

NOAH JACOBS

(270) 202 • 6638 | nj142@duke.edu

Image Credit: NASA

REMOTE SENSING & ENVIRONMENTAL POLICY

/ WHO IS NOAH JACOBS?

I am an ambitious problem-solver with a passion for using remote sensing technologies to benefit life on Earth.

In my research I use critical remote sensing to study the Arctic. My current project focuses on detecting lake ice in Alaska using PlanetScope satellite imagery.

/ EDUCATION

>> The University of Alabama | 4.0/4.0 GPA

B.S. in Remote Sensing & Environmental Policy, with Minor in Social Innovation & Leadership

>> Duke University | Ph.D. Student

Earth & Climate Science Ph.D. student in the Duke Nicholas School of the Environment

/ SKILLS & PROFICIENCIES

- ArcGIS Products & QGIS
- Remote Sensing (ERDAS, Planet Explore)
- Python (ArcPy, GEE)
- Grant & Proposal Writing
- Machine Learning (YOLOV4, Meta SAM)

/ HONORS & AWARDS

NSF GRFP Graduate Research Fellow, 2024
Zed Factor Fellow, Class of 2021
University Fellow at the University of Alabama
Blackburn Institute Fellow
Levitetz Lightbulb Research Scholar
NASA L'SPACE NPWEE Scholar
AIAA - Ellis F. Hitt Digital Avionics Scholar
Kentucky Governor's Scholar
Presidential Scholar at the University of Alabama
Burger King Scholarship
Hardin Planetarium Volunteer of the Year
Dean's List (2020-Present)
Dr. George H & Jane Denny Scholarship
Tutwiler Scholarship
Byron & Ophelia Watson Scholarship
International Studies Scholarship
Capstone Engineering Scholarship

/ WORK EXPERIENCE

>> Product Management Intern

Wisk Aero | 2021

- Used data science tools and GIS to create population models for the eVTOL industry.
- Led an **independent GIS study** into how urban transportation networks were shifting post-pandemic.
- Volunteered to help develop Wisk's Sustainability PSRD-- focused on finding ways to **reduce the company's carbon footprint** during their aircraft manufacturing process.

>> Apprentice Science Publications Manager at Planet Planet Labs | 2022 to 2023

- Read and summarized almost **two thousand research papers** which utilized Planet's satellite data.
- Gained in-depth understanding into how **remote sensing technologies** are being used for conservation worldwide, and learned how to apply these technologies towards **environmental policies**.

/ EXTRACURRICULAR EXPERIENCE

>> Levitetz Lightbulb Research Scholar

CCGC Research Lab | 2023 to 2024

- Used **GIS data and archival research** to investigate the history of indigenous dispossession on university-owned lands across the deep south.
- Showed how UA's land management programs came to power through a **critical geography** of settler colonialism & the financialization of timber and coal.
- Was awarded the competitive **Levitetz Lightbulb Award** for my research.
- Presented my findings at the Dimensions of Political Ecology conference in spring 2024.

>> President, UA Astronomical Society

University of Alabama | 2022 to 2024

- Led science education for over 500 members and the broader Tuscaloosa community through dozens of events each semester.

>> Director of Flight Software, UA Space

University of Alabama | 2020 to 2021

- Led the initial software design for our university's flagship CubeSat mission, BAMA-1, which flew into space in 2021.

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/ EXPERIENCE (CONT.)

>> Founder and President, Fighting Food Waste

University of Alabama | 2023 to 2024

- Founded an initiative to **reduce food waste** across my college town, through creating partnerships with both local businesses and with my university.
- Recruited dozens of students to help bring the 2good2go app to Tuscaloosa, and promote **circular sustainable economies** in my hometown.

>> Member, UA Environmental Council

University of Alabama | 2022 to 2024

- Organized letter writing & climate activism at UA

>> Nicholas School of the Environment Liason

NSOE Graduate Council | 2024 to present

- Graduate council representative for NSOE ECS

/ VOLUNTEERING

>> Main Street Marion, GIS & Economic Revitalization

Marion, Alabama | 2021 & 2022

- Volunteered with Main Street Marion, a small community revitalization organization in a small town in Alabama.
- Used my **GIS skills** and graphic design affinity to help local leaders with downtown revitalization projects.
- Returned as a student leader the following year to help train the next generation of volunteers.

>> UA Vote Everywhere, Policy & Voting Rights

Tuscaloosa, Alabama | 2022 - 2023

- Volunteered to restore voting rights to formerly convicted individuals at a local parole board, as well as for the broader UA student body.
- **Helped hundreds of people register to vote.**

>> UA Arboretum, Conservation Volunteer

Tuscaloosa, Alabama | 2021 - 2024

>> Hardin Planetarium, Tech Operator

Bowling Green, Kentucky | 2017 - Present

>> Estacion de Campo San Luis, GIS & Spanish

Monteverde, Costa Rica | 2023

- Volunteered on a **community-based mapping project** while studying abroad in Costa Rica for two months.
- Partnered with La Asociación de Desarrollo Integral de San Luis to create a series of **trail maps**, websites, and infographics to help make their remote rainforest outpost more accessible to english speaking educational groups.
- Final maps and more details on this project can be found on the cartography page of my website: pnoahphoto.wixsite.com/noahjacobs

/ FELLOWSHIPS

>> NSF Graduate Research Fellowship, Class of 2024

- The GRFP is a highly competitive grant from the National Science Foundation which completely funds 3 years of graduate education, for a total value of \$159,000.
- I was awarded the GRFP in 2024 for geoscience, and I plan to use my funding to study how climate change is modifying the hydrologic cycles of Alaskan landscapes. I hope to understand how these changes may impact Alaskan livelihoods by blending ethnographic qualitative interviews with quantitative remote sensing analysis to present a holistic view of how the Anthropocene is affecting life in the far North.

