

# Maximilian Rohde

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## EDUCATION

### B.A. in Physics and B.A. in Geology

Carleton College • Northfield, MN • 2017 • 3.47 GPA

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## EXPERIENCE

### ORISE Fellow (Division of Antiviral Products)

FDA (CDER / Office of New Drugs)

March 2019 - Present, Silver Spring, MD

- Conducted a pooled analysis of 37 clinical trials to address concerns stemming from post-market surveillance and the peer-reviewed literature that direct-acting antiviral treatment for hepatitis C may be associated with development of herpes zoster. Presented a poster at the IDWeek 2019 conference and won best poster at FDA CDER ORISE poster day. A first-author peer-reviewed publication is in progress.
- Collaborated on an analysis of 9 clinical trials to determine novel clinical endpoints for immunological non-responders after HIV antiretroviral therapy. Merged and cleaned data across trials and collaborated with FDA statisticians on statistical modeling.
- Analyzed clinical trial data with the clinical review team for the approval of PrEP products. Created data summaries and visualizations featured in the clinical review document and advisory committee presentations.
- Implemented a next-generation sequencing analysis to differentiate between *Streptococcus pneumoniae* serotypes in infected patients.

### ORISE Fellow (Biomedical Informatics and Regulatory Review Science)

FDA (CDER / Office of New Drugs)

January 2018 - March 2019, Silver Spring, MD

- Created a natural-language processing tool to map medical terms within drug product labels to the SNOMED-CT medical ontology. Developed a web-based interface for the tool and deployed it for use across FDA.
- Analyzed adverse event data from over 5000 clinical trials to identify key areas where sponsors are not in compliance with CDISC data standards and provided recommendations to improve quality of sponsor-submitted data.
- Implemented a support-vector machine (SVM) classifier to classify FDA meeting-minute documents into a hierarchy of topics to reduce the need for manual labeling.

### Academic Tutor

Prep10n1

September 2017 - Present, Potomac, MD

- Tutored high school students 10-15 hours a week in mathematics (including AP calculus and statistics), AP science courses (physics, chemistry, biology), and ACT/SAT test preparation.
- Led training workshops for other tutors on effective science teaching.
- Contributed significantly to creating a company-wide ACT mathematics and science curriculum.

### Science Policy Intern

MIT Washington Office

September 2017 - December 2017, Washington, DC

- Attended and reported on a variety of events (e.g., congressional hearings, think-tank seminars, scientific society meetings) for publication in a weekly newsletter for the MIT administration.
- Researched and wrote reports with senior policy advisors on science policy topics relevant to MIT, including a long-form report on autonomous vehicle policy.

### Research Intern

USGS Albuquerque Seismological Laboratory

June 2016 - September 2016, Albuquerque, NM

- Analyzed seismic signals using spectral analysis as part of the 2016 Incorporated Research Institutions for Seismology (IRIS) internship in order to characterize long-period seismic noise
- Installed experimental arrays of broadband seismometers in the Albuquerque Seismological Laboratory testing vault to characterize the seismic background.
- Developed automated data analysis workflows using Python scientific libraries and created new scientific visualizations for analyzing seismic noise.
- Published work as first author in *Seismological Research Letters*, a peer-reviewed journal, and gave a poster presentation at the 2016 American Geophysical Union annual meeting

## Teaching Assistant

### Carleton College Department of Physics

February 2014 – June 2017, Northfield, MN

- Tutored students in coursework for a variety of introductory and upper level physics courses (e.g., Quantum Mechanics, Introduction to Special Relativity, Electricity and Magnetism).
- Assisted students during laboratory sections with experimental techniques, mathematical derivations, and data analysis.
- Aided professors in grading problem sets and exams.
- Started an initiative for students to provide anonymous feedback to teaching assistants to better understand the needs of students and improve teaching methods.

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## ACADEMIC RESEARCH PROJECTS

### Analyzing Magnetically Induced Noise with the LIGO Detector Characterization Group

- Conducted research in Spring and Summer 2015 with Dr. Nelson Christensen through the Carleton College Department of Physics and Astronomy as a member of the Laser-Interferometer Gravitational-Wave Observatory (LIGO) Detector Characterization team.
- Analyzed magnetically induced noise in the LIGO detector channels by writing automated signal processing tools to determine the effect of magnetic transients on gravitational-wave detection.
- Communicated my work as an author on a journal article detailing the effects of Schumann resonances on gravitational-wave detection.

### Astronomical Tuning of the Bartonian–Priabonian Boundary near Gubbio, Italy Using Terrestrial Laser Scanning

- Conducted research in Fall 2015 at the Osservatorio Geologico di Coldigioco as part of my semester-abroad final project to date the carbonate stratigraphy of the Bartonian–Priabonian boundary using terrestrial laser scanning and cyclostratigraphic techniques.
- Collected the laser scanning data and wrote MatLab scripts to detect orbital cycles using Fourier transform techniques.
- Presented the work at the 2015 Osservatorio Geologico di Coldigioco research symposium.

### New Approaches to Calculating the Gravitational Field Due to a Cylinder

- Worked at Carleton College with Dr. Bill Titus as a summer 2014 research fellow towards modeling the three-dimensional gravitational field of a finite cylinder for the purpose of aiding identification of subsurface gravity anomalies.
- Obtained results analytically using vector calculus techniques and numerically using Mathematica and C code.
- Presented a poster at the 2014 Carleton & St. Olaf summer research symposium.

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## PUBLICATIONS

### Characterizing local variability in long-period horizontal tilt noise

Rohde, M. D., Ringler, A. T., Hutt, C. R., Wilson, D. C., Holland, A. A., Sandoval, L. D., & Storm, T. (2017). Characterizing local variability in long-period horizontal tilt noise. *Seismological Research Letters*, 88(3), 822–830.

### Globally coherent short duration magnetic field transients and their effect on ground based gravitational-wave detectors

Kowalska-Leszczynska, I., Bizouard, M. A., Bulik, T., Christensen, N., Coughlin, M., Gołkowski, M., ... & Rohde, M. (2017). Globally coherent short duration magnetic field transients and their effect on ground based gravitational-wave detectors. *Classical and Quantum Gravity*, 34(7), 074002.

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## SKILLS

**Computer:** Python, R, Mathematica, UNIX, Bash scripting, LaTeX

**Data Analysis and Visualization:** pandas, scikit-learn, seaborn, ggplot2, tidyverse, d3.js

**Software:** Microsoft Office, Adobe Illustrator, Adobe InDesign

**Languages:** English, French, Greek