Sabine Annaliese Nix

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Citizenship: USA

SUMMARY:

- Rising junior at the University of Pennsylvania studying Earth and Environmental Science
- Strong technical research skills; passionate about environmental and ecology research

EDUCATION:

University of Pennsylvania | Philadelphia, PA *May 2020*
Candidate for B.A in Earth Science, Concentration in Environmental Science
Candidate for Minor in Hispanic Studies

- *Cumulative GPA*: 3.89/4.0
- *Extracurricular:* Epsilon Eta Co-Ed Environmental Fraternity; Stamped Magazine Design; The Daily Pennsylvanian Design
- *Honors & Awards:* Dean's List 2016-2017; University Scholar Research Program
- *Relevant Coursework:* Modeling Geographical Space; Intro to Environmental Science; Oceanography; Global Climate Change; Intro to Biology; Intro to Chemistry; Calculus; Energy Systems and Policy

University of Edinburgh, School of Geosciences | Edinburgh, Scotland *September – December 2018*

- Study abroad during fall semester of 2018
- *Coursework:* Principles and Practice of Remote Sensing; Conservation Science; Development and Decolonization of Latin America

Phillips Academy | Andover, MA *June 2016*

- NITARP (NASA/IPAC Teacher Archive Research Program) - worked with several high schools to publish new research related to the identification and classification of young stellar objects
- *Extracurricular:* Co-Founder and Layout Editor of BOSS Magazine; Biology Tutor
- *Selected Honors & Awards:* Marsh Prize in Biology
- *Relevant Coursework:* AP Computer Science; Computer Graphics; AP BC Calculus; AP Spanish

EMPLOYMENT HISTORY & EXPERIENCE:

***Visiting Researcher,* Alliance for a Sustainable Amazon** | Madre De Dios, Peru *July – August 2018*

- I wrote and submitted an independent research proposal be a visiting researcher at the Finca Las Piedras field station in Madre de Dios, Peru. To get permission to conduct this research, I also submitted a copy of my research proposal translated into Spanish to the *Servicio Nacional Forestal y de Fauna Silvestre* (SERFOR) of Peru. As a visiting researcher, I worked on collecting ground-truth observations to be used as training data in supervised classifications of the region with remotely sensed Landsat data. I stayed for three weeks in remote conditions in the rainforest, managing my time based on my project's requirements and working independently. I received funding for this research from the University Scholar Committee at the University of Pennsylvania. I am currently still working on incorporating my field observations into my classifications. In the next year, I will include additional ground-based measurements to better assess the full impact of land-cover change on this region.

***Field Technician,* United States Geological Survey, Canyonlands Biological Station** | Moab, Utah *May – July 2018*

- As an intern for the USGS Biological Station located in Moab, Utah, I worked closely with other field technicians, as well as primary investigators, to conduct the field work necessary to a variety of USGS research projects. I assisted with monitoring vegetation's response to extreme drought on a joint USGS-USDA project, as well as a project investigating biological soil crust's ability to withstand varying degrees of wind and rain erosion. In these projects, I gained experience in plant identification, field ecology skills, and working long hours in extreme conditions.

***Research Intern*, U.S. Forest Service** | Philadelphia, PA *January 2018 - Present*

- Researching ecological legacy of street tree plantings in Philadelphia
- Assess motivations for planting specific tree species using Philadelphia city and horticultural archives

***Teaching Assistant*, Biology 101** | University of Pennsylvania January – *May 2018*

- Worked collaboratively with professors and other teaching assistants to improve class content and help students with material in lectures

***Secretary*, Epsilon Eta, Co-Ed Environmental Fraternity** | University of Pennsylvania *January – May 2018*

- Manage communication between Epsilon Eta's executive board and members

***Non Profit Representative* (Fundraiser), Ruffalo Noel Levitz, LLC** | Philadelphia, PA *May 2017 – May 2018*

- Reach out to University of Pennsylvania alumni to encourage participation in annual giving fund
- Often awarded top caller for achieving highest alumni participation rate
- Raised over $70,000 to date

***Research Assistant*, Sediment Lab, University of Pennsylvania** *May – August 2017*

- Worked with PhD student to design experiment on sediment dynamics of turbidity currents
- Used Python and OpenCV to analyze data collected from experiments
- Conducted background research on physics of turbidity currents
- Wrote successful funding proposal to University Scholar Committee of the University of Pennsylvania for $4,500 to participate in this research

***Layout Associate*, The Daily Pennsylvanian** | Philadelphia, PA *January – May 2017*

- Formatted layout of articles in University of Pennsylvania's daily student-run newspaper
- Designed graphics and headlines for the newspaper using Adobe InDesign and Adobe Illustrator

***Instructor*, Computer Adventures** | Mt. Kisco, NY *July – August 2016*

- Designed and taught courses in HTML/CSS and App Development to 2nd - 8th graders

***Intern*, Adirondack Public Observatory** | Tupper Lake, NY *July – August 2015*

- Taught public Friday night stargazing sessions
- Delivered presentations for public audiences at The Wild Center using NOAA's "Science on a Sphere" technology
- Taught and created activities and lesson plans for students still in use at observatory today
- Produced outreach material for events at the observatory

