CURRICULUM VITA

Melkamu (Mel) Zeleke

College of Science and Health
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Education

- ***Ph.D. in Mathematics***, Temple University, Philadelphia, PA, U.S.A., 1998.
  Thesis: Discrete Radon Transform, Covering Congruences & Boolean Functions.
  Advisor: Doron Zeilberger, Board of Governors' Professor of Mathematics, Rutgers University, Piscataway, New Jersey.
- ***M.Sc. in Mathematics***, Addis Ababa University, Addis Ababa, Ethiopia, 1992.
  - ❖ DAAD - German Academic Exchange Fellow.
- ***B.Sc. in Mathematics***, Addis Ababa University, Addis Ababa, Ethiopia, 1989.
  - ❖ **Gold medalist** for **outstanding student** of the year.

Highlights of Administrative Experience and Service

1. **Associate Dean**, College of Science and Health (COSH), William Paterson University, July 1, 2020 to present.
   - ❖ Responsible for managing the academic progress and advisement of over 3000 students in the college; handle all instructional and curriculum matters for the college; coordinate scheduling of undergraduate & graduate courses offered by the nine academic departments; monitor enrollment in all course sections and the management of adjunct budget for the college; oversee the operations of all academic support services in the college; work with the offices of sponsored programs and institutional advancement on applying for funding to support student learning and engagement in research and faculty development; represent the college at various university committees on student development and success.

2. **College of Science and Health Dean's Fellow**, 2019 - 2020 Academic Year.
   - ❖ Develop strategies to increase the retention and timely graduation of College of Science & Health (COSH) majors. Work closely with department chairs and/or the designated faculty/committee to closely examine the DFW grades in 1000-level COSH courses and collaborate with Chairs and/or faculty/committee to determine benchmarks for student success in each 1000-level course; Work with Chairs and/or faculty/committee to ensure that best practices for effective teaching are implemented and ensure common SLOs for multi-section courses and common final and/or assessment for multi-section of the same course; Work with College Assessment Coordinator to ensure timely assessments; Work as the liaison with Center for Teaching and Academic Development units in integrating best practices for student retention.

3. **Chairperson**, Department of Mathematics, William Paterson University, September 2004 – June 2010.
    - ❖ Provided leadership to a department with fifteen fulltime faculty members and over thirty adjunct faculty; initiated major curricular change initiatives and introduced a revised BA degree program in mathematics and new BS degree programs in mathematics and actuarial science; led the effort to develop a graduate program and introduced MS degree program in applied mathematics with concentrations in statistics and discrete mathematics; managed the department budget for hiring adjunct faculty, running the mathematics learning center, supporting faculty travel & career development, and daily operation of the department office.

4. **Assistant Chairperson**, Department of Mathematics, William Paterson University, September 2003 – August 2004.
    - ❖ Responsible for handling all mathematics course scheduling; advisement of mathematics majors and minors; hiring and evaluation of adjunct faculty.

5. Strategic Planning Working Group on Attrition, January 2022 to present.
6. NSSE-FSSE Taskforce, Spring 2020 to present.
7. Provost's Retention, Tenure, and Promotion Taskforce, Fall 2019 to Spring 2020.
8. College of Science & Health Council, William Paterson University, Fall 2004 to Spring 2010 and Fall 2020 to present.
9. College of Science & Health Strategic Initiatives Committee, Fall 2003 to Spring 2010.
10. Academic Chairs Council, Fall 2004 to Spring 2010.
11. Senate Council on University Core Curriculum and Panel on Scientific and Quantitative Perspectives, Fall 2009 to 2015.
12. Department of Mathematics Representative on the Faculty Senate, 2001 - 2004.

Faculty Appointments/ Teaching Experience

1. ***Professor of Mathematics***, William Paterson University, Sept 2007 to present.
2. ***Fulbright Scholar and Visiting Professor,*** Addis Ababa University, Addis Ababa, Ethiopia, August 2010 – June 2011.
3. ***Associate Professor of Mathematics***, William Paterson University, Sept 2003 to August 2007.
4. ***Assistant Professor of Mathematics***, William Paterson University, Sept 1998 to August 2003.
5. ***Graduate Teaching Assistant***, Temple University, 1994 to 1998.
6. ***Lecturer of Mathematics & Computer Science***, Addis Ababa University, Addis Ababa, Ethiopia, 1992 to 1994.
7. ***Assistant Lecturer of Mathematics & Computer Science***, Addis Ababa University, Addis Ababa, Ethiopia, 1989 to 1992.

