

**Columbia University**  
**Fu Foundation School of Engineering and Applied Science**  
**Faculty Personnel Record**

***ANTONIUS (TON) DIEKER***

Associate Professor  
Industrial Engineering and Operations Research, Columbia University

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**Date:** April 10, 2019

***Education:***

<u>School</u>	<u>Degree</u>	<u>Date</u>
University of Amsterdam, The Netherlands	Ph.D. in Mathematics	March 2006
Vrije Universiteit Amsterdam, The Netherlands	M.Sc. in Operations Research	April 2002

***Title of Ph.D. Thesis:***

Extremes and fluid queues (advisor: Dr. Michel Mandjes)

***Principal Fields of Interest:***

Applied Probability, with a specific focus on:

- Stochastic networks and resource allocation problems, and
- Design and analysis of stochastic simulation algorithms.

***Career History:***

<u>Employer</u>	<u>Position</u>	<u>Beginning</u>	<u>Ending</u>
Columbia University	Associate Professor	July 2015	
Columbia University	Visiting Associate Professor	July 2014	June 2015
Georgia Institute of Technology	Fouts Family Assistant Professor	August 2013	July 2015
Georgia Institute of Technology	Assistant Professor	August 2008	July 2013
IBM Watson Research Center	Goldstine Postdoctoral Fellow	August 2007	July 2008
University College Cork, Ireland	Postdoctoral Researcher	April 2006	July 2007

***Current Professional Organization Membership:***

Institute for Operations Research and the Management Sciences (INFORMS),  
Institute of Mathematical Statistics (IMS),  
Netherlands Society for Statistics and Operations Research (VVSOR).

**Awards Received:**

- Research recognition
  - Air Force NYC Civic Leader tour (March 2017)
  - White House PECASE award (February 2016)
  - IBM Faculty Award (July 2013)
  - NSF CAREER award (November 2012).
  - The Erlang Prize (October 2012).  
Awarded every other year by the Applied Probability Society of INFORMS to a researcher within 9 years of PhD.
  - Finalist in the 2011 INFORMS JFIG (Junior Faculty Interest Group) paper competition for the paper *Sensitivity analysis for diffusion processes constrained to an orthant*, with Xuefeng Gao.
- Honorary visiting positions
  - Oberwolfach Leibniz postdoctoral fellowship (2011).  
Position for a summer research visit of 6 weeks at the Mathematical Research Institute in Oberwolfach.
  - Visiting Fellow at the Isaac Newton Institute of the University of Cambridge, UK (May 12, 2010 – June 13, 2010).
  - IBM Goldstine Fellowship (August 2007).  
Postdoctoral position awarded annually to a scientist to advance his or her scholarship as resident department members at the IBM Research Center.
  - DYNSTOCH young researcher (May 2004).  
Visiting position at the Probability and Applications Laboratory of Paris VI for three months as a PhD student, funded through a European research network.
- PhD and MSc thesis recognition
  - Gijs de Leve Prize (January 2009).  
Best Ph.D. thesis in Mathematics of Operations Research defended during 2006, 2007, and 2008 in The Netherlands.
  - Stieltjes Prize (June 2008).  
Best Ph.D. thesis in Mathematics defended during 2006 in The Netherlands.
  - Ph.D. degree obtained *cum laude* (March 2006)  
Awarded to top 2 percent of Ph.D. theses at University of Amsterdam.
  - Applied Probability Trust Award (March 2006).  
Awarded to selected young researchers in applied probability.
  - Runner-up Master's thesis award 2003, Netherlands Society for Statistics and Operations Research (VVS).  
VVS organizes an annual Master's thesis competition for theses in Statistics and Operations Research.
  - M.Sc. degree obtained *cum laude* (March 2002).
- Teaching recognition (Georgia Tech internal)
  - Thank a Teacher Certificates (April 2010, March 2011, March 2013, November 2013) for teaching ISyE 2027 (Probability with Applications).
  - Thank a Teacher Certificate (February 2014) for teaching ISyE 4106 (Senior Design).
- Advisees recognition

