Dr. Jimmy Risk

Department of Mathematics & Statistics
California State Polytechnic University, Pomona
3801 W Temple Ave, Pomona, CA 91768
Building 8-202
Phone: (231) 633-1473
jrisk@cpp.edu
jimmyrisk.github.io

ACADEMIC POSITIONS

California State Polytechnic University, Pomona CA
Department of Mathematics & Statistics
- Assistant Professor (Tenure–Track) — Sept 2017–Current

University of California, Santa Barbara CA
Department of Statistics & Applied Probability
- Teaching Assistant — Sept 2013–Dec 2013
- Teaching Associate (Student Lecturer) — January 2012–June 2013

Michigan State University
Department of Statistics & Probability
- Teaching Assistant — Sept 2013–Dec 2013
- Teaching Associate (Student Lecturer) — Summer 2012

PUBLICATIONS

Risk, Jimmy, Huynh, Nhan, and Ludkovski, Michael. "SOA 2021 ILEC mortality prediction contest." *Society of Actuaries* (2021). https://www.soa.org/globalassets/assets/files/resources/research-report/2021/mort-prediction-contest.pdf

Risk, Jimmy, and Ludkovski, Michael. "Sequential Design and Spatial Modeling for Portfolio Tail Risk Measurement." *SIAM Journal on Financial Mathematics 9.4* (2018) 1137-1174.

Risk, Jimmy, Ludkovski, Michael, and Zail, Howard. "Gaussian Process Models for Mortality Rates and Improvement Factors." *ASTIN Bulletin: The Journal of the IAA 48.3* (2018) 1307-1347.

Risk, Jimmy, and Ludkovski, Michael. "Statistical emulators for pricing and hedging longevity risk products." *Insurance: Mathematics and Economics* 68 (2016): 45-60.

Risk, Jimmy. "Correlations between Google search data and Mortality Rates." arXiv preprint arXiv:1209.2433 (2012). https://arxiv.org/abs/1209.2433

HONORS & AWARDS

Winner of SOA Mortality Prediction Contest — Fall 2021
- Open to all international entrants
- The Society of Actuaries (SOA) is global professional organization for actuaries; one of the two largest in the United States
- See Publications section for winning submission

Recipient of SOA Hickman Scholarship — Spring 2015–Spring 2017
- Worldwide scholarship for PhD students pursuing academia & actuarial credentials
- Only five new scholars awarded annually

EDUCATION

Doctor of Philosophy, Statistics & Applied Probability — September 2013–June 2017
Emphasis in Financial Mathematics and Statistics
University of California, Santa Barbara, CA
Dissertation Committee:
- Michael Ludkovski (Advisor)
- Jean-Pierre Fouque
- Tomoyuki Ichiba

Thesis Topic: Applications of Gaussian Processes to Actuarial Modeling and Pricing

Extended Adademic Visit September 2015
ISFA: Institut de Science Financière et d'Assurances - Université Lyon 1
Topic: Stochastic Kriging in Longevity Risk Pricing
Invited by Stéphane Loisel

Master of Science, Statistics & Probability January 2011–May 2013
Michigan State University, East Lansing, MI
Bachelor of Science, Mathematics January 2007–August 2010
Michigan State University, East Lansing, MI
Actuarial Specialization

ACTUARIAL Passed exams P, FM, MLC, C, MFE; All VEE credits completed

TEACHING EXPERIENCE

Assistant Professor
Department of Mathematics & Statistics, California State Polytechnic University, Pomona
- STA 5250 (Graduate Level Time Series Analysis) (F17, F19, F21)
- STA 4250 (Survival Analysis) (Sp18, Sp20)
- STA 1200 & 1200H (Statistics with Applications) (S18, Su18, F18)
- STA 2100 (Introduction to Statistics) (F18, F20)
- STA 4320 (Applied Regression Analysis) (F18, Su20)
- STA 5320 (Linear Statistical Models) (S19)
- MAT 3100 (Introduction to Real Analysis) (Su20)
- STA 5900 (Statistical Consulting) (F20)
- MAT 4190 (Advanced Linear Algebra) (Su21)
- STA 4990 (Introduction to Actuarial Science) (Su21)

Teaching Associate (Student Lecturer)
Department of Statistics & Applied Probability, University of California, Santa Barbara
- PSTAT 109 (Statistics for Economics) (Summer 2015, 2016)

Department of Statistics & Probability, Michigan State University
- STT 200 (Introduction to Probability & Statistics) (Summer 2012)

Teaching Assistant
Department of Statistics & Applied Probability, University of California Santa Barbara
- PSTAT 501 (TA Training Course) (F16 W16)
- PSTAT 213ABC (PhD Level Probability Theory) (F15 F16 W16 W17 S16 S17)
- PSTAT 160A (Introduction to Stochastic Processes) (F15)
- PSTAT 171 (Mathematics of Interest) (F13 F14)
- PSTAT 172AB (Actuarial Statistics) (W14 W15 W16 S14 S15 S16)
- Lecturer for PSTAT 182T (Tutorial for Exam P & FM) (W14 S14)

