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Stephen Yeung

**ASSOCIATE PROFESSOR**

Full-Time Faculty

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**Biography**

Dynamical systems theory including coupled oscillators, Josephson junction arrays, injection lasers, sigma-delta data converters, and algorithmic analysis of microarray data



**EDUCATION**

◆ PhD, Mathematics, Cornell University, 1999



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# Biography

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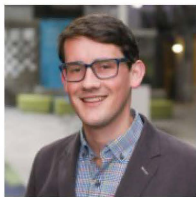
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## EDUCATION

◇ PhD, Mathematics, Cornell University, 1999

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### James Wilson

Assistant Professor

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James is an Assistant Professor of Statistics and Co-Director of the BS in Data Science program at the University of San Francisco. He has joint appointments in the Department of Mathematics and Statistics and the MS in Data Science program, where he has developed and taught courses in Bayesian statistics, machine learning, data science, and network analysis. In research, James develops new statistical and computational techniques to model, analyze, and explore high-dimensional and relational C...

**Education:** PhD, Statistics and Operations Research, University of North Carolina, 2015, MS, Mathematical Sciences, Clemson University, 2010, BS, Mathematics, Campbell University, 2008, BS, Chemistry, Campbell University, 2008



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**Biography**

Dynamical systems theory including coupled oscillators, Josephson junction arrays, injection lasers, sigma-delta data converters, and algorithmic analysis of microarray data

**Office Hours**

Thur. 9:30-9:55 a.m.

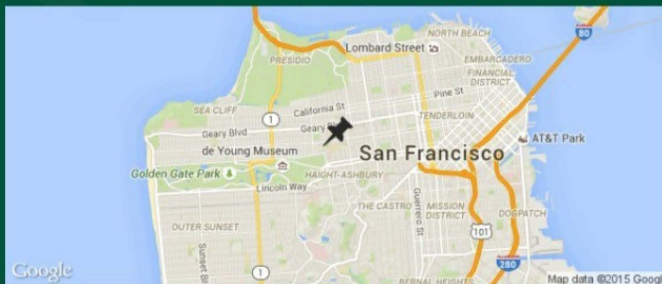
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- Great Ideas in Mathematics
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Biography

Dynamical systems theory including coupled oscillators, Josephson junction arrays, injection lasers, sigma-delta data converters, and algorithmic analysis of microarray data

Office Hours

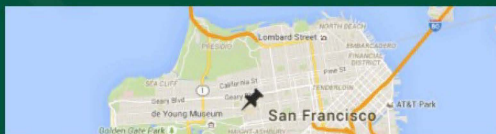
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# PHYSICAL REVIEW B

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## Interactions of topological kinks in two coupled rings of nonlinear oscillators

A. E. Duwel, C. P. Heij, J. C. Weisenfeld, M. K. Stephen Yeung, E. Trías, S. J. K. Várdy, H. S. J. van der Zant, S. H. Strogatz, and T. P. Orlando  
Phys. Rev. B **58**, 8749 – Published 1 October 1998



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### ABSTRACT

Two discrete rings of nonlinear oscillators with topologically trapped kinks exhibit features due to coupling interactions between the rings. These interaction effects include phase locking between kinks in different rings, precession of the kink/antikink collision region, excitation of kink/antikink pairs, and time-dependent switching. We study these phenomena in simulations of two coupled discrete sine-Gordon equations, and in experiments on two inductively coupled rings of niobium Josephson junctions.

Received 27 April 1998

DOI: <https://doi.org/10.1103/PhysRevB.58.8749>

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### Issue

Vol. 58, Iss. 13 — 1 October 1998

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### AUTHORS & AFFILIATIONS



DOI: <https://doi.org/10.1103/PhysRevB.58.8749>  
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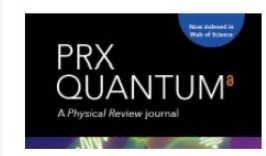
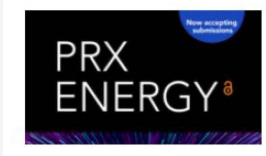
[S. H. Strogatz](#)

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[T. P. Orlando](#)

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## Time Delay in the Kuramoto Model of Coupled Oscillators

M. K. Stephen Yeung and Steven H. Strogatz  
Phys. Rev. Lett. **82**, 648 – Published 18 January 1999

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### ABSTRACT

We generalize the Kuramoto model of coupled oscillators to allow time-delayed interactions. New phenomena include bistability between synchronized and incoherent states, and unsteady solutions with time-dependent order parameters. We derive exact formulas for the stability boundaries of the incoherent and synchronized states, as a function of the delay, in the special case where the oscillators are identical. The experimental implications of the model are discussed for populations of chirping crickets, where the finite speed of sound causes communication delays, and for physical systems such as coupled phase-locked loops or lasers.

Received 13 July 1998  
DOI: <https://doi.org/10.1103/PhysRevLett.82.648>  
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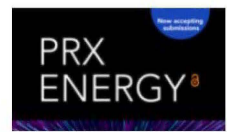
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M. K. Stephen Yeung and Steven H. Strogatz  
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**Excerpts from Acknowledgements** section (in particular, pg. x – xiii), the doctoral thesis of Man Kit Stephen Yeung, “Time delay in the Kuramoto model of coupled-phase oscillators,” UMI Dissertation Information Service, A Bell & Howell Information Company, Ann Arbor, Michigan; UMI Number: 9927414; submitted to the Faculty of the Graduate School of Cornell University, May 1999:

Grad students in the Department of Theoretical and Applied Mechanics at Cornell are also very friendly. I have been lucky enough to have Chris Papadopoulos, Binqun Gu, Dave Shia, and John Weisenfeld as my officemates. Dave was ever entertaining and always there when I wanted to play darts. Binqun drilled me daily in Mandarin. John got me started on Josephson junctions and kept me working hard by flooding me with new ideas and results on a daily basis. ...

Guys, thanks for sharing an office with me. Thanks for the fun and the company. I know that from time to time I am very obnoxious. Thanks for putting up with me.

In this department there are also Harrison Poon and Raj Kolhe. Harrison was the guru who baptized me into the world of Unix. We enjoyed ourselves very much writing little shellscripts that did fun and occasionally useful things. We also had great times having dinner together in the Ivy Room. ...

I would also like to thank the Department of Theoretical and Applied Mechanics at Cornell for financial support in the form of a teaching assistantship, and the National Science Foundation for supporting my work through a research assistantship.

There is no mention in the thesis of a mathematics nor statistics department which might be consistent with the position as advertised which Dr. Yeung filled during the academic year 2005/06.

Note: Dr. Yeung’s doctoral advisor, Dr. Steven Strogatz (as of March 2022, holding appointment as Jacob Gould Schunman Professor of Applied Mathematics, Department of Mathematics, Cornell University) maintains a professional website which links as “Primary Web Page” from his profile page on the official Cornell University website – [stevenstrogatz.com](http://stevenstrogatz.com). Therein is further posted his Curriculum Vitae which indicates that in 1999, he held the position Associate Professor of Theoretical and Applied Mechanics, Cornell University. **This document appears, to me (the reader thereof can determine if an alternate interpretation is reasonable),** to list comprehensively all PhD students for which he was advisor, degree awarded and current employment. As to Dr. Yeung, his PhD appears, to me, to be listed as Theoretical and Applied Mechanics: reference the website screen captures on the following three pages of this file following the current textual insert of two total pages length.

The subsequent five pages are comprised of screen captures of Dr. Strogatz’s professional website and curriculum vitae thereon from 2015, retrieved from the database *Internet Archive* – relevant information is consistent with that published March 16, 2022.

Following these are two website screen captures generated **March 27, 2022** (with Google Chrome Developer Tools open as to the first of these screen captures), from one may conclude that, as of this date, the “Download My CV” feature has precisely the same behavior as it did, as retrieved from the *Internet Archive*, corresponding to **September 6, 2015** (for which, in my opinion, strong evidence is provided in the subsequent two website screen captures); in particular, a student housing contract **for the academic year 2015/16 (file: ay1516\_housingcontract1.pdf)**, opens instead of a Curriculum Vitae. The screen capture of the student housing contract document contains content on the first page thereof which reasonably suggests (though acknowledged as not dispositive) a publication date no later than **August 22, 2015**. That this identical feature persisted as of **August 27, 2022**, and again as of **December 22, 2022**, is evinced by the next four website screen captures though it is noted that the format, but not content, of the website somewhat changed (the added elements in box titled, “ON THIS PAGE” merely change focus on the same screen and do not link to another webpage). It is also acknowledged that, in principle, the Developer Tools Code could be superficially altered within the Google Chrome browser to give an appearance in screen capture inconsistent with the original, however, one can check the website itself as preserved, including Developer Code, for both 2015 and 2022 versions, on the *Internet Archive*, web.archive.org, search: **www.usfca.edu/faculty/stephen-yeung**. Perma.cc archival links for December 22, 2022, that also authenticate this feature are: <https://perma.cc/BG6T-PJRC> and <https://perma.cc/H5VB-93EU>. Further, one can check the site directly for as long as the behavior persists.

The remaining pages of the file constitute excerpt from math.cornell.edu/graduate-program-history which purports to comprise a comprehensive catalog of all PhD (i.e., doctorate) degrees in mathematics that have been awarded by Cornell University in its history. All website pages – including those originally retrieved from the *Internet Archive* – represented in this file, Degree\_Evidence1.pdf, by screen capture and/or print to pdf from the Google Chrome Browser, have been, in turn, archived by JSK Independent Legal Services with Perma.cc, a service developed by Harvard’s Library Innovation Lab (official website: lil.law.harvard.edu); which is utilized by academic libraries and by courts for creation and reference of authenticatable records, in respect, internet publications. Interested parties may contact John S. Kao at the email address listed on JSKIndependentLegal.com for further information, and verification (**in particular, URLs for Perma.cc archival records not included expressly**), as requested. Apposite to this discussion are the following Perma.cc links: <https://perma.cc/VJ6H-C6UZ> and <https://perma.cc/LC6F-X6FQ>; which archive IAWM records for www.usfca.edu/arts-sciences/undergraduate-programs/mathematics/faculty from 2020 and 2021. As of December 31, 2022, the list for the USF Mathematics Faculty is published at www.usfca.edu/arts-sciences/programs/undergraduate/mathematics/faculty; which is archived as of this date at Perma.cc link: <https://perma.cc/5JYD-2LB3>.

