

Yevgeniy Kovchegov

Department of Mathematics, Oregon State University, Corvallis, OR 97331, USA
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EDUCATION

- *Ph.D. in mathematics*, Stanford University, California, June 2002 Advisor: A. Dembo
- *M.S. in mathematics*, Stanford University, California, September 2000
- *B.A. in mathematics, with honors*, New York University, New York, May 1997

EMPLOYMENT

- PROFESSOR
Department of Mathematics, Oregon State University
September 2017 - Present
- ASSOCIATE PROFESSOR
Department of Mathematics, Oregon State University
September 2011 - September 2017
- ASSISTANT PROFESSOR
Department of Mathematics, Oregon State University
September 2005 - September 2011
- VIGRE ASSISTANT PROFESSOR
Department of Mathematics, University of California, Los Angeles
August 2002 - June 2005
- RESEARCH ASSISTANT / TEACHING ASSISTANT
Department of Mathematics, Stanford University, California
August 1997 - June 2002

VISITING APPOINTMENTS

- VISITING FULL PROFESSOR
IME, University of São Paulo, São Paulo, SP, Brazil
December 2018 - June 2019
- VISITING ASSOCIATE PROFESSOR
IME, University of São Paulo, São Paulo, SP, Brazil
January 2017 - March 2017

PUBLICATIONS

BOOKS

- B1. **Yevgeniy Kovchegov** and Peter T. Otto, *Path Coupling and Aggregate Path Coupling*, SpringerBriefs in Probability and Mathematical Statistics, Springer, 2018, ISBN 978-3-319-77018-5. doi:10.1007/978-3-319-77019-2

SURVEYS

- R2. **Yevgeniy Kovchegov**, Ilya Zaliapin, and Efi Foufoula-Georgiou, *Random Self-Similar Trees with Applications to Geophysics*, Surveys in Geophysics, Vol. **43**, (2022) 353-421; doi:10.1007/s10712-021-09682-0
- R1. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Random Self-Similar Trees: A mathematical theory of Horton laws*, Probability Surveys, Vol. **17** (2020), 1-213; doi:10.1214/19-PS331

SUBMITTED PAPERS

- S1. **Yevgeniy Kovchegov**, Alex Negrón, Clarice Pertel, and Christopher Wang, *Extensions of true skewness for unimodal distributions*, submitted arXiv:2209.11139

REFEREED JOURNAL PUBLICATIONS

- J38. **Yevgeniy Kovchegov** and Peter T. Otto, *Multidimensional Lambert-Euler inversion and vector-multiplicative coalescent processes*, to appear in Journal of Statistical Physics (2024) arXiv:2107.13162
- J37. **Yevgeniy Kovchegov**, Guochen Xu, and Ilya Zaliapin, *Invariant Galton-Watson trees: metric properties and attraction with respect to generalized dynamical pruning*, Advances in Applied Probability, Vol. **55**, Issue 2, (2023) 643-671; doi:10.1017/apr.2022.39
- J36. Evgenia Chunikhina, Paul Logan, **Yevgeniy Kovchegov**, Anatoly Yambartsev, Debashis Mondal, and Andrey Morgun, *The C-SHIFT algorithm for normalizing covariances*, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Vol. **20**, Issue 1, (2023) 720-730; doi:10.1109/TCBB.2022.3151840
- J35. **Yevgeniy Kovchegov**, Ilya Zaliapin, and Yehuda Ben-Zion, *Invariant Galton-Watson branching process for earthquake occurrence*, Geophysical Journal International Vol. **231**, Issue 1, (2022) 567-583; doi:10.1093/gji/ggac204
- J34. **Yevgeniy Kovchegov**, *A new life of Pearson's skewness*, Journal of Theoretical Probability, Vol. **35**, Issue 4, (2022) 2896-2915; doi:10.1007/s10959-021-01149-7

- J33. (Same as R2.) **Yevgeniy Kovchegov**, Ilya Zaliapin, and Efi Foufoula-Georgiou, *Random Self-Similar Trees with Applications to Geophysics*, *Surveys in Geophysics*, Vol. **43**, (2022) 353-421; doi:10.1007/s10712-021-09682-0
- J32. **Yevgeniy Kovchegov**, Ilya Zaliapin, and Efi Foufoula-Georgiou, *Critical Tokunaga model for river networks*, *Physical Review E* **105**, 014301 (2022); doi:10.1103/PhysRevE.105.014301
- J31. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Invariance and attraction properties of Galton-Watson trees*, *Bernoulli*, Vol. **27**(3), (2021) 1789-1823; doi:10.3150/20-BEJ1292
- J30. **Yevgeniy Kovchegov**, Peter T. Otto, and Anatoly Yambartsev, *Cross-multiplicative coalescent processes and applications*, *ALEA: Latin American Journal of Probability and Mathematical Statistics*, Vol. **18** (2021), 81-106; doi:10.30757/ALEA.v18-05
- J29. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Dynamical pruning of rooted trees with applications to 1D ballistic annihilation*, *Journal of Statistical Physics*, Volume **181**, Issue 2 (2020), 618-672; doi:10.1007/s10955-020-02593-1
- J28. (Same as R1.) **Yevgeniy Kovchegov** and Ilya Zaliapin, *Random Self-Similar Trees: A mathematical theory of Horton laws*, *Probability Surveys*, Vol. **17** (2020), 1-213; doi:10.1214/19-PS331
- J27. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Random self-similar trees and a hierarchical branching process*, *Stochastic Processes and Their Applications*, Volume **129**, Issue 7 (2019), 2528-2560; doi:10.1016/j.spa.2018.07.015
- J26. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Tokunaga self-similarity arises naturally from time invariance*, *Chaos* **28**, 041102 (2018); doi:10.1063/1.5029937
- J25. José C. Hernández, **Yevgeniy Kovchegov**, and Peter T. Otto, *The aggregate path coupling method for the Potts model on bipartite graph*, *Journal of Mathematical Physics*, Volume **58**, Issue 2, 023303 (2017); doi:10.1063/1.4976502
- J24. Jenia Rousseva and **Yevgeniy Kovchegov**, *On alternating quantum walks*, *Physica A: Statistical Mechanics and its Applications*, Volume **470** (2017), 309-320; doi:10.1016/j.physa.2016.11.138
- J23. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Horton self-similarity of Kingman's coalescent tree*, *Annales de l'Institut Henri Poincaré - Probabilités et Statistiques*, Vol. **53**, No. 3 (2017), 1069-1107; doi:10.1214/16-AIHP748
- J22. Anatoly Yambartsev, Michael Perlin, **Yevgeniy Kovchegov**, Natalia Shulzhenko, Karina L. Mine, Xiaoxi Dong, Andrey Morgun, *Unexpected links reflect the noise in networks*, *Biology Direct* **11**, 52 (2016); doi:10.1186/s13062-016-0155-0
- J21. **Yevgeniy Kovchegov** and Ilya Zaliapin, *Horton law in self-similar trees*, *Fractals*, Vol. **24**, No. 2 (2016) 1650017 (10 pages); doi:10.1142/S0218348X16500171