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- Guido Lagos: winner of the INFORMS Applied Probability Society Student Paper Competition 2017 for the paper *On the Euler discretization error of Brownian motion about random times*.
- Tonghoon Suk: 2<sup>nd</sup> place in the INFORMS George Nicholson Student paper competition 2014 for the paper *Randomized longest-queue-first scheduling for large-scale buffered systems*.
- Mehran D'souza: finalist in the INFORMS Doing Good with Good OR student paper competition 2014 for the paper *Resource allocation and optimization for advanced voting in Gwinnett County*, with student coauthors S. Gan, A. Luff, and P. Yang.  
A version of this work was awarded 2<sup>nd</sup> place in the student paper competition of the 2014 IIE southeastern regional conference.

### **Service:**

#### At Columbia University:

- DSI committees
  - Executive committee member, 2015 – present
  - DSI/CEEM search committee member on “Smart Cities”, 2016
  - Lecturer in discipline search committee member, 2016
  - Internal seed grant reviews 2017, 2018
- IEOR committees
  - Undergraduate curriculum committee member, 2015 – present
  - Mentoring committee member Adam Elmachtoub (chair), 2015 – present
  - Mentoring committee member Sharon Di, 2017 – present
  - Mentoring committee member Henry Lam, 2017 – 2018
  - IEOR search committee member (chair of stochastics search), 2016 – 2017
  - IEOR search committee chair, 2017 – 2018
- SEAS committees
  - IEOR representative Committee On Instruction (COI), 2019 – present
  - Ad hoc promotion/tenure review committee member, Nov 2016, Mar 2017, Nov 2017, Mar 2019
  - Internal seed grant reviews 2018, 2019

#### At Georgia Institute of Technology:

- Comprehensive PhD Exam committee membership
  - *Operations Research* PhD program, 2009 – 2010, 2012 – 2013.
  - *Stochastics* track for the *Industrial Engineering* PhD program, 2008 – 2009.
- Coordinating Committee membership
  - *Operations Research* PhD program, 2012 – 2014.
  - *Algorithms, Combinatorics, and Optimization* (ACO) PhD program, 2010 – 2014.
- ISyE school committee membership
  - Graduate Committee 7/2013 – 6/2014.
  - School Chair search committee member, 2014.
- Seminar organization
  - Stewart School of ISyE colloquiums in Operations Research, 2009 – 2011 (with Renato Monteiro).
  - Stochastic Systems seminar series, Spring 2009.
- Student and postdoc selection committee membership
  - Simons Foundation/ARC postdoc search committee, 2009 – 2010.

- Algorithms and Randomness Center (ARC) student fellowship committee, 2009 – 2012 (chair 2011-2012.)
- ACO Outstanding Student Prize committee, 2014 (chair).

