

Karen Yu

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Education

Harvard University

PHD CANDIDATE, ENVIRONMENTAL SCIENCE & ENGINEERING, SECONDARY FIELD IN COMPUTATIONAL SCIENCE & ENGINEERING

M.S., APPLIED MATHEMATICS

Cambridge, MA

May 2017 (anticipated)

May 2016

Carnegie Mellon University

M.S., CIVIL AND ENVIRONMENTAL ENGINEERING

B.S., CIVIL ENGINEERING WITH ADDITIONAL MAJOR IN POLICY AND MANAGEMENT

Pittsburgh, PA

May 2012

Dec. 2011

Experience

Harvard University

GRADUATE RESEARCHER IN ATMOSPHERIC CHEMISTRY MODELING GROUP

- Developed high-resolution regional modeling capability in GEOS-Chem Model to support field mission in collaboration with 100+ scientists.
- Examined effect of increasing grid resolution in chemical transport modeling by evaluating high-resolution model against data from field campaign. Presented work at American Geophysical Union conference and published work in peer-reviewed journal.
- Quantified errors in chemical transport model (CTM) using offline meteorological fields compared to coupled chemistry-climate model. Developed parameterizations to address resolution induced transport errors in offline CTMs. Manuscript in preparation.

TEACHING FELLOW FOR MATHEMATICAL MODELING (AM115)

- Managed class of 40+ students and provided one-on-one mentoring for students' final projects.

Duke University

RESEARCH INTERN

- Investigated effectiveness of sequential chemical extraction methods for the speciation of silver nanomaterials in ambient environments.

Carnegie Mellon University

PEER TUTOR

- Held walk-in tutoring sessions in freshmen dorms for Physics for Engineers I & II, and one-on-one tutoring sessions for various engineering courses.

UNDERGRADUATE RESEARCHER

- Investigated cause of poor transport of nanomaterial through natural soil to improve effectiveness of toxic waste remediation using column experiments, gas chromatography, and UV-visible spectroscopy.
- Applied microbiology techniques to examine effect of engineered silver nanomaterials on bacterial populations in simulated natural environments.

Skills, Coursework, and Awards

Programming

Python, R, MatLab, Fortran 77/90, IDL

Languages

Fluent in spoken Mandarin Chinese, basic proficiency in French

Coursework

Stochastic Optimization Methods, Parallel Programming, Machine Learning, Partial Differential Equations, Numerical Methods, Computational Fluid Dynamics, Probability and Estimation Methods in Engineering Systems

Awards

Graduate Consortium on Energy and Environment (partial tuition fellowship), CMU CEE Tuition Scholarship

Service and Activities

Harvard University

SCHOOL OF ENGINEERING AND APPLIED SCIENCES (SEAS) GRADUATE COUNCIL COMMUNITY SERVICE INITIATIVE LEADER

- Build community within SEAS by organizing social and professional development events for graduate students. As community service initiative lead, I led a group of students to volunteer at a local middle school in preparation for their science fair.

Carnegie Mellon University

ENGINEERS WITHOUT BORDERS GRANTS AND SPONSORSHIPS CHAIR

- Acquired over \$20,000 in funding for CMU's EWB chapter. Worked as part of team to design solar rooftop installation for school in India.