- J20. Kyle Bradford, **Yevgeniy Kovchegov**, and Thinh Nguyen, *Stable adiabatic theorems for Markov chains*, Stochastics, Volume **88**, Issue 4 (2016), 567-585; doi:10.1080/17442508.2015.1102267
- J19. **Yevgeniy Kovchegov** and Peter T. Otto, *Rapid mixing of Glauber dynamics of Gibbs ensembles via aggregate path coupling and large deviations methods*, Journal of Statistical Physics, Volume **161**, Issue 3 (2015), 553-576; doi:10.1007/s10955-015-1345-3
- J18. **Yevgeniy Kovchegov** and Nese Yildiz, *Orthogonal polynomials for semiparametric instrumental variables model*, ESAIM: Probability and Statistics, Volume **19**, (2015), 293-306; doi:10.1051/ps/2014025
- J17. **Yevgeniy Kovchegov** and Nicholas Michalowski, *A class of Markov chains with no spectral gap*, Proceedings of the American Mathematical Society, Volume **141**, Number 12 (2013), 4317-4326; doi:10.1090/S0002-9939-2013-11697-7
- J16. Max Brugger, Kyle Bradford, Samina Ehsan, Bechir Hamdaoui, **Yevgeniy Kovchegov**, *Analytic bounds on data loss rates in mostly-covered mobile DTNs*, IEEE Transactions on Wireless Communications, Volume **12**, Number 7 (2013), 3121-3129; doi:10.1109/TWC.2013.060313.111597
- J15. Kien Nguyen, Thinh Nguyen, **Yevgeniy Kovchegov**, and Viet Le, *Distributed Data Replenishment*, IEEE Transactions on Parallel and Distributed Systems, Volume **24**, Number 2 (2013), 275-287; doi:10.1109/TPDS.2012.115
- J14. Samina Ehsan, Kyle Bradford, Max Brugger, Bechir Hamdaoui, **Yevgeniy Kovchegov**, Douglas Johnson, and Mounir Louhaichi, *Design and analysis of delay-tolerant sensor networks for monitoring and tracking free-roaming Aanimals*, IEEE Transactions on Wireless Communication, Volume **11**, Issue 3 (2012), 1220-1227; doi:10.1109/TWC.2012.012412.111405
- J13. Ilya Zaliapin and **Yevgeniy Kovchegov**, *Tokunaga and Horton self-similarity for level set trees of Markov chains*, Chaos, Solitons & Fractals, Volume **45**, Issue 3 (2012), 358-372; doi:10.1016/j.chaos.2011.11.006
- J12. Zlatko Dimcovic, Daniel Rockwell, Ian Milligan, Robert Burton, Thinh Nguyen, and **Yevgeniy Kovchegov**, *Framework for discrete-time quantum walks and a symmetric walk on a binary tree*, Physical Review A **84**, 032311 (2011), 12 pages; doi:10.1103/PhysRevA.84.032311
- J11. **Yevgeniy Kovchegov**, Peter T. Otto, and Mathew Titus, *Mixing times for the mean-field Blume-Capel model via aggregate path coupling*, Journal of Statistical Physics, Volume **144**, Issue 5 (2011), pp. 1009-1027; doi:10.1007/s10955-011-0286-8
- J10. Kyle Bradford and **Yevgeniy Kovchegov**, *Adiabatic theorems for Markov chains and applications*, Journal of Statistical Physics, Volume **143**, Issue 5 (2011), 955-969; doi:10.1007/s10955-011-0219-6

- J9. **Yevgeniy Kovchegov**, *Orthogonality and probability: mixing times*, Electronic Communications in Probability, Vol. **15** (2010), 59-67; doi:10.1214/ECP.v15-1525
- J8. **Yevgeniy Kovchegov**, *A note on adiabatic theorem for Markov chains*, Statistics & Probability Letters, **80** (2010), 186-190; doi:10.1016/j.spl.2009.10.005
- J7. **Yevgeniy Kovchegov**, Nick Meredith, and Eyal Nir, *Occupation times and Bessel densities*, Statistics & Probability Letters, **80** (2010), 104-110; doi:10.1016/j.spl.2009.09.018
- J6. **Yevgeniy Kovchegov**, *Orthogonality and probability: beyond nearest neighbor transitions*, Electronic Communications in Probability, Vol. **14**, (2009), 90-103; doi:10.1214/ECP.v14-1447
- J5. **Yevgeniy Kovchegov**, *Multi-particle processes with reinforcements*, Journal of Theoretical Probability, **21** (2008), 437-448; doi:10.1007/s10959-007-0141-7
- J4. Eyal Nir, Xavier Michalet, Kambiz Hamadani, Ted A. Laurence, Daniel Neuhauser, **Yevgeniy Kovchegov**, and Shimon Weiss, *Shot-noise limited single-molecule FRET histogram: comparison between theory and experiments*, Journal of Physical Chemistry B, Vol. 110, N. 44 (2006), 22103-22124; doi:10.1021/jp063483n
- J3. **Yevgeniy Kovchegov**, *Exclusion processes with multiple interactions*, Stochastic Processes and Their Applications, Vol. **115** (2005), 1233-1256; doi:10.1016/j.spa.2005.03.003
- J2. **Yevgeniy Kovchegov**, *Brownian bridge asymptotics for the subcritical Bernoulli bond percolation*, Markov Processes and Related Fields, Vol. **10**, N. 2 (2004), 327-344
- J1. **Yevgeniy Kovchegov** and Scott Sheffield, *Linear speed large deviations for percolation clusters*, Electronic Communications in Probability, Vol. **8** (2003), 179-183; doi:10.1214/ECP.v8-1098

REFEREED CONFERENCE PROCEEDINGS

- C6. Leena Zacharias, Thinh Nguyen, **Yevgeniy Kovchegov**, and Kyle Bradford, *Analysis of Adaptive Queueing Policies via Adiabatic Approach*, the Proceedings of the 2013 International Conference on Computing, Networking and Communications(ICNC), (2013), 1053-1057; doi:10.1109/ICCNC.2013.6504237
- C5. Max Brugger, Kyle Bradford, Samina Ehsan, Bechir Hamdaoui, **Yevgeniy Kovchegov**, *Upper Bounds on Expected Hitting Times in Mostly-Covered Delay-Tolerant Networks*, the Proceedings of IEEE International Conference on Communications (IEEE ICC 2012), June 2012, 4995-4999; doi:10.1109/ICC.2012.6363751

- C4. Samina Ehsan, Max Brugger, Kyle Bradford, Bechir Hamdaoui, **Yevgeniy Kovchegov**, *Sufficient Node Density Conditions on Delay-Tolerant Sensor Networks for Wildlife Tracking and Monitoring*, the Proceedings of IEEE GLOBECOM 2011, December 2011; doi:[0.1109/GLOCOM.2011.6134558](https://doi.org/10.1109/GLOCOM.2011.6134558)
- C3. Kien Nguyen, Thinh Nguyen, **Yevgeniy Kovchegov**, and Viet Le, *P2P Distributed Data Replenishment*, the Proceedings of the 20th IEEE International Conference on Computer Communications and Networks (ICCCN), (2011); doi:[10.1109/ICCCN.2011.6005811](https://doi.org/10.1109/ICCCN.2011.6005811)
- C2. Kyle Bradford, Max Brugger, Samina Ehsan, Bechir Hamdaoui, **Yevgeniy Kovchegov**, *Data Loss Modeling and Analysis in Partially-Covered Delay-Tolerant Networks*, the Proceedings of the 20th IEEE International Conference on Computer Communications and Networks (ICCCN), (2011); doi:[10.1109/ICCCN.2011.6005924](https://doi.org/10.1109/ICCCN.2011.6005924)
- C1. Kien Nguyen, Thinh Nguyen, and **Yevgeniy Kovchegov**, *A P2P video delivery network (P2P-VDN)*, the Proceedings of the 18th IEEE International Conference on Computer Communications and Networks (ICCCN), (2009); doi:[10.1109/ICCCN.2009.5235364](https://doi.org/10.1109/ICCCN.2009.5235364)