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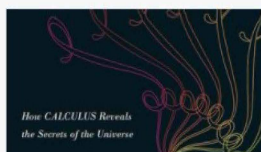
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**Steven Strogatz** is an applied mathematician who works in the areas of nonlinear dynamics and complex systems, often on topics inspired by the curiosities of everyday life. He loves finding math in places where you'd least expect it—and then using it to illuminate life's mysteries, big and small. For example: Why is it so hard to fall asleep a few hours before your regular bedtime? When you start chatting with a stranger on a plane, why is it so common to find that you have a mutual acquaintance? What can twisting a rubber band teach us about our DNA? An award-winning researcher, teacher, and communicator, Strogatz enjoys sharing the beauty of math through his books, essays, public lectures, podcasts, and radio and television appearances. [Bio for Steven Strogatz](#) →

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**Infinite Powers: How Calculus Reveals the Secrets of the Universe**

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personal website: [www.stevenstrogatz.com](http://www.stevenstrogatz.com)

### Employment

- 2021-2022 Distinguished Visiting Professor, National Museum of Mathematics
- 2017– Stephen H. Weiss Presidential Fellow, Cornell
- 2009– Professor of Mathematics, Cornell
- 2009–2014 Professor of Mechanical and Aerospace Engineering, Cornell
- 2007– Jacob Gould Schurman Professor of Applied Mathematics, Cornell
- 2005–2012 Director, Center for Applied Mathematics, Cornell
- 2000–2009 Professor of Theoretical and Applied Mechanics, Cornell
- 1994–2000 Associate Professor of Theoretical and Applied Mechanics, Cornell
- 1993–1994 Associate Professor of Applied Mathematics, Dept. of Mathematics, MIT
- 1989–1993 Assistant Professor of Applied Mathematics, Dept. of Mathematics, MIT
- 1986-1989 NSF Postdoc in Mathematical Sciences, Harvard and Boston University

### Education

- 1986 Ph. D., Applied Mathematics, Harvard University
- 1986 M.A., Mathematics, Cambridge University
- 1982 B. A., first class honours, Mathematics, Cambridge University
- 1980 A. B., summa cum laude, Mathematics, Princeton University

### Research Interests

Nonlinear dynamics and complex systems applied to physics, biology, and social science

### Honors and Awards

- 2021 Distinguished Visiting Professor for the Public Dissemination of Mathematics, National Museum of Mathematics
- 2021 Honorary Degree, Doctor of Laws (honoris causa), Dalhousie University
- 2019 Finalist for Royal Society Science Book Prize  
*Infinite Powers* was one of six books shortlisted for the Royal Society Science Book Prize sponsored by Insight Investment, “celebrating the very best in popular science writing from around the world for a non-specialist audience.”
- 2019 George Pólya Prize for Mathematical Exposition





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2. Mauricio Barahona (Physics, 1996) Imperial College

*Cornell:*  
3. Duncan Watts (Theoretical and Applied Mechanics, 1997) Penn  
4. M.K. Stephen Yeung (Theoretical and Applied Mechanics, 1999) U. San Francisco

6

5. Duncan Callaway (Theoretical and Applied Mechanics, 2001) UC Berkeley  
6. Joel Ariaratnam (Applied Mathematics, 2002) St. Martin's Press  
7. Michelle Girvan (Physics, 2003) U. Maryland  
8. Daniel Wiley (Applied Mathematics, 2006) US Government  
9. Danny Abrams (Theoretical and Applied Mechanics, 2006) Northwestern U.  
10. Sam Arbesman (Computational Biology, 2008) Lux Capital  
11. Erik Martens (Theoretical and Applied Mechanics, 2009) Tech Univ. Denmark  
12. Lauren Childs (Applied Mathematics, 2010) Virginia Tech  
13. Seth Marvel (Applied Mathematics, 2011) U. Michigan  
14. Tim Novikoff (Applied Mathematics, 2013) Google  
15. Isabel Kloumann (Applied Mathematics, 2016) Facebook  
16. Danielle Toupo (Applied Mathematics, 2016) Intel  
17. Kevin O'Keefe (Applied Mathematics, 2017) Apple  
18. Bertrand Ottino-Löffler (Applied Mathematics, 2018) Rockefeller U.  
19. Irena Papst (Applied Mathematics, 2021)  
20. Lindsay Mercer (Applied Mathematics, expected 2023)  
21. David Hathcock (Physics, expected 2022)  
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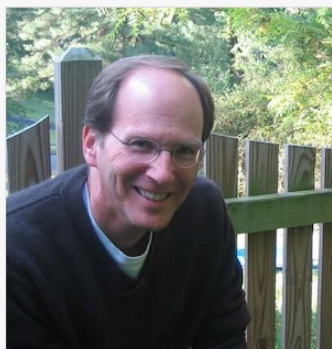
**Master's Students**  
John Weisenfeld (Theoretical and Applied Mechanics, 1997)

**Postdoctoral Fellows**  
Ricardo Oliva (2001)

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## What can math reveal about our world and ourselves?





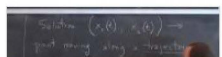
**Steven Strogatz** is an applied mathematician who works in the areas of nonlinear dynamics and complex systems, often on topics inspired by the curiosities of everyday life. He loves finding math in places where you'd least expect it—and then using it to illuminate life's mysteries, big and small. For example: Why is it so hard to fall asleep a few hours before your regular bedtime? When you start chatting with a stranger on a plane, why is it so common to find that you have a mutual acquaintance? What can twisting a rubber band teach us about the DNA in our cells? An award-winning teacher and communicator, Strogatz enjoys sharing the beauty of math through his writings, public lectures, and radio and television appearances. [Bio for Steven Strogatz](#) →

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  - Multivariable Calculus for Engineers (Math 1920)
  - Differential Equations for Engineers (Math 2930)
  - Advanced Engineering Analysis (IAM 3100)
  - Intermediate Dynamics (IAM 5700)
  - Nonlinear Dynamics and Chaos (IAM 5780)
  - Methods of Applied Mathematics (IAM 6100, 6110)
  - Asymptotics and Perturbation Methods (IAM 6130)
  - Complex Systems (IAM 6780)
  - Applied Dynamical Systems (Math 7170)
  - Differential Equations and Dynamical Systems (Math 4200)
  - Applied Complex Analysis (Math 4220)
  - Calculus III (Math 2130)
  - History of Mathematics (Math 4030)

- Courses taught at MIT**
- Principles of Applied Mathematics (1994)
  - Calculus (1993)
  - Nonlinear Dynamics and Chaos (1990–1995)
  - Complex Variables (1989–1991)
  - Mathematical Methods for Engineers (1989–1993)

- Ph.D. Students Supervised at Cornell**
- Duncan Watts (Theoretical and Applied Mechanics, 1997)
  - M.K. Stephen Young (Theoretical and Applied Mechanics, 1999)
  - Duncan Callaway (Theoretical and Applied Mechanics, 2001)
  - Joel Ariatman (Applied Mathematics, 2002)
  - Michelle Girvan (Physics, 2003)
  - Daniel Wiley (Applied Mathematics, 2006)
  - Danny Abrams (Theoretical and Applied Mechanics, 2006)
  - Sam Arbesman (Computational Biology, 2008)
  - Erik Martens (Theoretical and Applied Mechanics, Ph.D., 2009)
  - Lauren Chikhi (Applied Mathematics, Ph.D., 2010)
  - Seth Marvel (Applied Mathematics, Ph.D., 2011)
  - Tim Novikoff (Applied Mathematics, Ph.D., 2012)
  - Danielle Tsougo (Applied Mathematics, Ph.D. expected in 2016)
  - Isabel Kloumann (Applied Mathematics, Ph.D. expected in 2016)

- Masters Students Supervised**
- John Weisenfeld (Cornell, 1997)

- Postdoctoral Fellows Supervised**
- Ricardo Oliva (Cornell, 2001)
  - Haant Sharma (Cornell, 2004)
  - Marc Timme (Cornell, 2005)

**Ph.D. Students Supervised at MIT**

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[speaking schedule](#)

**in the news**

**Billionaires and Mathematicians Crack Jokes at the Geekiest Event of the Season**  
- *The Wall Street Journal*  
October 19, 2014

**TED talk**



**The Science of Sync**  
How things in nature tend to sync up

**recent activities**



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### Steven H. Strogatz

Jacob Gould Schurman Professor of Applied Mathematics  
Department of Mathematics  
533 Malott Hall  
Cornell University  
Ithaca, NY 14853-4201

Phone: (607) 255-5999 (w)  
e-mail: [strogatz@cornell.edu](mailto:strogatz@cornell.edu)  
personal website: [www.stevenstrogatz.com](http://www.stevenstrogatz.com)

#### Employment

- 2009–present Professor of Mathematics, Cornell
- 2009–2014 Professor of Mechanical and Aerospace Engineering, Cornell
- 2007–present Jacob Gould Schurman Professor of Applied Mathematics, Cornell
- 2005–2012 Director, Center for Applied Mathematics, Cornell
- 2000–2009 Professor, Theoretical and Applied Mechanics, Cornell
- 1994–2000 Associate Professor, Theoretical and Applied Mechanics, Cornell
- 1993–1994 Associate Professor of Applied Mathematics, Dept. of Mathematics, MIT
- 1989–1993 Assistant Professor of Applied Mathematics, Dept. of Mathematics, MIT

#### Education

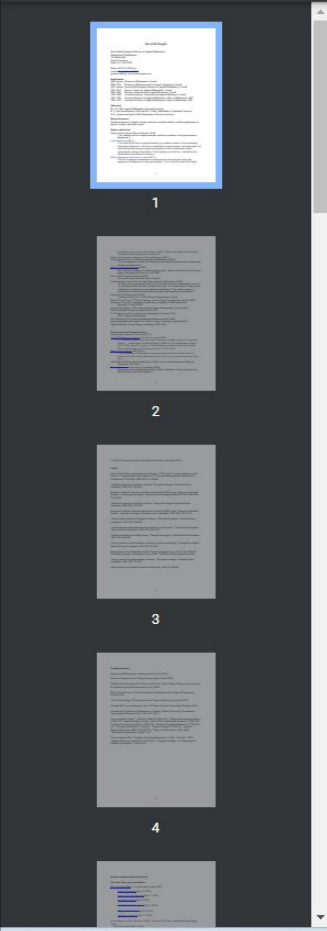
Ph. D. (1986), Applied Mathematics, Harvard University.  
B. A., first class honours (1982) and M.A. (1986), Mathematics, Cambridge University.  
A. B., summa cum laude (1980), Mathematics, Princeton University.

#### Research interests

Nonlinear dynamics, complex systems, networks, coupled oscillators, and their applications in physics, biology, and social science.

#### Honors and awards

Fellow of the American Physical Society (2014).  
("For seminal work on complex networks, nonlinear oscillators, and synchronization phenomena.")  
Euler Book Prize (2014).  
("The Euler Book Prize is awarded annually to an author or authors of an outstanding book about mathematics. The Prize is intended to recognize authors of exceptionally well written books with a positive impact on the public's view of mathematics and to





*Topology of chromatin and supercoiled DNA.*  
(Undergraduate thesis work with F. Almgren and A. Worcel, 1980)

**Ph.D. students supervised**

MIT:

- 1. Shinya Watanabe (Applied Mathematics, 1995)
- 2. Mauricio Barahona (Physics, 1996)

Cornell:

- 3. Duncan Watts (Theoretical and Applied Mechanics, 1997)
- 4. M.K. Stephen Yeung (Theoretical and Applied Mechanics, 1999)
- 5. Duncan Callaway (Theoretical and Applied Mechanics, 2001)
- 6. Joel Ariaratnam (Applied Mathematics, 2002)
- 7. Michelle Girvan (Physics, 2003)
- 8. Daniel Wiley (Applied Mathematics, 2006)
- 9. Danny Abrams (Theoretical and Applied Mechanics, 2006)
- 10. Sam Arbesman (Computational Biology, 2008)
- 11. Erik Martens (Theoretical and Applied Mechanics, 2009)
- 12. Lauren Childs (Applied Mathematics, 2010)
- 13. Seth Marvel (Applied Mathematics, 2011)
- 14. Tim Novikoff (Applied Mathematics, 2012)
- 15. Isabel Kloumann (Applied Mathematics, expected 2016)
- 16. Danielle Toupo (Applied Mathematics, expected 2016)
- 17. Kevin O'Keefe (Physics, expected 2016)

**Master's students supervised**

John Weisenfeld (TAM, 1997)

**Postdoctoral fellows supervised**

Ricardo Oliva (2001)  
Basant Sharma (2004)  
Marc Timme (2005)

**Diversity**

Co-PI of Cornell's Summer Mathematics Institute, (2006-present), a summer "boot camp" for mathematically talented women and minority undergraduates who are headed for graduate school and desire a stronger foundation in analysis and algebra.

