October 1, 2022

NANCY EATON, PH.D.

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POSITIONS

Current positions:

University of Rhode Island:

Director of Data Science, 07/2020 – 07/2023 ----------

Full Professor of Mathematics, 07/2005 to present (current level Full III) ----------

Former positions:

University of Rhode Island:

Interim Director of Data Science, 07/2019 – 06/2020 ----------

Associate Dean, College of Arts and Sciences, 07/2014 to 06/2019 ----------

Chairperson, Department of Mathematics, 05/2008 to 06/2014 ----------

Associate Professor of Mathematics, 07/1998 to 06/2005 ----------

Assistant Professor of Mathematics, 07/1992 to 06/1998 ----------

Emory University:

Teaching Assistant, Mathematics PhD Program, 09/1987 to 05/1992 ----------

Poughkeepsie New York:

Systems Analyst, Central Hudson Gas and Electric Corporation, 06/1985 to 08/1987----------

EDUCATION

Ph.D. in Mathematics

Emory University, Atlanta GA - awarded May 1992 ----------

B.S. in Mathematics

State University of New York at New Paltz - awarded May 1985 ----------

A.S. in Computer Science

Dutchess Community College, Poughkeepsie, NY - awarded Jan. 1984 ----------

Painting (no degree)

Swain School of Design, New Bedford, MA - Attended 1976 to 1977 ----------

LEADERSHIP

Current position:

Director of Data Science (2019-2023) (Interim (2019-2020))

Former positions:

Associate Dean, College of Arts and Sciences (7/1/2014 – 6/30/2019)

Fellow, American Council on Education (ACE) (7/1/2012 – 6/30/2013)

Chairperson, Department of Mathematics (5/25/2008 – 6/30/2014)

Chairperson, Faculty Senate (1/1/2011 – 5/25/2012)

Chair, The Collaboration for Explorations in Mathematics and Sciences (CEMS) (9/1/2009-5/25/2015)

PI, Scholarship Program to Increase Numbers and Strengthen the Workforce in Technology and Mathematics (SPIN+) (3/30/2013-3/30/2019)

I was the PI, along with three co-PIs, on a grant from the NSF Program - Scholars in Science, Technology, Engineering and Mathematics (S-STEM). The $640,000 grant (NSF Award Number: 1259473) was awarded in 2013. SPIN+ is a comprehensive program that is designed to enhance the academic experience and create a sense of community for high achieving scholars from underrepresented groups in Computer Science, Computer Engineering, and Mathematics through offering tuition scholarships, book scholarships, mentoring, attentive faculty advisors, and professional development opportunities.

Scholarly Research in Mathematics

Research Area

- Combinatorics with an emphasis in Graph Theory - Dissertation: *Some Results in Graph Ramsey Theory and Graph Representations* – Ph.D. Advisor: Vojtéch Rödl, Emory University (1989-1992)

Peer Refereed Papers in Professional Research Journals

1. Eaton, N. & Rödl, V. (1992). A canonical Ramsey theorem. *Random Structures and Algorithms*, 3(4), 427-444.
2. Eaton, N. & Rödl, V. (1996). Graphs of small dimensions. *Combinatorica*, 16(1), 59-85.
3. Eaton, N., Gould, R., & Rödl, V. (1996). On p-intersection representations. *Journal of Graph Theory*, 21(4), 377-392.
4. Eaton, N. & Grable, D. (1996). Set representations for almost all graphs. *Journal of Graph Theory*, 23(3), 1-12.
5. Eaton, N. (1997). Intersection representations of complete unbalanced bipartite graphs. *Journal of Combinatorial Theory Series B*, 71(2), 123-129.
6. Eaton, N. (1998). Ramsey numbers for sparse graphs. *Discrete Mathematics*, 185, 63-75.
7. Eaton, N. & Hull, T. (1999). Defective list colorings of planar graphs. *Bulletin of the Institute of Combinatorics and its Applications*, 24, 79-87.
8. Eaton, N. (2000). A near packing of two graphs. *Journal of Combinatorial Theory, Series B*, 80(1), 98-103.
9. Eaton, N, Czygrinow, A, Hurlbert, G H, & Kayll, P M (2002). On pebbling threshold functions for graph sequences. *Discrete Mathematics*, 247(1 - 3), 93-105.
10. Eaton, N., Furedi, Z., Kostochka, A., & Skokan, J. (2007). Tree Representations of Kn,n. *European Journal of Combinatorics*, 28(4), 1087-1098.

