

## Edinah K. Gngang

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CONTACT INFORMATION	Department of Applied Mathematics and Statistics Johns Hopkins University, Whiting School of Engineering 3400 North Charles Street, Whitehead Hall 100, Baltimore, MD 21218-2608 edu.jhu@legngang
RESEARCH INTERESTS	Combinatorics, Computational linear and multilinear algebra.
EDUCATION	<b>Rutgers, The State University of New Jersey–New Brunswick, NJ</b>  Ph.D., Computer Science, 2008–2013 <ul style="list-style-type: none"><li>• Thesis: <i>Computational Aspects of the Combinatorial Nullstellensatz Method</i></li><li>• Advisors: Vladimir Retakh, (Math) and Ahmed Elgammal, (CS)</li><li>• Dissertation Committee: Neil Sloane and Mario Szegedy</li></ul> <b>Université de Montréal</b> , Montréal, QC, Canada  B.S., Mathematics and Physics (Double Major), June 2005
ACADEMIC POSITIONS	<b>Assistant Professor</b> June 2017 to present Department of Applied Mathematics and Statistics, <b>Johns Hopkins University</b>  <b>Golomb Visiting Assistant Professor of Mathematics</b> July 2014 to May 2017 Department of Mathematics, <b>Purdue University</b> Faculty mentor: Andrei Gabrielov  <b>Joint Postdoctoral Researcher</b> July 2013 to June 2014 Center for Computational Intractability, <b>Princeton University</b> and <b>Institute for Advanced Study</b> , School of Mathematics, Princeton, NJ Faculty mentor: Avi Wigderson
REFEREED JOURNAL PUBLICATIONS	<ol style="list-style-type: none"><li>1. E. K. Gngang, Yuval Filmus. On the spectra of hypermatrix direct sum and Kronecker products constructions, <i>Linear Algebra and its Applications</i>, Volume 519, Pages 238-277.</li><li>2. E. K. Gngang, Maksym Radziwiłł, Carlo Sanna. Counting arithmetic formulas, <i>European Journal of Combinatorics</i>, Volume 47, Pages 40-53, 2015.</li><li>3. E. K. Gngang, D. Zeilberger. Generalizing and Implementing Michael Hirschhorn’s AMAZING Algorithm for Proving Ramanujan-Type Congruences, <i>La Gaceta de la RSME</i> volume 17, issue 1 (2014)</li><li>4. P. Devlin, E. K. Gngang. Some integer formula encodings and related Algorithm, <i>Adv. Appl. Math.</i> (2013) Volume 51, Issue 4, pp. 536-541</li></ol>

5. E. K. Gngang, D. Zeilberger. Zeroless arithmetic: representing integers ONLY using ONE, *Journal of Difference Equations and Applications*, Volume 19, Number 11, 1 November 2013, pp. 1921-1926 (6)
6. E. M. Santos, E. K. Gngang, E. Kowler. Anticipatory smooth eye movements with random-dot kinematograms, *Journal of Vision* 2012 Oct 1; 12(11).
7. E. K. Gngang, A. Elgammal, V. Retakh. A Spectral Theory for Tensors, *Annales de la faculté des sciences de Toulouse Sér. 6*, 20 no. 4, p. 801-841, 2011.

PAPERS IN  
PREPARATION

1. Yuval Filmus, E. K. Gngang, On the rank of third order hypermatrices.

GRANTS

- Co-Principal investigator, NFS Conference and Workshops in the Mathematical Sciences, *3rd-5th Lake Michigan Workshop on Combinatorics and Graph Theory March 2015-March 2017*

AWARDS

- NSF-IGERT Graduate fellowship in Perceptual Science.
- Rutgers University Integrated Graduate Traineeships in Perceptual Science

SELECTED INVITED  
TALKS

- Combinatorial aspects of hypermatrices, Conference for African American Researchers in the Mathematical Sciences hosted by ICERM 2015
- Computational aspects of hypermatrices and applications, Sandia National Laboratories Livermore, CA 2015
- Hypermatrix Algebra, Mini-Symposium at SIAM Chicago 2014
- Computational Aspects of the Combinatorial Nullstellensatz Method, Discrete Mathematics Seminar at the University of California, Davis 2014
- Hypermatrix Spectral Decomposition, Mini-Symposium SIAM OPT14 San Diego 2014
- Hypermatrix Algebra and their Spectral Analysis, Norbert Wiener Center for Harmonic Analysis and Applications at University of Maryland College Park 2014
- Hypermatrix Spectra, Howard University-Department of Mathematics colloquium 2013
- Hypermatrix Algebra, IAS Theoretical Computer Science and Discrete Mathematics Seminar 2013
- Computational Aspects of the Combinatorial Nullstellensatz Method Experimental Mathematics Seminar at Rutgers University 2013

TEACHING  
EXPERIENCE

Instructor Fall 2014, Spring 2015, Fall 2015, Fall 2016  
MA 265 - Linear Algebra  
Department of Mathematics, Purdue University

Instructor  
MA 351 - Elementary Linear Algebra  
Department of Mathematics, Purdue University

Summer 2016

Instructor  
MA 375 - Discrete Mathematics  
Department of Mathematics, Purdue University

Summer 2015

	Instructor	Spring 2011
	CS 206 - Discrete Structures II Department of Computer Science, Rutgers University	
	Teaching Assistant	Fall 2010
	CS 206 - Discrete Structures II Department of Computer Science, Rutgers University	
	Teaching Assistant	Spring 2010
	CS 344 - Introduction to Algorithms Department of Computer Science, Rutgers University	
WORK EXPERIENCE	Research Intern	December 2005–June 2007
	Medical Imaging Research Group Siemens Corporate Research, Princeton NJ Mentor: Leo Grady	
	Research Intern	June 2011–August 2011
	Microsoft Research New England Cambridge, MA Mentor: Henry Cohn	
AWARDS	<ul style="list-style-type: none"> <li>• 2016-2017 Spira Teaching Award winner for excellence in undergraduate teaching.</li> </ul>	
SERVICE	Faculty mentor to the Purdue Science Bound Program	2014
	<ul style="list-style-type: none"> <li>• Computer Programming Mentor for High school students from under-represented minorities in the STEM disciplines.</li> </ul>	
COMPUTATIONAL SKILLS	<ul style="list-style-type: none"> <li>• C, C++, Python, Sagemath, MATLAB, Maple, Mathematica.</li> <li>• Hypermatrix Algebra Package available on GitHub</li> </ul>	