

Bryn Mawr College • Department of Mathematics • 101 N. Merion Avenue • Bryn Mawr, Pennsylvania 19010 • USA
E-mail: ejgraham@brynmawr.edu • **Phone:** 610.526.7971

EDUCATION

Ph.D., Mathematics, 2012, University of Utah | *Advisor:* Frederick R. Adler

M.S., Mathematics, 2008, University of Utah

A.B., Mathematics, 2004, Bryn Mawr College | *Magna Cum Laude, Honors in Mathematics*

RESEARCH INTERESTS

Mathematical biology, with applications to generalized physiology, including metabolism, endocrinology, and immune-mediated mechanisms of hemostasis.

ACADEMIC POSITIONS

Bryn Mawr College Mathematics Department

Associate Professor

2021–present

Assistant Professor

2015 – 2021

NC State University Department of Mathematics

NSF Alliance Postdoctoral Research Scholar | *Mentor:* James F. Selgrade

2012 – 2015

PUBLICATIONS

Books

A. Deines, D. Ferrero, E. GRAHAM*, M. S. Im, C. Manore, C. Price. 2018. *Advances in the Mathematical Sciences: AWM Research Symposium*, Los Angeles, CA, April 2017. Springer.

Peer-reviewed publications

E. J. GRAHAM*, N. Elhadad, M. Albers. 2023. Reduced model for female endocrine dynamics: validation and functional variations. *Mathematical Biosciences*, 358, 1089779.

E. J. GRAHAM*. 2023. Intersectionality as Impetus and Impediment. In: *Aspiring and Inspiring: Tenure and Leadership in Academic Mathematics*, eds. Garcia et al. American Mathematical Society, 29.

E. J. GRAHAM* and A. Radunskaya. 2019. Mathematical Modeling of Immune-Mediated Processes in Coagulation and Anticoagulation Therapy. In: *A Celebration of the EDGE Program's Impact on the Mathematics Community and Beyond*, eds. D'Agostino et al. Association for Women in Mathematics Series, vol 18. Springer, 237–275.

E. J. GRAHAM* and J. F. Selgrade. 2017. A model of ovulatory regulation examining the effects of insulin-mediated testosterone production on ovulatory function. *Journal of Theoretical Biology* 416, 149–160.

L. de Pillis, E. J. GRAHAM*, K. Hood, Y. Ma, A. Radunskaya, J. Simons. 2015. Injury-initiated clot formation under flow: a mathematical model with warfarin treatment. In: *Applications of Dynamical Systems in Biology and Medicine*, eds. T. Jackson and A. Radunskaya, vol. 158 of *The IMA Volumes in Mathematics and its Applications*, 75–98.

E. J. GRAHAM* and F. R. Adler. 2014. Long-term models of oxidative stress and mitochondrial damage in insulin resistance progression. *Journal of Theoretical Biology* 340, 238–250.

Non-peer-reviewed publications

E. J. GRAHAM*. 2021. How (and How Not) to be Anti-racist in Mathematics. 2021. *MAA FOCUS*. 41(2), 22–28.

E. GRAHAM*, R. Higgins, C. Price, S. Wilson. 2018. The “Mathematically Gifted and Black” Website. *Notices of the AMS*. 46 (2), 936–938.

E. GRAHAM*. 2017. The Accidental Mathematician. *The Lighthouse Almanac* 1, 3–5.

R. Higgins, E. GRAHAM*, S. Wilson. 2016. SIAM Celebrates Diversity in Mathematics. *SIAM News* 49, 11.

GRANTS**Funded**

- 2021 | Mathematical Association of America Tensor-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement) grant | Project: Mathematically Gifted and Black
- 2018 | Simons Foundation Mathematics and Physical Sciences-Collaboration Grants for Mathematicians | Project: Mathematical Models for Biomedical Applications
- 2016 | Alliance to Advance Liberal Arts Colleges workshop grant | Workshop: Strategic Optimization: Focusing Undergraduate Research to Maximize Scholarship in Applied Mathematics
- 2015 | AWM Conference Travel Grant

Unfunded

- 2017 | NSF CAREER: Modeling Androgen Signaling in Mechanisms of Ovulation
- 2016 | NSF SCH:INT: Collab. Research: A Precision Obesity Management System using Dynamic Energy Profiling
- 2016 | NSF QuBBD: Collaborative Research: Hybrid Modeling and Scalable Analysis of Energy Profiles to Dynamically Inform Precision Obesity Management

PROFESSIONAL SERVICE

NSF Panelist

Co-founder/partner: Mathematically Gifted and Black/Society for Industrial and Applied Mathematics (MGB-SIAM) Early-Career Fellowship (MSEC) (est. 2021).