**Professional Services:**

- Editorial Work
  - Associate Editor for *Mathematics of Operations Research*, 2011 – 2018.
  - Associate Editor for *Operations Research*, 2009 – 2017.
  - Associate Editor for *Journal of/Advances in Applied Probability*, 2016 – present.
  - Associate Editor for *Stochastic Systems*, 2016 – 2017.
  - Guest Co-editor (with Marc Lelarge) for a special issue of *Queueing Systems on Mathematical performance analysis for computer and communication systems*, 2014.
- Conference and workshop organization
  - Co-organizer of the workshop *Queueing theory without limits: transient and asymptotic analysis*, EURANDOM, October 2007 (with Johan van Leeuwen).
  - Publication Chair ACM SIGMETRICS 2013.
  - Cluster Co-chair *Cloud Computing* INFORMS 2013 Annual Meeting, Session Chair INFORMS 2012 Annual Meeting.
- Program committee membership
  - Program committee member, INFORMS Applied Probability Society Conference 2009, 2011.
  - Program committee member, ACM SIGMETRICS 2013, 2014.
  - Program committee member, ACM SIGMETRICS Mathematical performance Modeling and Analysis (MAMA) 2010 – 2016.
- Award committee membership
  - INFORMS Applied Probability Society, Prize Committee member, 2018 – 2021.
  - INFORMS George Nicholson Student Paper Competition committee member, 2013.
- Grant proposal reviewing
  - External reviewer for Netherlands Science Foundation (NWO), Netherlands (2015).
  - National Science Foundation panelist
    - CMMI Operations Research (2009, 2010, 2014).
    - CMMI Service, Manufacturing, and Operations Research (2016).
  - External reviewer for Research Foundation Flanders (FWO), Belgium (2013).
  - External reviewer for Swiss National Science Foundation (SNF), Switzerland (2014).
- Reviewer for 20+ journals in mathematics, operations research, and engineering: *ACM Transactions on Modeling and Computer Simulation*, *Acta Applicandae Mathematicae*, *Acta Mathematica Scientia*, *Annals of Applied Probability*, *Annals of Operations Research*, *Annals of Probability*, *Arkiv för Matematik*, *Bernoulli*, *Communications in Statistics: Simulation and Computation*, *Discrete Mathematics*, *Electronic Journal of Probability*, *Extremes*, *IEEE Transactions on Automatic Control*, *IIE Transactions*, *Journal of Applied Mathematics and Stochastic Analysis*, *Journal of Applied Probability*, *Journal of the American Mathematical Society*, *Mathematics of Operations Research*, *Operations Research*, *Performance Evaluation*, *Probability Theory and Related Fields*, *Queueing Systems*, *Statistics and Probability Letters*, *Stochastic Analysis and Applications*, *Stochastic Models*, *Stochastic Processes and their Applications*, *Stochastics and Stochastic Reports*.

**Consulting Record:**

Firm

John Wiley & Sons

Beginning

January 2012

Ending

January 2012

**Patents:**

- US 8458075: A method and apparatus for commodity sourcing management (with Y. Lu and M. Squillante).
- US 8635175: Managing capacities and structures in stochastic networks (with S. Ghosh and M. Squillante)

**Teaching Experience**

At Columbia:

Spring 2015	IEOR 4307	Applied Statistical Models in OR	Lecturer	13	3.30
Spring 2015	IEOR 8800	Sampling Algorithms	Lecturer	5	
Fall 2015	SIEO 4150	Introduction to Probability and Statistics	Lecturer	113	4.00
Spring 2016	SIEO 3600	Introduction to Probability and Statistics	Lecturer	90	4.69
Spring 2016	IEOR 4307	Applied Statistical Models in OR	Lecturer	19	4.58
Fall 2016	IEOR 4150	Introduction to Probability and Statistics	Lecturer	135	4.57
Fall 2016	IEOR 3658	Probability for Engineers	Lecturer	76	4.05
Spring 2017	IEOR 4307	Statistics and Data Analysis	Lecturer	26	3.92
Fall 2017	IEOR 4150	Introduction to Probability and Statistics	Lecturer	126	4.39
Fall 2017	IEOR 3658	Probability for Engineers	Lecturer	104	4.50
Spring 2018	IEOR 4307	Statistics and Data Analysis	Lecturer	66	3.85
Fall 2018	IEOR 4150	Introduction to Probability and Statistics	Lecturer	109	3.92
Spring 2019	IEOR 4307	Statistics and Data Analysis	Lecturer	37	
Spring 2019	IEOR 6712	Stochastic Modeling II	Lecturer	22	

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At Georgia Tech:

*Undergraduate*

Fall 2008	ISYE 2027A	Probability and its applications	Lecturer	3.60
Spring 2010	ISYE 2027D	Probability and its applications	Lecturer	3.60
Spring 2010	ISYE 2027B	Probability and its applications	Lecturer	3.90
Fall 2010	ISYE 2027D	Probability and its applications	Lecturer	4.00
Fall 2010	ISYE 2027A	Probability and its applications	Lecturer	4.10
Spring 2013	ISYE 2027C	Probability and its applications	Lecturer	4.67
Spring 2013	ISYE 4106AD	Senior Design	Faculty Advisor for Industry Projects	4.50
Fall 2013	ISYE 4106AD	Senior Design	Faculty Advisor for Industry Projects	4.72
Spring 2014	ISYE 4106AD	Senior Design	Faculty Advisor for Industry Projects	4.50