Read about [USF's COVID-19 resources](#) and about our return to campus this fall.

# ABOUT USF ♦ ACADEMICS ♦ ADMISSION STUDENT LIFE ♦ SAN FRANCISCO ADVANTAGE



## Stephen Yeung

**ASSOCIATE PROFESSOR**  
Full-Time Faculty

✉ yeung@math.usfca.edu    ☎ (415) 422-2187  
📍 Harney Science Center 122D

## Biography

Dynamical systems theory including coupled oscillators, Josephson junction arrays, injection lasers, sigma-delta data converters, and algorithmic analysis of microarray data

## EDUCATION

♦ PhD, Mathematics, Cornell University, 1999

[a.color\\_block\\_callout\\_link](#) 300 × 73.18

[DOWNLOAD MY CV](#)

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**2015-2016 TERMS AND CONDITIONS OF OCCUPANCY**

**APPLICATION FOR HOUSING**

An application to live in any University-operated student housing unit requires the submission of this completed agreement. Students who are new to USF are also required to submit a \$300 non-refundable housing pre-payment.

**HOUSING REQUIREMENT**

All undergraduates admitted for the Fall 2015 Semester with 40 or fewer transfer credits will be required to live on campus for their first two semesters of enrollment at USF. Exemptions from this requirement are granted to students living at home with their legal guardian if legal guardian's permanent address is within a 40-mile radius of campus or for medical or financial hardships as determined by the Director or designee. All requests for an exemption must be submitted through USFrooms to the Student Housing and Residential Education (SHARE) Office for approval. When campus housing nears capacity, the University reserves the right to relax the exemption policy.

**ELIGIBILITY FOR OCCUPANCY**

1. Student must be registered and enrolled for a full credit-hour load at USF (as defined by the most recent University General Catalog) by the University Census date or the effective date of this agreement, whichever comes later, for each semester (fall and spring) covered under this agreement. Exceptions to this requirement must be requested in advance in writing and approved by the Director of SHARE or designee.
2. In addition to the credit-hour load requirement stated above, Student must be in good behavioral standing with the University (i.e., not have received a sanction from the University Conduct System that prevents him or her from living in University operated housing).

**RATES FOR ROOM AND MEAL PLAN**

1. Rates for residence hall rooms and other units/spaces as well as the meal plan are published prior to the beginning of the Fall semester and are included on the Student Housing website. Room and board charges are assessed by the semester and are due as billed by One Stop.
2. This agreement legally binds Student to room and board charges for the full term or remaining balance thereof. Any Student who leaves the residence halls or other units/space during the agreement period without signing a Contract Cancellation form (see "Contract Cancellation" section below) continues to be liable for charges during the Agreement Term.
3. Students assigned to live in Phelan Hall, Hayes-Healy Hall, Gillson Hall, Lone Mountain Hall/Pacific Wing, or Fromm Hall, must purchase the University meal plan each semester. The University will automatically enroll the Student in the Flexi meal plan for Students assigned to these buildings. In certain circumstances, students with dietary restrictions may be eligible for a meal plan modification by submitting a request with contact the Dining Services office of Bon Appetite. The Meal plan is non-transferable beyond the spring semester or between student accounts and has no cash value at the completion of the academic year. (Students assigned to Pedro Arrupe Hall, HESA House or Loyola Village are not required to purchase a meal plan)

**DATES OF OCCUPANCY**

- The dates of occupancy for the 2015-16 academic year are as follows:
1. Fall Semester: Saturday, August 22, 2015 to 24 hours after the Student's last final exam OR noon on Saturday, December 19, 2015, whichever comes first.
  2. Intersession and Spring Semester: noon on Sunday, January 3, 2016 to 24 hours after the Student's last final exam OR noon on Saturday, May 21, 2016, whichever comes first. Students participating in...







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3. Exceptions to the above dates must be requested in advance, in writing and approved by the Director of SHARE or designee. Students authorized to check-in prior or check-out after the agreement period of occupancy may be assessed additional daily room charges, and .







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On This Page

Cornell Mathematics Doctorates, 1868-1939

Cornell Mathematics Doctorates, 1940-1959.

Cornell Mathematics Doctorates, 1960-1969

Cornell Mathematics Doctorates, 1970-1979

Cornell Mathematics Doctorates, 1980-1989

Cornell Mathematics Doctorates, 1990-1999

## Graduate Program History

[Home](#) » Graduate Program History

### Cornell Mathematics Doctorates, 1868-1939

The Charter creating Cornell University was signed by the Governor of New York in 1865 and the University opened in 1868.

This page gives the complete chronological list, per decade (except for the first period of twelve years), of the people who earned a doctorate in mathematics at Cornell from the opening in 1868 to 1939 included. One hundred doctorates were awarded by the department during this period including twenty one awarded to women. The title of the doctorate and the name of the advisor are given as well as minimal information on the later career of the individual.

#### 1868-1879 (1 doctorate)

Henry Turner Eddy, 1872

In 1872, Eddy received the first Ph.D. awarded at Cornell in any subject. He was an Assistant Professor in Mathematics at Cornell. There is no record of his dissertation. He had a brilliant scientific and academic career.



#### 1880-1889 (3 doctorates)

Hiram John Messenger, 1886

Title: Modern Methods in Geometric Conics. Advisor: James Oliver. Career: Actuary, Cornell Trustee.

# Department of Mathematics

## On This Page



## Graduate Program History

[Home](#) » Graduate Program History

### Cornell Mathematics Doctorates, 1868-1939

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---

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In 1872, Eddy received the first Ph.D. awarded at Cornell in any subject. He was an Assistant Professor in Mathematics at Cornell. There is no record of his dissertation. He had a brilliant scientific and academic career.



## Mark Gordon Low

Title: A Unified Asymptotic Minimax Theory for Nonparametric Density Estimation and Nonparametric Regression. Advisor: Lawrence Brown. Career: Wharton School of the University of Pennsylvania.

## Christopher Francis Noble

Title: Equilibrium Behavior of the Sexual Reproduction Process. Advisor: Richard Durrett. Career: Lawrence University; Senior Consulting Actuary at Towers Watson, Seattle, Washington.

## Jinchao Xu

Title: Theory of Multilevel Methods. Advisor: James Bramble. Career: Pennsylvania State University.

## Cornell Mathematics Doctorates, 1990-1999

The Mathematical Science Institute (1986-1997) was supported for ten years by a grant from the Army Research Office. The four designated areas of research in the Institute were applied analysis, physical mathematics, numerical analysis and statistics and applied probability. For most of the institute existence (1987-1997), Anil Nerode served as Director.

On October eight 1998, to everyone surprise, a large Pumpkin was discovered at the top of McGraw tower. It remained there until the next spring.

Ninety three doctorates were awarded during this decade including sixteen to women. After the swings of the previous two decades, the annual rate of 9 to 10 per year became the norm. Thirty nine faculty supervised Ph.D.s during the period. The most active advisors were Richard Durrett (12 students) followed by Leonard Gross (9), Anil Nerode (6), Allen Hatcher (5), and Kenneth Brown, John Hubbard, Richard Shore, Roberts Strichartz and Karen Vogtmann (4).

---

## 1990 (16 doctorates)

---

### Mark Brittenham

Title: Essential Laminations in Seifert-Fibered Spaces. Advisor: Allen Hatcher. Career: University of Nebraska at Lincoln.

### Francois Destrempes

Title: Invariants of Virtual Lattices over Group Rings with Applications to Galois Module Structure. Advisor: Stephen Chase. Career: University of Ottawa.

### Ping Lee

Title: On the Vector-Scalar Potential Formulation of the Three Dimensional Eddy Current Problem. Advisor: James Bramble. Career: President and General Manager of BG Group China (Oil & Gas).

### Gregory Lieb



Title: Holomorphic Motions and Teichmüller Space. Advisor: Clifford Earle. Career: Dresdner Kleinwort, Commerzbank; Alto Energy, LLC.

## Ming Lin

Title: The Convergence of the  $U(1)$  Gauge Theory on Random Lattices in Three Dimensions. Advisor: Leonard Gross. Career: Managing Director at Royal Bank of Scotland - RBS Global Banking & Markets.

## James Lipton

Title: Relating Kripke Models and Realizability. Advisor: Anil Nerode. Career: Wesleyan University.

## Xialong Luo

Title: High-Dimensional Annihilating Branching Random Walks. Advisor: Richard Durrett. Career: Sr. Director, Biostatistics at Celgene.

## Randolph McCarthy

Title: Cyclic Homology of an Exact Category. Advisor: Daniel Grayson and Stephen Lichtenbaum. Career: University of Illinois at Urbana Champaign.

## Claudia Neuhauser

Title: Ergodic Theorems for the Multitype Contact Process. Advisor: Richard Durrett. Career: University of Minnesota. Speaker at the 2010 International Congress of Mathematicians in Hyderabad.

## Todd Peterson

Title: Convergence Properties of the Discontinuous Galerkin Method for a Scalar Hyperbolic Equation. Advisor: Lars Wahlbin. Career: University of Virginia; George Mason University; Director of Financial Engineering at Fannie Mae.

## Emily Petrie

Title: Convergence of Power Series Invariants for Families of  $p$ -adic Galois Representations. Advisor: Shankar Sen. Career: Arizona State University; Merrimack College, MA.

## Ambar Sengupta

Title: The Yang-Mills Measure for the Two-Sphere. Advisor: Leonard Gross. Career: Louisiana State University.

## Duminda Wijesekera

Title: Constructive Modal Logics. Advisor: Anil Nerode. Career: George Mason University.

## Alexander Yakhnis

Title: Game Theoretic Semantics for Concurrent Programs and Their Specifications, Advisor: Anil Nerode. Career: The College at Brockport (SUNY Brockport).

## Vladimir Yakhnis

Title: Concurrent Programs, Calculus of State Strategies, and Gureviuch-Harrington Games. Advisor: Anil Nerode. Career: Vice President and Chief Scientist at STILMAN ADVANCED STRATEGIES LLC.

## Yu Zhang

Title: A Power Law for Connectedness of Some Random Graphs at the Critical Point. Advisor: Harry Kesten. Career: University of Colorado, Colorado Springs.

---

## 1991 (8 doctorates)

---

## Ernesto Acosta

Title: On the Essential Self-Adjointness of Dirichlet Operators on Non-Linear Path Space. Advisor: Leonard Gross. Career: Universidad Nacional de Colombia, Bogota.

## Martin Bridson

Title: Geodesics and Curvature in Metric Simplicial Complexes. Advisor: Karen Vogtmann. Career: Oxford University. Speaker at the 2006 International Congress of Mathematicians in Madrid.

## Shuh-Jye Chern

Title: Mathematical Theory of the Barotropic Model in Geophysical Fluid Dynamics. Advisor: Jerrold Marsden. Career: National Tsing-Hua University, Taiwan.

## Erich Friedman

Title: First Passage Percolation on a Poisson Lattice. Advisor: Richard Durrett. Career: Stetson University, Florida.

## Steven Kautz

Title: Degrees of Random Sets. Advisor: Richard Shore. Career: Iowa State University.

## Alberto Setti

Title: Eigenvalue and Heat Kernel Estimates for the Weighted Laplacian on a Riemannian Manifold. Advisor: Robert Strichartz. Career: Università degli Studi dell'Insubria.

