminar. Icelandic Centre of Excellence in Theoretical Computer Science (ICE-TCS). Reykjavik University. Reykjavik, Iceland. (November 2014).
7. Combinatorics Seminar. Northern Arizona University. Flagstaff, AZ (March 2014).
8. Algebra Seminar, University of Georgia. Athens, GA (April 2013).
9. Discrete Mathematics Seminar, Georgia Southern University. Statesboro, GA (April 2012).
10. Combinatorics Seminar, Dartmouth College. Hanover, NH (April 2011).
11. Algebraic Lie Theory Seminar, University of Colorado. Boulder, CO (November 2010).
12. Algebra Seminar, Virginia Tech. Blacksburg, VA (March 2010).
13. Algebra and Combinatorics seminar, North Carolina State University. Raleigh, NC (February 2010).
14. Combinatorics Seminar, University of Washington. Seattle, WA (June, 2009).
15. Senior Seminar, University of North Carolina. Asheville, NC (February 2009).
16. Algebra and Discrete Mathematics Seminar, Clemson University. Clemson, SC (4 times from 2009-14).
17. Algebra Seminar, Virginia Tech. Blacksburg, VA (March 2008).

STUDENT ADVISING

Graduate student advising (primary advisor)

Sandra Annie Tsiorintsoa (Ph.D.). "Models of functional redundancy in ecological communities.". April 2024. Co-advised with Sharon Bewick (Biology). First job: Postdoc, University of Florida.

Tilly Erwin (M.S.). "Reverse engineering time-series data with gene knockouts using algebraic methods." August 2020.

Sandra Annie Tsiorintsoa (M.Sc.). "Pseudo-monomials in algebraic biology." African Institute for Mathematical Sciences. June 2018.

Qijun He (Ph.D). "Algebraic geometry and combinatorics of partially nested canalyzing functions." May 2016. First job: Biocomplexity Institute at Virginia Tech (postdoc).

Andy Jenkins (M.S.) "A Boolean model of the L-arabinose operon in *E. coli*". May 2016.

Shihwei Chao (Ph.D.). "Cyclic reducibility in Coxeter Groups." August 2014. First job: University of North Georgia (awarded tenure).

Qijun He (M.S.). "Some new combinatorial problems from RNA." December 2012.

Grady Thomas (M.S.). "Dynamics of Bi-threshold Graph Dynamical Systems." May 2012.

Chris Wilson (M.S.). "Backward Bifurcations in Epidemiological Models." Co-advised with Jan Medlock. May 2012.

Undergraduate student advising (research)

Stephen Jones. Spring 2023, Fall 2023.

Daniel Dale. Fall 2022, Spring 2023.

Vincent Cicino. Fall 2021, Spring 2022.

Anthony Angone, Spring 2021, Fall 2021

Kathryn Graham, Summer 2020. Supposed by the Clemson REU in Material Sciences.

Isadora Yang, Fall 2019, Spring 2020.

Garrick Stott. Fall 2016.

Daniel Christensen. Spring 2016, Fall 2016.

Andrew Bell. Fall 2015.

Kelly Rigsbee. Summer 2015, Fall 2016.
James Stevens. Summer 2014. Supported by NSF grant.
Timothy Downing. 2012-13. Supported by NSF grant.

Thesis Committees Served (defense date given)
Masoum Soleimani, June 2024. Advisor: J. Coykendall
Joseph Swanson, June 2023. Advisor: J. Coykendall
Julia VanLandingham, April 2023. Advisor: W. Goddard
Alec Mertin (M.S.), April 2023. Advisor: S. Poznanovikj
Jushawn Macon (M.S.), April 2023. Advisor: K. Cook
Michael Nelson (Ph.D.), March 2023. Advisor: K. Sather-Wagstaff.
Sandra Annie Tsiorintsoa (M.S.), April 2021. Advisor: M. Saltzman
Philip de Castro (M.S.), March 2020. Advisor: J. Coykendall.
Ian Edhlund (Ph.D., Environmental Toxicology). November 2019. Advisor: C. Lee.
Shuai Wei (M.S.), July 2019. Advisor: K. Sather-Wagstaff.
Amy Grady (Ph.D.), May 2018, and (M.S.), April 2014. Advisor: S. Poznanovikj
Kara Stasikelis (Ph.D.), April 2018. Advisor: S. Poznanovikj.
Brandon Goodell (Ph.D), April 2017. Advisor: J, Coykendall.
Sherli Koshy Chenthittayil (Ph.D), April 2017, and (M.S.), May 2015. Advisor: E. Dimitrova.
Thomas Jiaxian Li (Ph.D.), February 2015. Advisor: C.M. Reidys (U. Southern Denmark).
Praveen Nalla (M.S.), December 2013. Advisor: E. Dimitrova.
Sher Chhetri (M.S.), July 2012. Advisor: T. Khan.
Ryan Harper (M.S.), April 2012. Advisor: E. Dimitrova / J. Medlock.
Margeaux Evans (M.S.), April 2012. Advisor: E. Dimitrova / J. Medlock.
Kaitlin Woskoff (M.S.), April 2012. Advisor: E. Dimitrova.
Nate Black (Ph.D.), April 2010, and (M.S.), July 2014. Advisor: S. Gao.
Lori Layne (Ph.D.) April 2011, and (M.S.), December 2009. Advisor: E. Dimitrova.
Frank Volny (Ph.D.), April 2011, and (M.S.), July 2009. Advisor: S. Gao.
Justin Peachey (M.S.), April 2009. Advisor: G. Matthews.

