

Xiaoran (Seamore) Zhu

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EDUCATION

Boston University, Boston, MA

Ph.D., Earth & Environment

Sept. 2022-Anticipating 2027 Graduation

Dartmouth College, Hanover, NH

Bachelor of Engineering in Environmental Systems, Bachelor of Arts in Engineering Sciences and Studio Art; magna cum laude

Sept. 2015-Mar. 2020

GPA: 3.86

RESEARCH

NASA Summer Internship – Goddard Space Flight Center, Greenbelt, MD

June-Aug. 2022

Synthesis of an Arctic Boreal Vulnerability Experiment (ABOVE) tundra database and preliminary analysis in support of tundra fire research

- Collected 47 datasets from in-situ ABOVE domain tundra sites and compiled a database covering 40 common and important variables across datasets
- Conducted preliminary analyses with the database concerning the impacts of fire history and severity on active layer thickness and vegetation cover

NASA DEVELOP National Program – Space Systems and Innovations LLC

Sept. 2021-Apr. 2022

VT & NH Ecological Forecasting (Project Lead) – Ames Research Center, Moffett Field, CA

- Led a team of five to study trends in tree defoliation due to gypsy moth outbreaks to predict future hardwood tree mortality and health impacts, partnering with: FEMC, VT Agency of Agriculture, UNH Cooperative Extension, and NH Division of Forests and Lands
- Used Google Earth Engine for data collection, processing, and analysis with a Random Forest model

- Designed presentations, a technical paper, and a public-facing ArcGIS StoryMap

Carolina Coastal Plain Ecological Forecasting – University of Georgia, Athens, GA

- Worked in a team of five to map habitat suitability for *Dionaea muscipula* (Venus flytrap) in order to inform the conservation efforts of our project partners: NCBG, NCU, and NCNHP
- Used Google Earth Engine for data collection and processing, ArcGIS Pro for study area shapefile creation, and VisTrails for modeling and data analysis
- Designed presentations, a technical paper, and a public-facing ArcGIS StoryMap

Engineering Capstone – Dartmouth College, Hanover, NH

Sept. 2019-Mar. 2020

Automated Home Composting System

- Worked in a team of four to design the first fully automated composting system at the household scale
- 3D-modeled, machined, and built prototypes and developed novel, quantitative testing methods to determine composting efficacy
- Delivered presentations and a final report to a review board and industry sponsor

SKILLS

Python, Java, MATLAB, Google Earth Engine, ArcGIS Pro, R, VisTrails, JMP, HTML, CSS, SolidWorks, Photoshop, Lightroom, InDesign, Excel, PowerPoint, and Word

EXPERIENCE

Center for Historic Plants – Thomas Jefferson Foundation, Charlottesville, VA

July 2020-Dec. 2021

- Nursery associate: propagated and transplanted plants, maintained the display gardens, packaged seeds, and assisted customers at plant sales
- Sustainable agriculture volunteer: practiced agriculture and reviewed agroforestry plans

Dartmouth College Office of Communications – Dartmouth College, Hanover, NH

June 2017-Mar. 2020

- Whitney Campbell '25 photojournalism intern

Thayer School of Engineering – Dartmouth College, Hanover, NH

Jan. 2017-Mar. 2020

- Designed course content for Industrial Ecology and Intro to Engineering
- Research Assistant: created an exhibition of materials, processes, and products to guide students in material selection
- Teaching Assistant for Fluid Mechanics, Systems, and Machine Engineering

AWARDS, GRANTS, AND HONORS

Boston University Dean's Fellowship

Sept. 2022-Sept. 2023

Fall 2021 DEVELOPer of the Term from NASA DEVELOP, SSAI LLC.

Sept.-Nov. 2021

Postgraduate Grant from the Dartmouth General Fellowship

June-Dec. 2019

- Awarded for the project *NYC – The Collective Breath*: an environmentally activated art photography project with the theme of capturing human connections with nature in urban spaces

The Peter D. Smith Student Initiative Award with Grant

Nov. 2016-Aug. 2017

- Awarded for the project *Between Each Passerby*: a landscape photography project exploring nature's coexisting resilience and fragility

Thomas W. Gerber '43 Award for Excellence in Photojournalism

Apr. 2016

PROFESSIONAL AFFILIATIONS

American Geophysical Union

Tau Beta Pi (TBP) Engineering Honor Society

COMMUNITY SERVICE

- Volunteered with TBP at the FIRST Lego League Challenge and Solar Sprint Challenge 2019-2020
- Weatherized a home and constructed an accessibility ramp with COVER Home Repair 2018, 2020

REFERENCES

Mark Friedl, PhD

- friedl@bu.edu
- Graduate Advisor at Boston University

Elizabeth Hoy, PhD

- elizabeth.hoy@nasa.gov
- Mentor during internship at NASA GSFC

Dong Chen, PhD

- itscd@umd.edu
- Mentor during internship at NASA GSFC

Marguerite Madden, PhD

- mmadden@uga.edu
- Science advisor at NASA DEVELOP, Georgia node