*Graduate*

Spring 2009	ISYE/MATH 6762	Stochastic Processes II	Lecturer	4.57
Fall 2011	ISYE/MATH 6761	Stochastic Processes I	Lecturer	4.55
Fall 2012	ISYE/MATH 6759	Stochastic Processes for Finance I	Lecturer	4.55
Fall 2012	ISYE 8813B	Mathematics for Operations Research	Lecturer	4.75
Fall 2013	ISYE 8813B	Mathematics for Operations Research	Lecturer	4.67
Spring 2014	ISYE 8813TD	Stochastic Processes and Algorithms	Lecturer	4.92

***Teaching Innovations***

- Developed hands-on student projects in IEOR 4307 and IEOR 4150.
- Redeveloped course materials for ISYE 8813B in Fall 2012 and Fall 2013.
- Developed a new course ISYE 8813TD in Spring 2014.

***Teaching Evaluations***

Scores for the question “overall, the instructor is an effective teacher” (Georgia Tech) and “Instructor: overall quality” are given in the last column of the above tables. These are interpolated medians, where 5.0 is the highest possible score.

ISYE 2027 is the first ISYE course in the curriculum with a class GPA of roughly 3.0/4.0.

***Other Teaching Activities***

Delivered a short course (ten lectures) on “*Stochastic processes and algorithms*” at Wroclaw University, Poland, October 2012.

**Publications**

In my research area, authors are almost always listed alphabetically.

**Papers in Refereed Journals:**

1. A. B. Dieker, G. Lagos.  
On the Euler discretization error of Brownian motion about random times.  
Submitted for publication.
2. A. B. Dieker, S.-H. Kim.  
Efficient fully sequential indifference-zone procedures using properties of multidimensional Brownian motion exiting a sphere.  
Submitted for publication.
3. Z. Liu, J. Blanchet, A. B. Dieker, T. Mikosch.  
On logarithmically optimal exact simulation of max-stable and related random fields on a compact set.  
To appear in *Bernoulli*.
4. A. B. Dieker, F. Saliola.  
Spectral analysis of random-to-random Markov chains.  
*Advances in Mathematics*, 323, p. 427–485, 2018.
5. A. B. Dieker, G. Lagos.  
A dichotomy for sampling barrier-crossing events of random walks with regularly varying tails.  
*Journal of Applied Probability*, 54, p. 1213–1232, 2017.
6. A. B. Dieker, S. Ghosh, and M. Squillante.  
Optimal resource capacity management for stochastic networks.  
*Operations Research*, 65, p. 221–241, 2016.
7. A. B. Dieker and S. Vempala.  
Stochastic billiards for sampling from the boundary of a convex set.  
*Mathematics of Operations Research*, 40, p. 888–901, 2015.
8. A. B. Dieker, T. Mikosch.  
Exact simulation of Brown-Resnick random fields at a finite number of locations.  
*Extremes*, 18, p. 301–314, 2015.
9. A. B. Dieker, T. Suk.  
Randomized longest-queue-first scheduling for large-scale buffered systems.  
*Advances in Applied Probability*, 47, p. 1015–1038, 2015.
10. J. G. Dai, A. B. Dieker, X. F. Gao.  
Validity of heavy-traffic steady-state approximations in many-server queues with abandonment.  
*Queueing Systems*, 78, p. 1–29, 2014.
11. A. B. Dieker, X. F. Gao.  
Sensitivity analysis for diffusion processes constrained to an orthant.  
*The Annals of Applied Probability*, 24, p. 1918–1945, 2014.
12. A. B. Dieker, B. Yakir.  
On asymptotic constants in the theory of Gaussian processes.  
*Bernoulli*, 20, p. 1600–1619, 2014.

