STEVEN DALTON BARNETT

CONTACT INFO

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RESEARCH INTERESTS

Bayesian statistics, computer experiments, surrogate modeling, computer model calibration, Gaussian process regression, and statistical computing. Application areas include engineering, space science, and environmental issues.

EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Ph.D. Statistics, expected May 2025, advised by Robert B. Gramacy
M.S. Statistics, May 2022, 3.9 GPA

BRIGHAM YOUNG UNIVERSITY
B.S. Computer Science, April 2016, 3.64 GPA

PEER-REVIEWED PAPERS

McAvoy, T. J., Foley, J., **Barnett, S. D.**, Mays, R., Dechaine, A., & Salom, S. M. (2024). Laboratory Assessment of Predation and Fecundity of *Laricobius* Species (Coleoptera: Derodontidae), Predators of Hemlock Woolly Adelgid (*To appear in Biocontrol Science & Technology*).

Bukvic, A. & **Barnett, S.** (2023). Drivers of flood-induced relocation among coastal urban residents: Insight from the US east coast. *Journal of Environmental Management*, 325(A), 116429. https://doi.org/10.1016/j.jenvman.2022.116429

PAPERS IN REVIEW

Barnett, S. D., Beesley, L. J., Booth, A. S., Gramacy, R. B., Osthus, D. (2024). Monotonic warpings for additive and deep Gaussian processes. https://arxiv.org/abs/2408.01540 *(Under review at Statistics & Computing)*

WORKING PAPERS

Barnett, S. D., Gramacy, R. B., Beesley, L. J., Osthus, D. (2024+). Deep Gaussian Process Poisson Modeling of Large-Scale Satellite Count Data for Computer Model Calibration.

Barnett, S. D., Gramacy, R. B., Beesley, L. J., Osthus, D., Huang, Y., Guo, F., Zirnstein, E. J., Reisenfeld, D. B. (2024+). Computer Model Calibration for Spatially Distributed Counts.

Bukvic, A. & **Barnett, S. D.** (2024+). Contrasts in place attachment between rural and urban residents on the US east coast.

O'Leary, E. J., Stringham, D. A., **Barnett, S. D.**, & Flowers, A. (2024+). A Longitudinal Investigation of Concert Band Music Performance Assessment.

TALKS & POSTERS

Key: **S** ≡ Seminar; **IT** ≡ Invited Talk; **CT** ≡ Contributed Talk; **P** ≡ Poster

Computer model calibration for large-scale spatially-distributed counts

IT	Oct 2024	**Advances in Interdisciplinary Statistics and Combinatorics**, Greensboro, NC
CT	Aug 2024	**Joint Statistical Meetings**, Portland, OR
CT	June 2024	**Statistics in Quality, Industry, and Technology**, Waterloo, CA
P	Feb 2024	**SIAM Conference on Uncertainty Quantification**, Trieste, IT
S	Aug 2023	**Statistical Sciences Group, Los Alamos National Lab**, Los Alamos, NM

Deep Gaussian process modeling of Poisson data

CT	Oct 2024	**Fall Technical Conference**, Nashville, TN
P	May 2024	**Design and Analysis of Experiments Conference**, Blacksburg, VA
P	Oct 2023	**Virginia Tech Corporate Partners**, Blacksburg, VA
P	May 2023	**ASA/IMS Spring Research Conference**, Banff, CA

Statistical collaborations & consulting

P	Aug 2023	**Joint Statistical Meetings**, Toronto, CA
P	Feb 2023	**Conference on Statistical Practice**, San Francisco, CA
P	Oct 2022	**Virginia Tech Corporate Partners**, Blacksburg, VA

HONORS & AWARDS

Student Travel Award, Joint Research Conference on Statistics in Quality, Industry, and Technology (2024)
Virginia Tech Gibbons Star Award for Combined Outstanding Research and Service (2023)
Virginia Tech Klaus Hinkelmann Award for Outstanding Departmental Service (2023)
Student Travel Scholarship, AMS/IMS Spring Research Conference (2023)
Virginia Tech John Bartko Ph.D. '62 Prize in Statistics for Outstanding Statistical Collaboration and Communication (2022)

TEACHING EXPERIENCE

Instructor of Record

- STAT 4714 - Statistics & Probability for Electrical Engineers, VIRGINIA TECH (Fall 2024)

Teaching Assistant

- STAT 2004 - Introductory Statistics, VIRGINIA TECH (Fall 2022)
- STAT 5204G - Experimental Design: Concepts and Applications, VIRGINIA TECH (Fall 2021)
- STAT 3654 - Intro to Data Analytics and Visualization, VIRGINIA TECH (Spring 2021)
- STAT 4664 - Computational Intensive Stochastic Modeling, VIRGINIA TECH (Spring 2021)
- STAT 4654 - Intermediate Data Analytics and Machine Learning, VIRGINIA TECH (Fall 2020)
- CS 465 - Computer Security, BRIGHAM YOUNG UNIVERSITY (Winter 2016)
- CS 312 - Algorithm Design & Analysis, BRIGHAM YOUNG UNIVERSITY (Fall 2015)

PROFESSIONAL EXPERIENCE

QUALTRICS, INC

Software Engineer II, *March 2020 - July 2020*

COVID ENGINEERING

- Designed and implemented system to track COVID-19 viral tests and notify patients of results
- Integrated notification framework with labs throughout the United States to enable batch testing

Software Engineer I, *July 2016 - March 2020*

CLIENT DATA AUTOMATIONS PLATFORM

- Designed and built framework for users to schedule repeated automations of bulk data exchange
- Developed feature to generate survey response exports and deliver them to customer data stores
- Built automations integrated with Amazon Simple Workflow Service, DynamoDB, and Nomad

ENGINEERING SERVICES

- Built real-time dashboards for managers to complete 360 surveys and view results
- Automated the distribution of over 100,000 daily survey invitations to customer contact lists
- Scoped, designed, and implemented custom solutions for several Fortune 500 companies

PRE-PROFESSIONAL EXPERIENCE

LOS ALAMOS NATIONAL LAB STATISICAL SCIENCES GROUP: Graduate research intern. Developed novel Gaussian process model calibration and surrogate modeling methods for non-continuous, large-scale satellite and computer model data; 2023-present

VIRGINIA TECH STATISTICAL APPLICATIONS AND INNOVATIONS GROUP: Lead collaborator. Provided statistical consulting and education to graduate students, faculty, and working professionals; 2021-2023

NCAR EARLY CAREER FACULTY INNOVATOR PROGRAM: Graduate research assistant. Conducted survey data analysis to understand attitudes on permanent relocation for coastal residents; Summer 2021-2022

SERVICE

ASQ, Chemical and Process Industries Division, Webinar/Communications Chair; 2023-present
Mu Sigma Rho, President of Virginia Tech Chapter; 2023-present
Mu Sigma Rho, Treasurer of Virginia Tech Chapter; 2022-2023
Virginia Tech Data Science Camp, Organizer and Facilitator; Summer 2022
Virginia Tech Corporate Partners Committee; 2021-present

PROFESSIONAL MEMBERSHIP

American Society for Quality (ASQ), Chemical and Process Industries Division
American Statistical Association (ASA), Section on Physical and Engineering Sciences
International Society for Bayesian Analysis (ISBA)
Society for Industrial and Applied Mathematics (SIAM)
Mu Sigma Rho National Honor Society