***Volunteer Counselor*, Cary Institute of Ecosystem Studies** | Millbrook, NY *June 2013*

- Worked with ecology campers to collect data and led groups on short hikes

***Intern,* Columbia University Department of Civil Engineering** | New York, NY *June 2013*

- Intern with Shiho Kawashima, Ph.D., Assistant Professor of Civil Engineering and Engineering Mechanics.
- Helped with experiments measuring the rate cement hydration by monitoring heat evolution under controlled temperatures to advance studies on how nanomaterials and additives influence rate of hydration

***Volunteer,* Groundwork on Hudson** | Hudson Valley, NY *Summers 2010 - 2014*

- Worked with groups to identify and remove invasive vines from trees along highway

GRANTS & AWARDS:

University Scholar Grant *May 2018*

University Scholar Committee of the University of Pennsylvania

- Wrote an independent research proposal involving one week of remote sensing work at a university in Lima and three weeks of "ground truth" field work in Puerto Maldonado, Peru.
- Received $3,500 in research funding to carry out this research during the summer of 2018

University Scholar Grant *May 2017*

University Scholar Committee of the University of Pennsylvania

- Wrote a proposal for $4,500 to cover living expenses for three months of working in the Sediment Lab during summer 2017.

Dean's List 2016 – 2017; 2017-2018 *May 2017; May 2018*
University of Pennsylvania
- For maintaining a high GPA during the 2016-2017 and 2017-2018 academic years

Abbot Grant *May 2016*
Abbot Academy Association Board of Directors
- Wrote a grant proposal for $2,250 to purchase a solar spectrograph for astronomy classes and public outreach at Phillips Academy.

Marsh Prize in Biology *May 2015*
Phillips Academy Andover
- For excellence in Biology

SKILLS:

Research
- Working on independent research project involving remote-sensing research and field-based ground observations in Puerto Maldonado, Peru (Summer 2018)
- Experience working alongside research ecologists at the USGS Southwest Biological Station in Moab, Utah (Summer 2018)
- Worked as research assistant in an Earth Science Laboratory at the University of Pennsylvania (Summer 2017)
- Worked with a team of students and teachers to publish four astronomy papers in high school; Attended conferences to present this research during senior year of high school

ArcGIS
- Graduate-level coursework in raster-based ArcGIS (Spring 2018)

Remote Sensing
- Working on independent research project using remote sensing data to analyze land-cover change near Puerto Maldonado, Peru (2018-2019)
- Coursework:
  - Graduate-level coursework in raster-based ArcGIS – University of Pennsylvania (Spring 2018)
  - Graduate-level coursework in Remote Sensing – University of Edinburgh (Fall 2018)

Computer Science and Coding
- Experienced with Java, Python, HTML/CSS, WebGL, OpenCV
- Coursework:
  - AP Computer Science using Java (2014-2015)
  - College-level in Computer Graphics using Python and WebGL (Winter 2016)
- Analyzed experimental video data with Python and OpenCV as research assistant in Sediment Dynamics Lab
- Designed and taught classes in HTML/CSS, Website Design and App Development to 2nd-8th graders

Google Earth Engine
- Used google earth engine extensively in independent remote sensing research looking at land-cover changes near Puerto Maldonado, Peru (2018)

ERDAS Imagine Remote Sensing Software
- Coursework:
  - Used ERDAS Imagine Remote Sensing software in weekly practical sessions for graduate level remote sensing course at the University of Edinburgh (Fall 2018)

Outdoor Experience
- Experienced backpacker and hiker; comfortable working in remote locations
- Field research experience in Moab, Utah and Puerto Maldonado, Peru (Summer 2018)

Teaching Experience and Science Communication
- Worked as teaching assistant for introductory biology class at the University of Pennsylvania
- Created and delivered science presentations to audiences at The Wild Center in Tupper Lake, New York for position at Adirondack Public Observatory
- Designed and taught computer science classes to children at Computer Adventures

Spanish
- Conversational Spanish speaker, reader, and writer
- Score of 5 on AP Spanish Exam
- Achieved level of CEFR B2+ (High Intermediate Plus) after 76 hours of classes during 5 weeks of study abroad in Buenos Aires, Argentina

Graphic Design

- Comfortable using Adobe Photoshop, Adobe InDesign and Adobe Illustrator
- Used Adobe Illustrator and Adobe InDesign to do layout and graphic design for: The Daily Pennsylvanian (University of Pennsylvania student-run newspaper); Stamped Magazine (University of Pennsylvania travel magazine); BOSS Magazine (Phillips Academy student-run magazine)

Microsoft Office

- Created course and outreach material for Adirondack Public Observatory and Computer Adventures using Microsoft Office
- Used Microsoft Excel extensively to analyze environmental data in courses and for independent research

PUBLICATIONS AND CONFERENCES:

- "Finding the Lightcurve and Rotational Period of Minor Planet 13003 Dickbeasley" May 2015
  Minor Planet Bulletin Vol. 42, No. 4
- "Finding the Lightcurve and Rotational Period of Minor Planet 7694 Krasetin" March 2016
  Minor Planet Bulletin Vol. 43, No. 3
- "Finding Young Stars in IC417" January 2016
  227th Annual American Astronomical Society Meeting
- "Identification and Classification of Infrared Excess Sources in the Spitzer Enhanced Imaging Products (SEIP) Catalog" January 2015
  225th Annual American Astronomical Society Meeting