ALEXANDER BURSTEIN
Curriculum Vitae
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Website: `https://profiles.howard.edu/alexander-burstein`

POSITION

Associate Professor, Department of Mathematics, Howard University, Washington, DC
Member of the Graduate Faculty

EDUCATION

Ph.D., 1998, University of Pennsylvania, Mathematics
M.A., 1993, University of Pennsylvania, Mathematics
B.A., 1993, University of Pennsylvania, Mathematics, cum laude
1993-1998, Graduate Student, University of Pennsylvania
1990-1993, Undergraduate Student, University of Pennsylvania
1987-1989, Undergraduate Student, Kyiv State University, Ukraine

PROFESSIONAL EXPERIENCE

Howard University, Associate Professor, 2013-present
Howard University, Assistant Professor, 2008-2013
Howard University, Visiting Assistant Professor, 2007-2008
John Knopfmacher Centre for Applicable Analysis and Number Theory,
    University of Witwatersrand, South Africa, Visitor, August 2007
Iowa State University, Assistant Professor, 2000-2007
George Washington University, Visiting Assistant Professor, 1999-2000
University of Rhode Island, Lecturer, 1998-1999
University of Pennsylvania, Graduate Teaching Assistant, 1993-1998
University of Pennsylvania, Undergraduate Teaching Assistant, 1992-1993

RESEARCH INTERESTS

Combinatorics and graph theory; especially, enumerative and algebraic combinatorics;
in particular, topics related to patterns in permutations, permutation statistics, and the Riordan group.

PUBLICATIONS

1. Miklós Bóna, Alexander Burstein, Permutations with exactly one copy of a monotone pattern of length k, and a generalization, *Annals of Combinatorics* (2022), `https://doi.org/10.1007/s00026-021-00549-0`.

2. Alexander Burstein, Louis W. Shapiro, Pseudo-involutions in the Riordan group, *Journal of Integer Sequences* **25** (2022), Article 22.3.6.

3. Alexander Burstein, Opel Jones, Enumeration of Dumont permutations avoiding certain four-letter patterns, *Discrete Mathematics and Theoretical Computer Science*, **22**:2 (2021), #7.

4. Jean-Luc Baril, Alexander Burstein, Sergey Kirgizov, Pattern statistics in faro words and permutations, *Discrete Mathematics* **344** (2021), no. 8, 112464.

5. Jonathan Bloom, Alexander Burstein, Egge triples and unbalanced Wilf-equivalence, *Australasian Journal of Combinatorics* **64(1)** (2016), 232–251.

6. Alexander Burstein, On the distribution of some Euler-Mahonian statistics, *Journal of Combinatorics* **6** (2015), no. 3, 273–284.

7. Alexander Burstein, Jay Pantone, Two examples of unbalanced Wilf-equivalence, *Journal of Combinatorics* **6** (2015), no. 1-2, 55–67.

8. Alexander Burstein, Sergi Elizalde, Total occurrence statistics on restricted sets, *Pure Mathematics and Applications (Pu.M.A.)* **24** (2013), no. 1, 103–123.

9. Ziyad AlSharawi, Alexander Burstein, Michael Deadman, Abdullahi Umar, A recursive sequence arising from a combinatorial problem in botanical epidemiology, *Journal of Difference Equations and Applications* **19** (2013), no. 6, 981–993.

10. Alexander Burstein, A short proof for the number of permutations containing pattern 321 exactly once, *Electronic Journal of Combinatorics* **18(2)** (2011), P21.

11. Alexander Burstein, Vít Jelínek, Eva Jelínková, Einar Steingrímsson, The Möbius function of separable and decomposable permutations, *Journal of Combinatorial Theory, Series A* **118** (2011), 2346–2364.

12. Alexander Burstein, Matthieu Josuat-Vergés, Walter Stromquist, New Dumont permutations, *Pure Mathematics and Applications (PU.M.A.)* **21** (2010), no. 2, 177–206.

13. Alexander Burstein, On joint distribution of adjacencies, descents and some Mahonian statistics, in *Proceedings of the 22nd International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2010), August 2010, San Francisco, CA, *DMTCS Proceedings*, vol. **AN**, 601–612.

14. Alexander Burstein, Peter Hästö, Packing sets of patterns, *European Journal of Combinatorics* **31** (2010), no. 1, 241–253.