13. I. Iyoob, E. Zarifoglu, A. B. Dieker.  
Cloud computing operations research.  
*Service Science*, 5, p. 88–101, 2013.
14. A. B. Dieker, X. F. Gao.  
Positive recurrence of piecewise Ornstein-Uhlenbeck processes and common quadratic Lyapunov functions.  
*The Annals of Applied Probability*, 23, p. 1291–1317, 2013.
15. A. B. Dieker, J. Shin.  
From local to global stability in stochastic processing networks through quadratic Lyapunov functions.  
*Mathematics of Operations Research*, 38, p. 638–664, 2013.
16. A. B. Dieker, M. Mandjes.  
Extremes of Markov-additive processes with one-sided jumps, with queueing applications.  
*Methodology and Computing in Applied Probability*, 13, p. 221–267, 2011.
17. J. G. Dai, A. B. Dieker.  
Nonnegativity of solutions to the basic adjoint relationship for some diffusion processes.  
*Queueing Systems*, 68, p. 295–303, 2011.
18. A. B. Dieker, J. Warren.  
Series Jackson networks and non-crossing probabilities.  
*Mathematics of Operations Research*, 35, p. 257–266, 2010.
19. A. B. Dieker.  
Interlacings for random walks on weighted graphs and the interchange process.  
*SIAM Journal on Discrete Mathematics* 24, p. 191–206, 2010.
20. A. B. Dieker, J. Moriarty.  
Reflected Brownian motion in a wedge: sum-of-exponential stationary densities.  
*Electronic Communications in Probability*, 14, p. 1–16, 2009.
21. A. B. Dieker, J. Warren.  
On the largest-eigenvalue process of generalized Wishart random matrices.  
*Latin American Journal of Probability and Mathematical Statistics*, 6, p. 369–376, 2009.
22. D. Denisov, A. B. Dieker, V. Shneer.  
Large deviations for random walks under subexponentiality: the big-jump domain.  
*The Annals of Probability*, 36, p. 1946–1991, 2008.
23. A. B. Dieker, J. Warren.  
Determinantal transition kernels for some interacting particles on the line.  
*Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques*, 44, p. 1162–1172, 2008.
24. K. Dębicki, A. B. Dieker, T. Rolski.  
Quasi-product forms for Lévy-driven fluid networks.  
*Mathematics of Operations Research*, 32, p. 629–647, 2007.
25. A. B. Dieker.  
Applications of factorization embeddings for Lévy processes.  
*Advances in Applied Probability*, 38, p. 768–791, 2006.
26. A. B. Dieker, M. Lelarge.  
Tails for (max,plus) recursions under subexponentiality.  
*Queueing systems*, 53, p. 213–230, 2006.



27. A. B. Dieker, M. Mandjes.  
Efficient simulation of random walks exceeding a non-linear boundary.  
*Stochastic Models*, 22, 459–481, 2006.
28. A. B. Dieker, M. Mandjes.  
Fast simulation of overflow probabilities in a queue with Gaussian input.  
*ACM Transactions on Modeling and Computer Simulation*, 16, 119–151, 2006.
29. A. B. Dieker, M. Mandjes.  
On asymptotically efficient simulation of large deviation probabilities.  
*Advances in Applied Probability*, 37, p. 539–552, 2005.
30. A. B. Dieker.  
Conditional limit theorems for queues with Gaussian input, a weak convergence approach.  
*Stochastic Processes and their Applications*, 115, p. 849–873, 2005.
31. A. B. Dieker.  
Extremes of Gaussian processes over an infinite horizon.  
*Stochastic Processes and their Applications*, 115, p. 207–248, 2005.
32. A. B. Dieker.  
Reduced-load equivalence for queues with Gaussian input.  
*Queueing Systems*, 49, p. 405–414, 2005.
33. A. B. Dieker, M. Mandjes.  
On spectral simulation of fractional Brownian motion.  
*Probability in the Engineering and Informational Sciences*, 17, p. 417–434, 2003.