TECHNICAL REPORTS

- T6. Bruno Barbosa, Wasamon Jantai, **Yevgeniy Kovchegov**, and Guochen Xu, *Proving Newman's CLT via Stein's method*, Technical Report, Oregon State University (2021) Deposited on [ScholarsArchive@OSU](#)
- T5. **Yevgeniy Kovchegov** and Nese Yildiz, *Identification via completeness for discrete covariates and orthogonal polynomials*, Technical Report, Oregon State University (2011) Deposited on [ScholarsArchive@OSU](#)
- T4. Robert M. Burton and **Yevgeniy Kovchegov**, *Mixing times via super-fast coupling*, Technical Report, Oregon State University (2011) Deposited on [ScholarsArchive@OSU](#)
- T3. Zlatko Dimcovic and **Yevgeniy Kovchegov**, *Quantum interchange walk as a unifying approach*, Technical Report, Oregon State University (2010) Deposited on [ScholarsArchive@OSU](#)
- T2. Robert M. Burton and **Yevgeniy Kovchegov** and Thinh Nguyen, *Quantum random walk via classical random walk with internal states*, Technical Report, Oregon State University (2010) Deposited on [ScholarsArchive@OSU](#)
- T1. **Yevgeniy Kovchegov**, *Russo's formula for Lorentz lattice gas model*, Technical Report, Oregon State University (2010) Deposited on [ScholarsArchive@OSU](#)

THESIS

- TH. **Yevgeniy Kovchegov**, *Brownian bridge, percolation and related processes*, Ph.D. Thesis, Stanford University (2002)

SERVICE TO THE PROFESSION

- EDITORIAL BOARD

- Associate Editor for *Stochastics and Dynamics* (Spring 2018 - Present)
- Associate Editor for *Rocky Mountain Journal of Mathematics* (Summer 2019 - Present)

- REFEREE/REVIEWER

American Mathematical Monthly; AMS MathSciNet Mathematical Reviews; Annals of Applied Probability; Annals of Probability; Econometrics; Electronic Communications in Probability; Electronic Journal of Probability; Entropy; Journal of Geophysical Research: Solid Earth; Journal of Statistical Physics; Journal of Theoretical Probability; NSF Probability Panel; Rocky Mountain Journal of Mathematics; Sankhya A; SIAM Journal on Discrete Mathematics; SIAM Journal on Mathematical Analysis; Stochastic Environmental Research and Risk Assessment; Stochastic Processes and Their Applications; Acta Physica Polonica A; Cengage Learning (book publisher); Pearson (book publisher)

- CONFERENCES ORGANIZED

- Fall 2006 - Fall 2022 Member of the scientific committee for the Pacific Northwest Probability Seminar, an annual scientific conference organized by Oregon State University, University of British Columbia, University of Oregon, University of Washington, and Microsoft Research (until 2018).
- Fall 2021 Co-organizer of *Frontier Probability Days (FPD) 2021*. The purpose of this conference is to bring together leading regional and national researchers in probability theory and its applications, along with graduate students and others, to foster interactions and stimulate research activity. The organizing committee was spread among three universities in the Intermountain West region: Oregon State University; University of Arizona; University of Nevada, Las Vegas; University of Utah.
- Spring 2018 Co-organizer of a research workshop on *Random Trees: Structure, Self-similarity, and Dynamics* that took place from April 23-27, 2018, at the Centro de Investigación en Matemáticas (CIMAT), Guanajuato, México.
- Spring 2018 Co-organizer of *Frontier Probability Days (FPD) 2018*. The purpose of this conference is to bring together leading regional and national researchers in probability theory and its applications, along with graduate students and others, to foster interactions and stimulate research activity. The organizing committee

was spread among three universities in the Intermountain West region: Oregon State University, University of Arizona, and University of Utah.

- Fall 2013 Co-Chair for *Statistics 2013 Oregon* event, marking 2013 as the International Year of Statistics. The International Year of Statistics was recognized in a resolution approved by both houses of the United States Congress. The goal of *Statistics 2013 Oregon* was to increase public awareness of the impact of probability and statistics on the society, and to engage Oregon students and professionals. *Statistics 2013 Oregon* was a collaborative effort of faculty members specializing in probability and statistics from the seven Oregon schools including Lewis & Clark College, Oregon Health Sciences University, Oregon State University, Portland State University, Reed College, University of Oregon, and Willamette University. The event was endorsed by the Bernoulli Society, the National Council of Teachers of Mathematics, and the International Year of Statistics (Statistics2013) campaign.

FUNDING

FUNDED GRANT PROPOSALS:

- February 1, 2022 - April 30, 2023 **The Southern California Earthquake Center (SCEC) Award #22090** “Stochastic Branching Process Modeling of Earthquake Occurrence” Ilya Zaliapin (PI at UNR), **Yevgeniy Kovchegov (PI at OSU)**, and Yehuda Ben-Zion (PI at USC)
Amount: \$30,019 (\$14,981 for Oregon State University)
- March 1, 2020 - February 28, 2022 **NSF DMS-1947572** “Frontier Probability Days Conference” Le Chen (PI), Sunder Sethuraman (Co-PI), Firas Rassoul-Agha (Co-PI), **Yevgeniy Kovchegov (Co-PI)**, and Thomas Alberts (Co-PI)
Amount: \$32,000
- March 1, 2018 - February 28, 2019 **NSF DMS-1802828** “Frontier Probability Days Conference” **Yevgeniy Kovchegov (PI)**, Thomas Alberts (Co-PI), Firas Rassoul-Agha (Co-PI), Sunder Sethuraman (Co-PI), and Davar Khoshnevisan (Co-PI)
Amount: \$25,000
- August 15, 2014 - December 31, 2018 **NSF DMS-1412557** “Unexpected Correlations in Biological Networks” **Yevgeniy Kovchegov (PI)** and Andrey Morgun (Co-PI)
Amount: \$184,702
- September 1, 2013 - August 31, 2014 **Simons Foundation / Collaboration Grants for Mathematicians** “Collaboration in Stochastics” (Award Number: 284262) **Yevgeniy Kovchegov (PI)**
Amount: \$35,000 This grant was used for one year out of five. The remaining funds were returned to the funding agency.