15. Alexander Burstein, Niklas Eriksen, Combinatorial properties of permutation tableaux, in *Permutation Patterns* (2010), S.A. Linton, N. Ruškuc, V. Vatter (eds.), LMS Lecture Note Series No. 376, Cambridge University Press, pp. 171–192.
Extended abstract (12 pages) in *Proceedings of the 20th Annual International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2008), June 2008, Viña del Mar, Chile.

16. Alexander Burstein, Isaiah Lankham, Restricted patience sorting and barred pattern avoidance, in *Permutation Patterns* (2010), S.A. Linton, N. Ruškuc, V. Vatter (eds.), LMS Lecture Note Series No. 376, Cambridge University Press, pp. 233–257.
Extended abstract (12 pages) in *Proceedings of the 18th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2006), June 2006, San Diego, CA.

17. Alexander Burstein, Sergey Kitaev, Partially ordered patterns and their combinatorial interpretations, *Pure Mathematics and Applications (PU.M.A.)* **19** (2008), no. 2-3, 27–38.

18. Alexander Burstein, Sergey Kitaev, Toufik Mansour, Independent sets in certain classes of (almost) regular graphs, *Pure Mathematics and Applications (PU.M.A.)*, **19** (2008), no. 2-3, 17–26.

19. Alexander Burstein, On some properties of permutation tableaux, *Annals of Combinatorics* **11** (2007), 355–368.

20. Alexander Burstein, Walter Stromquist, Dumont permutations of the third kind, extended abstract, *Proceedings of the 19th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2007), July 2007, Tianjin, China.

21. Alexander Burstein, Sergi Elizalde, Toufik Mansour, Restricted Dumont permutations, Dyck paths and noncrossing partitions, *Discrete Mathematics* **306** (2006), no. 22, 2851–2869.
Extended abstract in *Proceedings of the 18th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2006), June 2006, San Diego, CA.

22. Alexander Burstein, Isaiah Lankham, Combinatorics of patience sorting piles, *Séminaire Lotharingien de Combinatoire*, **54A** (2006), Article B54Ab, 19 pp.
Extended abstract in *Proceedings of the 18th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2006), June 2006, San Diego, CA.

23. Alexander Burstein, Isaiah Lankham, A geometric form for the extended patience sorting algorithm, *Advances in Applied Mathematics* **36** (2006), no. 2, 106–117.
Extended abstract in *Proceedings of the 17th International Conference on Formal Power Series and Algebraic Combinatorics* (FPSAC 2005), June 2005, Taormina, Italy.

24. Alexander Burstein, Restricted Dumont permutations, *Annals of Combinatorics* **9** (2005), 269–280.

25. Alexander Burstein, Sergey Kitaev, On unavoidable sets of word patterns, *SIAM Journal on Discrete Mathematics* **19** (2005), no. 2, 371–381.

26. Alexander Burstein, Peter Hästö, Toufik Mansour, Packing patterns into words, *Electronic Journal of Combinatorics* **9(2)** (2002–2003), #R20.

27. Alexander Burstein, Toufik Mansour, Words restricted by 3-letter generalized multipermutation patterns, *Annals of Combinatorics* **7** (2003), no. 1, 1–14.

28. Alexander Burstein, Toufik Mansour, Counting occurrences of subword patterns, *Discrete Mathematics and Theoretical Computer Science* **6:1** (2003), 1–12.

29. Alexander Burstein, Toufik Mansour, Words restricted by patterns with at most 2 distinct letters, *Electronic Journal of Combinatorics* **9(2)** (2002–2003), #R3.

30. Alexander Burstein, Sylvie Corteel, Alexander Postnikov, Carla D. Savage, A lattice path approach to counting partitions with minimum rank t, *Discrete Mathematics* **249** (2002), no. 1–3, 31–39.

31. Alexander Burstein, Herbert S. Wilf, On cyclic strings without long constant blocks, *Fibonacci Quarterly* **35** (1997), no. 3, 240–247.

32. *Ph.D. Thesis:* Enumeration of words with forbidden patterns, University of Pennsylvania, 1998. *Adviser:* Herbert S. Wilf.

SUBMITTED

1. Alexander Burstein, Distribution of peak heights modulo k and double descents on k-Dyck paths, *Australasian Journal in Combinatorics*.