#### **Proceedings of Refereed Conferences:**

1. A. B. Dieker, S.-H. Kim.  
A fully sequential procedure for known and equal variances based on multivariate Brownian motion,  
*Winter Simulation Conference 2014*, p. 3749–3760.
2. A. B. Dieker, T. Suk.  
Diffusion approximations for large-scale buffered systems.  
*ACM/SIGMETRICS Performance Evaluation Review*, 41, p. 49–51, 2013.
3. A. B. Dieker, S.-H. Kim.  
Selecting the best by comparing simulated systems in a group of three when variances are known and unequal.  
*Winter Simulation Conference 2012*, paper 44.
4. S.-H. Kim, A. B. Dieker.  
Selecting the best by comparing simulated systems in a group of three.  
*Winter Simulation Conference 2011*, p. 3992–4003.
5. A. B. Dieker, S. Ghosh, M. S. Squillante.  
Capacity optimization in feedforward Brownian networks.  
*ACM/SIGMETRICS Performance Evaluation Review*, 36, p. 137–139, 2008.

#### **Books and Chapters in Books:**

1. A. B. Dieker.  
Reflected Brownian motion.  
in: *Wiley Encyclopedia of Operations Research and Management Science*, 2011.

***Invited Lectures***

- *Towards a next-generation methodology for stochastic network analysis*
  - INFORMS Applied Probability Society Conference  
Brisbane, Australia, July 2019
- *Simulation algorithms and the change-of-measure technique*
  - Berkeley-Columbia Meeting in Engineering and Statistics, April 2018
- *Approximations of Queueing Performance for Rapid Systems Design* (with S. Hackman)
  - YEQT conference,  
Eindhoven, Netherlands, November 2016
  - Vrije Universiteit  
Amsterdam, Netherlands, June 2016
  - INFORMS 2015 TutORial,  
Philadelphia PA, November 2015
- *Exact simulation of stationary max-stable random fields*
  - BIRS conference,  
Banff, Canada, June 2015
- *A change-of-measure love story*
  - Keynote, 4th Australian and New Zealand Applied Probability Workshop, April 2015
- *Exact simulation of stationary max-stable random fields*
  - Applied Probability and Risk Seminar,  
Columbia University, September 28, 2014.
- *System selection with noisy performance observations*
  - IEOR-DRO Seminar,  
Columbia University, February 11, 2014.
- *Simulation of extremes of a Gaussian vector*
  - IOE Seminar,  
University of Michigan, December 2, 2013.
  - INFORMS annual meeting 2013,  
Minneapolis MN, October 7, 2013.
- *Markov functions: reflections and musings*
  - ACO student seminar,  
Georgia Institute of Technology, October 25, 2013.
  - Probability seminar,  
Carnegie Mellon University, September 30, 2013.
- *On simulation of constants from the theory of Gaussian processes*
  - Stochastic Networks and Risk Analysis 2014,  
Bedlewo, Poland, May 2014.
  - Applied Probability Society Conference 2013,  
San Jose, Costa Rica, July 2013.
- *Optimal resource capacity management for stochastic networks*
  - ORFE Seminar,  
Princeton University, November 3, 2014.
  - Stochastic Networks Conference,  
CWI Amsterdam, June 27, 2014.

- MS&E Seminar,  
Stanford University, January 28, 2014.
- IEMS Seminar,  
Northwestern University, January 21, 2014.
- ISE Seminar,  
University of Florida, January 15, 2014.
- ORIE Seminar,  
Cornell University, November 19, 2013.
- IE Seminar,  
Penn State University, September 26, 2013.
- IOE Seminar,  
University of Michigan, September 25, 2013.
- IE Seminar,  
University of Pittsburgh, January 31, 2013.
- IEOR-DRO Seminar,  
Columbia University, January 24, 2013.
- INFORMS annual meeting 2012,  
Phoenix AZ, October 15, 2012.
- *High-dimensional sampling and shake-and-bake algorithms*
  - INFORMS annual meeting 2011,  
Phoenix AZ, October 17, 2012.
- *Sensitivity analysis for diffusion processes constrained to an orthant*
  - Department of Statistics Seminar,  
Colorado State University, November 28, 2011.
  - INFORMS annual meeting 2011,  
Charlotte NC, November 16, 2011.
- *Global stability of stochastic processing networks using local quadratic Lyapunov functions*
  - Applied Probability Society Conference 2013,  
San Jose, Costa Rica, July 2013.
  - Eindhoven Stochastics Seminar,  
EURANDOM, Eindhoven, The Netherlands, November 4, 2011.
- *Positive recurrence of piecewise Ornstein-Uhlenbeck processes and common quadratic Lyapunov functions*
  - Probability Seminar,  
University of Amsterdam, The Netherlands, November 8, 2011.
  - Probability Seminar,  
University of Virginia, January 30, 2011.
- *Small-scale algorithms for large-scale Markov processes*
  - Mathematical Research Institute Oberwolfach,  
Oberwolfach, Germany, October 19, 2010.
- *Interlacings for random walks on weighted graphs and the interchange process*
  - Probability Forum Seminar, University of Warwick,  
Coventry, United Kingdom, June 2, 2010.
  - Algebraic Combinatorics Seminar,  
Fields Institute, Toronto, Canada, February 12, 2010.

