



GEOG CAREERS & NETWORKING PANEL (VIRTUAL)

SPRING 2022

Are you interested in a career in geographical sciences?

Review the notes below to read what our panelists shared about Geographical Sciences from graduate school advice to internship and research opportunities!

INTRODUCTIONS: Briefly tell us more about your program or organization.

Kyle DeGraw '20, *Bicycle Program Assistant*, <https://aedaero.com/>



- We are an emergent leader in aviation cartography and Jas products. We make a charts for basically anywhere in the world that a client may want. we primarily focus at the moment in the South China Sea and the Middle East.
- We're also expanding into Africa and a little bit into Europe as well.
- We make the charts from scales from continent size all the way down to individual cities, and each chart individually has any number of things on them that very specific to this that scale we're at this point still a fairly small company but we're growing as much as we can.

Christopher Barber, Junior GIS Coordinator

- We are located in Lexington Park, Maryland, which is in southern Maryland, approximately an hour and 20 min or so from UMD.
- A lot of the international chart making and maps that we do and maps that you make do.
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- When I'm going into military airplanes and helicopters that will eventually be used in like testing and actual missions as well by various air Force organizations throughout the world. we also do have domestic efforts that we work into one of our contracts is with the Arizona department of transportation.
- Another is uploading with San Diego gas and electric, but it can vary as much as
- For example, one of the projects that I work. one is with the Royal Thai Air Force, and we'll be bringing on the Philippines and Bernai, and the coming weeks.
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Travis Carter, *Geographer*, [U.S. Census. Population Geography](https://www.census.gov), nicholas.a.john@census.gov

- I work in Maryland as part of the population geography focused on international and domestic concerns.



FEMA



- Internationally, we collect and map national population data for humanitarian relief and disaster purposes. Our products provide data on global population patterns according to both administrative areas and grid cells.
- Data inputs include census data from every country and territory that conducts a census, administrative boundary maps from national and international mapping agencies, and high- and medium-resolution satellite imagery. Population data can be projected forward to the present and linked to administrative boundary maps to allow mapping of population density and other variables.

Jennifer Smith, [USACE Geospatial Research Laboratory](#),

Jennifer.L.Smith@usace.army.mil



- We provide accurate and relevant geospatial information, capabilities, and research to the Warfighter. Our research and development technology solutions offer geospatially enabling data, information and decision framework capabilities that ensure detailed situational awareness of the battlefield.
- Our research areas and capabilities include terrain analysis and reasoning; passive and active spectral signature analysis; fluorescence; photogrammetry; terrain visualization; precision surveying and mapping; image analysis; data management; geographic information systems; data/image fusion; and spatio-temporal reasoning and numerical analysis.
- We are located in Alexandria, Virginia.

Ghermay Araya, *CEO*, [New Light Technologies](#), ghermay.araya@nltgis.com



- New Light Technologies provides information technology consulting services, such as application/product development and software engineering, surrounding geospatial technology and data.
- We support federal agencies (e.g., FEMA, Census Bureau) with our technical staff and subject matter experts.

Elizabeth Tran, *Campus Recruiter*, [National Geospatial-Intelligence Agency \(NGA\)](#),

elizabeth.b.tran@nga.mil



- We are a federal government agency located in Springfield, VA, with locations in Missouri as well.
- Our agency focuses on world class geospatial intelligence for the military, policy makers, and the President.
- When there are natural disasters, we take pre- and post- data to support FEMA and National Security.
- We had a critical role in the raid on Osama Bin Laden. We had analysts map out where his compound was, using photogrammetry. They created a physical (3D) model that you can now find at the 9/11 museum. This same kind of model was used by the Navy SEALs in the Pakistan raid.





Kevin Carpenter-Driscoll, *Environmental Coordinator*, [City of Greenbelt - Dept. of Public Works](#), kdriscoll@greenbeltmd.gov

- I am tasked with working towards beautification of infrastructure and environment.
- A lot of my role involves citizen work and volunteer groups that perform conservation stewardship activities
- Right now, we are building an internship program for the department to build maps and collect data.