Co-founder and co-director: *Mathematically Gifted & Black* (<https://mathematicallygiftedandblack.com/>) website (est. 2017) and predoctoral student scholarship (est. 2020).

Society for Industrial and Applied Mathematics (SIAM) Diversity Advisory Committee: member, Workshop Celebrating Diversity Working Group, 2015-2018.

2017 SIAM Annual Meeting Organizing Committee

Reviewer: *Spora – A Journal of Biomathematics*; *Journal of Mathematical Biology* (JOMB); *Journal of Theoretical Biology* (JTB); *PLoS Computational Biology*; Springer Book Series

SELECTED FELLOWSHIPS AND AWARDS

- 2022 | AWM Presidential Recognition Award recipient | Program: Mathematically Gifted and Black
- 2019–2020 | Bryn Mawr College Rosabeth Moss Kanter Change Master Fund recipient
- 2016 | AWM Workshop funded speaker | SIAM Annual Meeting
- 2015–2018 | Project NExT Fellow
- 2014 | SIAM Travel Award | SIAM Conference on Computational Science and Engineering
- 2014 | SIAM Travel Award | SIAM Annual Meeting
- 2012–2015 | NSF Alliance Postdoctoral Fellowship

PROFESSIONAL DEVELOPMENT

Certificate in Teaching Techniques, North Carolina State University, Spring 2014

Completed 16 hours of training in teaching techniques. *Workshops completed*: Introduction to Teaching, Active Learning, Establishing Credibility and Authority in the Classroom, Motivational Teaching Strategies, Writing Learning Outcomes, Integrating Writing into the STEM Classroom, Experiences of Students with Disabilities, Learning Styles.

WORKSHOPS AND CONFERENCE SESSIONS ORGANIZED

July 2022 (minisymposium organizer): *Data and Modeling in Action: When Mathematics and Society Intersect*, SIAM Annual Meeting, Pittsburgh, Pennsylvania, USA

June 2017 (co-organizer and host): Alliance to Advance Liberal Arts Colleges Workshop, *Strategic Optimization: Focusing Undergraduate Research to Maximize Scholarship in Applied Mathematics*, Bryn Mawr, Pennsylvania, USA

April 2017 (special session co-chair): *From cells to landscapes: modeling health and disease*, Association for Women in Mathematics Research Symposium, Los Angeles, California, USA

March 2015 (minisymposium co-chair): *Fluid Transport Dynamics in Biology and Medicine, part of the Workshop Celebrating Diversity*, Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering, Salt Lake City, Utah, USA

October 2014: *Perspectives in Diabetes Modeling*, International Symposium on Biomathematics and Ecology Education and Research, Claremont Colleges, Claremont, California, USA

August 2014 (minisymposium co-chair): *Dynamics of thrombus development: formation, degradation, and therapeutic design*, Society for Industrial and Applied Mathematics (SIAM) Conference on the Life Sciences, Charlotte, North Carolina, USA

KEYNOTE, PLENARY, AND NAMED LECTURES

August 2022: MAA Mathfest, BIO SIGMAA Plenary Address, Philadelphia, Pennsylvania, USA

April 2021: ParaDIGMS Spring Conference plenary address (*virtual*)

January 2021: Joint Mathematics Meetings, Invited MAA-SIAM-AMS Hrabowski-Gates-Tapia-McBay Lecturer (*virtual*)

March 2020: Keynote Speaker, WiMSoCal (Symposium for Women in Mathematics in Southern California), Irvine, California, USA

September 2019: Dorothy Wrinch Lecture in Biomathematics, WIMIN Conference, Northampton, Massachusetts, USA

INVITED TALKS: COLLOQUIA AND SEMINARS

April 2022: Seminar, University of Colorado Denver, Denver, Colorado, USA

November 2021: Mathematics Colloquium, Villanova University

November 2021: Temple University (*virtual*)

October 2021: Equity Forum, University of Toronto (*virtual*)

April 2021: Mathematical Modeling Seminar, Rochester Institute of Technology (*virtual*)

October 2020: Biomathematics Seminar, Virginia Commonwealth University (*virtual*)

April 2020: Washington College (*virtual*)

September 2019: Saint Joseph's University, Philadelphia, Pennsylvania, USA

April 2019: Morehouse College, Atlanta, Georgia, USA

April 2019: Mathematical and Computer Science Colloquium, Moravian College, Bethlehem, Pennsylvania, USA