## Seth Stafford

Title: Harmonic Functions on Manifolds of Nonnegative Ricci Curvature. Advisor: Richard Durrett. Career: Director of Fusion Applications Architecture, Oracle Corporation.

## Melanie Stein

Title: Groups of Piecewise Linear Homeomorphisms. Advisor: Kenneth Brown. Career: Trinity College.

---

## 1992 (11 doctorates)

---

## Bruce Anderson

Title: Signed Sequences and Rolle's Restrictions: Why Not All Real Differentiable Functions and Polynomials Satisfying Rolle's Theorem Are Constructible. Advisor: Moss Sweedler. Career: Kent State University; ?

## Charles Delman

Title: Essential Laminations in Knot Complements. Advisor: Allen Hatcher. Career: Eastern Illinois University.

## John Darroch Faught

Title: Local Connectivity in a Family of Cubic Polynomials. Advisor: John Hubbard. Career: Chief Actuary at Swiss Re, South Africa.

## Suresh Govindachar

Title: Explicit Weight Two Motivic Cohomology Complexes and Algebraic K-Theory. Advisor: Stephen Lichtenbaum. Career: Senior Engineer, Mercedes-Benz Research & Development North America.

## Zhenchun Guo

Title: The Regularity of Solutions to the Heat Equation Over Group-Valued Path Space. Advisor: Leonard Gross. Career: Banking and Finance.

## Susan Hermiller

Title: Rewriting Systems for Coxeter Groups. Advisor: Kenneth Brown. Career: University of Nebraska, Lincoln.

## John Meier

Title: Endomorphisms of Negatively-Curved Polygonal Groups. Advisor: Kenneth Brown. Career: Lafayette College.

## Alyson Reeves

Title: Combinatorial Structure on the Hilbert Scheme. Advisor: Michael Stillman and Peter Kahn. Career: Institute for Defense Analyses, Center for Computing Science.

## Rachel Roberts

Title: Construction Taut Laminations. Advisor: Allen Hatcher. Career: Washington University in St Louis.

## Li-Min Song

Title: Special Values of L-Functions of Curves Over Finite Fields. Advisor: Stephen Lichtenbaum. Career: unknown.

## Yue Yang

Title: Priority Arguments and Reverse Mathematics. Advisor: Richard Shore. Career: National University of Singapore.

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## 1993 (8 doctorates)

---

### Brian Hall

Title: The Bargmann-Segal "Coherent State" Transform for Compact Lie Groups. Advisor: Leonard Gross. Career: University of Notre Dame

### Vee-Ming Lew

Title: The Semistability at Infinity for Multiple Extension Groups. Advisor: Kenneth Brown. Career: Wilkes University, PA.

### Jenny Xiaoe Li

Title: Optimal Monetary Policy. Advisor: Karl Shell and Jerry Lloyd Bona. Career: Pennsylvania State University.

### Antonio Machiavelo

Title: On Semi-Linear Representations over Local Fields. Advisor: Shankar Sen. Career: Universidade do Porto.

### Yuan-Chung Sheu

Title: On Path Properties of Superdiffusions. Advisor: Eugene Dynkin. Career: National Chiao Tung University, Taiwan.

### Weng-Yin Yap

Title: A Combinatorial Geometry of the Whitehead Torsion of Finite Abelian Groups. Advisor: Keith Dennis. Career: National University of Singapore.

## Linda Hong Zhao

Title: Frequentist and Bayesian Aspects of Some Nonparametric Estimation Problems. Advisor: J. T. Gene Hwang. Career: The Wharton School University of Pennsylvania.

## Louis Zulli

Title: A Matrix for Computing the Jones Polynomial of a Knot. Advisor: Allen Hatcher. Career: Lafayette College.

---

## 1994 (8 doctorates)

---

## Heike Dengler

Title: Poisson Approximations to Continuous Security Market Models. Advisor: Richard Durrett. Career: Risk Management, Ernst & Young; Frankfurt School of Finance & Management.

## William Kalies

Title: Regularized Models of Phase Transformation in One-Dimensional Nonlinear Elasticity. Advisor: Philip Holmes. Career: Florida Atlantic University.

## Sungchul Lee

Title: A Note On Greedy Lattice Animals. Advisor: Harry Kesten. Career: Yonsei University, South Korea.

## Susan Lee

Title: Optimal Drift on the Unit Interval. Advisor: Richard Durrett. Career: Actuary with Bolton Partners, Inc.

## Lawrence Kwan Ho Ma

Title: Quasisymmetric Conjugacy of Degree  $N$  Critical Circle Map. Advisor: John Hubbard. Career: National University of Singapore;?

## John W. Parker

Title: Band-Limited Wavelets With Rotational Symmetry. Advisor: Robert Strichartz. Career: unknown.

## Dierk Schleicher

Title: Internal Addresses in the Mandelbrot Set and Irreducibility of Polynomials. Advisor: John Hubbard. Career: Jacobs University Bremen.

## Gengqiang Zhou



Title: Finiteness and Compactness for the Family of Isospectral Riemannian Manifolds. Advisor: Robert Strichartz. Career: unkown.

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## 1995 (7 doctorates)

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### James Coykendall

Title: Normsets and Rings of Algebraic Integers. Advisor: Shankar Sen. Career: North Dakota State University.

### John Paul Dalbec

Title: Geometry and Combinatorics of Chow Forms. Advisor: Bernd Sturmfels. Career: Software Specialist at Youngstown State University.

### Ramin Farzaneh

Title: A Computer Generated Proof for the Existence of Periodic Orbits for Three-Dimensional Vector Fields. Advisor: John Guckenheimer. Career: Director of Software Engineering at Oracle Corp.

### Jiaqi Luo

Title: Combinatorics and Holomorphic Dynamics: Captures, Matings and Newton's Method. Advisor: John Hubbard. Career: Beacon Software Development Company.

### Niandong Liu

Title: Algebraic and Combinatorial Methods for Face Enumeration in Polytopes. Advisor: Louis Billera. Career: Banking and Finance.

### Gang Ma

Title: Brownian Motion and Admissible Limits. Advisor: Richard Durrett. Career: Actuary, Financial Industry.

### Weizhen Wang

Title: On Assessment of Bioequivalence (Mean, Variance). Advisor: J.T. Gene Hwang. Career: Wright State University.

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## 1996 (6 doctorates)

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### Jeffrey Baggett

Title: Non-Normal Dynamics and Hydrodynamic Stability. Advisor: Lloyd Nicholas Trefethen. Career: University of Wisconsin-La Crosse.

### Tianwen (Tony) Cai

Lawrence Brown (1997) - CUNY

Title: Nonparametric Function Estimation via Wavelets. Advisor: Lawrence Brown. Career: Wharton School of the University of Pennsylvania.

## Richard Dunlap

Title: Superconvergence Points in Locally Uniform Finite Element Meshes for Second Order Two-Point Boundary Value Problems. Advisor: Lars Wahlbin. Career: Director of Engineering at SAI Global Compliance.

## Boris Goldfarb

Title: Splitting Assembly Maps for Arithmetic Groups With Large Actions At Infinity. Advisor: James West. Career: State University of New York at Albany.

## Birkett Huber

Title: Polyhedral Decompositions and Solving Sparse polynomial systems. Advisor: Bernd Sturmfels. Career: Software Engineer at Google.

## Thomas Albert Stiadle

Title: Algebraic K-theory and Assembly for Complexes of Groups. Advisor: James West. Career: Wells College.

## 1997 (5 doctorates)

## Marcelo Aguiar

Title: Internal Categories and Quantum Groups. Advisor: Stephen Chase. Career: Texas A&M University; Cornell University.

## Harel Barzilai

Title: Finiteness Properties for Handlebody Mapping Class Groups. Advisors: Allen Hatcher. Career: Salisbury University, Md.

## Edward Bueler

Title: The Heat Kernel Weighted Hodge Laplacian on Noncompact Manifolds. Advisor: Leonard Gross. Career: University of Alaska, Fairbanks.

## Henry Koewing Schenck

Title: Homological Methods in the Theory of Splines. Advisor: Michael Stillman. Career: University of Illinois at Urbana Champaign.

## Nikhil Shah

Title: The Betti Numbers of the Algebraic Closure of a Finite Field. Advisor: David Eisenbud. Career: University of Michigan.

## 1998 (15 doctorates)

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### Robert Bättig

Title: Completeness of securities market models-an operator point of view. Advisor: Richard Durrett. Career: Died in 1997.

### Ek Nath Belbase

Title: Coexistence in a Two-Species Reaction Diffusion Process Using a Hydrodynamic Limit. Advisor: Richard Durrett. Career: Andrew Davidson & Co. Inc.

### Debra Boutin

Title: Centralizers of Finite Subgroups of Automorphisms and Outer Automorphisms of Free Groups. Advisor: Karen Vogtmann. Career: Hamilton College, NY.

### Jennifer Davoren

Title: Modal Logics for Continuous Dynamics. Advisor: Anil Nerode and Sergei Artemov. Career: The University of Melbourne.

### Maria Gordina

Title: Holomorphic Functions and the Heat Kernel Measure on an Infinite Dimensional Complex Orthogonal Group. Advisor: Leonard Gross. Career: University of Connecticut.

### Craig Jensen

Title: Cohomology of  $\text{Aut}(F(N))$ . Advisor: Karen Vogtmann. Career: University of New Orleans; St. Michael's College, VT.

### Min Jeong Kang

Title: Asymptotic Behavior of Solutions of One-Dimensional Parabolic Spde. Advisor: Richard Durrett. Career: North Carolina State University.

### Wicharn Lewkeeratiyutkul

Title: Perturbation Theorems for Supercontractive Semigroups. Advisor: Leonard Gross. Career: Chulalongkorn University, Thailand.

### Jeffrey Mitchell

Title: Short Time Behavior of Hermite Functions on Compact Lie Groups. Advisor: Leonard Gross. Career: Robert Morris University.

## Ricardo Oliva

Title: On the Combinatorics of External Rays in the Dynamics of the Complex Hénon Map. Advisors: John Smillie. Career: Senior Software Engineer, Box.

## Lisa Anne Orlandi-Korner

Title: Actions of Artin Groups and Automorphism Groups on Ir-Trees. Advisor: Karen Vogtmann. Career: Owner of Cotton Cradles.

## Shu-Yen Pan

Title: Local Theta Correspondence and Unrefined Minimal K-Types. Advisor: Dan Barbasch. Career: National Tsing Hua University.

## David Reed Solomon

Title: Reverse Mathematics and Ordered Groups. Advisor: Richard Shore. Career: University of Connecticut.

## Alexander Teplayev

Title: Spectral Analysis on Infinite Sierpinski Gaskets. Advisor: Robert Strichartz. Career: University of Connecticut.

## Yongjian Xiang

Title: Computing Thom-Boardman Singularities. Advisor: John Guckenheimer. Career: Two Sigma Investments, LLC.

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## 1999 (9 doctorates)

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## Maria Fung

Title: Twisted Torsion on Compact Hyperbolic Spaces: a Representation-Theoretic Approach. Advisor: Birgit Speh. Career: Worcester State University.

## Gonzalo Garcia

Title: On Conformal Metrics On The Euclidean Ball. Advisor: Jose Escobar. Career: Universidad del Valle, Cali, Colombia.

## Ilya German

Title: Hedging Options with Small Transaction Costs. Advisor: Richard Durrett. Career: Senior Consultant at Solum Financial, London.