Junchuan Fan, *Research Scientist*, [Oak Ridge National Laboratory](#), wicksan@ornl.gov

- I joined the lab in August 2020. Before that, I was a postdoc at UMD for 3 years. I am currently a research scientist focused on science, cybersecurity, and geospatial applications and basic research.
- At Oak Ridge, we have many positions that are suitable for anyone who is skilled, no matter education level.



Rachel Ackerman, [UMD Campus GIS](#)

- We have had an internship program since 2012 hosting almost 100 total undergraduate interns, mostly from the UMD GEOG program.
- We do everything related to the campus map application: developing layers, transportation data feeds, story maps, etc.
- In the next academic year, we are looking to pilot an app that will display the indoor layout platform for McKeldin Library. The purpose of this app is to facilitate finding assets (such as books) using real-time IPS routing via bluetooth beacons. We are hoping to debut the application this spring.
- We also have worked on utilities networking and an Internet of Things (IOT) stormwater monitoring project.



Jack Ma, *Director*, [Master of Science Geospatial Information Sciences \(GIS\) Program, UMD](#), jma3@umd.com



DEPARTMENT OF
GEOGRAPHICAL
SCIENCES

- Classes are typically in the evenings, from 5 - 7:30 PM.
- It is a 2 year program, but some students have finished as quickly as 15 months.
- Since GIS is a technical field, it's easy to find internships.
- I advise that students start considering graduate programs as a junior.
- Our program emphasizes flexibility, meaning it's not uncommon for students to tackle both working and studying full-time. The majority of our students are doing this.

APPLICATION TIPS

Master of Science Programs - UMD

- We emphasize broader skills.
- Application requirements include:



- 3.0 GPA
- Transcripts
- Recommendation letters
- Statement of Purpose
- There is no GRE requirement

Students can be admitted into the program with various backgrounds. However, to be able to officially start the program in the fall, students are required to meet the prerequisite requirement: An introductory course in GIS (or proof of practical/field experience). For admission, the applicants are not required to have any GIS background. However, before they can start the program, they have to meet the prerequisite. The electronic submission of application materials helps expedite the review of an application. Completed applications are reviewed by an admissions committee in each graduate degree program. The recommendations of the committees are submitted to the Dean of the Graduate School, who will make the final admission decision.

What type of positions does the program prepare you for?

- We have a flexible program that's geared toward new graduates who want to gain advanced skills in GIS applications and also toward working professionals. Students are able to study and work full time.
- Our students have an interest in remote sensing or GIS application development.

AVAILABLE POSITIONS:

UMD Bicycle Program DOTS: Currently, we are hiring a [student to work 10 hrs/week](#). We also welcome volunteer work which is beneficial to have on your resume.

UMD Campus GIS: We are looking to hire [undergraduate interns](#) for academic credit, and have about 3-4 seats open per semester.

City of Greenbelt, Dept. of Public Works: Right now, we are building an internship program for the department to build maps and collect data. We currently have opportunities for:

- [GIS volunteer](#)
- [Environmental/Sustainability Intern](#)

Oak Ridge National Laboratory: We have [a summer program](#) where you can get experience working on a team with real world projects.

CONSIDER WORKING WITH US:

Oak Ridge National Laboratory

Are you interested in careers such as:

- Cartographer



- Geospatial Engineer

Or have these skills:

- Spatial analysis
- Data visualization

USACE Geospatial Research Laboratory

Are you interested in careers such as:

- Geographers
- Cartographers
- Computer Scientists

Or have these skills:

- Problem-solving skills and solutions driven
- bright energetic scientists

New Light Technologies

Have these skills/experiences:

- UMD GIS graduate degree
- Statistical programming languages
- Predictive analytics
- Oral and written communication

Population Geography, U.S. Census

Have these skills:

- Cartography
- GIS programming
- Statistical, and/or satellite image analysis software
- Data visualization
- Geographic data analysis