11. Eaton, N. & Faubert, G. (2007). Caterpillar Tolerance Representations of Cycles. *Bulletin of the Institute of Combinatorics and its Applications*, 51, 80-88.
12. Eaton, N. & Tiner, G. (2010). On the Erdös-Sós Conjecture and graphs with large minimum degree. *Ars Combinatoria*, 95, 373-382.
13. Eaton, N. & Faubert, G. (2012). Caterpillar Tolerance Representations. *Bulletin of the Institute of Combinatorics and its Applications*, 64,109-117.
14. Barbato, M. A. & Eaton, N. (2012). K1,3-subdivison Tolerance Representations of Cycles. *Bulletin of the Institute of Combinatorics and its Applications*, 65.
15. Eaton, N. & Tiner, G. (2013). On the Erdös-Sós Conjecture for Graphs Having No Paths with k+4 Vertices. *Discrete Mathematics*, 313 , 1621-1629.
16. Barbato, M. A. & Eaton, N. (2018). $K_{1,3}$8-Subdivision Representations with Tolerance 1 and 2. *Bulletin of the Institute of Combinatorics and its Applications,* 82, 21-29.
17. Armstrong, A., Eaton, N. (2020). New restrictions on defective coloring with applications to steinberg-type graphs. *Journal of Combinatorial Optimization* .
    https://doi.org/10.1007/s10878-020-00573-5
    Published April 25, 2020.

Major Professor for Ph.D. Students

1. Thomas Hull • 1997 • *Some Problems In List Coloring Bipartite Graphs* • Professor, Professor Western Connecticut State University
2. Mary Ann (Saadi) Barbado • 2001 • *Some Results On Tree Tolerance Representations* • Professor and Department Chair, Fitchburg State University
3. Glenn Faubert • 2005 • *Caterpillar Tolerance Representations Of Graph* • Lecturer/Part-time instructor, URI Department of Mathematics
4. Gary Tiner • 2007 • *On The Erdos-Sos Conjecture* • Professor, Faulkner University
5. Mia Hessian • 2013 • *Some Results In Graph Representations And Graph Colorings* • Associate Professor at Manhattanville College
6. Adam Gilbert • 2013 • *Some Results On Graph Representations And Closure Systems* • Associate Professor at Southern New Hampshire University
7. Caitlin (Phifer) Krul • 2014 • *The Cycle Intersection Matrix And Applications To Planar Graphs And Network Theory* • Assistant Professor at Worchester State University (Joint with Professor Woong Kook)
8. Diana Smith • 2014 • *Towards Steinberg's Conjecture* • Assistant Professor at the New England Institute of Technology
9. Addie Armstrong • 2016 • *Coloring Planar Graphs with no 4-Cycles, 5-Cycles, or Certain Other Small Faces* • Assistant Professor at Norwich University

- *Technical Reports, Other*
  1. Eaton, N. & Rödl, V. (1992). A regularity lemma. *Emory University Technical Report Series*.
  2. Eaton, N., Gould, R., & Rödl, V. (1992). On p-intersection representations. *Emory University*

Technical Report Series.

3. Eaton, N., Kook, W., & Thoma, L. (2003). Monotonicity For Complete Graphs and Symmetric Complete Bipartite Graphs. Unpublished.
4. Eaton, N., Kook, W., & Thoma, L., (2004). Number of Spanning Trees in the Complete Graph on notes minus an edge. *The Online Encylopedia of Integer Sequences*, A071720, A089104.

Collaborations - White papers

- Mohammad Qayoumi, Kimberly Polese, Nancy Eaton, Maureen Scharberg, Jennifer Summitt. (2013). *Are We Innovation-Ready? A Bold New Model for Higher Education*. Published Online: California State University San Jose, Office of the President.
- Mohammad Qayoumi, Kimberly Polese. (2012). *Reinventing Public Higher Education: A Call to Action*. Published Online: California State University San Jose, Office of the President. (Special thanks to Ellen Junn, Bill Nance, Maureen Scharberg, Jennifer Summit and Nancy Eaton)

Research in Progress

1. Eaton, N., Gilbert, A., & Heissan, A. M. (2013). 4-Coloring Coils.
2. Eaton, N. & Gilbert, A. (2013). On A Characterization of K_4 Subdivisions.
3. Eaton, N. & Heissan, A. M. (2013). Path Representations of Graphs.
4. Eaton, N., Smith, D. (2014) Planar graphs with no 4-cycles, 5-cycles, or 8-cycles are (1,0,0)-colorable.

Professional Memberships:

- American Mathematical Society
- SIAM
- MAA

Conference Presentations – selected (2005-2017)

2016

Joint Mathematical Meetings: *On Three-Coloring Planar Graphs Containing No Chained Triangles*. Addie Armstrong (presenter) & Nancy Eaton, University of Rhode Island

2015

Mathematical Association of America, Sectional Meeting & Brown University Symposium for Undergraduate Research in the Mathematical Sciences): *Sidon Sequences and Magic Numbers for Complete Graphs*. Jake Smith (undergraduate student presenter), Addie Armstrong (advisor), Nancy Eaton (advisor)

2014

Southeastern International Conference on Combinatorics, Graph Theory & Computing: $K_{1;n}$*-subdivision Tolerance Representations of Cycles*. Adam Gilbert (presenter), Northeastern University & Nancy Eaton, University of Rhode Island

Joint Mathematical Meetings: A Remediation Program for Calculus: Initial Findings. Caitlin Phifer (presenter) & Nancy Eaton

2013

Joint Mathematical Meetings: *On the Erdős-Sós Conjecture for graphs having no path with k+4 vertices*. Gary Tiner (presenter), Faulkner University & Nancy Eaton, University of Rhode Island

2008

No Teacher Left Behind II, Brown University: *Advanced Viewpoints of Mathematics in the High School Classroom*. Joint presentation with Lewis Pakula.