## Dennis Hirschfeldt

Title: Degree Spectra of Relations on Computable Structures. Advisor: Richard Shore. Career: University of Chicago.

## Robert Milnikel

Title: Nonmonotonic Logic: A Monotonic Approach. Advisor: Anil Nerode and Sergei Artemov. Career: Kenyon College.

## Sudeb Mitra

Title: Teichmuller Theory and Holomorphic Motions. Advisor: Clifford Earle. Career: Queens College, City University of New York.

## Shayan Sen

Title: Representations and Characters of an Extension of  $SL(3, \mathbb{R})$  by an Outer Automorphism. Advisor: Birgit Speh. Career: Senior Actuarial Manager at Aviva Canada.

## Luis Miguel O'Shea

Title: Abelian Sesquisymplectic Convexity for Orbifolds. Advisor: Reyer Sjamaar. Career: Telecommunications Consultant, Mckinsey & Company.

## David Mark Stephenson

Title: Asymptotic Density in an  $n$ -Threshold Randomly Coalescing and Annihilating Random Walk on the  $d$ -Dimensional Integer Lattice. Advisor: Harry Kesten. Career: eBay, Head of Business Analytics; Managing Director and Chief Data officer, DSI Analytics.

## Cornell Mathematics Doctorates, 2000-2009

In 1999, after having occupied White Hall for most of its existence, the department move to Malott Hall, the former home of the Johnson School named after Deane Waldo Malott, the sixth president of Cornell University (1951-1963). Malott Hall's north wing was build in 1963 (Architects: Warner, Burns, Toan & Lunde). The south wing (annex) was added in 1977 (Architects: Levatich, Miller & Hoffman). The architectural drawing pictured here (1975) is from John Clair Miller and Alex Krueger, for the addition project. John Clair Miller is Professor Emeritus in the College of Architecture, Arts and Planning.

Ninety nine doctorates were awarded during the first decade of the twenty-first century. From 2000 to 2006, the graduate program was supported in part by a Vertical Integration of Research and Education in the Mathematical Sciences (VIGRE) grant from the Division of Mathematical Sciences at the National Science Foundation. The goal of this program was "to increase the number of well-prepared U.S. citizens, nationals, and permanent residents who pursue careers in the mathematical sciences". The NSF phased-out the VIGRE program by the end of the decade. Thirty five faculty supervised graduate students during this decade. The most active were Anil Nerode and Laurent Saloff-Coste (7), Louis Billera, Kenneth Brown and Mike Stillman (6), Leonard Gross, John Hubbard and Lars Wahlbin (5), and Jose Escobar, Ravi Ramakrishna, Richard Shore and Karen Vogtmann (4).

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### 2000 (4 doctorates)

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## Stephen Bullock

Title: Warped Cohomology. Advisor: Birgit Speh. Career: National Institute of Standards and Technology.

## Andrei Caldararu

Title: Derived Categories of Twisted Sheaves on Calabi-Yau Manifolds. Advisor: Mark Gross. Career: University of Wisconsin, Madison.

## Antal Jari

Title: Incipient Infinite Clusters in 2D Percolation. Advisor: Harry Kesten. Career: University of Bath.

## Walker McMillan White

Title: Characterizations for Computable Structures. Advisor: Richard Shore. Career: Director, Game Design Initiative at Cornell (Computer Science).

## 2001 (8 doctorates)

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## Henrique Morais Araujo

Title: On the Total Scalar Curvature Plus Total Mean Curvature Functional. Advisor: Jose Escobar. Career: Universidade Federal de Pernambuco.

## David Anthony Brown

Title: Using Spider Theory to Explore Parameter Spaces. Advisor: John Hubbard. Career: Ithaca College.

## Suman Ganguli

Title: Recursive Models of Modal Logics. Advisor: Anil Nerode. Career: New York City College of Technology and The Brooklyn Institute for Social Research.

## Brian Meloon

Title: Construction of Markov Partitions for Linear and Nonlinear Automorphisms of Tori. Advisor: John Guckenheimer. Career: Researcher at Campbell & Co.

## Nathaniel Miller

Title: A Diagrammatic Formal System for Euclidean Geometry. Advisor: David Henderson. Career: University of Northern Colorado.

## Kathryn Nyman

Title: Enumeration in Geometric Lattices and the Symmetric Group. Advisor: Louis Billera. Career: Willamette University.



## Catherine Stenson

Title: Linear Inequalities for Flag  $f$ -vectors of Polytopes. Advisor: Louis Billera. Career: Juanita College.

## Anke Walz

Title: On the Bellows Conjecture. Advisor: Robert Connelly. Career: Kutztown University of Pennsylvania.

## 2002 (10 doctorates)

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## Sarah Spence Adams

Title: Subspace Subcodes and Generalized Coset Codes. Advisor: Dexter Kozen. Career: Olin College of Engineering.

## Ryan Budney

Title: Representations of Mapping Class Groups via Topological Constructions. Advisor: Allen Hatcher. Career: University of Victoria.

## Alan Demlow

Title: Estimates for and Properties of Mixed Finite Element Methods for Elliptic Problems. Advisor: Lars Wahlbin. Career: Texas A&M University.

## Ferenc Gerlits

Title: Invariants in Chain Complexes of Graphs. Advisor: Karen Vogtmann. Career: Renyi Institute, Budapest; Morgan Stanley, Budapest.

## Jennifer (Suzanne) Lynch Hruska Boyd

Title: On the Numerical Construction of Hyperbolic Structures for Complex Dynamical Systems. Advisor: John Smillie. Career: University of Wisconsin, Milwaukee.

## Geoffrey Hruska

Title: Nonpositively Curved Spaces with Isolated Flats. Advisor: Karen Vogtmann. Career: University of Wisconsin, Milwaukee.

## Swapneel Mahajan

Title: Shuffles and Shellings via Projection Maps. Advisor: Kenneth Brown. Career: Indian Institute of Technology Bombay, Mumbai.

## Joseph Miller

Title: Co-occurring Classes in Computable Analysis and Topology. Advisor: Anil Nerode. Career: University of Wisconsin, Madison.

## David Revelle

Title: Random Walks on Solvable Groups. Advisor: Laurent Saloff-Coste. Career: Senior Instructor at The Infinite Actuary.

## Leah Stella (Gold)

Title: Some Homological Results in Commutative Algebra. Advisor: Michael Stillman Career: Cleveland State University.

## 2003 (4 doctorates)

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### Rebecca Shuller Borbely

Title: A Theory of Multitask Learning for Learning from Disparate Data Sources. Advisor: Anil Nerode. Career: CyberPoint International, Md.

### Matthew Horak

Title: Mapping Class Subgroups of Automorphism Groups of Free Groups. Advisor: Karen Vogtmann. Career: University of Wisconsin, Stout.

### Samuel Hsiao

Title: Peak Quasisymmetric Functions and Flag Enumeration in Eulerian Posets. Advisor: Louis Billera. Career: Bard College.

### Fernando Coda Marques

Title: Existence and Compactness Theorems on Conformal Deformation of Metrics. Advisor: Jose Escobar. Career: Princeton University. Speaker at the 2010 International Congress of Mathematicians in Hyderabad. Plenary speaker at the 2014 International Congress of Mathematicians in Seoul.

## 2004 (13 doctorates)

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### James Belk

Title: Thompson's Group F. Advisor: Kenneth Brown. Career: Bard College.

### Janet Best

Title: The Mathematics of Ecological Competition. Advisor: Richard Durrett. Career: Ohio State University.

## Nelia Charalambous

Title: On the LP Spectrum of the Hodge Laplacian and Logarithmic Sobolev Inequalities on Non-Compact Manifolds. Advisor: Jose Escobar and Leonard Gross. Career: University of Cyprus.

## Dan Ciubotaru

Title: Unitary Representations of Exceptional p-adic Groups. Advisor: Dan Barbasch. Career: University of Oxford.

## Jean Cortissoz

Title: On the Ricci Flow in Rotationally Symmetric Manifolds with Boundary. Advisor: Jose Escobar. Career: University of Toledo.

## Christopher Francisco

Title: Hilbert Functions and Graded Free Resolutions. Advisor: Michael Stillman. Career: Oklahoma State University.

## Yuval Gabay

Title: Double Jump Inversions and Strong Minimal Covers in the Turing Degrees. Advisor: Richard Shore. Career:

## Noam Greenberg

Title: The Role of True Finiteness in the Admissible Recursively Enumerable Degrees. Advisor: Richard Shore. Career: Victoria University of Wellington.

## Jaeun Ku

Title: Least-Squares Methods for Second-Order Elliptic Partial Differential Equations. Advisor: Lars Wahlbin. Career: Oklahoma State University.

## Dmitriy Leykekhman

Title: Pointwise Weighted Error Estimates for Parabolic Finite Element Equations. Advisor: Lars Wahlbin. Career: University of Connecticut.

## Yi Lin

Title: Equivariant Symplectic Hodge Theory and Strong Lefschetz Manifolds. Advisor: Reyer Sjamaar. Career: Georgia Southern University.

## Shawn Walker

Title: Shift Techniques and Multicover Inequalities on Colored Complexes. Advisor: Louis Billera. Career: National Security Agency.

## Harrison Huibin Zhou

Title: Minimax Estimation With Thresholding and Asymptotic Equivalence for Gaussian Variance Regression. Advisor: J.T. Gene Hwang and Michael Nussbaum. Career: Yale University, Statistics.

## 2005 (14 doctorates)

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### Maria Belk

Title: Applications of Stress Theory: Realizing graphs and Kneser-Poulsen. Advisor: Robert Connelly. Career: Bard College.

### Nathanael Berestycki

Title: Phase Transitions for the Distance of Random Walks and Applications to Genome Rearrangement. Advisor: Rick Durrett and Jean-Francois Legall. Career: University of Cambridge.

### Jose Trujillo Ferreras

Title: The Random Walk Loop Soup and the Expected Area of the Brownian Loop in the Plane. Advisor: Gregory Lawler. Career: Quantitative Financial Analyst (Model Validation) at Bank of America Merrill Lynch.

### Lee Gibson

Title: The Number of Sites Visited by a Random Walk on an Infinite Graph. Advisor: Laurent Saloff-Coste. Career: Instructor, The Infinite Actuary.

### Radu Haiduc

Title: Horseshoes in the Forced van der Pol Equation. Advisor: John Guckenheimer. Career: Director, Credit Suisse.

### Spencer Hamblen

Title: Lifting -Dimensional Galois Representations. Advisor: Ravi Ramakrishna. Career: McDaniel College.

### Christopher Hardin

Title: The Horn Theory of Relational Kleene Algebra. Advisor: Dexter Kozen. Career: Union College; Finance (Jane Street Capital, NY).

### Todd Kemp

Title: Hypercontractivity in Non-Commutative Holomorphic Spaces. Advisor: Leonard Gross. Career: University of California San Diego.

### Antonio Montalban

Title: Beyond the Arithmetic. Advisor: Richard Shore. Career: University of California, Berkeley. Speaker at the 2014 International Congress of Mathematician in Seoul.

## Roland Roeder

Title: Topology for the Basins of Attraction of Newton's Method in Two Complex Variables. Advisor: John Hubbard. Career: Indiana University, Purdue University indianapolis.

## Hasanjan Sayit

Title: Realistic No Arbitrage Condition. Advisor: Philip Protter. Career: Durham University.

## Fernando Schwartz

Title: Scalar Curvature Problems on Manifolds with Boundary. Advisor: Leonard Gross, Richard Schoen and Jose Escobar. Career: University of Tennessee.