- Math Probability Seminar,  
University of Wisconsin at Madison, November 19, 2009.
- Colloquium on Statistics and Probability,  
Michigan State University, November 17, 2009.
- INFORMS Applied Probability Society Conference 2009,  
Ithaca, NY, July 14, 2009.
- *Departures from queues in series and the largest-eigenvalue process for Wishart random matrices*
  - INFORMS Applied Probability Society Conference 2009,  
Ithaca, NY, July 13, 2009.
- *Series Jackson networks and non-crossing probabilities*
  - Seminario Dipartimento di Matematica, Università di Roma Tre,  
Rome, Italy, June 22, 2010.
  - Workshop 'Interacting Stochastic Particle Systems',  
Montréal, Canada, May 18, 2009.
  - Probability Seminar,  
Georgia Institute of Technology, School of Mathematics, October 21, 2009.
- *On capacity allocation in queueing networks*
  - Workshop 'Stochastic processes for communication sciences',  
International Center for Mathematical Sciences,  
Edinburgh, Scotland, June 10, 2010.
  - Industrial and Systems Engineering Seminar,  
Auburn University, October 26, 2009.
  - CDSNS Colloquium,  
Georgia Institute of Technology, School of Mathematics, March 30, 2009.
  - ARC Thinktank Seminar,  
Georgia Institute of Technology, School of Computer Science, October 21, 2008.
- *Extremes and fluid queues*
  - 34<sup>th</sup> Conference on the Mathematics of Operations Research, (plenary)  
Lunteren, The Netherlands, January 14, 2009.
  - Stieltjes Afternoon,  
Delft Institute of Technology, The Netherlands, June 30, 2008.
- *Large deviations for random walks under subexponentiality*
  - Graybill VIII 'Extreme Value Analysis' Conference,  
Fort Collins CO, June 23, 2009.
  - INFORMS Annual Meeting 2008,  
Washington DC, October 13, 2008.
  - LIDS-ORC Seminar,  
Massachusetts Institute of Technology, April 18, 2008.
- *On the stationary measure of a reflected Brownian motion in a wedge*
  - Probability and Computational Finance Seminar,  
Carnegie Mellon University, October 12, 2009.
  - Stochastic Systems Seminar,  
Georgia Institute of Technology, January 29, 2009.
  - Conference 'Stochastic Networks', (plenary)  
Ecole Normale Supérieure, Paris, France, June 2008.