- April 2009 - June 2009 **OSU/FRT** “Orthogonality and Probability” **Yevgeniy Kovchegov (PI)**
Amount: \$6,000

FUNDED TRAVEL SUPPORT:

- Winter-Spring 2019 **Foundation for Research Support of the State of São Paulo (FAPESP), Brazil.** Travel grant. “Hydrodynamic limits of coalescent processes and minimal spanning trees with applications in mathematical biology” (Award 2018/07826-5) Anatoly Yambartsev (Principal researcher) and **Yevgeniy Kovchegov (Visiting Researcher)**
Amount: \$18,953 (R\$71,415)
- Winter 2017 **Foundation for Research Support of the State of São Paulo (FAPESP), Brazil.** Travel grant. “Extending the theory of weak convergence for coalescence processes” (Award 2016/19286-0) Anatoly Yambartsev (Principal researcher) and **Yevgeniy Kovchegov (Visiting Researcher)**
Amount: \$7,816 (R\$25,024)
- June 2014 Travel support for attending 30th IUGG Mathematical Geophysics Organizing Committee, Merida, Yucatan, Mexico, June 2-6, 2014.
Amount: \$1,000
- August 2013 **AMS/NSF-DMS** Travel support for attending the Mathematical Congress of the Americas in Guanajuato, Mexico in August 2013.
Amount: \$1,600

FUNDED STUDENT RESEARCH:

- Fall/Winter/Spring 2011-12 **OSU/URISC** Christopher Jones “Quantum Walks and Quantum Algorithms” (Faculty Project Advisor: **Yevgeniy Kovchegov**)
Amount: \$1,800
- Winter/Spring 2007 **OSU/URISC** Nick Meredith “Occupation Times and Learning Models” (Faculty Project Advisor: **Yevgeniy Kovchegov**)
Amount: \$1,200

STUDENTS AND POSTDOCTORAL TRAINEES

- POSTDOCS MENTORED

Patrik V. Nabelek, Sept. 2020 - June 2022

José J. C. Hernández, Dec. 2015 - April 2016

Nicholas Michalowski, Sept. 2010 - June 2012 (co-mentored)

- PH.D. STUDENTS SUPERVISED

Guochen Xu - Ph.D. in mathematics, degree awarded in Winter 2023

Thesis: “*On Invariant Galton-Watson Trees with Exponential Edge Lengths*”

Wasamon Jantai - Ph.D. in mathematics, degree awarded in Summer 2021

Thesis: “*Proving limit theorems for associated random variables via Stein’s method*”

Bruno Barbosa - Ph.D. in mathematics, degree awarded in Fall 2020

Thesis: “*Aggregate path coupling for the generalized Curie-Weiss model*”

Paul Logan - Ph.D. in statistics, degree awarded in Winter 2020 (co-advised)

Thesis: “*C-SHIFT, quantile theory, and assessing monotonicity*”

Kyle Bradford - Ph.D. in mathematics, degree awarded in Spring 2013

Thesis: “*Adiabatic and stable adiabatic times*”

Zlatko Dimcovic - Ph.D. in physics, degree awarded in Spring 2012

Thesis: “*Discrete-time quantum walks via interchange framework and memory in quantum evolution*”

- M.S. STUDENTS SUPERVISED

Lars D. Gunderson - M.S. in mathematics, degree awarded in Spring 2023

Guochen Xu - M.S. in mathematics, degree awarded in Spring 2021

Rodrigo Duran - M.S. in mathematics, degree awarded in Winter 2013

Jonathan Hunt - M.S. in mathematics, degree awarded in Winter 2012

Kyle Bradford - M.S. in mathematics, degree awarded in Fall 2010

Matthew Eves - M.S. in mathematics, degree awarded in Fall 2007

- LOCAL GRADUATE CO-ADVISOR

Dallas Foster - Ph.D. in mathematics, degree awarded in Spring 2021

Johannes Krotz - M.S. in mathematics degree awarded in Spring 2021

- HONORS STUDENTS SUPERVISED

Nick Meredith - Honors B.S. in mathematics, graduated in Spring 2007

- UNDERGRADUATE RESEARCH PROJECTS SUPERVISED

C. Wang (Columbia University) - REU, Summer 2021

C. Pertel (Cornell University) - REU, Summer 2021

A. Negrón (Illinois Inst. of Tech.) - REU, Summer 2021

J. Johnson (Oregon State University) - REU, Summer 2017

C. Campregher (California State University, Long Beach) - REU, Summer 2017

A.-S. Hirst (California State University, Dominguez Hills) - REU, Summer 2016

R. Linder (University of Maryland, Baltimore County) - REU, Summer 2016

J. Rousseva (Eastern Washington University) - REU, Summer 2015

A. Asay (Oregon State University) - REU, Summer 2015

G. Grindstaff (Pomona College) - REU, Summer 2013

K. Wilson (University of Oregon) - REU, Summer 2013

L. Veith (University of Washington) - REU, Summer 2012

K. Schwenkler (Hampshire College) - REU, Summer 2012

A. Deibel (Arizona State University) - REU, Summer 2012

C. Jones (Oregon State University) - URISC project, Fall/Winter/Spring 2011-12

B. Cornelis (University of British Columbia) - REU, Summer 2011

S. Sherpa (MIT) - REU, Summer 2011

D. Shigeta (University of Portland) - REU, Summer 2010

J. Thompson (University of Cambridge, UK) - REU, Summer 2010

E. Azorr (Oregon State University) - REU, Summer 2009

S. Ghitelman (Oberlin College) - REU, Summer 2009

R. Morrison (Williams College) - REU, Summer 2009

G. Rice (Oregon State University) - REU, Summer 2009

B. Coate (The College of Idaho) - REU, Summer 2008

E. DeYoung (University of Chicago) - REU, Summer 2008

J. Drinane (Winona State U.) - REU, Summer 2008

J. Hanselman (MIT) - REU, Summer 2008

N. Meredith (Oregon State University) - URISC project, Winter/Spring 2007

T. Gao (UCLA) - VIGRE Research Experience, UCLA, Summers 2003 and 2004

- SERVED ON DEFENSE COMMITTEE

1. Renee Nolan (M.S. degree, Mathematics)
2. John Henry (Ph.D. in Statistics, Mathematics, minor professor)
3. Benjamin Morin (M.S. degree, Mathematics)
4. Noppadon Wichitsongkram (M.S. and Ph.D. degrees, Mathematics)
5. Leena Zacharias (M.S. degree, EECS)
6. Daniel Rockwell (Ph.D. degree, Mathematics)
7. Torrey Johnson (Ph.D. degree, Mathematics)
8. Zachary Gelbaum (Ph.D. degree, Mathematics)
9. Mathew Titus (M.S. degree, Mathematics)
10. Daniel Lebowitz (M.S. degree, Mathematics)
11. Pingan Zhu (M.S. degree, Mathematics)
12. Victor Nava (M.S. degree, Mathematics)
13. Christopher Owens (M.S. degree, Mathematics)
14. Joshua Kincaid (Ph.D. degree, Physics)
15. Alex Root (M.S. degree, Mathematics)
16. Huanqun Jiang (Ph.D. degree, Mathematics)
17. Ricardo Reyes Grimaldo (M.S. degree, Mathematics)
18. Micah Losee (M.S. degree, Mathematics)
19. Lucas Perryman-Deskins (Ph.D. degree, Mathematics)

- SERVED AS GRADUATE COUNCIL REPRESENTATIVE (GCR)

1. Balaji Lakshminarayanan (M.S. degree, EECS)
2. Thuan Duong-Ba (Ph.D. degree, EECS)
3. Mohammad Javad Norooz Oliaee (M.S. degree, EECS)
4. Majid Adeli (Ph.D. degree, EECS)
5. Fanghui Ren (M.S. degree, EECS)
6. Benjamin Hershberg (Ph.D. degree, EECS)
7. Sachin Rao (M.S. degree, EECS)
8. Megha Maiya (Ph.D. degree, EECS)
9. Atipol Asavametha (M.S. degree, EECS)
10. Gaole Jin (M.S. degree, EECS)
11. Sumit A. Talwalkar (Ph.D. degree, EECS)