## Serguei Slavnov

Title: Semantic Investigations of Linear Logic. Advisor: Anil Nerode. Career: Higher School of Economics, Moscow.

## Russell Woodroffe

Title: Shelling The Coset Poset. Advisor: Kenneth Brown. Career: Mississippi State University.

## 2006 (13 doctorates)

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## Drew Armstrong

Title: Generalized Noncrossing Partitions and Combinatorics of Coxeter Groups. Advisor: Louis Billera. Career: University of Miami.

## Kristin Camenga

Title: Angle Sums on Polytopes and Polytonal Complexes. Advisor: Louis Billera. Career: Houghton College; Juanita College.

## Guan-Yu Chen

Title: The Cutoff Phenomenon for Finite Markov Chains. Advisor: Laurent Saloff-Coste. Career: National Chiao Tung University, Taiwan.

## William Gryc

Title: On the Holonomy of the Coulomb Connection over 3-Manifolds with Boundary. Advisor: Leonard Gross. Career: Muhlenberg College.

## Jason Martin



Title: Building Infinite Ray-Class Towers with Specific Signatures and Small Bounded Root Discriminant. Advisor: Ravi Ramakrishna. Career: NSA, James Madison University.

## Jeffrey Mermin

Title: Lexicographic Ideals. Advisor: Michael Stillman. Career: Oklahoma State University Stillwater.

## Steve Morris

Title: Four- and Six-Dimensional Nilmanifolds and Symplectic Forms. Advisor: Reyer Sjamaar. Career: Unknown.

## Melanie Pivarski

Title: Heat Kernels on Euclidean Complexes. Advisor: Laurent Saloff-Coste. Career: Roosevelt University.

## Franco Saliola

Title: The Face Semigroup Algebra of a Hyperplane Arrangement. Advisor: Kenneth Brown. Career: Université du Québec à Montréal.

## Steven Sinnott

Title: Results in Computational Algebra of Bayesian Networks. Advisor: Michael Stillman. Career: unknown.

## John Thacker

Title: Properties of Brownian and Random Walk Loop Soups. Advisor: Gregory Lawler. Career: unknown.

## Birgitta Vermesi

Title: Intersection Exponents for Random Walks on Cylinders. Advisor: Gregory Lawler. Career: DigiPen.

## Yan Zeng

Title: Compensators of Stopping Times. Advisor: Philip Protter. Career: Quantitative Analyst, VP, State Street Corporation.

## 2007 (12 doctorates)

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## Jason Bode

Title: Isoperimetric Constants and Self-Avoiding Walks and Polygons on Hyperbolic Coxeter Groups. Advisor: Kenneth Brown. Career: Lander University.

## Benjamin Chan

Title: Coexistence of Contact Processes. Advisor: Richard Durrett. Career: Director, Operational Risk Quantification at American Express.

## Farkhod Eshmatov

Title: The Calogero-Moser Correspondence for Noncommutative Deformations of Kleinian Singularities. Advisor: Yuri Berest. Career: Sichuan University.

## Pavel Gyrya

Title: Heat Kernel Estimates for Inner Uniform Subsets of Harnack-type Dirichlet Spaces. Advisor: Laurent Saloff-coste. Career: American Express (Risk Management).

## Henri Johnston

Title: The Trace Map and Galois Module Structure of Rings of Integers for Absolutely Abelian Number Fields. Advisor: Ravi Ramakrishna. Career: University of Exeter.

## Evgueni Klebanov

Title: Asymptotic Behavior of Convolutions of Centered Density on Lie Group of Polynomial Volume Growth. Advisor: Laurent Saloff-Coste. Career: Banking Industry.

## Andrei Maxim

Title: Aspects of the Finite Element Method for Elliptic Partial Differential Equations. Advisor: Lars Wahlbin. Career: Executive Director - Equities Strategies at Goldman Sachs.

## Vadims Moldavskis

Title: New Generic Properties of Real and Complex Dynamical Systems. Advisor: Yulij Ilyashenko. Career: Interest rate risk manager at HSBC.

## Achilleas Sinefakopoulos

Title: On Some Classes of Borel Fixed Ideals and their Cellular Resolutions. Advisor: Michael Stillman. Career: unknown.

## Aaron Solo

Title: Finite Element Methods for Elliptic and Parabolic Problems with Low Regularity Boundary Data. Advisor: Lars Wahlbin. Career: Quantitative research associate for Susquehanna International Group.

## Mauricio Velasco

Title: Monomial Resolutions and the Cox Rings of Del Mezzo Surfaces. Advisor: Michael Stillman. Career: Universidad de los Andes.

## Treven Wall

Title: A Fatou Theorem for a Class of Quasi-linear Elliptic Partial Differential Equations. Advisor: Leonard Gross. Career: The Johns Hopkins University Applied Physics Laboratory.

## 2008 (10 doctorates)

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## Bryant Adams

Title: Representing Processes as Update Automata and Transducers. Advisor: Anil Nerode. Career: unknown.

## Edoardo Carta-Gerardino

Title: Update Transducers and Linear Recurrence Equations over Semirings. Advisor: Anil Nerode. Career: CUNY York College.

## Noam Horwitz

Title: Free Resolutions of Monomial Ideals. Advisor: Irena Peeva. Career: Industry.

## Sarah Koch

Title: A New Link between Teichmüller Theory and Complex Dynamics. Advisor: John Hubbard. Career: University of Michigan.

## Francesco Matucci

Title: Algorithms and Classification in Groups of Piecewise-Linear Homeomorphisms. Advisor: Kenneth Brown and Martin Kassabov. Career: Universidade Estadual de Campinas, Brazil.

## Mia Minnes

Title: Computability and Complexity Properties of Automatic Structures and Their Applications. Advisor: Anil Nerode. Career: Computer Science and Engineering Department, University of California San Diego.

## Michael O'Connor

Title: Using Tree Automata to Investigate Intuitionistic Propositional Logic. Advisor: Richard Shore. Career: Jane Street Capital.

## Jay Schweig

Title: Poset Convex-Ear Decompositions and Applications to the Flag  $h$ -Vector. Advisor: Edward Swartz. Career: Oklahoma State University.

## John Workman

**JOHN WOIWKIHAL**

Title: End-point Estimates and Multi-parameter Paraproducts on Higher Dimensional Tori. Advisor: Camil Muscalu. Career: Practice Manager at The Advisory Board Company.

## Jessica Zuniga

Title: Merging of Some Time Homogeneous and Inhomogeneous Markov Chains. Advisor: Laurent Saloff-Coste. Career: Relevance at LinkedIn.

## 2009 (11 doctorates)

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### Joshua Bowman

Title: Flat Structures and Complex Structures in Teichmüller Theory. Advisor: John Hubbard. Career: Pepperdine University.

### Nikolay Dimitrov

Title: Rapid evolution of complex limit cycles. Advisor: Yulij Ilyashenko. Career: Technische Universitat Berlin.

### Alimjon Eshmatov

Title: Group-Valued Implosion and Conjugation Spaces. Advisor: Reyer Sjamaar. Career: Georgia Southern University.

### Bradley Forrest

Title: Degree Subcomplexes of Outer Space and Ribbon Graph Complexes. Advisor: Karen Vogtmann. Career: Stockton University.

### Christopher Lipa

Title: Monodromy And Hénon Mappings. Advisor: John Hubbard. Career: Software Developer.

### Jonathan Needleman

Title: On Branching Laws of Representations from  $GL_4(F)$  to  $Sp_4(F)$ . Advisor: Brigit Speh. Career: Le Moyne College.

### Radu Murgescu

Title: On the  $p$ -Class Groups of the Pure Number Field  $\mathbb{Q}(N1/p)$  and its Galois Closure  $\mathbb{Q}(N1/p, \zeta_p)$ . Advisor: Ravi Ramakrishna. Career: Quantitative Analyst, Citi.

### Artem Pulemotov

Title: Geometric Flows on Manifolds with Boundary. Advisor: Leonard Gross. Career: The University of Queensland.

## Biao Wang

Title: Foliations for Quasi-Fuchsian 3-Manifolds. Advisor: William Thurston. Career: Queensborough Community College.

## James Worthington

Title: Automata, Representations, and Proofs. Advisor: Dexter Kozen and Anil Nerode. Career: unknown.

## Zhigen Zhao

Title: Decision Approach and Shrinkage Confidence Intervals. Advisor: J.T. Gene Hwang and Michael Nussbaum. Career: Temple University.

## Cornell Mathematics Doctorates, 2010-2019

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### 2010 (5 doctorates)

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#### Andrew Cameron

Title: [Estimates for Solutions of Elliptic Partial Differential Equations with Explicit Constants and Aspects of the Finite Element Method for Second-Order Equations](#). Advisor: Alfred H. Schatz. First position: Adjunct instructor of mathematics at Tompkins Cortland Community College.

#### Timothy Goldberg

Title: [Hamiltonian Actions in Integral Kähler and Generalized Complex Geometry](#). Advisor: Reyer Sjamaar. First position: Visiting assistant professor of mathematics at Lenoir-Rhyne University.

#### Gregory Muller

Title: [The Projective Geometry of Differential Operators](#). Advisor: Yuri Berest. First position: Assistant professor at Louisiana State University

#### Matthew Noonan

Title: [Geometric Backlund transformation in homogeneous spaces](#). Advisor: John H. Hubbard.

#### Sergio Pulido Niño

Title: [Financial Markets with Short Sales Prohibition](#). Advisor: Philip E. Protter. First position: Postdoctoral associate in applied probability and finance at Carnegie Mellon University.

### 2011 (17 doctorates)

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## Mihai Bailesteanu

Title: [The Heat Equation under the Ricci Flow](#). Advisor: Xiaodong Cao. First position: Visiting assistant professor at the University of Rochester.

## Owen Baker

Title: [The Jacobian Map on Outer Space](#)

Advisor: Karen Vogtmann

First position: Postdoctoral fellow at McMaster University

## Jennifer Biermann

Thesis: [Free Resolutions of Monomial Ideals](#)

Advisor: Irena Peeva

First position: Postdoctoral fellow at Lakehead University

## Mingzhong Cai

Thesis: [Elements of Classical Recursion Theory: Degree-Theoretic Properties and Combinatorial Properties](#)

Advisor: Richard A. Shore

First position: Van Vleck visiting assistant professor at the University of Wisconsin at Madison

## Ri-Xiang Chen

Thesis: [Hilbert Functions and Free Resolutions](#)

Advisor: Irena Peeva

First position: Instructor at Shantou University in Guangdong, China

## Denise Dawson

Thesis: [Complete Reducibility in Euclidean Twin Buildings](#)

Advisor: Kenneth S. Brown

First position: Assistant professor of mathematics at Charleston Southern University

## George Khachatryan

Thesis: [Derived Representation Schemes and Non-commutative Geometry](#)

Advisor: Yuri Berest

First position: Reasoning Mind

## Samuel Kolins

Thesis: [Face Vectors of Subdivision of Balls](#)

Advisor: Edward Swartz

First position: Assistant professor at Lebanon Valley College

## Victor Kostyuk

Thesis: [Outer Space for Two-Dimensional RAAGs and Fixed Point Sets of Finite Subgroups](#)

Advisor: Karen Vogtmann

First position: Knowledge engineering at Reasoning Mind

## Ho Hon Leung

Thesis: [K-Theory of Weight Varieties and Divided Difference Operators in Equivariant KK-Theory](#)

Advisor: Reyer Sjamaar

First position: Assistant professor at the Canadian University of Dubai

## Benjamin Lundell

Thesis: [Selmer Groups and Ranks of Hecke Rings](#)