IN PREPARATION

1. Alexander Burstein, Megan Martinez, The ternary forest Wilf class of inversion sequences and restricted permutations.

2. Alexander Burstein, Walter Stromquist, Unimodal inversion sequences and related pattern classes.

3. Alexander Burstein, Chinenye Ofodile, Dumont permutations containing one occurrence of certain three- and four-letter patterns.

CONFERENCE TALKS

1. Miklos Bóna, Alexander Burstein, Permutations with exactly one copy of a monotone pattern of length k, and a generalization, June 15-16, 2021, University of Strathclyde, Glasgow, Scotland, online at `http://combinatorics.cis.strath.ac.uk/pp2021/`.

2. Alexander Burstein, Pattern classes equinumerous to the class of ternary forests, 2020 Permutation Patterns Virtual Workshop, June 30 – July 1, 2020, online at `https://permutationpatterns.com/2020-virtual-workshop/`.

3. Alexander Burstein, Pattern classes enumerated by OEIS A098746, Special Session on Patterns in Permutations, AMS Southeastern Section Meeting, November 2-3, 2019, Gainesville, FL.

4. Alexander Burstein, Hana Kim, Louis W. Shapiro, Involutions and pseudoinvolutions in the Riordan group, Special Session on Riordan Groups, AMS-MAA Joint Mathematics Meetings, January 16-19, 2019, Baltimore, MD.

5. Alexander Burstein, Walter Stromquist, Unimodal inversion sequences and related pattern classes, talk,

   (a) Minisymposium on Permutations in Patterns and Words, 26th British Combinatorial Conference (BCC'17), July 3-7, 2017, University of Strathclyde, Glasgow, UK. (all minisymposium talks are invited)

   (b) 15th International Conference on Permutation Patterns (PP'17), June 26-30, 2017, Reykjavik University, Reykjavik, Iceland.

6. Alexander Burstein, Opel Jones, Restricted Dumont permutations, Special Session on Enumerative Combinatorics, AMS Central Section Meeting, October 28-30, 2016, University of St. Thomas, Minneapolis, MN.

7. Alexander Burstein, Walter Stromquist, Unimodal inversion sequences and pattern-avoiding classes, poster, 14th International Conference on Permutation Patterns (PP'16), June 27 – July 1, 2016, Howard University, Washington, DC.

8. Alexander Burstein, Walter Stromquist, Unimodal inversion sequences and pattern-avoiding classes, Special Session on Enumerative Combinatorics and Graph Theoretic Applications, AMS Central Section Meeting, October 3-4, 2015, Chicago, IL.

9. Alexander Burstein, Unbalanced Wilf-equivalence, Special Session on Patterns in Permutations and Words, and Applications, AMS Central Section Meeting, September 20-21, 2014, Eau Claire, WI.

10. Alexander Burstein, Unbalanced Wilf-equivalence, 12th International Conference on Permutation Patterns (PP'14), July 7-11, 2014, East Tennessee State University, Johnson City, TN.

11. Alexander Burstein, Unbalanced Wilf-equivalences, Bijective and Algebraic Combinatorics: In honor of Bruce Sagan's 60th birthday, March 24-25, 2014, University of Florida, Gainesville, FL.

12. Alexander Burstein, Equidistribution of some Euler-Mahonian statistics, AMS Special Session on Patterns in Permutations and Words, AMS-MAA Joint Mathematics Meetings, January 9-12, 2013, San Diego, CA.

13. Alexander Burstein, A combinatorial proof of equidistribution of some Euler-Mahonian statistics, Special Session on Algorithms, Permutation Patterns and Enumerative Combinatorics, AMS Eastern Section Meeting, September 22-23, 2012, Rochester, NY.

14. Alexander Burstein, A combinatorial proof of joint equidistribution of some pairs of permutation statistics, 10th International Conference on Permutation Patterns (PP'12), June 11-15, 2012, Glasgow, UK.

15. Alexander Burstein, Dumont permutations containing one occurrence of certain three and four letter patterns, Special Session on Enumerative and Geometric Combinatorics, AMS Central Section Meeting, March 31 – April 1, 2012, Lawrence, KS.

16. Alexander Burstein, Chinenye Ofodile, Dumont permutations containing one occurrence of certain three- and four-letter patterns, 9th International Conference on Permutation Patterns (PP'11), June 20-24, 2011, San Luis Obispo, CA.

