

JOSH HILLER

Department of Mathematics and Computer Science, Adelphi University
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EDUCATION

Ph.D. in Mathematics University of Florida	2014 - 2017
M.S. in Applied Mathematics Western Carolina University	2012 - 2014
B.A. in Mathematics, Magna Cum Laude Webster University in St. Louis	2002 - 2005

ACADEMIC APPOINTMENT

Assistant Professor, Department of Mathematics and Computer Science,
Adelphi University

TEACHING EXPERIENCE

Adelphi University: Assistant Professor

Precalculus/Calculus I/Calculus II

Western Carolina University: TA/Instructor of record (Fall 2013-Spring 2014)

Precalculus (2 sections).

Santa Fe College: Adjunct Assistant Professor (Summer 2016-Summer 2017)

Intermediate Algebra (2 sections)/ Introduction to Logic/ Contemporary Mathematics (5 sections)

University of Florida: TA (Fall 2014-Spring 2015 and Fall 2016-Spring 2017)

Calculus I (5 sections)/ Calculus II (5 sections)

PUBLICATIONS (* DENOTES UNDERGRADUATE COAUTHOR)

Published or Accepted for Publication

1. "A proof of two conjectures of Deveci and Karaduman," Josh Hiller, *Linear Algebra and its Applications*, 2014, Vol. 446, 163-165.
2. "Generalized Ramsey theorems for r-uniform hypergraphs," Mark Budden, Josh Hiller, and Aaron Rapp, *Australasian Journal of Combinatorics*, 2015, Vol. 63(1), 142-152.
3. "Old friends in unexpected places: Pascal (and other) matrices in $GL_n(C)$," Josh Hiller, *American Mathematical Monthly*, 2016, Vol. 123(2), 161-167.
4. "A note on subloop lattices, " Tuval Foguel and Josh Hiller, *Results in Mathematics*, 2016, Vol. 69(1-2), 11-21.
5. "Cancer incidence and the biology of extreme old age, " Josh Hiller, Celeste Vallejo, Leo Betthausen, and James Keesling *Integrative Molecular Medicine*, 2016, Vol. 4(1).
6. "Hypergraph Ramsey numbers involving paths, " Mark Budden, Josh Hiller, and Aaron Rapp, *Acta Universitatis Apulensis*, 2016, Vol. 48(7) 75-87.

7. “The lifting of graphs to 3-uniform hypergraphs and some applications to hypergraph Ramsey theory,” Mark Budden, Josh Hiller, Joshua Lambert, and Christopher Sanford*, *Involve: a journal of mathematics*, 2017, Vol. 10(1), 65-76.
8. “Characteristic patterns of cancer incidence: Epidemiological data, biological theories, and multistage models,” Josh Hiller, Celeste Vallejo, Leo Betthausen, and James Keesling, *Progress in Biophysics and Molecular Biology*, 2017, Vol. 124, 41-48.

Works in Progress

9. “A doubly stochastic model of deforestation in the context of large-scale industrial agriculture,” Josh Hiller, Mauricio Nunez-Regueiro, and Cristina Nunez-Godoy.
10. “Markov models of deforestation: a review,” Josh Hiller, Cristina Nunez-Godoy, and Mauricio Nunez-Regueiro.
11. “Modeling the dual role of macrophages in early tumor development,” Leo Betthausen, Josh Hiller and James Keesling.
12. “The eigen-decomposition of the Zhang-Liu matrices over arbitrary fields,” Leo Betthausen and Josh Hiller.
13. “On the lexicographic product of k-uniform hypergraphs with an application to Ramsey theory,” Melody Bruce*, Mark Budden, and Josh Hiller.
14. “Identities for hyperbolic functions via the Poisson process and the Chapman-Kolmogorov equation.,” Josh Hiller and James Keesling.
15. “Asymptotic relative risk results from a simple stochastic multistage model of carcinogenesis,” Josh Hiller and James Keesling.

Non-math Papers

16. “Misinterpretation vs. misunderstanding: a look at ESL students,” Josh Hiller, *WLN: A Journal of Writing Center Scholarship*, 2004, Vol. 29(4), 10.

AWARDS AND ACHIEVEMENTS

Alumni Fellowship (2014-2018), University of Florida, \$25,000/year for four years.

Dean’s Outstanding Scholar Award (2014), Western Carolina University, Graduate School.

Department of Mathematics Outstanding Graduate Student Award (2014), Western Carolina University, Department of Mathematics and Computer Science.

Supplemental Research Stipend (2014), Western Carolina University, Graduate School, \$1,000 in support of “Explicit generating sets for Free Groups”.

Supplemental Research Stipend (2013), Western Carolina University, Graduate School, \$1,000 in support of “Pascal Matrices.”

CONFERENCE PRESENTATIONS AND EXTERNAL TALKS

MAA SE Sectional meeting, March 2013, Winthrop University, “*On a relation between Pascal matrices and arbitrary matrices over the complex numbers.*”

SERMON 2013, April 2013, High Point University, “*A generalization of Fermat’s Little Theorem to non-singular integer matrices with integer eigenvalues.*”

MAA SE Sectional meeting, March 2014, Tennessee Technical University, “*A new twist on the Ping-Pong Lemma... and why we care.*”

SMURCHOM VII, April 2014, Western Carolina University, “*Felix Klein and his lemma.*”

DEPARTMENTAL PRESENTATIONS (UNIVERSITY OF FLORIDA)

Graduate Mathematics Association Colloquium,

1. “*Constructive lower bounds in hypergraph Ramsey theory.*” October 2014.
2. “*What do you mean ‘the’ multistage model of carcinogenesis?*” February 2017.

Biomath Seminar,

3. “*Cancer epidemiology and modeling carcinogenesis.*” December 2015.
4. “*Cancer incidence and the biology of extreme old age.*” November 2016.
5. “*On some variations of the multistage model of carcinogenesis.*” February 2017.

Topological Data Analysis Seminar,

6. “*Measures, randomness, and spatial data.*” February 2017.

SERVICE

To the department

1. First year graduate student mentor to Cristina Korb and Robert Monahan (UF)
2. WebAssign department liaison (Fall 2016/Spring 2017) (UF)

To the profession

1. Chair of Theoretical Ecology for the Southern Cone Chapter of the Society for Conservation Biology
2. Referee for: PlosONE and Maejo International Journal of Science and Technology

SKILLS

1. Languages:

English/Spanish: Native level fluency.

2. Software/Programming Languages

R, C++, LaTeX, MATLAB, Excel, Windows.

MEMBERSHIP

American Mathematical Society, Mathematical Association of American, Society for Conservation Biology.

REFERENCES

1. Dr. Jed Keesling, Professor,
Department of Mathematics
University of Florida, FL, email: kees@ufl.edu