Career Development and Leadership Workshops

- MAA Workshop I – New Experiences in Teaching, Brown University, Providence, RI, August 1999.
- MAA Workshop II – New Experiences in Teaching, University of California at Los Angeles, Los Angeles, CA, August 2000.
- DIMACS Reconnect Workshop, Rutgers University, Piscataway, NJ, June 2002.
- Geometric Combinatorics Workshop, Mathematical Sciences Research Institute, Berkeley, CA, June 2006.
- Leading the Academic Department – A Workshop for Mathematical Sciences Chairs, MAA Carriage House Conference Center, Washington, DC, June 2008.
- 12th Annual legacy of R. L. Moore Conference on Discovery Learning, University of Texas, Austin, TX, April 2009.
- Blackwell-Tapia 2012 Conference on Computational Mathematics, ICERM, Brown University, Providence, RI, November 2012.
- Course Hero Education Summit, Redwood City, CA, July 2019.
- EAB Higher Education Emerging Leaders Workshop, September to May 2022.

Fellowships

- Fulbright Scholar Fellowship, The J. William Fulbright Scholarship Board, August 2010 – June 2011.
- Project NExT Fellowship, Exxon Educational Foundation and Mathematical Association of America, July 1999 to August 2000.
- DAAD - German Academic Exchange Visiting Scholar Fellowship, University of Griefswald, Griefswald, Germany, June 1992 - August 1992.
- DAAD - German Academic Exchange In-country Fellowship, Addis Ababa University, Addis Ababa, Ethiopia, September 1990 - May 1992.

Grants

- Co-PI for Access to STEM Pathways through Integrated Research and Engagement (ASPIRE) – a five-year (2021 – 2025), $4.99 million US Department of Education grant that will benefit first-time, first-year Hispanic and low-income WP and Passaic County Community College (PCCC) students by seeking to increase the total number of overall WP STEM majors, increase the number of low-income and Hispanic STEM students transferring from PCCC to WP in a STEM major, and increase the number of juniors and seniors participating in internships, research fellowships, and other work-based learning opportunities.
- New Jersey Higher Education Commission Dual Enrollment Grant – 2009-2010 Academic Year - $20,000.00.
- William Paterson Alumni Foundation Grant – 2007/2008 AY - $1300.00.
- College of Science and Health Center for Research Grants:
  1. Summer 2008 - $4000.00 (Generalized Motkin Numbers)
  2. Summer 2002 - $4,250.00 (K-Trees and Applications)
  3. Summer 2000 - $4,000.00 (Skew Diagrams and Ordered Trees)
- Provost's Centers of Excellence Incentive Grants:
  1. Student Success Technology Workshops - $3,000.00.
  2. Summer Transition Program - $5,000.00.

Awards and Certificates

- ***Gold Medal for Outstanding Student of the Year***, College of Natural Science, Addis Ababa University, July 1989.
- ***Distinguished Teaching Award*** from College of Arts and Sciences, Temple University, April 1997.
- ***Certificate of Participation***, Project NExT (New Experiences in Teaching), Mathematical Association of America, August 2000.
- ***Certificate of Completion,*** The J. William Fulbright Scholarship Board and The Bureau of Educational and Cultural Affairs of the United States Department of State, Washington, DC, June 2011.
- ***Certificate of Appreciation,*** Department of Mathematics, College of Computer & Mathematical Sciences, Addis Ababa University, June 2011.
- ***Outstanding Community Leadership Award,*** Equal Opportunity Fund Program, William Paterson University, April 2022.