DEPARTMENTAL SERVICE
Graduate Affairs committee. 2021–present
Library Liaison for School of Mathematical and Statistical Sciences (SMSS), 2018–present.
SMSS Council. 2019–21.
Departmental representative to Trailblazers: Provost's Mentoring Initiative for Faculty, 2018–19.
SMSS chair search committee, 2016–18.
Undergraduate Affairs committee, 2016–20.
Sabbatical review committee: 2016–18.
Academic advising, approximately 10 undergraduates each year. 2015–present.
Faculty advisor of four undergraduates participating in the inaugural 2015 CRP: Collaborative Research Program. March 2015.
Faculty advisor of two 3-person undergraduate teams competing in the MCM: Mathematical Contest in Modeling. 2015, 2016, 2022.
Organizer: Algebra and Discrete Mathematics seminar. 2011–13.
Clemson Calculus Challenge volunteer. Proctor (2012, 2014) and problem writer (2013).
Departmental representative, UCSB Graduate Student Association, 2006–07.
Organizer: UCSB Graduate Student Mathematics Seminar, 2004–06.

COLLEGE SERVICE
University Assessment Committee (dean-appointed college rep), 2019–22.
General Education Committee (elected college rep), 2018–21.

Council on Global Engagement (elected college rep), 2018–present.
Clemson University Grievance Board member (elected college rep), 2018–20.
ScienceForward leadership team, responsible for developing the Strategic Plan for the College of Science. Invited by Dean Cynthia Young, 2017–18.
Lead Faculty Senator to the College of Science, 2017–18.
Faculty Senator (elected college rep), 2015–19.
Clemson University Athletic Council (elected college rep), 2016–19.
Clemson University Athletic Council alternate (elected college rep), 2014–16.
Accompanied 12 undergraduate engineering students (10 from Clemson) on a study-abroad trip to Trier University of Applied Sciences, in Trier, Germany. Official instructor of record of two classes: IS 210 and BE 440. Summer Session I, 2010.

UNIVERSITY SERVICE
University Club Task Force, 2019–20.
Clemson Abroad Champion, 2018–present.
Clemson Online Synchronized Review Committee, 2018–covid.
Data Advisory Committee, 2018–covid.
Faculty Senate Bylaws Committee, 2018.
Faculty Senate Ad Hoc Committee on the Status of Women, 2018–19.
Faculty Senate Secretary, 2018–19.
Faculty Senate Welfare Committee, 2018–19.
Faculty Senate Finance Committee, 2017–18.
University Diversity and Inclusion Committee, 2016–17.
Faculty Senate Scholastic Policy Committee, 2015–16.
Parking Advisory Committee, 2017–2019.

UNIVERSITY TRAINING FOR ADVOCACY AND LEADERSHIP
Clemson University Search Advocate Program, to promote equity in Clemson University candidate searches. Inaugural cohort. 2019–20.
Clemson University Civil Treatment for Employees training, Apr. 2019.
Clemson Abroad Champions workshop with Diversity Abroad. Feb. 2019.
Ally Training: Awareness and Empathy. 2-hour training. Clemson Gantt Multicultural Center. Dec. 2018.
Ally Training: Action and Advocacy. 2-hour training. Clemson Gantt Multicultural Center. Dec. 2018.
TIGERS Advocates: 2-hour training for men on gender equality. Funded by NSF ADVANCE grant. Nov. 2018.
Clemson Abroad Champions workshop: Clemson Abroad 101. Nov. 2018.
Provost's Mentoring Initiative for Faculty: half-day training by Clemson Tigers ADVANCE Trailblazers. May 2018.

SERVICE TO THE PROFESSION
The Abram Gannibal Project: Collaborative Research in Applied Algebra and Geometry in Africa. Research advisor for recent PhDs. Makerere University, Uganda. May 2020 [*canceled due to COVID*]
Delegate representing the United States to the third bi-annual *Next Einstein Forum (NEF) Global Gathering*, the largest science and innovation gathering on the African continent. Nairobi, Kenya. March 2019. [*postponed due to COVID, then ran virtually*]
Co-organizer (with David Murrugarra and Claus Kadelka). Special session at the Biomathematics, Ecology, Education and Research (BEER) Symposium. University of Wisconsin. La Crosse, WI. October 2019.

Panelist: National Defense Science and Engineering Graduate (NDSEG) Fellowship.
Grant reviewer: Chilean National Fund for Scientific and Technological Development (FONDECYT).
NSF panelist, twice. (Intentionally vague about dates and programs.)
Co-organizer (with John Jungck and Raina Robeva): Investigative workshop on "*Algebraic Mathematical Biology*" at the National Institute for Mathematical and Biological Synthesis (NIMBioS) at the University of Tennessee. July 2016.
Co-organizer (with Terrell Hodge and Raina Robeva): Tutorial on "*Algebraic and Discrete Mathematical Biology for Undergraduate courses*." National Institute for Mathematical and Biological Synthesis (NIMBioS) at the University of Tennessee. Knoxville, TN. June 2014.
Co-organizer (with Brandilyn Stigler): Special session on "*Applications to the life and physical sciences.*" SIAM conference on Applied Algebraic Geometry. Colorado State University. Fort Collins, CO. August 2013.
Co-organizer (with Terrell Hodge and Raina Robeva): Workshop on *"Teaching Discrete and Algebraic Mathematical Biology to Undergraduates*." Mathematical Biosciences Institute at Ohio State University. Columbus, OH. July 2013.
Co-organizer (with Dana Ernst): Special session on "*Combinatorics of Coxeter groups*." Spring 2011 AMS Sectional meeting, College of the Holy Cross, Worcester, MA. April 2011.
Co-author: Algebra and Discrete Mathematics graduate preliminary exam. Many semesters.
Co-organizer: Workshop on "How to establish and fund interdisciplinary research collaborations." AMS/MAA Joint Mathematics Meetings. Washington, DC. January, 2009.
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