

Cheyne Homberger

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Positions

University of Maryland, Baltimore County <i>Adjunct Professor, Department of Mathematics and Statistics</i>	Baltimore, MD 1/15–Present
University of Otago <i>Visiting Researcher, Department of Computer Science</i>	Dunedin, New Zealand 3/14–5/14
University of Florida <i>Graduate Teaching and Research Assistant, Mathematics Department</i>	Gainesville, FL 8/09–5/14

Education

PhD, Mathematics University of Florida, <i>Gainesville, FL</i> Advisor: <i>Miklós Bóna</i> Dissertation: <i>Patterns in Permutations and Involutions: A Structural and Enumerative Approach</i>	5/14
MS, Mathematics University of Florida, <i>Gainesville, FL</i>	5/11
BS, Mathematics, Minor in Education University of Florida, <i>Gainesville, FL</i>	5/09

Selected Teaching Experience

University of Maryland, Baltimore County.....	
Instructor, Single and Multivariable Calculus	1/15–12/16
○ Led lectures and supervised teaching assistants for large undergraduate calculus courses.	
University of Florida.....	
Instructor, College Algebra and Precalculus Algebra	8/10–12/11
○ Developed and implemented specialized intensive curricula for students with weak STEM backgrounds.	
Instructor, Math for Liberal Arts Majors	1/11–8/11
○ Independently developed and implemented a course designed to give liberal arts students an overview of mathematics.	
○ Topics included graph theory, algorithms, fractals, and knot theory.	
Assistant, Calculus 1, 2, 3	1/12–12/13
○ Led weekly discussions and wrote exams and quizzes for undergraduate calculus sequence.	

Awards and Support

UF College of Liberal Arts Dissertation Fellowship, \$5500	1/14
UF Center for Applied Math Summer Research Fellowship, \$3000	4/13
UF Certificate of Teaching Excellence	4/12, 4/13
Chat Yin Ho Scholarship, \$2000	4/12
UF Computational Biology Initiative Seed Grant, \$8000	4/12
Grinter Fellowship, \$2000	1/11

Academic Service

Leadership.....	
UF Graduate Math Association	
<i>President</i>	1/12–1/13
<i>Vice President</i>	1/11–1/12
○ Established and organized a biweekly interdisciplinary seminar.	
○ Developed and organized a peer mentoring program for incoming graduate students.	

- UF L^AT_EX Workshop — Organizer and Presenter** 4/12, 4/13
 ○ Established an annual workshop with average attendance of over two-hundred.
- UF Graduate Student Mentoring Award — Organizer and Reviewer** 10/13
 ○ Established and judged a university-wide award highlighting student accomplishments in mentoring.
- UF I³ Program — Graduate Student Advisory Council Chair** 9/11–1/13
 ○ Advised the management of a large NSF grant aimed at increasing collaboration and communication across UF graduate departments.
 ○ Worked closely with upper administration to facilitate university-wide events and opportunities.
- UF Math Department Graduate Committee — Member** 7/11–1/13
 ○ Co-authored a five year department restructuring plan for university administration.
 ○ Co-authored a department guide for incoming graduate students.

Conferences.....

- Bijjective and Algebraic Combinatorics** 3/14
 ○ Organizing Committee, University of Florida.
 ○ Approximate attendance of 60.
- Graduate Student Research Day 2011, 2012, and 2013** 10/11, 10/12, 10/13
 ○ Organizing Committee Chair, University of Florida.
 ○ Approximate attendance of 150, 200, and 250, respectively.

Reviewer.....

Peer Reviewer

Electronic Journal of Combinatorics, Pure Mathematics and Applications, Integers, Journal of Combinatorics

AMS Math Reviews

Reviewer

Selected Talks and Presentations

- Pattern Enumeration in the Separable Permutations** 3/17
 Florida Atlantic University, Boca Raton, FL — *Invited Talk, SEICCGTC48*
- Pattern Statistics on Random Restricted Permutations** 10/16
 US Naval Academy, Annapolis, MD — *Invited Talk*
- Equipopularity in the Separable Permutations** 7/16
 Howard University, Washington, DC — *Permutation Patterns 2016*
- Counting Patterns: Equipopularity in Permutation Classes** 5/15
 Reykjavík University, Iceland — *Invited Talk*
- Deflatibility in Permutation Classes** 3/15
 Georgetown University, Washington, DC — *Invited Talk, AMS East Sectional Meeting*
- Pattern Popularity and Separable Permutations** 9/14
 Howard University, Washington, DC — *Invited Talk*
- Real Applications of Structural Combinatorics** 3/14
 Rutgers University, Piscataway, NJ — *Invited Talk, CCICADA/DIMACS*
- Expected Patterns in Permutation Classes** 9/12
 Rochester Institute of Technology, Rochester, NY — *Invited Talk, AMS East Sectional Meeting*
- Expected Patterns in Permutations Avoiding 123** 7/12
 University of Strathclyde, Glasgow, Scotland — *Permutation Patterns 2012*
- Automatic Enumeration of Polynomial Classes and Applications to Genomics** 5/12
 Centre International de Rencontres Mathématiques (CIRM), Marseilles, France — *CANT 2012*
- Enumerating Large Patterns in Permutations** 1/11
 University of Florida, Gainesville, FL — *Invited Talk, UF Interdisciplinary Research Conference*
- The Expected Number of Distinct Maximal Minors of a Permutation** 10/10
 Syracuse University, Syracuse, NY — *Invited Talk, AMS East Sectional Meeting*
- The Number of Distinct Minors of a Permutation** 8/10
 Dartmouth College, Hanover, NH — *Permutation Patterns 2010*

Publications

Preprints.....

- [1] M.H. Albert, Cheyne Homberger, Jay Pantone, Nathaniel Shar, and Vincent Vatter. Generating permutations with restricted containers. arXiv:1510.00269 [math.CO].
- [2] David Bevan, Cheyne Homberger, and Bridget Tenner. Prolific permutations: maximizing downsets in the pattern poset. arXiv:1608.06931 [math.CO].

Peer-Reviewed Articles.....

- [3] Cheyne Homberger and Vincent Vatter. On the effective and automatic enumeration of polynomial permutation classes. *Journal of Symbolic Computation*, 76:84–96, 2016.
- [4] M. H. Albert, M. D. Atkinson, Cheyne Homberger, and Jay Pantone. Deflatability of permutation classes. *The Australasian Journal of Combinatorics*, 64:252–276, 2016.
- [5] Miklós Bóna, Cheyne Homberger, Jay Pantone, and Vincent Vatter. Pattern-avoiding involutions: exact and asymptotic enumeration. *The Australasian Journal of Combinatorics*, 64:88–119, 2016.
- [6] Michael Albert, Cheyne Homberger, and Jay Pantone. Equipopularity classes in the separable permutations. *Electronic Journal of Combinatorics*, 22(2):Paper 2.2, 18, 2015.
- [7] Cheyne Homberger. Counting fixed-length permutation patterns. *Online Journal of Analytic Combinatorics*, (7):12, 2012.
- [8] Cheyne Homberger. Expected patterns in permutation classes. *Electronic Journal of Combinatorics*, 19(3):Paper 43, 12, 2012.

Miscellaneous.....

- [9] Cheyne Homberger and Jay Pantone. permpy: Permutations workshop in python. <https://pypi.python.org/pypi/permpy/0.0.2>, 2016.
- [10] Cheyne Homberger. *Patterns in permutations and involutions, a structural and enumerative approach*. ProQuest LLC, Ann Arbor, MI, 2014. Thesis (Ph.D.)–University of Florida.

References

- o References available on request