Research and Publications

- **Publications in refereed journals**
  1. On Combinatorial Interpretation of Some Elements of the Riordan Group (with M. Jani), Combinatorics, Graph Theory, and Computing, Springer-PROMS, 83 – 95, (2024).
  2. On the Möbius Function of a Pointed Graded Lattice (with S. A. Fufa), *Indian J. Pure Appl. Math*., **49**(1), 51 – 69, (2018).
  3. On Subsets of Ordered Trees Enumerated by a Subsequence of Fibonacci Numbers (with M. Jani), Proceedings of INTEGRES 2013 Conference: The Erdós Centennial, **Volume 15A,** A#14 (2015).
  4. On Generalization of Motzkin Numbers using k-Trees (with M. Jani), *Ars Combinatoria*, **89**, 287 – 297 (2008).
  5. A Bijective Proof of a Tennis Ball Problem (with M. Jani), *Bulletin of Inst. Of Combinat. and its Appl.*, **41**, 89 - 95 (2004).
  6. Catalan Identities and k-trees, *Congressus Numerantium,* **165**, 39 - 49 (2003).
  7. Enumeration of K-Trees and Applications (with M. Jani & R.G. Rieper*), Annals of Combinatorics* **6**, 375-382 (2002).
  8. Skew Diagrams and Ordered Trees (with R.G. Rieper*), Advances in Applied Mathematics* **27**, 671-681 (2001).
  9. Valleyless Sequences (with R.G. Rieper), *Congressus Numerantium* **145**, 33-42 (2000).
  10. On Disjoint Covering Systems with Precisely One Repeated Modulus (with J. Simpson), *Advances in Applied Mathematics* **23**, 322-332 (1999).
  11. Examples of Noninjectivity for the Combinatorial Radon Transform, *Journal of Difference Equations and Applications* **5**, 319 - 322 (1998).
  12. On Injectivity of the combinatorial Radon transform of order 5 (with T. Amdeberhan), *Journal Computational and Applied Mathematics* **83**, 251-255 (1997).
- **Publications of solutions in monthly mathematics journals**
  1. Gamma Function Inequality, American Mathematical Monthly **105**, 376 (1998).
  2. Sum of a Sequence of Floors and Ceilings, Mathematics Magazine **71**, 390-391 (1998).

Selected Research Presentations

1. 9th International Conference on Riordan Arrays and Related Topics, Howard University, Washington, DC, June 2024.
2. 53rd Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton, FL, March 2022.
3. AMS Special Session on the Riordan Group, 2019 Joint Mathematics Meetings, Baltimore, MD, January 2019.
4. 5th International Conference on Riordan Arrays and Related Topics, Busan, South Korea, June 2018.
5. International Science Symposium, Adama Science and Technology University, Adama, Ethiopia, January 2016.
6. Algorithmic and Enumerative Combinatorics, Research Institute for Symbolic Computation, Johannes Kepler University, Linz/Hagenberg, Austria, August 2014.
7. The 2013 INTEGERS Conference, University of West Georgia, Carrollton, GA, October 2013.
8. Experimental Mathematics Seminar, Rutgers University, Piscataway, NJ, April 2013.
9. Experimental Mathematics Seminar, Rutgers University, Piscataway, NJ, April 2012.
10. Lectures on Current Developments in Combinatorics, Mathematics Colloquium, Addis Ababa University, Addis Ababa, Ethiopia, December 2010 – February 2011.
11. From A = B to Z = 60, International Conference in Combinatorics at Doron Zeilberger's 60th Birthday, Rutgers University, Piscataway, New Jersey, May 2010.
12. 3rd Conference on Algebra, Number Theory and Combinatorics, Universidad Industrial de Santander, Bucaramanga, Colombia, July 2008.
13. Algebra Seminar, Universidad de Antioquia, Medellin, Colombia, July 2008.
14. Mathematics Colloquium, Colgate University, Hamilton, NY, November 2007.
15. 6th International Conference on Lattice Path Combinatorics, Eastern Tennessee University, Johnstown, TN, July 2007.
16. 37th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton, FL, March 2006.
17. The 2005 INTEGERS Conference, University of West Georgia, Carrollton, GA, October 2005.
18. International Conference on Paths, Permutations and Trees, Nankai University, Tianjin, P.R. China, February 2004.
19. Joint Mathematics Meetings, Contributed Papers, Baltimore, MD, January 2003.
20. 966th AMS Meeting, Stevens Institute of Technology, Hoboken, NJ, April 2001.
21. 9th Quadrennial International Conference on Graph Theory, Combinatorics and Applications, Western Michigan University, Kalamazoo, MI, June 2000.
22. Mathematics Colloquium, Howard University, Washington, D.C., October 1999.
23. AMS Eastern Sectional Meeting, State University of New York, Buffalo, NY, April 1999.