12. Duong Nguyen-Huu (M.S. degree, EECS)
13. Thai Duong (M.S. degree, EECS)
14. Wei Li (M.S. degree, EECS)
15. Lixia Zhou (Ph.D. degree, Chemistry)
16. Liang Wang (M.S. degree, Chemistry)
17. Rasha Mohammad Obeidat (Ph.D. degree, EECS)
18. Zhengxian Lin (Ph.D. degree, EECS)
19. Ian McQuoid (Ph.D. degree, CS)
20. Noah Silva de Leonardi (Ph.D. degree, Integrative Biology)
21. Hanyu Wang (Ph.D. degree, EECS)

UNIVERSITY SERVICE

- UNIVERSITY COMMITTEE SERVICE: Ecosystem Informatics IGERT executive committee
- DEPARTMENTAL COMMITTEE SERVICE:
 - departmental newsletter committee (Fall 2022- present)
 - tenure-track search committee in Probability with Applications in Data Science (CHAIR: Summer 2021 - Winter 2022)
 - tenure-track search committee in Topology - Topological Data Analysis (Summer 2021 - Winter 2022)
 - postdoc search committee (Winter 2020 - Spring 2020)
 - tenure-track search committee (Summer 2019 - Spring 2020)
 - undergraduate advising committee (Fall 2015 - Summer 2018, Fall 2019 - Summer 2020)
 - actuarial science committee (CHAIR: Fall 2015 - Summer 2018)
 - mathematics colloquium (CO-CHAIR: Spring 2018, CO-CHAIR: Fall 2020 - Spring 2021; CHAIR: Fall 2021-Winter 2022)
 - qualifying exams committee (Fall 2011 - Summer 2018, Fall 2020 - Spring 2021; CHAIR: Fall 2021- present)
 - ad-hoc committee on hiring (Fall 2017)
 - ad-hoc committee on remaking MTH 306 (2016 - 2017)
 - co-organizer of Milne Lecture (Spring 2017)
 - three year review committee: David Koslicki (Spring 2016)

- visiting assistant professor hiring committee (Spring 2016)
- graduate committee (Fall 2011 - Spring 2015)
- qualifying exam task force (Fall 2013)

Before Fall 2011: undergraduate advising committee, language exam, computer committee

- Fall 2005 - present Organized weekly probability seminar in the Department of Mathematics at Oregon State University.
- Spring 2009 - 2012 Organizer of a research and exploration group on quantum information and computation at Oregon State University that brought together faculty and students from Department of Mathematics, Department of Physics and the School of EECS.
- Volunteered at the Mathematics Learning Center (MLC) in Fall 2013, Winter 2014.

PROFESSIONAL MEETINGS, SYMPOSIA, AND CONFERENCES

118. October 2022 The Twenty-second Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
117. June 2022 *Critical Tokunaga model for river networks*, 33rd IUGG Conference on Mathematical Geophysics, Seoul National University, Seoul, Republic of Korea (**invited speaker**)
116. April 2022 *Multidimensional Lambert-Euler inversion and vector-multiplicative coalescent processes*, Probability Seminar, Indiana University, Bloomington, IN (**invited speaker**)
115. December 2021 **Frontier Probability Days 2021**, University of Nevada, Las Vegas (**organizer**)
114. November 2021 *A generalization of Abel's binomial theorem*, Mathematics Colloquium, Pacific University, Forest Grove, Oregon (**invited speaker**)
113. November 2021 *A new life of Pearson's skewness*, Nevada Statistics Seminar, University of Nevada, Reno (**invited speaker**)
112. March 2021 *Invariant Galton-Watson measures*, Seminário de Probabilidade e Processos Estocásticos, University of São Paulo, São Paulo, Brazil (**invited speaker**)
111. March 2021 *Invariant Galton-Watson trees*, 2021 Coast Combinatorics Conference, hosted by the University of Victoria (**invited speaker**)

110. February 2021 *Invariant Galton-Watson measures*, Mathematical Physics and Probability Seminar at University of Arizona and Stochastics Seminar at University of Utah **(invited speaker)**
109. November 2020 *A new life of Pearson's skewness*, Mathematics Colloquium, Oregon State University **(invited speaker)**
108. October 2020 *Quantum Walks: What's Missing?*, Portland Quantum Computing Meetup **(invited speaker)**
107. August 2020 *Critical Tokunaga branching processes*, section on Random Discrete Structures, Bernoulli-IMS One World Symposium 2020 **(presenter)**
106. October 2019 The Twenty-first Northwest Probability Seminar (annual conference), University of Washington, Seattle **(organizer)**
105. April 2019 *Random self-similar trees: dynamical pruning and its applications*, Seminário de Probabilidade e Processos Estocásticos, University of São Paulo, São Paulo, Brazil **(invited speaker)**
104. December 2018 *An Introduction to Stein's Method*, 2º Encontro da pós-graduação em estatística do IME-USP (a conference), Instituto de Matemática e Estatística (IME) da University of São Paulo, São Paulo, Brazil **(invited speaker)**
103. October 2018 The Twentieth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA **(organizer)**
102. September 2018 *Cross-multiplicative coalescence and minimal spanning trees of irregular graphs*, Mathematical Physics and Probability Seminar, University of Arizona **(invited speaker)**
101. June 2018 *Random self-similar trees and applications in geosciences*, 32nd IUGG Conference on Mathematical Geophysics, Nizhny Novgorod, Russia **(invited speaker)**
100. May 2018 *Tokunaga self-similarity arises naturally from time invariance*, Probability Seminar, Oregon State University **(presenter)**
99. April 2018 *Random Trees and Their Applications: Metric Trees*, presented at the workshop on Random trees: Structure, Self-similarity, and Dynamics (April 23-27, 2018) in CIMAT, Guanajuato, Mexico **(invited speaker / organizer)**
98. March 2018 *Frontier Probability Days 2018*, Oregon State University, Corvallis, Oregon **(organizer)**
97. February 2018 *Random self-similar trees: dynamical pruning and its applications to inviscid Burgers equations*, Mathematical Physics and Probability Seminar, University of Arizona **(invited speaker)**

96. November 2017 *Random self-similar trees: dynamical pruning and its applications to inviscid Burgers equations*, The Nineteenth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**invited speaker / organizer**)
95. October 2017 *Random self-similar trees: dynamical pruning and its applications to inviscid Burgers equations*, Probability Seminar, Oregon State University (**presenter**)
94. July 2017 *Random Self-Similar Trees: Dynamical Pruning, Invariance, and Criticality*, presented at the 39th Conference on Stochastic Processes and their Applications (SPA2017) contributed session on random self-similar trees and their applications (July 24-28, 2017) in Moscow, Russia (**presenter / contributed session organizer**)
93. April 2017 *Coalescence and minimal spanning trees of irregular graphs*, Probability Seminar, Oregon State University (**presenter**)
92. March 2017 *Path Coupling and Aggregate Path Coupling*, Applied Mathematics Colloquium, University of São Paulo, São Paulo, Brazil (**invited speaker**)
91. March 2017 *Self-similar random trees (a two lecture mini course)*, IME, University of São Paulo, São Paulo, Brazil (**invited speaker**)
90. February 2017 *Coalescence and Minimal Spanning Trees*, Seminário de Teoria da Computação, Combinatória e Otimização, University of São Paulo, São Paulo, Brazil (**invited speaker**)
89. November 2016 *Stationary distribution for Moran process*, Mathematical Biology Seminar, Oregon State University (**presenter**)
88. November 2016 *New Perspectives in Discrete Probability and Its Applications*, Mathematics Colloquium, Oregon State University (**presenter**)
87. November 2016 The Eighteenth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**organizer**)
86. October 2016 *On tree-pruning and prune-invariances in random binary rooted trees*, Probability Seminar, University of California, Berkeley (**invited speaker**)
85. June 2016 *Hierarchical branching processes*, 31st IUGG Conference on Mathematical Geophysics, Paris, France (**invited speaker**)
84. June 2016 *Tree self-similarity based on Horton ordering and Tokunaga indexing*, Conference on “Random Trees and Maps: Probabilistic and Combinatorial Aspects”, Centre International de Rencontres Mathématiques (CIRM), Marseille, France (**invited speaker**)
83. May 2016 *Horton-Strahler ordering and Tokunaga indexing in stochastic processes*, Probability Seminar, Oregon State University (**presenter**)