17. Alexander Burstein, On joint distribution of adjacencies, descents and some Mahonian statistics, 22th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'10), August 2-6, 2010, San Francisco, CA.

18. Alexander Burstein, On joint distribution of adjacencies, descents and some Mahonian statistics, From A = B to Z = 60: Conference in Honor of Doron Zeilberger's 60th Birthday, May 27-28, 2010, Rutgers University, Piscataway, NJ.

19. Alexander Burstein, Matthieu Josuat-Vergés, Walter Stromquist, Distribution of some combinatorial statistics on old and new Dumont permutations, Workshop on Combinatorics, Enumeration, and Invariant Theory (WCEIT), George Mason University, March 19-20, 2010.

20. Alexander Burstein, On joint distribution of adjacencies, descents and some Mahonian statistics, Special Session, AMS Southeastern Section Meeting, October 30 – November 1, 2009, Boca Raton, FL.

21. Alexander Burstein, Distribution of pattern statistics on Dumont permutations, 7th International Conference on Permutation Patterns (PP'09), July 13-17, 2009, Florence, Italy.

22. Alexander Burstein, Peter Hästö, Packing sets of patterns, Special Session, AMS Western Section Meeting, October 4-5, 2008, Vancouver, Canada.

23. Alexander Burstein, Niklas Eriksen, Combinatorial properties of permutation tableaux, Special Session, AMS Southeastern Section Meeting, Murfreesboro, TN, November 2007; 20th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'08), Viña del Mar, Chile, June 2008. (revised and expanded)

24. Alexander Burstein, Sergi Elizalde, Total occurrence statistics on restricted sets, 6th International Conference on Permutation Patterns (PP'08), June 2008, University of Otago, Dunedin, NZ.

25. Alexander Burstein, Walter Stromquist, New Dumont permutations, Special Session, AMS Central Section Meeting, Chicago, IL, October 2007.

26. Alexander Burstein, Walter Stromquist, Dumont permutations of the third kind, 19th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'07), Tianjin, China, July 2007. (poster presentation)

27. Alexander Burstein, Niklas Eriksen, Some more properties of permutation tableaux, 5th International Conference on Permutation Patterns (PP'07), St. Andrews, UK, June 2007.

28. Alexander Burstein, Properties of permutation tableaux, 58éme Séminaire Lotharingien de Combinatoire (SLC-58), Lyon, France, March 2007.

29. Alexander Burstein, Sergi Elizalde, Toufik Mansour, Restricted Dumont permutations, Dyck paths and noncrossing partitions, 18th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'06), San Diego, CA, July 2006. (poster presentation)

30. Alexander Burstein, Isaiah Lankham, Patience sorting and barred pattern avoidance, 18th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'06), San Diego, CA, July 2006. (poster presentation)

31. Alexander Burstein, On some properties of permutation tableaux, 4th International Conference on Permutation Patterns (PP'06), Reykjavik University, Iceland, June 2006.

32. Alexander Burstein, Isaiah Lankham, Patience sorting on words and lexicographic arrays, 2006 AMS Joint Meetings, San Antonio, TX.

33. Alexander Burstein, Isaiah Lankham, Combinatorics of patience sorting piles, 17th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'05), Taormina, Italy, June 2005. (poster presentation)

34. Non-intersecting patience sorting shadow diagrams and barred permutation patterns, Workshop on Permutation Patterns, University of Haifa, May 2005.

35. A geometric form for the extended patience sorting algorithm, 3rd International Conference on Permutation Patterns (PP'05), University of Florida, Gainesville, FL, March 2005.

36. Alexander Burstein, Sergey Kitaev, Partially ordered generalized patterns and their combinatorial interpretations, 3rd International Conference on Permutation Patterns (PP'05), University of Florida, Gainesville, FL, March 2005.

37. Alexander Burstein, Toufik Mansour, Restricted Dumont permutations, 2nd International Conference on Permutation Patterns (PP'04), Malaspina University-College, Nanaimo, BC, Canada, July 2004.

38. Alexander Burstein, Toufik Mansour, Packing patterns into words, 1st International Conference on Permutation Patterns (PP'03), University of Otago, Dunedin, New Zealand, February 2003.