Doctoral Degree Thesis Supervised

1. Samuel A. Fufa, *On the Möbius Function of Pointed Partitions and Pointed Exponential Structures*, Addis Ababa University, Ethiopia, May 2015.

Master's Degree Projects Supervised

1. Esubalew Getie, *Riordan Arrays and Enumeration Problems*, Addis Ababa University, Ethiopia, Spring 2013.
2. Daniel Workneh, *Pattern Avoiding Permutations*, Addis Ababa University, Ethiopia, Spring 2013.
3. Temesgen Molla, *Fibonacci Numbers, Schur Polynomials, and the Rogers-Ramanujan Identities*, Addis Ababa University, Ethiopia, Spring 2011.
4. Thomas Berhanu, *K-Trees and q-Catalan Numbers*, Addis Ababa University, Ethiopia, Spring 2011.
5. Fuffa Beyene, *Survey of Fine and Motzkin Numbers*, Addis Ababa University, Ethiopia, Spring 2011.

Undergraduate Capstone Research Projects Supervised at William Paterson University of New Jersey

1. Secondary RNA Numbers – Caroline Ajami (Spring 2021)
2. Four Color Problem: A Mathematical History – Robert Graham (Spring 2021)
3. Riordan Arrays & Combinatorics – Kwasi Asare-Bediako (Spring 2020)
4. Euler's Problem – Sean Orso (Spring 2019)
5. Lucas Numbers – Scott Levine (Fall 2018)
6. Understanding Google's PageRank Using Graphs – Noelle Mironis (2017)
7. The Stirling and Bell Numbers – McKinley Tull (2017)
8. The Tennis Ball Problem – Keith Hoyte (2017)
9. Legendre Polynomials in Electrostatics – Lauren Barnes (2016)
10. What do the Catalan Numbers Count? – Issel Garcia (2016)
11. Polya's Formula and Classification of Isomers – Mary Haines (2016)
12. Measuring Voting Power – Grace Antonick (2015)
13. The Pentagonal Number Theorem – Karla Hernandez (2014)
14. Pattern Avoiding Permutations – Michael Ingrafia (2014)
15. Expanding the Calculus Horizon through Robotics – Natalie Diaz (2013)
16. The Weibul Distribution and the Cost of Warranties – Amy Baxter (2012)
17. Enumeration of Directed Column-Convex Polyominoes – Mark Akintobi (2012)
18. On the Hausdorff Measure of Fractals – Alexandra Megalos (2011)
19. Riding Square Wheels – Bryan Carbone (2009)
20. Exponential Generating Functions and their Applications – Jameson Gill (2009)
21. The Principle of Inclusion-Exclusion and its Applications – Edwin Torres (2008)
22. Analysis of Waiting Lines at Fast Food Restaurants – Syreena Williams (2006)
23. Stock Portfolio Management – Nick Willis (2005)
24. Hydro-Turbine Optimization - John Porter (2005)
25. Limitations of Galileo's Falling Raindrops Model – Raul Quispe (2005)
26. Reliability and the Cost of Guarantees – Desiree Helms (2005)

27. Recurrence Relations and their Applications – Fouad Kojak-Ali (2004)
28. Modeling the AIDS Epidemic – Loukas Dimitoulis (2004)
29. Design and Analysis of a Planar Robot Arm – Jennifer Saria (2003)
30. Evaluation of the Riemann-Zeta Function – Tom McGuire (2003)
31. The Catalan Numbers – Nicole Reynolds (2003)
32. Enumeration of Unimodal Sequences – Michael Ladolceta (2002)
33. The Lights Out Puzzle – Nicole Ginnetti (2001)
34. The Divine Proportion – Kim Lewicki (2001)
35. Enumeration of Combinatorial Objects – Sarai Molina (2000)
36. The Ramsey Problem – Craig Hill (1999)