>> Zed Factor Fellowship, Class of 2021

- The Zed Factor Fellowship is a **prestigious aerospace fellowship** focused on diversity, equity and inclusion.
- Fellows receive a grant to design a service project in their local community-- mine was designing a museum exhibit on how satellites can be used for environmental conservation.
- I also was selected out of my entire cohort to receive a free trip to the Satellite 2021 conference in D.C. on behalf of the fellowship.
- To give back to the fellowship, I continue to review applications and volunteer with the program.

>> Blackburn Institute Fellowship, Class of 2021

- The Blackburn Institute focuses on **building future policymakers**-- from environmental conservation, to public infrastructure, to agriculture & forestry sectors.
- The fellowship includes both travel experiences and service work, with a goal of introducing fellows to activists in order to learn more about the various issues faced our by local and state governments.
- Has been instrumental in building my understanding of governance, especially **US conservation policy.**

>> UA University Fellowship, Class of 2020

- The UFE is a prestigious four year fellowship focusing on conducting **ethical service learning** to build a community of servant leaders.
- Only **30 students** are selected each year out of an eligible pool of **1,500 applicants.**
- Includes service projects in Tuscaloosa and Marion, AL, as well as an international study abroad experience in Cuba, and a major senior research project called a Magnum Opus (my project was on **smallholder agriculture** in Alabama.)
- Has been instrumental in my growth as a **leader** and **global citizen.**

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/ RESEARCH PROJECTS

>> Regenerative Agriculture in Alabama's Black Belt

HEIMA Lab, UA | 2023 - 2024 | UFE Magnum Opus

- Led an independent research project into how **smallholder minority farmers** can utilize regenerative agriculture practices for **climate resiliency** and economic security.
- Mapped small farms in Alabama's Black Belt, with a focus on recognizing greenhouses and vegetable patches using **high resolution remote sensing imagery** and artificial intelligence. (Sentinel-2, Meta SAM)
- Worked closely with farmers on the ground to ensure my remote sensing research is closely tied into the land and **local sources of knowledge**.
- Expanded upon my relationships built through my service work in Marion through the University Fellows Experience.

Project Director - Dr. Nicholas Magliocca

Skills - ArcGIS, ERDAS Imagine, Planet Explore, Sentinel-2, Python, Deep Learning, AI Models

>> UA Timberlands: Deep Roots in Alabama

CCGC Lab, UA | 2023 - 2024 | Lightbulb Research Award

- Worked to understand the environmental impact of UA's land management department through a critical political ecology analysis of university-owned timberlands and coal mines.
- Utilized **GIS data** and **cartographic research practices** to investigate the history of **indigenous dispossession** on university owned lands, and how UA's land management programs came to power.
- Took advantage of both decades-old archival data and cutting-edge geospatial data to understand what social & environmental impacts UA's land management has across the state.

Project Director - Dr. Jared Margulies

Skills - ArcGIS, ArcPy, Archival Research, Ethnography

>> Vertiport Population Analysis

Wisk | 2021

- Analyzed how urban populations were shifting post-Covid to recommend prime locations for "vertiports" for the eVTOL company Wisk Aero.
- Scraped through enormous amounts of census data to build population trends from 2020-2021.

Project Director - Erick Corona

Skills - QGIS, Python, Big Data Analysis

/ NOTABLE COURSES

- **GY 420** - Remote Sensing A+
- **GY 439** - GIS Programming A+
- **GY 436** - Adv. GIS Systems A+
- **GY 430** - Intro GIS Systems A+
- **GY 488** - Digital Terrain & Watershed A+
- **GY 470** - Conservation Politics A
- **GY 267** - Political Ecology A
- **GY 204** - Map & Air Photo Interp. B+
- **GY 102** - Earth Surface Processes A+
- **GY 101** - Atmosph. Proc & Patterns A

- **CS 322** - Python Programming A+
- **CS 100** - Intro to Computer Science A+
- **CS 197** - Computational Thinking A

- **MATH 127** - Calculus I A
- **MATH 197** - Calculus II A
- **MATH 227** - Calculus III B-
- **MATH 301** - Discrete Mathematics A+
- **ST 260** - Statistical Data Analysis A

- **GEC 397** - Sustainable Agriculture A
- **NEW 397** - Sustainable City Dvlpmt. A
- **NEW 197** - United Nations SDGs A
- **NEW 230** - Environmental Studies A
- **ANT 106** - Native Peoples of N. America A+

/ CONFERENCES

Satellite 2021 - Represented the Zed Fellowship
AGU 2023 - Shared Planet Labs' data access program with scientists while working at the Planet booth
DOPE 2024 - Presented my timberlands research project as an in-person paper presentation
AAG 2024 - Presented my regenerative agriculture research project as a digital poster presentation

/ CONTACT DETAILS

Email • nj142@duke.edu

LinkedIn • [linkedin.com/in/noah-space/](https://www.linkedin.com/in/noah-space/)

Mobile # • (270) 202 • 6638

Website • pnoahphoto.wixsite.com/noahjacobs