March 2019: University of the Sciences, Philadelphia, Pennsylvania, USA

October 2018: Applied Mathematics Colloquium, Claremont Colleges, Claremont, California, USA

March 2018: Health Equity and Inclusion Seminar, University of Utah, Salt Lake City, Utah, USA

October 2017: Partial Differential Equations and Applied Mathematics Seminar, Drexel University, Philadelphia, Pennsylvania, USA

December 2016: Department of Electrical and Computational Engineering, Drexel University, Philadelphia, Pennsylvania, USA

October 2016: Applied Mathematics & Statistics Colloquium, Colorado School of Mines, Golden, Colorado, USA

April 2016: AWM Student Chapter Seminar, University of Delaware, Newark, Delaware, USA

April 2016: Mathematics & Statistics Colloquium, Villanova University, Villanova, Pennsylvania, USA

February 2016: Bard College at Simons Rock, Barrington, Massachusetts, USA
February 2016: Applied Math & Scientific Computing Seminar, Temple University, Philadelphia, Pennsylvania, USA
November 2015: Bi-Co Mathematics Colloquium (Haverford College)
December 2014: GlaxoSmithKline (remote), Research Triangle Park, North Carolina, USA
October 2014: Mathematical Biological Colloquium, Duke University, Durham, North Carolina, USA
July 2014: National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases (NIH/NIDDK), Bethesda, Maryland, USA
January 2013: Biomathematics Seminar, North Carolina State University, Raleigh, North Carolina, USA
June 2012: Metabolism Interest Group, Division of Endocrinology, University of Utah School of Medicine, Salt Lake City, Utah, USA
July 2009: University of Minnesota Medical School (Division of Pediatric Endocrinology), Minneapolis, Minnesota, USA

INVITED TALKS: CONFERENCES

August 2023: International Congress on Industrial and Applied Mathematics (ICIAM), Tokyo, Japan
July 2023: Society for Mathematical Biology Annual Meeting, Columbus, Ohio, USA
May 2023: SIAM Conference on Dynamical Systems, Portland, Oregon, USA
July 2022: SIAM Annual Meeting, Pittsburgh, Pennsylvania, USA
May 2021: SIAM Conference on Dynamical Systems (*virtual*)
July 2019: International Congress on Industrial and Applied Mathematics (ICIAM), Valencia, Spain
July 2019: SIAM Conference on Dynamical Systems, Snowbird, Utah, USA
March 2019: Explanation, Idealization and Modeling Workshop, Bryn Mawr College, Bryn Mawr, Pennsylvania, USA
July 2018: SIAM Annual Meeting, Portland, Oregon, USA
July 2018: SIAM Conference on Applied Mathematics Education, Portland, Oregon, USA
January 2018: Joint Mathematics Meetings, San Diego, California, USA
July 2017: SIAM Annual Meeting, Pittsburgh, Pennsylvania, USA
February 2017: Women in Data Science (WiDS) Newtown Square, SAP America Inc., Newtown Square, Pennsylvania, USA
July 2016: SIAM Annual Meeting, Boston, Massachusetts, USA
July 2016: SIAM Conference on the Life Sciences, Boston, Massachusetts, USA
January 2016: Joint Mathematics Meetings, Seattle, Washington, USA
October 2015: Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Conference, Washington, District of Columbia, USA
June 2015: Society for Mathematical Biology Annual Meeting, Atlanta, Georgia, USA
April 2015: Association for Women Mathematics (AWM) Research Symposium, College Park, Maryland, USA
March 2015: Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering, Salt Lake City, Utah, USA
January 2015: Joint Mathematics Meetings, San Antonio, Texas, USA
August 2014: Society for Industrial and Applied Mathematics (SIAM) Conference on the Life Sciences, Charlotte, North Carolina, USA
July 2014: Society for Industrial and Applied Mathematics (SIAM) Annual Meeting, Chicago, Illinois, USA
July 2011: International Council for Industrial and Applied Mathematics (ICIAM), Vancouver, British Columbia, Canada

CONTRIBUTED CONFERENCE TALKS

July 2017: Society of Mathematical Biology Annual Meeting, Salt Lake City, Utah, USA

July 2017: University of Utah Math Biology Alumni Reunion Conference in honor of James P. Keener's 70th birthday, Salt Lake City, Utah, USA

October 2014: International Symposium on Biomathematics and Ecology Education and Research, Claremont Colleges, Claremont, California, USA

August 2014: Society for Industrial and Applied Mathematics (SIAM) Conference on the Life Sciences, Charlotte, North Carolina, USA