Advisor: Ravi Ramakrishna

First position: Acting assistant professor at the University of Washington

## Eyvindur Ari Palsson

Thesis: [Lp Estimates for a Singular Integral Operator Motivated by Calderón's Second Commutator](#)

Advisor: Camil Muscalu

First position: Visiting assistant professor at the University of Rochester

## Paul Shafer

Thesis: [On the Complexity of Mathematical Problems: Medvedev Degrees and Reverse Mathematics](#)

Advisor: Richard A. Shore

First position: Lecturer at Appalachian State University

## Michelle Snider

MICHELLE BRUCE

Thesis: [Affine Patches on Positroid Varieties and Affine Pipe Dreams](#)

Advisor: Allen Knutson

First position: Government consulting job in Maryland

## Santi Tasena

Thesis: [Heat Kernel Analysis on Weighted Dirichlet Spaces](#)

Advisor: Laurent Saloff-Coste

First position: Lecturer professor at Chiang Mai University, Thailand

## Russ Thompson

Thesis: [Random Walks and Subgroup Geometry](#)

Advisor: Laurent Saloff-Coste

First position: Postdoctoral fellow at the Mathematical Sciences Research Institute

## Gwyneth Whieldon

Thesis: [Betti Numbers of Stanley-Reisner Ideals](#)

Advisor: Michael E. Stillman

First position: Assistant professor of mathematics at Hood College

## 2012 (7 doctorates)

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Juan Alonso

Thesis: [Graphs of Free Groups and their Measure Equivalence](#)

Advisor: Karen Vogtmann

First position: Postdoc at Uruguay University

Jason Anema

Thesis: [Counting Spanning Trees on Fractal Graphs](#)

Advisor: Robert S. Strichartz

First position: Visiting assistant professor of mathematics at Cornell University

Saúl Blanco Rodríguez

Thesis: Shortest Path Poset of Bruhat Intervals and the Completecd-Index

Advisor: Louis Billera

First position: Visiting assistant professor of mathematics at DePaul University

Fatima Mahmood

Thesis: [Jacobi Structures and Differential Forms on Contact Quotients](#)

<https://math.cornell.edu/graduate-program-history>

Thesis: [Local Structures and Differential Forms on Contact Quotients](#)

Advisor: Reyer Sjamaar

First position: Visiting assistant professor at University of Rochester

Philipp Meerkamp

Thesis: [Singular Hopf Bifurcation](#)

Advisor: John M. Guckenheimer

First position: Financial software engineer at Bloomberg LP

Milena Pabiniak

Thesis: [Hamiltonian Torus Actions in Equivariant Cohomology and Symplectic Topology](#)

Advisor: Tara Holm

First position: Postdoctoral associate at the University of Toronto

Peter Samuelson

Thesis: [Kauffman Bracket Skein Modules and the Quantum Torus](#)

Advisor: Yuri Berest

First position: Postdoctoral associate at the University of Toronto

## 2013 (12 doctorates)

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Anna Bertiger

Thesis: [The Combinatorics and Geometry of the Orbits of the Symplectic Group on Flags in Complex Affine Space](#)

Advisor: Allen Knutson

First position: University of Waterloo, Postdoctoral Fellow

Mariya Bessonov

Thesis: [Probabilistic Models for Population Dynamics](#)

Advisor: Richard Durrett

First position: CUNY City Tech, Assistant Professor, Tenure Track

Igors Gorbovickis

Thesis: Some Problems from Complex Dynamical Systems and Combinatorial Geometry

Advisor: Yulij Ilyashenko

First position: Postdoctoral Fellow at the University of Toronto

Marisa Hughes

Thesis: [Quotients of Spheres by Linear Actions of Abelian Groups](#)

Advisor: Edward Swartz

First position: Visiting Professor, Hamilton College

Kristine Jones

Thesis: [Generic Initial Ideals of Locally Cohen-Macaulay Space Curves](#)

Advisor: Michael E. Stillman

First position: Software Developer, Microsoft

Shisen Luo

Thesis: [Hard Lefschetz Property of Hamiltonian GKM Manifolds](#)

Advisor: Tara Holm

First position: Associate, Goldman Sachs

Peter Luthy

Thesis: [Bi-parameter Maximal Multilinear Operators](#)

Advisor: Camil Muscalu

First position: Chauvenet Postdoctoral Lecturer at Washington University in St. Louis

Remus Radu

Thesis: [Topological models for hyperbolic and semi-parabolic complex Hénon maps](#)

Advisor: John H. Hubbard

First position: Milnor Lecturer, Institute for Mathematical Sciences, Stony Brook University

Jenna Rajchgot

Thesis: [Compatibly Split Subvarieties of the Hilbert Scheme of Points in the Plane](#)

Advisor: Allen Knutson

First position: Research member at the Mathematical Sciences Research Institute (fall 2012); postdoc at the University of Michigan

Raluca Tanase

Thesis: [Hénon maps, discrete groups and continuity of Julia sets](#)

Advisor: John H. Hubbard

First position: Milnor Lecturer, Institute for Mathematical Sciences, Stony Brook University

Ka Yue Wong

Thesis: [Dixmier Algebras on Complex Classical Nilpotent Orbits and their Representation Theories](#)

Advisor: Dan M. Barbasch

First position: Postdoctoral fellow at Hong Kong University of Science and Technology

Tianyi Zheng

Thesis: [Random walks on some classes of solvable groups](#)

Advisor: Laurent Saloff-Coste

First position: Postdoctoral Associate, Stanford University

2014 (11 doctorates)



Margarita Amchislavska

Thesis: [The geometry of generalized Lamplighter groups](#)

Advisor: Timothy Riley

First position: Department of Defense

Hyungryul Baik

Thesis: [Laminations on the circle and hyperbolic geometry](#)

Advisor: John H. Hubbard

First position: Postdoctoral Associate, Bonn University

Adam Bjorndahl

Thesis: [Language-based games](#)

Advisor: Anil Nerode and Joseph Halpern

First position: Tenure Track Professor, Carnegie Mellon University Department of Philosophy

Youssef El Fassy Fihry

Thesis: [Graded Cherednik Algebra And Quasi-Invariant Differential Forms](#)

Advisor: Yuri Berest

First position: Software Developer, Microsoft

Chikwong Fok

Thesis: [The Real K-theory of compact Lie groups](#)

Advisor: Reyer Sjamaar

First position: Postdoctoral fellow in the National Center for Theoretical Sciences, Taiwan

Kathryn Lindsey

Thesis: [Families Of Dynamical Systems Associated To Translation Surfaces](#)

Advisor: John Smillie

First position: Postdoctoral Associate, University of Chicago

Andrew Marshall

Thesis: [On configuration spaces of graphs](#)

Advisor: Allan Hatcher

First position: Visiting Assistant Professor, Cornell University

Robyn Miller

Thesis: [Symbolic Dynamics Of Billiard Flow In Isosceles Triangles](#)

Advisor: John Smillie

First position: Postdoctoral Researcher at Mind Research Network

Diana Ojeda Aristizabal

Thesis: [Ramsey theory and the geometry of Banach spaces](#)

Advisor: Justin Moore

First position: Postdoctoral Fellow, University of Toronto

Hung Tran

Thesis: [Aspects of the Ricci flow](#)

Advisor: Xiaodong Cao

First position: Visiting Assistant Professor, University of California at Irvine

Baris Ugurcan

Thesis: [LPL-Estimates And Polyharmonic Boundary Value Problems On The Sierpinski Gasket And Gaussian Free Fields On High Dimensional Sierpinski Carpet Graphs](#)

Advisor: Robert S. Strichartz

First position: Postdoctoral Fellowship, University of Western Ontario

## 2015 (9 doctorates)

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David Belanger

Thesis: [Sets, Models, And Proofs: Topics In The Theory Of Recursive Functions](#)

Advisor: Richard A. Shore

First position: Research Fellow, National University of Singapore

Cristina Benea

Thesis: [Vector-Valued Extensions for Singular Bilinear Operators and Applications](#)

Advisor: Camil Muscalu

First position: University of Nantes, France

Kai Fong Ernest Chong

Thesis: [Face Vectors and Hilbert Functions](#)

Advisor: Edward Swartz

First position: Research Scientist, Agency for Science, Technology and Research, Singapore

Laura Escobar Vega

Thesis: [Brick Varieties and Toric Matrix Schubert Varieties](#)

Advisor: Allen Knutson

First position: J. L. Doob Research Assistant Professor at UIUC

Joeun Jung

Thesis: [Iterated trilinear fourier integrals with arbitrary symbols](#)

Advisor: Camil Muscalu

First position: Researcher, PARC (PDE and Functional Analysis Research Center) of Seoul National University

Yasemin Kara

Thesis: [The Isospectral on hyperbolic Poincaré surfaces and Mass forms](#)

Thesis: [The Laplacian on Hyperbolic Riemann Surfaces and Mass Forms](#)

Advisor: John H. Hubbard

Chor Hang Lam

Thesis: [Homological Stability Of Diffeomorphism Groups Of 3-Manifolds](#)

Advisor: Allen Hatcher

Yash Lodha

Thesis: [Finiteness Properties And Piecewise Projective Homeomorphisms](#)

Advisor: Justin Moore and Timothy Riley

First position: Postdoctoral fellow at Ecole Polytechnique Federale de Lausanne in Switzerland

Radoslav Zlatev

Thesis: [Examples of Implicitization of Hypersurfaces through Syzygies](#)

Advisor: Michael E. Stillman

First position: Associate, Credit Strats, Goldman Sachs

## 2016 (10 doctorates)

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Lucien Clavier

Thesis: [Non-affine horocycle orbit closures on strata of translation surfaces: new examples](#)

Advisor: John Smillie

First position: Consultant in Capital Markets, Financial Risk at Deloitte Luxembourg

Voula Collins

Thesis: [Crystal branching for non-Levi subgroups and a puzzle formula for the equivariant cohomology of the cotangent bundle on projective space](#)

Advisor: Allen Knutson

First position: Postdoctoral Associate, University of Connecticut

Pok Wai Fong

Thesis: [Smoothness Properties of symbols, Calderón Commutators and Generalizations](#)

Advisor: Camil Muscalu

First position: Quantitative researcher, Two Sigma

Tom Kern

Thesis: [Nonstandard models of the weak second order theory of one successor](#)

Advisor: Anil Nerode

First position: Visiting Assistant Professor, Cornell University

Robert Kesler

Thesis: [Unbounded multilinear multipliers adapted to large subspaces and estimates for degenerate simplex operators](#)

Advisor: Camil Muscalu

Advisor: Carmine Muscatu

First position: Postdoctoral Associate, Georgia Institute of Technology

Yao Liu

Thesis: [Riesz Distributions Associated to Dunkl Operators](#)

Advisor: Yuri Berest

First position: Visiting Assistant Professor, Cornell University

Scott Messick

Thesis: [Continuous atomata, compactness, and Young measures](#)

Advisor: Anil Nerode

First position: Start-up

Aaron Palmer

Thesis: [Incompressibility and Global Injectivity in Second-Gradient Non-Linear Elasticity](#)

Advisor: Timothy J. Healey

First position: Postdoctoral fellow, University of British Columbia

Kristen Pueschel

Thesis: [On Residual Properties of Groups and Dehn Functions for Mapping Tori of Right Angled Artin Groups](#)

Advisor: Timothy Riley

First position: Postdoctoral Associate, University of Arkansas

Chenxi Wu

Thesis: [Translation surfaces: saddle connections, triangles, and covering constructions.](#)