82. April 2016 *Path Coupling and Aggregate Path Coupling*, Mathematical Physics and Probability Seminar, University of Arizona (**invited speaker**)
81. April 2016 *Hierarchical Branching Processes*, Special Session on Topics in Probability, AMS Western Sectional Meeting, University of Utah (**presenter**)
80. March 2016 *Path Coupling and Aggregate Path Coupling*, Probability Seminar, Stanford University, California (**invited speaker**)
79. February 2016 *Path Coupling and Aggregate Path Coupling*, Probability Seminar, University of Washington, Seattle (**invited speaker**)
78. October 2015 The Seventeenth Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
77. October 2015 *Path Coupling and Aggregate Path Coupling*, Probability Seminar, Oregon State University (**presenter**)
76. September 2015 *Path Coupling and Aggregate Path Coupling*, Probability Seminar, University of São Paulo, São Paulo, Brazil (**invited speaker**)
75. September 2015 *Horton self-similarity of Kingman's coalescent*, New Interactions of Combinatorics and Probability, ICMC, University of São Paulo, São Carlos, Brazil, August 24 – September 4, 2015 (**invited speaker**)
74. October 2014 The Sixteenth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**organizer**)
73. June 2014 *Horton self-similarity of coalescent trees* (with Ilya Zaliapin), 30th IUGG Conference on Mathematical Geophysics, Merida, Yucatan, Mexico, June 2-6, 2014 (**poster presenter**)
72. March 2014 *Horton Self-similarity of Kingman's Coalescent*, Mathematics Colloquium, New Mexico State University (**invited speaker**)
71. February 2014 *Noise in gene regulatory networks, FKG and Holley inequalities*, Mathematical Biology Seminar, Oregon State University (**presenter**)
70. November 2013 *On Markov Chain Monte Carlo*, Probability Seminar, Oregon State University (**presenter**)
69. October 2013 The Fifteenth Northwest Probability Seminar at University of Washington (1st day) and Microsoft Research, Redmond, WA (2nd day) (**organizer**)
68. October 2013 *Statistics 2013 Oregon* event, marking 2013 as the International Year of Statistics. Public Lecture and Reception, Hoffman Hall at Portland State University, Oregon (**organizer**)

67. August 2013 *Horton self-similarity and coalescent trees*, Special Session on Graph and Network Analysis in the Geosciences, Mathematical Congress of the Americas 2013 in Guanajuato, Mexico (**invited speaker**)
66. May 2013 *Proportion of Unexpected Correlations (PUC) as a measure of error in regulatory network* (presented jointly with A. Morgun), Mathematical Biology Seminar, Oregon State University (**presenter**)
65. February 2013 *Horton self-similarity of Kingman's coalescent tree*, Probability Seminar, Oregon State University (**presenter**)
64. October 2012 The Fourteenth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**organizer**)
63. April 2012 *Application of aggregate path coupling and large deviations to mixing times of statistical mechanical models*, Probability Seminar, Oregon State University (**presenter**)
62. April 2012 *Application of aggregate path coupling and large deviations to mixing times of statistical mechanical models*, Probability Seminar, UCLA (**invited speaker**)
61. February 2012 *Identification via completeness for discrete covariates and orthogonal polynomials*, Probability Seminar, Oregon State University (**presenter**)
60. October 2011 The Thirteenth Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
59. May 2011 *Phase estimation in quantum computing*, Probability Seminar, Oregon State University (**presenter**)
58. March 2011 *Introduction to Quantum Computation*, Mathematics Colloquium, Willamette University (**invited speaker**)
57. February 2011 *Path coupling method*, Probability Seminar, Oregon State University (**presenter**)
56. November 2010 *Convergence to stationary state*, Mathematics Colloquium, Oregon State University (**presenter**)
55. November 2010 *Tokunaga self-similarity for time series*, Probability Seminar, Oregon State University (**presenter**)
54. October 2010 *Introduction to free probability*, Probability Seminar, Oregon State University (**presenter**)
53. October 2010 The Twelfth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**organizer**)

52. September 2010 *On Markov Chain Monte Carlo (MCMC) and Mixing Rates*, Mathematics and Statistics Colloquium, University of Nevada, Reno (**invited speaker**)
51. July 2010 *Orthogonal polynomials and mixing rates*, Conference on Orthogonal Polynomials in Probability Theory, July 6-10, 2010, Texas A & M University, College Station (**invited speaker**)
50. January 2010 *Orthogonality and probability: mixing times*, Probability Seminar, University of Oregon (**invited speaker**)
49. January 2010 *Discrete and continuous quantum walks*, Probability Seminar, Oregon State University (**presenter**)
48. October 2009 *On Markov Chain Monte Carlo and mixing rates*, Solid State Physics Seminar, Department of Physics, Oregon State University (**invited speaker**)
47. October 2009 The Eleventh Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
46. October 2009 *On MCMC and Mixing Rates*, Mathematics Colloquium, Willamette University (**invited speaker**)
45. October 2009 *Intro to quantum probability and quantum computing* (a series of three talks), Probability Seminar, Oregon State University (**presenter**)
44. April 2009 *Mixing times via orthogonal polynomials*, Probability Seminar, Oregon State University (**presenter**)
43. March 2009 *On orthogonality in probability*, Frontier Probability Days 2009, Salt Lake City, Utah (**presenter**)
42. March 2009 *Orthogonality and Probability, Part IV: Riemann-Hilbert problems, applications*, Probability Seminar, Oregon State University (**presenter**)
41. February 2009 *Orthogonality and Probability*, Probability Seminar, Stanford University, California (**invited speaker**)
40. January 2009 *A note on adiabatic theorem for Markov chains and adiabatic quantum computation*, Probability Seminar, Oregon State University (**presenter**)
39. November 2008 *Orthogonality and Probability, Part III: Beyond nearest neighbor transitions*, Probability Seminar, Oregon State University (**presenter**)
38. November 2008 The Tenth Northwest Probability Seminar (annual conference), Microsoft Research, Redmond, WA (**organizer**)
37. October 2008 *Orthogonality and Probability, Part II*, Probability Seminar, Oregon State University (**presenter**)