39. Alexander Burstein, Toufik Mansour, Words restricted by patterns with at most 2 distinct letters, 14th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC'02), University of Melbourne, Melbourne, Australia, July 2002. (poster presentation)

40. Alexander Burstein, Distinguished patterns in words and permutations, 1999 AMS-MAA Joint Meetings, Baltimore, MD.

41. Alexander Burstein, Enumeration of words with forbidden patterns, 1998 AMS-MAA Joint Meetings, San Antonio, TX.

OTHER CONFERENCES AND WORKSHOPS ATTENDED

1. Virtual Workshop on Combinatorial Species, Operads, Riordan Arrays and Related Topics, online, Sungkyunkwan University, South Korea, February 22-24, 2022.

2. International Conferences on Permutation Patterns (PP) (2003-2022).

3. Joint Mathematics Meetings (JMM) 2020, Denver, CO, January 15-18, 2020, including:

    (a) MAA META Math Workshop.

4. Mid-Atlantic Algebra, Geometry, and Combinatorics (MAAGC 2018) Workshop, Drexel University, April 28, 2018.

5. Bijective and Algebraic Combinatorics: In honor of Bruce Sagan's 60th birthday, University of Florida, Gainesville, FL, March 24-25, 2014.

6. International Conferences on Formal Power Series and Algebraic Combinatorics (FPSAC) (1998, 2001-2011, 2013, 2018).

7. Waterloo Workshop in Computer Algebra: In honor of Herb Wilf's 80th birthday, Wilfrid Laurier University, May 26-29, 2011.

8. Summer School in Geometric Combinatorics, University of Vienna, Austria, July 18-29, 2005.

9. Summer School in Algebraic Combinatorics, University of Linköping, Sweden, June 30-July 10, 2003.

10. Herb Wilf's 65th birthday conference, University of Pennsylvania, June 1996.

SELECTED COLLOQUIUM AND SEMINAR TALKS

1. Involutions and pseudo-involutions in the Riordan group,

    (a) Combinatorics Seminar, Howard University, April 12, 2022.
    (b) Combinatorics, Algebra and Geometry Seminar (CAGS), George Mason University, October 18, 2019.
    (c) Discrete Mathematics Seminar, Virginia Commonwealth University, March 13, 2019.
    (d) Combinatorics Seminar, George Washington University, October 25, 2018.

2. Unbalanced Wilf-equivalence,

    (a) Combinatorics, Algebra and Geometry Seminar (CAGS), George Mason University, November 10, 2017.
    (b) Combinatorics Seminar, George Washington University, September 20, 2017.

3. Patterns in permutations,

    (a) Morgan State University Mathematics Colloquium, October 31, 2019.

    (b) Towson University Mathematics Colloquium, October 4, 2019.

    (c) George Mason University Mathematics Colloquium, November 7, 2014.

    (d) Discrete Math Seminar, Virginia Commonwealth University, October 9, 2012.

    (e) Combinatorics, Algebra and Geometry Seminar (CAGS), George Mason University, May 4, 2012.

    (f) Discrete Math Seminar, University of Delaware, September 13, 2011.

    (g) Mathematics Colloquium, James Madison University, April 5, 2011.

4. Permutation patterns and permutation tableaux, Drexel University Mathematics Colloquium, May 14, 2009.

5. Combinatorics of permutation tableaux, George Washington University Combinatorics Seminar, October 31, 2007.

6. Patterns in words and permutations, Howard University Colloquium, September 5, 2007.

7. Combinatorics of permutation tableaux, Howard University Colloquium, April 23, 2007.

Research Certifications:

1. Human Subjects Research (Social and Behavioral Sciences), CITI Program, October 2019 (required for META Math field testing).

2. Responsible Conduct of Research (Social and Behavioral Sciences), CITI Program, October 2019 (required for META Math field testing).

TEACHING

Certifications:

1. Distance Learning certification, CETLA, August 2020.

2. Blackboard certification, CETLA, March 2020.

3. Writing Across the Curriculum (WAC) certification to teach writing-intensive courses, CETLA, March 2012.

Courses taught:

1. Howard:

    (a) College Algebra I (with ALEKS educational software),

    (b) Patterns in Mathematics,

    (c) Actuarial Science Seminar (directed reading),

    (d) Calculus I,

    (e) Calculus II,

    (f) Calculus III,

    (g) Discrete Structures,

    (h) Differential Equations,

    (i) Probability and Statistics I,

    (j) Probability and Statistics II,

    (k) Introduction to Modern Algebra I (undergraduate/graduate),

    (l) Introduction to Modern Algebra II (undergraduate/graduate),

    (m) Introduction to Analysis I (undergraduate/graduate) – writing-intensive,

    (n) Introduction to Analysis II (undergraduate/graduate),

    (o) Modern Algebra I (graduate),

    (p) Complex Analysis I (graduate),

    (q) Complex Analysis II (graduate),

    (r) Combinatorics I (graduate),

    (s) Combinatorics II (graduate).