Professional Activities and Community Outreach

1. ***Fellow*****,** Institute of Combinatorics and its Applications (ICA), 2003 to present.
2. ***Referee – Journal Articles***
   - European Journal of Combinatorics
   - Journal of Discrete Mathematics
   - INTEGERS: Electronic journal of Combinatorial Number Theory
   - Ars Combinatoria – Canadian Journal of Combinatorics
   - Bulletin of the ICA (Institute of Combinatorics and its Applications)
   - Mathematics Magazine and Mathematical Reviews
3. ***External Reviewer – Promotion and Tenure Folders***
   - Howard University, Fall 2012.
   - Coastal Carolina University, Fall 2016.
   - Spelman College, Fall 2019.
4. ***Member***, American Mathematical Society, 1994 to present.
5. ***Member*****,** Mathematical Association of America, 1997 to present.
6. ***Host and Coordinator***, Garden State Undergraduate Mathematics Conference and MAA New Jersey Section Meeting, Spring 2008.
7. ***Mathematics Core Curriculum Standards Reviewer***
   - Paterson Public Schools, Paterson, New Jersey, April 2008.
   - Midland Park Public Schools, Midland Park, New Jersey, April 2010.
8. ***Coordinator***, Dual Enrollment Program – A partnership of William Paterson University, Paterson, and Passaic Public Schools, 2009 - 2012.
9. ***Mentor and Mathematics Tutor***, Thurgood Marshall Academy for Learning and Social Change, Harlem, NY, 2004 - 2008.
10. ***Secretary***, Editorial Board of HISSAB, Ethiopian Journal of Mathematics, 1991 to 1994.

Service to the Department, College, and University

Department Level:

1. Chairperson, September 2004 to June 2010.
2. Assistant Chairperson, Fall 2003 to Fall 2004.

3. Member, Department Council, Spring 2001 to present.
4. Chair, Graduate Program Ad Hoc Committee, Fall 2016 to present.
5. Mathematics Major Faculty Advisor, Fall 2011 to present.
6. Member, Promotion, Retention & Tenure Committees, Fall 2003 to 2012.
7. Chair, Program Review Committee, Fall 2008 – Fall 2009.
8. Chair, Undergraduate Curriculum Committee, Fall 2001 to Spring 2003.
9. Faculty Senate Representative, Fall 2001 – Spring 2004.
10. Faculty Advisor, Fall 1999 to Spring 2003 & Fall 2008 to present.
11. Math Awareness Week Coordinator, Spring 2000 and 2001.
12. Math Fair Coordinator, Fall 2002.
13. Mathematics Seminar Coordinator, Fall 1998 to Spring 2000.
14. Recording Secretary, Fall 1998 to Spring 1999.

College Level:

1. COSH Dean's Fellow, January 2020 to June 2020.
2. Member, Executive Council of College of Science & Health, Fall 2004 to Spring 2010 and July 2020 to present.
3. Member, College of Science & Health Strategic Initiatives Committee, Fall 2003 to Spring 2010.
4. Member, Science Hall Renovation and Construction Steering Committee, Fall 2005 – Spring 2010.
5. Member, Mathematics & Science Advisory Board, Fall 2004 to 2010.
6. Member, College of Science & Health Assessment Committee, Fall 2003 to Spring 2004.
7. Member, College of Science & Health Louis Stokes Alliance for Minority Participation (LSAMP) Faculty Advisory Committee, Fall 2008 to present.
8. Member, Faculty Search Committee, Chemistry Department, Fall 2015.
9. Chair, Search Committee for Associate Dean of College of Science & Health, Spring 2005.
10. Member, College of Science & Health Curriculum Committee, Fall 2000 to Spring 2004.

University Level:

1. Member, Strategic Planning Working Group on Attrition, Jan 2022 to present.
2. NSSE/FSSE Taskforce, January 2020 to Present.
3. Provost's RTP Taskforce, Fall 2019 to Spring 2020.
4. Faculty Senate Representative, Fall 2001 – Spring 2004.
5. Member, Academic Chairs Council, Fall 2004 to Spring 2010.
6. Member, Council on University Core Curriculum, Fall 2009 to Spring 2015.
7. Member, Scientific & Quantitative Perspectives Panel, Fall 2009 to 2019.
8. Member, Provost's Faculty Advisory Committee on Assessment of Core Curriculum, Summer 2016.
9. Member, University Sabbatical Committee, 2007/2008 & 2012/2013 AYs.
10. Member of Faculty Advisory Committee for Robert Noyce NSF Scholarships, Fall 2013 to present.
11. Member, Advisory Committee on Honors General Education, Summer 2007.
12. Member, Minority Recruitment & Retention Taskforce, 2004 - 2005 AY.
13. Member, University Basic Skills Council, Spring 2003 to 2010.