36. October 2008 *Orthogonality and Probability*, Probability Seminar, Oregon State University (**presenter**)
35. January 2008 *Perfect coupling and tunneling to the future*, Probability Seminar, Oregon State University (**presenter**)
34. January 2008 *Tunneling to the future and perfect coupling*, Workshop on Random Walks, Particle Systems and Random media - Santiago, Chile (**invited speaker**)
33. October 2007 The Ninth Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
32. October 2007 *Occupation times and modified Bessel functions*, Probability Seminar, Oregon State University (**presenter**)
31. August 2007 *Superfast Coupling and Rapid Mixing*, The 32nd Conference on Stochastic Processes and their Applications, University of Illinois at Urbana-Champaign (**presenter**)
30. May 2007 *Markov Chain Monte Carlo simulations and their mixing rates*, Mathematics Colloquium, Oregon State University (**invited speaker**)
29. March 2007 *Mixing times via super-fast coupling*, Stochastics Seminar, University of Utah (**invited speaker**)
28. March 2007 *Mixing times via super-fast coupling*, Dynamics Seminar, University of Victoria, Canada (**invited speaker**)
27. February 2007 *On Stein-Chen coupling*, Probability Seminar, Oregon State University (**presenter**)
26. October 2006 *Mixing times via super-fast coupling*, Probability Seminar, University of Oregon (**invited speaker**)
25. October 2006 The Eighth Northwest Probability Seminar (annual conference), University of Washington, Seattle (**organizer**)
24. October 2006 *Mixing times via super-fast coupling*, Probability Seminar, Oregon State University (**presenter**)
23. October 2006 *Mixing times via coupling method*, Probability Seminar, Oregon State University (**presenter**)
22. January 2006 *Critical percolation and Lorentz lattice gas model: an expository talk*, Probability Seminar, Oregon State University (**presenter**)
21. January 2006 *Subcritical percolation: cluster expansion and Brownian bridge asymptotics*, Probability Seminar, Oregon State University (**presenter**)

20. November 2005 *On Mixing Times II*, Probability Seminar, Oregon State University (**presenter**)
19. October 2005 *Generalized symmetric exclusion processes*, The Seventh Northwest Probability Seminar, University of Washington, Seattle (**invited speaker**)
18. October 2005 *On Mixing Times I*, Probability Seminar, Oregon State University (**presenter**)
17. April 2005 *Multi-particle edge-reinforced processes*, Colloquium, Oregon State University (**invited speaker**)
16. February 2005 *Multi-particle edge-reinforced processes*, Probability Seminar, University of Minnesota (**invited speaker**)
15. January 2005 *Multi-particle processes with reinforcements*, Probability Seminar, University of Pennsylvania (**invited speaker**)
14. January 2005 *Multi-particle edge-reinforced processes*, Probability Seminar, University of Rochester (**invited speaker**)
13. January 2005 *Edge-reinforced processes*, Probability Seminar, University of California, Berkeley (**invited speaker**)
12. November 2004 *Multi-particle edge-reinforced processes*, Probability Seminar, Stanford University, California (**invited speaker**)
11. October 2004 *Multi-particle processes with reinforcements*, Probability Seminar, University of California, Los Angeles (**presenter**)
10. April 2004 *Exclusion processes with multiple interactions*, Probability Seminar, Stanford University, California (**invited speaker**)
9. March 2004 *Exclusion processes with multiple interactions*, Probability Seminar, University of California, Los Angeles (**presenter**)
8. May 2003 *Brownian bridge in percolation and self-avoiding walks models*, Probability Seminar, University of California, Los Angeles (**presenter**)
7. May 2003 *Finding Brownian bridge in percolation and self-avoiding walk models*, Probability Seminar, University of California, Irvine (**invited speaker**)
6. April 2003 *Finding Brownian bridge in percolation and self-avoiding walk models*, Probability Seminar, University of Southern California, Los Angeles (**invited speaker**)
5. October 2002 *Recurrence phenomenon in Lorentz lattice gas model*, Probability Seminar, University of California, Los Angeles (**presenter**)
4. February 2002 *Brownian bridge in percolation and related processes*, Probability Seminar, University of Washington, Seattle (**invited speaker**)

3. January 2002 *Brownian bridge in percolation and related processes*, Probability Seminar, University of British Columbia, Canada (**invited speaker**)
2. October 2001 *Brownian bridge asymptotics in percolation*, Probability Seminar, Stanford University, California (**presenter**)
1. August 1996 *Measures on the Sierpinski gasket*, MAA National Student Conference, University of Washington, Seattle (**presenter**)

COURSES TAUGHT AT OREGON STATE UNIVERSITY

Credit Courses			
Term:	Course number:	Course Title:	Enrollment:
Fall 2005	MTH 463/563	Probability I	32
	MTH 599	Ecosystem Informatics (co-teaching)	9
Winter 2006	MTH 464/564	Probability II	16
	MTH 599	Ecosystem Informatics (co-teaching)	8
Spring 2006	MTH 465/565	Probability III	14
	MTH 306	Matrix and Power Series Methods	109
	MTH 599	Ecosystem Informatics (co-teaching)	6
Summer 2006	MTH 256	Applied Differential Equations	16
	MTH 306	Matrix and Power Series Methods	16
Fall 2006	MTH 669	Topics in Stochastic Processes I	9
	MTH 599	Ecosystem Informatics (co-teaching)	6
Winter 2007	MTH 669	Topics in Stochastic Processes II	5
	MTH 599	Ecosystem Informatics (co-teaching)	6
Spring 2007	MTH 611	Complex Analysis I	22
Fall 2007	MTH 612	Complex Analysis II	5
	MTH 599	Ecosystem Informatics (co-teaching)	10
Winter 2008	MTH 232	Elements of Discrete Mathematics II	50
	MTH 599	Ecosystem Informatics (co-teaching)	10
Spring 2008	MTH 254.040	Vector Calculus I	68
	MTH 254.060	Vector Calculus I	72
Fall 2008	MTH 599	Ecosystem Informatics (co-teaching)	6
Winter 2009	MTH 232	Elements of Discrete Mathematics II	41
	MTH 664	Probability Theory I	17
	MTH 599	Ecosystem Informatics (co-teaching)	6
Spring 2009	MTH 665	Probability Theory II	17
Summer 2009	MTH 306	Matrix and Power Series Methods	28
Fall 2009	MTH 463/563	Probability I	27
Winter 2010	MTH 342	Linear Algebra II	21
	MTH 464/564	Probability II	10
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	5
Spring 2010	MTH 361	Introduction to Probability	31
	MTH 465/565	Probability III	8
Summer 2010	MTH 231	Elem. Discr. Mathematics I (Ecampus)	13
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	9
Fall 2010	MTH 311	Advanced Calculus I	24
	MTH 341	Linear Algebra I	32
	MTH 231	Elem. Discr. Mathematics I (Ecampus)	9