2. ISU:

    (a) Enumerative Combinatorics and Ordered Sets (graduate),

    (b) Introduction to Combinatorics,

    (c) Graphs and Networks,

    (d) Introduction to Abstract Algebra,

    (e) Introduction to Linear Algebra,

    (f) Introduction to Matrices,

    (g) Elementary Differential Equations,

    (h) Calculus II,

    (i) Independent Study (Topics in Combinatorics).

3. GWU: Single-Variable Calculus, Calculus for Social and Management Sciences.

4. URI: Precalculus, Topics in Mathematics, Graph Theory.

5. UPenn: Ordinary Differential Equations; (TA) Advanced Analysis, Linear Algebra, Calculus.

Ph.D. students:

1. Opel Jones, Howard University, 2011–2019.

2. Chinenye Ofodile, Howard University, 2008–2011.

Dissertation Advisor:

1. Opel Jones, Howard University, Ph.D., July 2019, *Enumeration of Dumont permutations avoiding certain four-letter patterns.*

2. Chinenye Ofodile, Howard University, Ph.D., May 2011, *Enumeration of Dumont permutations with few occurrences of three- and four-letter patterns.*

Ph.D. committee member:

1. Shakuan Frankson, Howard University, May 2023 or later (projected).

2. Stoyan Dimitrov, University of Illinois at Chicago, May 2022.

3. Opel Jones, Howard University, July 2019.

4. Kendra Pleasant, Howard University, March 2017.

5. Dev Phulara, Howard University, February 2014.

6. Kourtney Fulton, Howard University, October 2013.

7. Peter McCalla, Howard University, April 2013.

8. Ken Shoda, George Washington University, May 2012.

9. Henry Jordan, Howard University, November 2011.

10. John Johnson, Howard University, September 2011.

11. Chinenye Ofodile, Howard University, March 2011.

12. Kendall Williams, Howard University, July 2010.

13. Hongxun Qin, George Washington University, May 2000.

GRANTS

1. Co-PI, "Permutation Patterns 2020," NSA conference grant, $10,250 (extended through summer 2022 due to COVID-related conference postponement).

2. Co-PI, "Permutation Patterns 2019-2021," NSF conference grant, $30,000, (extended through summer 2022 due to COVID-related conference postponement).

3. Co-PI, "Permutation Patterns 2018," NSA conference grant, $9,996.

4. Co-PI, "Permutation Patterns 2017," NSF conference grant, $17,000.

5. PI, "Permutation Patterns 2016," NSF conference grant, $20,000.

6. Co-PI, "Permutation Patterns 2013," NSF and NSA conference grants, $22,625 each.

7. Advanced Summer Research Fellowship 2012, Howard University, May-June 2012: $15,000.

8. New Faculty Start-Up Fund, Howard University, 7/1/2008 – 6/30/2011: $34,128.

9. Patterns in permutations, NSA Young Investigator grant, 1/27/2006 – 1/26/2008: $30,000.

10. ISU summer support grant, June 2001: $5,333.

11. Travel grants (other than departmental or university grants):

   - FPSAC = Formal Power Series and Algebraic Combinatorics,
   - JMM = Joint Mathematics Meetings,
   - BIRS = Banff International Research Station,
   - META Math = Mathematical Education of Teachers as an Application of Undergraduate Mathematics.

   (a) Analytic and Probabilistic Combinatorics, workshop, BIRS, Banff, Canada, November 2022: full support for lodging and meals.

   (b) Permutation Patterns 2022, Valparaiso, IN, June 2019: $904.

   (c) MAA META Math Workshop at JMM 2020, Denver, CO, January 2020: $1517.

   (d) Permutation Patterns 2019, Zurich, Switzerland, June 2019: $3173.

   (e) Permutation Patterns 2018, Hanover, NH, July 2018: $1200.