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- ORIE Seminar,  
Cornell University, April 1, 2008.
- INFORMS Applied Probability Society Conference 2007,  
Eindhoven, The Netherlands, July 9, 2007.
- *On series Jackson networks and determinantal transition kernels*
  - Math Probability Seminar,  
University of Wisconsin at Madison, November 15, 2007.
  - INFORMS Annual Meeting 2007,  
Seattle WA, November 6, 2007.
- *Time-dependent behavior of Jackson series networks and determinants*
  - EURANDOM, Eindhoven, The Netherlands, October 19, 2007.
  - Conference 'Stochastic Networks and Related Topics 2007',  
Bedlewo, Poland, May 28, 2007.
- *Queues in series, combinatorial correspondences, and determinants*
  - National University of Ireland Galway, Ireland, April 16, 2007.
  - National University of Ireland Maynooth, Ireland, March 28, 2007.
  - Columbia University, New York NY, February 20, 2007.
  - Michigan State University, Lansing MI, January 29, 2007.
  - Georgia Institute of Technology, Atlanta GA, January 18, 2007.
  - CWI, Amsterdam, The Netherlands, January 15, 2007.
- *Fluid systems with Markov-additive input, an approach based on extremes*
  - Workshop 'Queues, fluid queues and extremes',  
EURANDOM, Eindhoven, The Netherlands, March 14, 2006.
- *On factorization identities and embeddings for Lévy processes*
  - Universiteit Utrecht, The Netherlands, February 23, 2005.
  - Workshop 'Rare events in communication networks',  
EURANDOM, Eindhoven, The Netherlands, February 3, 2005.
- *Extremes of Gaussian processes with stationary increments*
  - Ecole Normale Supérieure, Paris, France, May 12, 2004.
  - EURANDOM, Eindhoven, The Netherlands, January 20, 2004.
- *Exact large-buffer asymptotics for Gaussian queues*
  - INFORMS Applied Probability Society Conference 2005,  
Ottawa, Canada, July 6, 2005.

## *Theses Supervised*

### **Ph.D. students**

- Xuefeng Gao (co-advisor: Jim Dai): Fall 2008 – Summer 2013  
Current position: Assistant Professor Chinese University of Hong Kong
- Guido Lagos Barrios: Spring 2013 – Fall 2016  
Current position: postdoc, Universidad Adolfo Ibanez Chile
- Richard Birge: Fall 2012 – Fall 2016  
Current position: Senior Consultant, Ernst & Young

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- Tonghoon Suk: Fall 2010 – Fall 2016  
Current position: IBM Research

**Ph.D. thesis committee membership**

- Zhipeng Liu (IEOR, 2019)
- Ni Ma (IEOR, 2018)
- Yanan Pei (IEOR, 2018)
- Brian Ward (IEOR, 2017)
- Ningyuan Chen (IEOR, 2015)
- Anand Louis (ACO, 2014)
- Ralph Yuan (ISyE, 2014)
- Ricardo Restrepo (math, 2011)
- Jiheng Zhang (ISyE, 2009)
- Kan Wu (ISyE, 2009)

**Postdoctoral mentoring**

- Dr. Ben Cousins (co-mentor: Alex Andoni): Spring 2018 – Spring 2019
- Dr. Jinwoo Shin (co-mentor: Prasad Tetali): Fall 2010 – Summer 2012  
Current position: Associate Professor KAIST, Korea.

## ***Outreach Efforts***

### **K-12**

Developed *Theme Park*, a web-based game on probability and statistics for high school students, along with teaching materials. <http://themepark.gatech.edu>

The game has been used during various activities for high school students and teachers (often in collaboration with CEISMC at Georgia Tech), including participation in professional development courses and ISyE's *Mission Possible* summer program.

Co-authored “*Studying Probability and Statistics Doesn't Just Lead to Vegas: Motivating a Broader Perspective*” with Marsha Shrago about the *Theme Park* game. Published in the Spring 2014 issue of *e-reflections*, a publication of the Georgia Council of Teachers of Mathematics.

## ***Research Funding History***

### **As Principal and Co-Principal Investigator**

- *CAREER: Stochastic processes in high dimensions: from asymptotic analysis to algorithms*. NSF CMMI-1252878, January 2013 – December 2018. \$400K (PI: A. B. Dieker).
- *BRIGE: Capacity allocation for networks of queues*. NSF EEC-0926308, August 2009 – August 2012. \$175K (PI: A. B. Dieker).

### **As Investigator**

- *Intelligent Wireless Charging for Electric Buses in Smart City*. UTRC, June 2015 – February 2016. \$60K (\$5K for Dieker; PI: A. Boulanger).
- *A novel framework for simulation selection procedures based on multidimensional drifting Brownian motions hitting ellipsoids*. NSF CMMI-1131047, August 2011 – August 2014. \$220K (\$30K for Dieker; PI: S.-H. Kim).