Credit Courses			
Term:	Course number:	Course Title:	Enrollment:
Winter 2011	MTH 306	Matrix and Power Series Methods	96
	MTH 312	Advanced Calculus II	14
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	8
Spring 2011	MTH 361	Introduction to Probability	29
	MTH 669	Topics Stoch. Proc. - Large Deviations	6
	MTH 231	Elem. Discr. Mathematics I (Ecampus)	26
Summer 2011	MTH 306	Matrix and Power Series Methods	28
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	16
Fall 2011	MTH 232	Elem. Discr. Mathematics II	62
	MTH 306	Matrix and Power Series Methods	76
	MTH 231	Elem. Discr. Mathematics I (Ecampus)	12
Winter 2012	MTH 306H	Matrix and Power Series Methods	19
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	16
Spring 2012	MTH 361	Introduction to Probability	40
	MTH 231	Elem. Discr. Mathematics I (Ecampus)	28
Summer 2012	MTH 306	Matrix and Power Series Methods	19
	MTH 232	Elem. Discr. Mathematics II (Ecampus)	17
Fall 2012	MTH 252H	Integral Calculus	19
	MTH 669	Topics Stoch. Proc. - Random Matrices	8
Winter 2013	MTH 664	Probability Theory I	23
Spring 2013	MTH 611	Complex Analysis I	23
	MTH 665	Probability Theory II	12
Summer 2013	MTH 306.001	Matrix and Power Series Methods	31
	MTH 306.002	Matrix and Power Series Methods	29
Fall 2013	MTH 463/563	Probability I	34
Winter 2014	MTH 306H	Matrix and Power Series Methods	20
	MTH 464/564	Probability II	11
Spring 2014	MTH 342	Matrix and Power Series Methods	25
	MTH 465/565	Probability II	7
Summer 2014	MTH 306.001	Matrix and Power Series Methods	33
	MTH 306.002	Matrix and Power Series Methods	25
Fall 2014	MTH 231	Elem. Discr. Mathematics	64
	MTH 306	Matrix and Power Series Methods	81
Winter 2015	MTH 342	Matrix and Power Series Methods	26
Spring 2015	MTH 483/583	Complex variables	32
Summer 2015	MTH 306	Matrix and Power Series Methods	28
	MTH 341	Linear Algebra I	27
Fall 2015	MTH 231	Elem. Discr. Mathematics	79
Winter 2016	MTH 254H	Vector Calculus I	6
	MTH 311	Advanced Calculus I	24
Spring 2016	MTH 312	Advanced Calculus II	33
	MTH 499/599	Topics Math. Bio.	7

Credit Courses			
Term:	Course number:	Course Title:	Enrollment:
Summer 2016	MTH 361	Introduction to Probability	18
Fall 2016	MTH 251H	Differential Calculus	20
	MTH 343	Intro to Modern Algebra	23
Spring 2017	MTH 428/528	Stochastic Elements in Math. Bio.	10
	MTH 467/567	Actuarial Mathematics	8
Summer 2017	MTH 361	Introduction to Probability	18
Fall 2017	MTH 306	Matrix and Power Series Methods	22
	MTH 341	Linear Algebra I	28
Spring 2018	MTH 428/528	Stochastic Elements in Math. Bio.	16
	MTH 467/567	Actuarial Mathematics	10
Summer 2018	MTH 323	Mathematical modeling (WIC ¹)	10
Fall 2019	MTH 323	Mathematical modeling (WIC ¹)	22
Winter 2020	MTH 355	Discrete Mathematics	35
	MTH 664	Probability Theory I	21
Spring 2020	MTH 428/528	Stochastic Elements in Math. Bio.	13
	MTH 665	Probability Theory II	15
Summer 2020	MTH 361	Introduction to Probability	28
Fall 2020	MTH 463/563	Probability I	53
Winter 2021	MTH 464/564	Probability II	39
Spring 2021	MTH 428/528	Stochastic Elements in Math. Bio.	15
	MTH 465/565	Probability III	23
Summer 2021	MTH 361	Introduction to Probability	10
Fall 2021	MTH 664	Probability Theory I	11
Winter 2022	MTH 428/528	Stochastic Elements in Math. Bio.	9
Summer 2022	MTH 361	Introduction to Probability (Ecampus)	8
Fall 2022	MTH 463/563	Probability I	43
Winter 2023	MTH 312	Advanced Calculus II	29
	MTH 467/567	Actuarial Mathematics	13
Summer 2023	MTH 256	Applied Diff. Eqs. (Ecampus)	89
	MTH 361	Introduction to Probability (Ecampus)	17
Fall 2023	MTH 341	Linear Algebra 1	69
	MTH 427/527	Introduction to Mathematical Biology	17

CURRICULUM DEVELOPMENT / COURSE MATERIALS

- Participated in developing and teaching MTH 599 Ecosystem Informatics experimental class.
- Developed two online undergraduate math courses for OSU E-campus, MTH 231 and MTH 232.

¹Writing Intensive Course

- Developed and taught MTH 669 Special Topics course on the theory of stochastic processes.
- Developed and taught MTH 669 Special Topics course on the theory of large deviations, attended by students (and faculty) from the Department of Mathematics, Department of Physics, and EECS.
- Developed and taught MTH 669 Special Topics course on random matrix theory.
- Prepared slides for MTH 306 Matrix and Power Series Methods. The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math306summer2015/>
- Prepared slides for MTH 312 Advanced Calculus II . The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math312winter2023/>
- Prepared slides for MTH 341 Linear Algebra I. The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math341fall2017/>
- Prepared slides for MTH 355 Discrete Mathematics. The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math355winter2020/>
- Lead the development of the proposal for MTH 428/528 Stochastic Elements in Mathematical Biology. The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math528winter2022/>
- Prepared slides for MTH 463/563 Probability I (first term of non-measure theoretic probability; undergraduate/graduate). The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math563fall2020/>
- Prepared slides for MTH 464/564 Probability II (second term of non-measure theoretic probability; undergraduate/graduate). The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math564winter2021/>
- Prepared slides for MTH 465/565 Probability III (third term of non-measure theoretic probability; undergraduate/graduate). The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math565spring2021/>
- Prepared slides for MTH 467/567 Actuarial Mathematics. The slides can be accessed at <http://math.oregonstate.edu/~kovchegy/math567spring2018/>
- Prepared slides for MTH 664 (the first quarter of graduate measure theoretic probability sequence). The slides can be accessed at
<http://math.oregonstate.edu/~kovchegy/math664fall2021/>

- Prepared slides for MTH 665 (the second quarter of graduate measure theoretic probability sequence). The slides can be accessed at <http://math.oregonstate.edu/~kovchegy/math665spring2020/>

COLLABORATION

- CURRENT AND PAST COLLABORATORS

Yehuda Ben-Zion (Earth Sciences, University of Southern California)

Robert M. Burton (Department of Mathematics, Oregon State University)

Efi Foufoula-Georgiou (Earth System Science, University of California, Irvine)

Bechir Hamdaoui (Electrical Engineering and Computer Science, Oregon State U.)

José J. C. Hernández (Dept. of Mathematics, Federal Univ. of Pernambuco, Brazil)

Nicholas Michalowski (Dept. of Mathematical Sciences, New Mexico State University)

Debashis Mondal (Mathematics and Statistics, Washington University in St. Louis)

Andrey Morgun (College of Pharmacy, Oregon State University)

Thinh Nguyen (Electrical Engineering and Computer Science, Oregon State U.)

Eyal Nir (Department of Chemistry, Ben-Gurion University, Beer-Sheva, Israel)

Peter T. Otto (Department of Mathematics, Willamette University)

Scott Sheffield (Department of Mathematics, MIT)

Anatoly Yambartsev (Probability and Statistics, University of São Paulo, Brazil)

Nese Yildiz (Department of Economics, University of Rochester)

Ilya Zaliapin (Department of Mathematics and Statistics, University of Nevada Reno)

- GRADUATE AND POSTDOCTORAL ADVISORS

Amir Dembo (Stanford University) - Ph.D. advisor

Thomas M. Liggett (University of California, Los Angeles) - postdoc mentor

OTHER SKILLS AND ACTIVITIES

LANGUAGES: English, Russian, Portuguese, Spanish.