2007

Discrete Mathematics Day, Middlebury College, Ripton VT: *Planar graphs and list coloring*. Nancy Eaton (invited talk)

Cumberland Conference, Emory University, Atlanta GA: *On the Erdős-Sós Conjecture*. Nancy Eaton (invited talk)

2005

Discrete Mathematics Day, Worcester Polytechnic Institute, MA: Graphs representable by Caterpillars. Nancy Eaton (invited talk)

Teaching

Currently teaching:

Fall 2022

MTH 307: Introduction to Mathematical Rigor

AMS/DSP 553: Mathematical Methods in Data Science

Courses taught:

Summer 2022

AMS/DSP 553: Mathematical Methods in Data Science

Spring 2022

MTH 307: Introduction to Mathematical Rigor

Fall 2021

MTH/CSC 447: Discrete Structures

AMS/DSP 553: Mathematical Methods in Data Science

Spring 2021

MTH 307: Introduction to Mathematical Rigor

Fall 2020

MTH 307: Introduction to Mathematical Rigor

Spring 2020

MTH 307: Introduction to Mathematical Rigor

CSC 320: Applied Combinatorics

Fall 2019

MTH 307: Introduction to Mathematical Rigor

CSC 320: Applied Combinatorics

Spring 2019

CSC 320: Applied Combinatorics

Prior to Fall 2014

MTH 107, 108, 111, 131, 132, 141, 142, 215, 243, 307, 382. 399, 420, 447, 451, 513, 547, 548, 591, 592, 691, 692

Service

Current Service

Service to the Department of Mathematics (2019-2023):

- Tenure-track Search Committee (Fall 2021 – Spring 2022)
- Tenure-track Search Committees - 2 positions (Fall 2021 – Spring 2022)
- Academic Program Review Committee (Spring 2022)
- Member of the Math Department Undergraduate Committee (2021-present)
- Member of the Math Department Graduate Committee (2019-2021)

Service to the Program of Data Science (2017-present):

- Director of Data Science (2020-2023) (Interim since 2019)
- Director Online Graduate Certificate in Data Science
    - Submitted program proposal (Fall 2020)
    - Program start (Summer 2021)
- Director of Online Masters in Data Science
    - Spring 2023 launch

University Service:

- Faculty Senate Member (5/8/2020 – 5/7/2023)
- Chair of the Centers Review subcommittee of the FS Committee on Research and Creative Activities (9/2020 – present)
- Member of the Academic Enhancement Center (AEC) Learning Advisory Board (2018 – present)
- Member the IT Research Computing Services Advisory Council (2019 – 2022)
    - Search Committee for Data Science Consultant (Summer 2021)
    - Chair of Search Committee for Director of IT Research Computing Services (2019)
- Member of IT Gov (a presidential committee) (Spring 2020-2022)

Other Past Service

- Member of the Search Committee for Assistant Professor of Physics (Fall 2019)
- Member of the Talent Development Scholar Success Executive Committee & Communications subcommittee (2017 – 2019)
- Chair & developer: CAS Student Success in Gateway Courses Committee (2018-2019)

- Chair & developer: CAS Ad Hoc Task Force on Graduate Teaching Assistant Reallocation (2018 – 2019)
- Chair: CAS Diversity Committee (2018 – 2019)
- Chair: CAS Research, Scholarship, and Creative Works Committee (2018-2019)
- Gateway to Completion - Administrative Advisory Board (2013 – 2016)
- Joint Committee on Academic Planning (2010 – 2011) and (2016 – 2018)
- College of Arts and Science Curriculum Committee (Many years, Chair from 2014-2018)
- 2010-2015 & 2016-2021 Academic Plan working groups
- Faculty Senate Vice Chair Elect (2013 - 2014)
- Faculty Senate Executive Committee (2009 – 2012, Chair: spring 2011, fall 2011, spring 2012)
- General education program development - Subcommittee (2013 – 2014)
- Strategic Budget Planning Committee (2011-2012)
- Enrollment Management and Retention Committee (2010 – 2012)
- Graduate Council & Curriculum Subcommittee (2010 – 2012)
- Search Committee for Vice Provost for Enrollment Management (2010)
- Administrator Review - Subcommittee (2013, 2021)