RESEARCH WORKSHOPS

May 2022: Banff International Research Station for Mathematical Innovation and Discovery (BIRS)

June 2021: Topic: Using Decision Modeling to Personalize Policy

June 2016: Lake Arrowhead, California, USA

May 2014: National Institute for Mathematical and Biological Synthesis (NIMBioS), Knoxville, Tennessee, USA

March 2014: Fields Institute, Toronto, Ontario, Canada

September 2013: Institute for Mathematics and its Applications (IMA), Minneapolis, Minnesota, USA | **Project Co-Leader:** 'Modeling Anticoagulation Therapy'

PANELS, CAREER ENRICHMENT, AND OUTREACH

April 2021, *Changing the 'Face' of Mathematics*, National Math Festival invited presentation (*virtual*), with R. Higgins, C. Price, S. Wilson

June 2020, Numerical Analysis Instructor, EDGE Summer Program (*virtual*), sponsored by Brown University

June 2019, Numerical Analysis Instructor, Enhancing Diversity in Graduate Education (EDGE) Summer Program, Pomona College, Claremont, California, USA

March 2019, Podcast guest, *Relatively Prime*, Episode: "Mathematically Gifted and Black", <https://relprime.com/mgab/>.

July 2018, Panelist, *Hidden Figures: Then and Now*, SIAM Annual Meeting, Portland, Oregon, USA

May 2018, #*Mathematics4Life*, Agnes Irwin School, Bryn Mawr, Pennsylvania, USA

July 2017, Panelist, *Hidden Figures* Event featuring retired NASA engineer Dr. Christine Darden, SIAM Annual Meeting, Pittsburgh, Pennsylvania, USA

May 2016, Panelist, 'Becoming an academic mathematician: Transitioning from undergraduate to grad student': Women in Mathematics Program, Institute for Advanced Study (IAS), Princeton, New Jersey, USA

March 2016, #*Mathematics4Life*, Sonia Kovalevsky Day keynote speaker, University of Wisconsin—Eau-Claire, Wisconsin, USA

October 2015, Society for Advancement of Chicanos/Hispanics and Native Americans in Science student poster judge and mentor, Washington, District of Columbia, USA

June 2014, Invited participant: Careers in Academia, Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, Rhode Island, USA

April 2014, Invited participant: Spring Opportunities for Women in the Mathematical Sciences, National Institute for Mathematical and Biological Synthesis (NIMBioS), Knoxville, Tennessee, USA

June 2013, *ROS and MT in IR: Reviewing Ominous Signs and Mathematical Tones in Irreversible Ruin*, Enhancing Diversity in Graduate Education Summer Symposium, New College of Florida, Sarasota, Florida, USA

June 2010, Graduate student mentor: Enhancing Diversity in Graduate Education Summer Program, North Carolina State University, Raleigh, North Carolina, USA

Held problem sessions and provided additional academic support to a diverse group of women entering graduate programs in the mathematical sciences.

June 2009, Workshop co-organizer: 5th Annual IGERT Student Workshop, Department of Mathematics, University of Utah, Salt Lake City, Utah, USA

Organized 3-day project-based workshop for first- and second-year graduate students featuring eminent speaker.

April 2009, Participant: Center for Quantitative Biology Workshop, Department of Mathematics and College of Science, University of Utah, Salt Lake City, Utah, USA

May 2008, Participant: Mathematical Perspective on Cancer Immunology, Department of Mathematics, University of Utah, Salt Lake City, Utah, USA

June 2006, Invited participant: Enhancing Diversity in Graduate Education Summer Program, New College of Florida, Sarasota, Florida, USA

COLLEGE-WIDE COMMITTEES AND SERVICE

2022–2024: Parliamentarian of the Faculty

2020–2022: Committee on the Undergraduate Curriculum

Spring 2020: Data Science steering committee

AY2019–2020: co-convener of the junior faculty

Fall 2019: Extra-departmental member, Bryn Mawr physiology faculty search committee

August 2019: Panelist, New faculty orientation

Fall 2017–Spring 2020: Committee on Libraries, Information and Computing (CLIC); 2019–2020 CLIC chair

December 2017–January 2018: BMC representative, Haverford pure mathematics faculty search committee

September 2017–December 2017: BMC representative, Haverford applied mathematics faculty search committee

May 2017 | May 2018: Emergency Faculty Marshal, Convocation & Commencement

October 2016–March 2017: 2017 Community Day of Learning planning committee

September 2016–February 2017: Bryn Mawr representative, Haverford health studies search committee