Department of Statistics & Probability, Michigan State University
- STT 315 (Introduction to Probability & Statistics for Business) (S12, F12, S13)
- STT 455/456 (Actuarial Models) (F12, S13)

INVITED LECTURES
- Science on Tap *(Cal Poly Pomona College of Science)* October 2021
  Topic: *How Random Was That? (An Introduction to Statistical Modelling)*
- UC Riverside Applied Statistics Colloquium March 2021
  Topic: *The Role of a Kernel in Statistical Learning*
- AMS Sectional Meeting; Special Session on Markov Processes, Gaussian Processes and Applications in San Francisco, CA October 2018
- Fourteenth International Longevity Risk and Capital Markets Solutions Conference in Amsterdam September 2018
  Topic: *An Interactive R Markdown Approach to Mortality Rate and Improvement Modeling using Gaussian Process Models*

- Twelfth International Longevity Risk and Capital Markets Solutions Conference in Chicago September 2016
  Topic: *Gaussian Process Models for Mortality Rates and Improvement Factors*
- 50th Actuarial Research Conference (ARC), University of Toronto August 2015
  Topic: *Statistical Emulators & Longevity Risk*
- Eleventh International Longevity Risk and Capital Markets Solutions Conference at Université Lyon 1, Lyon, France September 2015
  Topic: *Statistical Emulators & Longevity Risk*

SEMINAR TALKS

- CPP Mathematics and Statistics Colloquium November 2017 Topic: *Stochastic Kriging in Quantile Estimation with Applications to VaR Calculations*
- CPP Mathematics and Statistics Colloquium March 2017 Topic: *Gaussian Processes for Machine Learning*
- UCSB Statistics Department Gaussian Process Research Group November 2016
  Newly established quarterly seminar for faculty and PhD students to discuss topics and their current research in Gaussian Processes
  Topic: *Stochastic Kriging in Quantile Estimation with Applications to VaR Calculations*
- UCSB Statistics Department Colloquium Talk May 2016
  Topic: *Statistical Emulators & Gaussian Processes*
- UCSB Mathematics Department May 2015
  Topic: *Proving the Central Limit Theorem in the strong operator topology*

IN PERSON CONFERENCE ATTENDANCE

- 8th Western Conference in Mathematical Finance March 2017
  University of Washington
- Society of Actuaries Annual Meeting & Exhibit October 2015
  Austin, TX
- Second NUS-UParis Diderot Workshop on Quantitative Finance September 2015
  University of Paris Diderot
- Conference on Stochastic Asymptotics & Applications September 2014
  Joint with Sixth Western Conference on Mathematical Finance
  University of California Santa Barbara
- 49th Actuarial Research Conference (ARC) July 2014
  University of California Santa Barbara

ADVISED MASTERS THESES

- Ronald Lencevicius *Connections between Neural Tangent and Laplace Kernels* Spring 2022 *(Expected)*
- Chris Muzquiz *Multi-output Gaussian Process Kernels for Natural Language Processing* Spring 2022 *(Expected)*
- Charles Amelin *Gaussian Process Super-Resolution* Summer 2021
- Kaitlyn McGloin *Methodology and Analysis of Collaborative Filtering Recommender Systems* Spring 2021
- Esteban Escobar *An Introduction to Practical Topological Data Analysis* Spring 2021
- Hakeem Frank *Gaussian Process Models for Computer Vision* Spring 2020
- Yuying (Bella) Guan *Introduction to Gaussian Processes For Regression* Spring 2020
- Kevin Bailey *Statistical Learning for Esports Match Prediction* Spring 2020
- Greg Nelson *Red and White Wine Data Analysis* Spring 2020

LEADERSHIP EXPERIENCE

CPP STA 1200 (Statistics with Applications) Coordinator F20–Current

- STA 1200 is one of CPP's highest enrolled courses
- First coordinator, creating a plan for coordination
- Meet biweekly with all STA 1200 instructors to discuss teaching duties
- Revise curriculum and teaching methods to better assist students and lecturers
- Develop assessment tools (common final exam item) for course assessment

- Develop resources to assist students and lecturers (Canvas course shell, list of recommended applets, videos, etc.)

ACADEMIC COMMITTEE EXPERIENCE

Cal Poly Pomona Mathematics and Statistics

- TA and Lecturer Hiring Committee F18–S20
- Faculty Search Committee F21–Current
- Assessment Committee F18–Current
  - Develop and utilize tools for department wide course assessment
- Graduate Committee F17–S18
- Statistics Committee F17–Current
- Colloquium Committee F17–S18
- Advising Committee (Chair) F18–S19

EXTRA-CURRICULAR ACTIVITIES

- Led student research group studying Continuous Martingales and Brownian Motion by Revuz & Yor F15–S16
- Member of SOA Education & Research Section Su16–Current
- Member of SIAM S12–Current