   (f) Mid-Atlantic Algebra, Geometry, and Combinatorics (MAAGC 2018) Workshop, Philadelphia, PA, April 2018: $150.

   (g) Permutation Patterns 2017, Reykjavik, Iceland, June 2017: $1000.

   (h) Permutation Patterns 2014, Johnson City, TN, July 2014: $426.

   (i) Permutation Patterns 2013, Paris, France, July 2013: $1900.

   (j) Permutation Patterns 2012, Glasgow, Scotland, June 2012: £200 (approx. $290).

   (k) Permutation Patterns 2011, San Luis Obispo, CA, June 2011: $1110.

   (l) FPSAC 2011, Reykjavik, Iceland, June 2011: $840.

   (m) FPSAC 2010, San Francisco, CA, August 2010: $740.

(n) FPSAC 2009, Hagenberg, Austria, June 2009: $820.

(o) FPSAC 2008, Viña del Mar, Chile, June 2008: $1250.

(p) FPSAC 2007, Tianjin, China, July 2007: $1400.

(q) FPSAC 2006, San Diego, CA, June 2006: $500.

(r) Permutation Patterns 2006, Reykjavik, Iceland, June 2006: 35000 ISK (approx. $500).

(s) FPSAC 2005, Taormina, Italy, June 2005: $475.

(t) Permutation Patterns 2005, University of Florida, Gainesville, FL, March 2005: $927.

(u) Workshop on Permutation Patterns, University of Haifa, Israel, May 2005: Full support, including airfare and lodging.

(v) FPSAC 2004, Vancouver, BC, Canada, June 2004: $706.

(w) FPSAC 2003, Linköping, Sweden, June 2003: $1716.

(x) ISU Foreign Travel Grant, Spring 2003, for travel to Permutation Patterns 2003: $1480.

(y) Permutation Patterns 2003, Dunedin, New Zealand, February 2003: NZ$500 (US$280).

(z) FPSAC 2002, University of Melbourne, Melbourne, Australia, July 2002: $1680.

12. Dissertation Fellowship, School of Arts and Sciences, University of Pennsylvania, 1997-1998.

13. Applications not funded:

(a) Co-PI, "Permutation Patterns 2019," NSA conference grant, $23,500.

(b) PI, "Permutation Patterns 2016," NSA conference grant, $25,100.

(c) Co-PI, "Permutation Patterns 2015," NSF and NSA conference grants, $25,000 each.

(d) Simons Collaboration Grant for Mathematicians (2013, 2014, 2015).

(e) ISU Special Research Initiation Grant application (2001, 2003).

(f) NSF Postdoctoral Fellowship application (1998, 1999).

SERVICE

Institutional

1. Howard University:

(a) Chair, Local Organizing Committee, American Mathematical Society Eastern Section Meeting, Spring 2024, Howard University.

(b) Member, Graduate School Assessment Council, Spring 2019 – present.

(c) Member, COAS Dean Search Advisory Committee, Fall 2018.

(d) Evaluator and Judge, Annual Graduate Research Day, Spring 2010, Spring 2011.

Departmental

1. Howard University:

(a) Chair, Tenured Faculty Committee (a.k.a. Appointments, Promotions and Tenure Committee), Fall 2018 – present.

(b) Chair, Faculty Search Committee, Spring 2018.

(c) Member, Faculty Search Committee (Combinatorics), Fall 2020 – Spring 2021.

(d) Member, Faculty Search Committee, Fall 2017.

(e) Department Webmaster and Site Builder, Spring 2017 – present.
Performed a major update and redesign of the entire HU math department webpage in 2017-2019.

(f) Calculus II Course Coordinator and Final Exam Facilitator, Fall 2016, Fall 2017, Fall 2018 – present.

(g) Colloquium Committee, Fall 2010 – present.

(h) Curriculum Committee, Fall 2013 – Spring 2019, Fall 2020 – present.

(i) Graduate Admissions Committee, Fall 2010 – present.

(j) Graduate Committee, Spring 2008 – present.

(k) Combinatorics Seminar Co-Organizer, Fall 2007 – present.

(l) Technology Committee, Fall 2015 – present.

(m) Faculty Evaluation Committee, Spring 2016, Spring 2019 – Summer 2020.

(n) Faculty Evaluation Criteria Committee, Fall 2017 – Fall 2018.

(o) Hiring Justification Committee, Fall 2017.

(p) Faculty Search Committee, Spring 2017.