Advisor: John Smillie

First position: Postdoctoral Associate, Max Planck Institute of Mathematics

## 2017 (7 doctorates)

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Heung Shan Theodore Hui

Thesis: [A Radical Characterization of Abelian Varieties](#)

Advisor: David Zywna

First position: Quantitative Researcher, Eastmore Group

Daniel Miller

Thesis: [Counterexamples related to the Sato–Tate conjecture](#)

Advisor: Ravi Ramakrishna

First position: Data Scientist, Microsoft

Lihai Qian

Thesis: [Rigidity on Einstein manifolds and shrinking Ricci solitons in high dimensions](#)

Thesis: [Rigidity on Einstein manifolds and shrinking Ricci solitons in high dimensions](#)

Advisor: Xiaodong Cao

First position: Quantitative Associate, Wells Fargo

Valente Ramirez Garcia Luna

Thesis: [Quadratic vector fields on the complex plane: rigidity and analytic invariants](#)

Advisor: Yulij Ilyashenko

First position: Lebesgue Post-doc Fellow, Institut de Recherche Mathématique de Rennes

Ilan Smythe

Thesis: [Set theory in infinite-dimensional vector spaces](#)

Advisor: Justin Moore

First position: Hill Assistant Professor at Rutgers, the State University of New Jersey

Zhexiu Tu

Thesis: [Topological representations of matroids and the cd-index](#)

Advisor: Edward Swartz

First position: Visiting Professor - Centre College, Kentucky

Wai-kit Yeung

Thesis: [Representation homology and knot contact homology](#)

Advisor: Yuri Berest

First position: Zorn postdoctoral fellow, Indiana University

## 2018 (15 doctorates)

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Tair Akhmejanov

Thesis: [Growth Diagrams from Polygons in the Affine Grassmannian](#)

Advisor: Allen Knutson

First position: Arthur J. Krener Assistant Professor, University of California, Davis

James Barnes

Thesis: [The Theory of the Hyperarithmetical Degrees](#)

Advisor: Richard Shore

First position: Visiting Lecturer, Wellesley College

Jeffrey Bergfalk

Thesis: [Dimensions of ordinals: set theory, homology theory, and the first omega alephs](#)

Advisor: Justin Moore

Postdoctoral Associate, UNAM - National Autonomous University of Mexico



TaoRan Chen

Thesis: [The Inverse Deformation Problem](#)

Advisor: Ravi Ramakrishna

Sergio Da Silva

Thesis: [On the Gorensteinization of Schubert varieties via boundary divisors](#)

Advisor: Allen Knutson

First position: Pacific Institute for the Mathematical Sciences (PIMS) postdoctoral fellowship, University of Manitoba

Eduard Einstein

Thesis: [Hierarchies for relatively hyperbolic compact special cube complexes](#)

Advisor: Jason Manning

First position: Research Assistant Professor (Postdoc), University of Illinois, Chicago (UIC)

Balázs Elek

Thesis: [Toric surfaces with Kazhdan-Lusztig atlases](#)

Advisor: Allen Knutson

First position: Postdoctoral Fellow, University of Toronto

Kelsey Houston-Edwards

Thesis: [Discrete Heat Kernel Estimates in Inner Uniform Domains](#)

Advisor: Laurent Saloff-Coste

First position: Professor of Math and Science Communication, Olin College

My Huynh

Thesis: [The Gromov Width of Symplectic Cuts of Symplectic Manifolds.](#)

Advisor: Tara Holm

First position: Applied Mathematician, Applied Research Associates Inc., Raleigh NC.

Hossein Lamei Ramandi

Thesis: [On the minimality of non- \$\sigma\$ -scattered orders](#)

Advisor: Justin Moore

First position: Postdoctoral Associate at UFT (University Toronto)

Christine McMeekin

Thesis: [A density of ramified primes](#)

Advisor: Ravi Ramakrishna

First position: Researcher at Max Planck Institute

Aliaksandr Patotski

Thesis: [Derived characters of Lie representations and Chern-Simons forms](#)



Advisor: Yuri Berest

First position: Data Scientist, Microsoft

Ahmad Rafiqi

Thesis: [On dilatations of surface automorphisms](#)

Advisor: John Hubbard

First position: Postdoctoral Associate, Sao Palo, Brazil

Ying-Ying Tran

Thesis: [Computably enumerable boolean algebras](#)

Advisor: Anil Nerode

First position: Quantitative Researcher

Drew Zemke

Thesis: [Surfaces in Three- and Four-Dimensional Topology](#)

Advisor: Jason Manning

First position: Preceptor in Mathematics, Harvard University

## 2019 (8 doctorates)

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### Swee Hong Chan

Title: Nonhalting abelian networks. Advisor: Lionel Levine. Career: Hedrick Adjunct Assistant Professor, UCLA

### Joseph Gallagher

Thesis: [On conjectures related to character varieties of knots and Jones polynomials](#). Advisor: Yuri Berest.

Jun Le Goh

Thesis: Measuring the Relative Complexity of Mathematical Constructions and Theorems. Advisor: Richard Shore.

Qi Hou

Thesis: Rough Hypoellipticity for Local Weak Solutions to the Heat Equation in Dirichlet Spaces. Advisor: Laurent Saloff-Coste.

Career: Visiting Assistant Professor, Department of Mathematics, Cornell University

Jingbo Liu

Thesis: Heat kernel estimate of the Schrodinger operator in uniform domains. Advisor: Laurent Saloff-Coste. First Position: Data Scientist, Jet.com.

Ian Pendleton

Thesis: The Fundamental Group, Homology, and Cohomology of Toric Origami 4-Manifolds. Advisor: Tara Holm.

Amin Saied

Thesis: [Stable representation theory of categories and applications to families of \(bi\)modules over symmetric groups](#). Advisor: Martin Kassabov. First Position: Data Scientist, Microsoft

Yujia Zhai

Thesis: Study of bi-parameter flag paraproducts and bi-parameter stopping-time algorithms. Advisor: Camil Muscalu. First Position: Postdoctoral Associate, Université de Nantes.

## Cornell Mathematics Doctorates, 2020-present

### 2021

**Zaoli Chen**

Thesis: Clustered Behaviors of Extreme Values

Advisor: Gennady Samorodnitsky

First Position: Postdoctoral Researcher, Department of Mathematics and Statistics, University of Ottawa

**Aleksandra Niepla**

Thesis: Iterated Fractional Integrals and Applications to Fourier Integrals with Rational Symbol

Advisor: Camil Muscalu

First Position: Visiting Assistant Professor, College of the Holy Cross

**Dylan Peifer**

Thesis: Reinforcement Learning in Buchberger's Algorithm

Advisor: Michael Stillman

First Position: Quantitative Researcher, Susquehanna International Group

**Rakvi**

Thesis: A Classification of Genus 0 Modular Curves with Rational Points

Advisor: David Zywina

First Position: Hans Rademacher Instructor, University of Pennsylvania

**Ana Smaranda Sandu**

Thesis: Knowledge of counterfactuals

Advisor: Anil Nerode

First Position: Instructor in Science Laboratory, Computer Science Department, Wellesley College

**Maru Sarazola**

Thesis: Constructing K-theory spectra from algebraic structures with a class of acyclic objects

Advisor: Inna Zakharevich

First Position: J.J. Sylvester Assistant Professor, Johns Hopkins University

**Beihui Yuan**

Thesis: Applications of commutative algebra to spline theory and string theory

Advisor: Michael Stillman

Advisor: Michael Sumner

First Position: Research Fellow, Swansea University

## 2020

### **Elliot Cartee**

Thesis: Topics in Optimal Control and Game Theory

Advisor: Alexander Vladimirovsky

First Position: L.E. Dickson Instructor, Department of Mathematics, University of Chicago

### **Frederik de Keersmaecker**

Thesis: Displaceability in Symplectic Geometry

Advisor: Tara Holm

### **Lila Greco**

Thesis: Locally Markov Walks and Branching Processes

Advisor: Lionel Levine

First Position: Actuarial Assistant, Berkshire Hathaway Specialty Insurance

### **Benjamin Hoffman**

Thesis: Polytopes And Hamiltonian Geometry: Stacks, Toric Degenerations, And Partial

Advisor: Reyer Sjamaar

First Position: Teaching Associate, Department of Mathematics, Cornell University

### **Daoji Huang**

Thesis: A Bruhat Atlas on the Wonderful Compactification of  $PSO(2n)/SO(2n-1)$  and A Kazhdan-Lusztig Atlas on  $G/P$

Advisor: Allen Knutson

### **Pak-Hin Li**

Thesis: A Hopf Algebra from Preprojective Modules

Advisor: Allen Knutson

### **Anwesh Ray**

Thesis: Lifting Reducible Galois Representations

Advisor: Ravi Ramakrishna

First Position: Postdoctoral Fellowship, University of British Columbia

### **Avery St. Dizier**

Thesis: Combinatorics of Schubert Polynomials

Advisor: Karola Meszaros

First Position: Postdoctoral Fellowship, Department of Mathematics, University of Illinois at Urbana-Champaign

Shihao Xiong

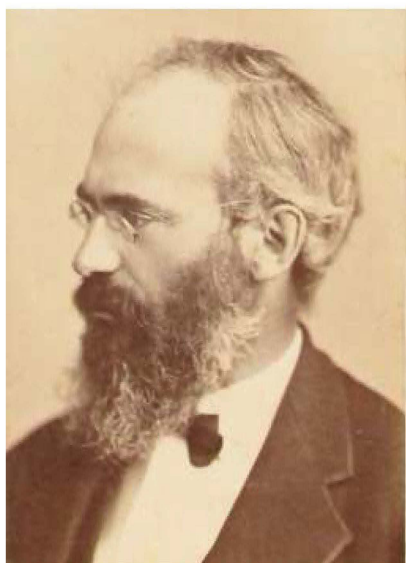
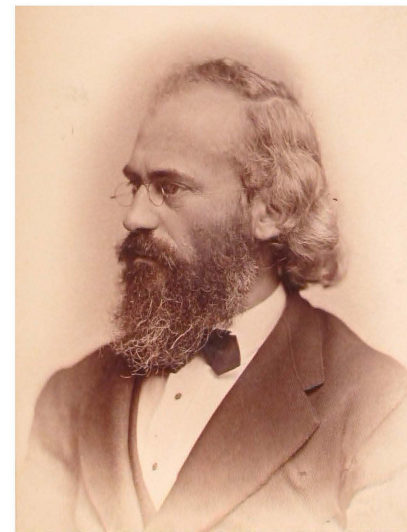
Thesis: Forcing Axioms For Sigma-Closed Posets And Their Consequences

Advisor: Justin Moore

## Cornell Mathematics Professors and their graduate students before 1940

The Mathematics graduate program at Cornell owes much to the vision and leadership of James Edward Oliver. His teacher, Benjamin Peirce, always said that "Jimmy Oliver was the best mathematician who had ever come under his notice."

This page provides, for each mathematics faculty who did advised graduate students, the complete list of the Cornell mathematics Ph.D.s they supervised. Only those faculty all of whose Cornell students obtained their Ph.D. before 1940 are included here. Except for James Oliver who come first, the faculty are listed in decreasing order of the number of Ph.D.s earned under their supervision. Two faculty, Ralph Agnew and Burton Wadsworth Jones, advised graduate students at Cornell both before and after 1940 and are not listed here. The years given for each faculty are the years of appointment at Cornell (not including emeritus appointment).



James Edward Oliver, 1871-1895