

CHRISTOPHER GRUBB

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EXPERIENCE

08/2023 – PRESENT

RESEARCH SCIENTIST, CENTER FOR BIOSTATISTICS AND HEALTH DATA SCIENCE

05/2017 – 05/2021

LEAD COLLABORATOR, STATISTICAL APPLICATIONS AND INNOVATIONS GROUP

Helped approximately 100 graduate students and university faculty with statistics work important for their masters' theses, dissertations, or publications. Taught several short courses on base R graphics, R graphics using ggplot2, data manipulation in R, and R basics. Participated in several special long-term and/or grant projects:

- **Secure, Smart, Point of Care Sensors for Lung Health (05/2021 - 05/2022):** Fit random-effects linear models and performed sensitivity analysis for a CCI grant project focused on developing a secure sensor to predict lung health using biomarkers typically associated with populations such as older and/or black individuals.
- **VT COVID-19 Wastewater Monitoring (09/2020 - 05/2021):** Leveraged R, Google Apps Script, Rclone, and cron to automate the gathering and merging of various data sources that updated daily, twice weekly, and weekly, while remaining HIPAA compliant. Predicted future outbreaks within university dormitories with the amount of virus shed into wastewater over the past 8 days, using generalized linear mixed effects models. Created R Shiny dashboard to visually display relevant information to the university administration responsible for allocating COVID-19 testing on campus.
- **VT Advancement (12/2019 - 06/2020):** Developed a codebase to automate data cleaning, feature synthesis, modeling, and prediction with the end goal of being able to focus effort on alumni more likely to donate to the university.

05/2019 – 08/2019

DATA SCIENCE INTERN, MICROSOFT

Implemented deep feature synthesis for a then-unreleased product that became Power BI's Cognitive Services, an AutoML solution designed for corporations with little to no statistical or machine learning knowledge.

05/2018 – 08/2018

DATA SCIENCE INTERN, MICROSOFT

Leveraged market basket analysis to investigate the predictive power of transactional history within a recommender system for Xbox Store. Worked primarily in Python and was required to learn a proprietary query language (SCOPE) that evolved into U-SQL.

SKILLS

- **Programming Languages:** R, Python, C, C++, U-SQL
- **Software:** R Markdown, R Shiny, JMP, Minitab, Microsoft Office, Microsoft Azure Databricks

EDUCATION

AUGUST 2023

PHD IN STATISTICS, VIRGINIA TECH - 3.98 GPA

Advisors: Dr. David Higdon and Dr. Leanna House

Dissertation: Probabilistic population synthesis for preconditioning of agent-based models

MAY 2016

BS IN MATHEMATICS, MILLERSVILLE UNIVERSITY - 3.79 GPA

Specializations in Actuarial Science and Statistics.

Dean's List (12/2014, 12/2015). *Magna cum laude*.

PUBLICATIONS

Alasdair Cohen, Ayella Maile-Moskowitz, **Christopher Grubb**, Raul A. Gonzalez, Alessandro Ceci, Amanda Darling, Laura Hungerford, Ronald D. Fricker Jr., Carla V. Finkielstein, Amy Pruden, and Peter J. Vikesland. (2022). "Subsewershed SARS-CoV-2 Wastewater Surveillance and COVID-19 Epidemiology Using Building-Specific Occupancy and Case Data." *ACS ES&T Water*.

Jeremiah R Foley, IV, Thomas J McAvoy, **Christopher Grubb**, Albert E Mayfield, III, Brian Strahm, Scott M Salom. (2022). "Subterranean Survivorship and Seasonal Emergence of *Laricobius* spp. (Coleoptera: Derodontidae), Biological Control Agents for the Hemlock Woolly Adelgid." *Environmental Entomology*. 51(1).

PRESENTATIONS

Automating Data Cleaning, Merging, Processing, and Visualization in Real Time. **Christopher Grubb**. Poster at Conference on Statistical Practice, 2023.

Probabilistic Population Synthesis for Decision-Making. **Christopher Grubb**, David Higdon, and Leanna House. Contributed poster at Joint Statistical Meetings, 2021.

Advancing Advancement with Data Science. **Christopher Grubb**, and Jennifer Van Mullekom. Poster at Conference on Statistical Practice, 2021.

AWARDS

- **CSP Poster Competition Honorable Mention**, 2023.
- **Daniel M. Wardrop Ph.D. '85 and Barbara J. Wardrop Graduate Fellowship**, 2021. Significant financial reward; awarded yearly (starting 2021) for outstanding performance in SAIG.
- **John J. Bartko Ph.D. '62 Award**, 2020. Financial compensation for travel/presentation at Conference on Statistical Practice; awarded yearly for outstanding performance in SAIG.

RESEARCH INTERESTS

Population Synthesis; Network Visualization, Inference, and Community Detection; Bayesian Linear Models and Latent Variable Models; Computational Statistics; Surrogate Modeling