(q) Math Graduate Program Requirements Revision Committee, Spring 2016.

(r) Graduate Scheduling Committee, Fall 2013 – Spring 2014.

(s) College Algebra I Final Exam Facilitator, Spring 2009, Spring 2010.

(t) Calculus III Final Exam Facilitator, Fall 2007.

2. Iowa State University:

(a) Undergraduate Committee, Spring 2005 – Spring 2006.

(b) Awards Committee, 2001–2002, 2003–2005.

(c) Library Committee, 2003–2006.

(d) Department Executive Officer (Chair) Review Committee, Spring 2004.

Professional

1. Putnam Exam Grading, MAA Putnam Examination.

(a) Problem Captain: January 2019, January 2020, March 2021, December 2021 – January 2022.

(b) Grader: December 2017.

2. Session Moderator:

(a) Permutation Patterns 2022, June 20-24, 2022.

(b) Permutation Patterns 2021 Virtual Workshop, June 15-16, 2021.

(c) Permutation Patterns 2020 Virtual Workshop, June 30 – July 1, 2020.

3. Materials Field-Tester, MAA META Math Project, Spring 2020.

4. Co-Organizer, Special Session on Riordan Arrays, AMS-MAA Joint Mathematics Meetings, January 16-19, 2019.

5. Member, Steering Committee (a.k.a. Oversight and Long-Term Planning Committee), Permutation Patterns Conference Series, June 2012 – present.

6. Member, Local Organizing Committee, Permutation Patterns 2018, Dartmouth College, Hanover, NH, July 2018.

7. Guest Editor, Proceedings of Permutation Patterns 2016, Discrete Mathematics and Theoretical Computer Science (DMTCS) Proceedings, vol. 19, no. 2, December 2016 – December 2018.

8. Chair, Organizing and Scientific Committees, 14th International Conference on Permutation Patterns (Permutation Patterns 2016), Howard University, Washington, DC, June 27 – July 1, 2016.

9. Organizer, Special Session on Patterns in Permutations and Words, AMS Eastern Sectional Meeting, March 7-8, 2015, Georgetown University, Washington, DC.

10. Organizing Committee Member, Blackwell Memorial Conference, Howard University, April 19-20, 2012.

11. Organizing Committee Member, Eighth International Conference on Permutation Patterns, August 9-13, 2010, Dartmouth, NH.

12. Organizing Committee Member, Third International Conference on Permutation Patterns, March 7-11, 2005, Gainesville, FL.

13. Referee for:
    (a) Advances in Applied Mathematics,
    (b) African Diaspora Journal of Mathematics,
    (c) Annals of Combinatorics,
    (d) Art of Discrete and Applied Mathematics,
    (e) Australasian Journal of Combinatorics,
    (f) Discrete Applied Mathematics,
    (g) Discrete Mathematics,
    (h) Discrete Mathematics and Theoretical Computer Science,
    (i) Electronic Journal of Combinatorics,
    (j) Enumerative Combinatorics and Applications,
    (k) European Journal of Combinatorics,
    (l) Graphs and Combinatorics,
    (m) INTEGERS: An Electronic Journal of Combinatorial Number Theory,
    (n) Journal of Combinatorial Theory, Series A,
    (o) Journal of Combinatorics,
    (p) Journal of Difference Equations and Applications,
    (q) Journal of Integer Sequences,
    (r) MAA Mathematics Magazine,
    (s) Online Journal of Analytic Combinatorics,
    (t) Order (A Journal on the Theory of Ordered Sets and its Applications),
    (u) Pure Mathematics and Applications,
    (v) Theoretical Computer Science,
    (w) International Conferences on Formal Power Series and Algebraic Combinatorics (FPSAC), 2004, 2010, 2013.
    (x) *Permutation Patterns*, S.A. Linton, N. Ruškuc, V. Vatter (eds.), London Mathematical Society Lecture Note Series No. 376, Cambridge University Press, 2010.

14. External referee, Icelandic Research Fund, Fall 2008.

15. Reviewer for Math Reviews, October 2002-present.

Other

1. Putnam exam seminar (co-)organizer.

    (a) ISU: 2000–2001, 2002–2005;
    (b) GWU: 1999–2000;
    (c) URI: 1998–1999.

2. Faculty advisor, Russian-speaking student association, ISU, 2001–2006.