

Spatial Sciences Institute Fall 2021 Internships

The Spatial Sciences Institute has partnered with the following organizations to offer in-person and virtual internships in the Fall 2021 semester.

These internships may be undertaken for credit by undergraduates by registering for SSCI 397: Spatial Sciences Internship or by master's students by registering for SSCI 596: Internship in Spatial Sciences.

The specific start and end dates, weekly schedule, and milestones will be determined by project leads with the students selected for the internships. Generally, interns should expect to commit an average of 10 hours per week throughout the semester.

These internships are open to USC students of any major, but require a background in GIS, either through coursework or by experience. Students who have been selected for an SSI funded faculty research project are not eligible for one of these internships.

To Apply:

Please submit your resume, statement of interest for the internship opportunity you are applying for, and your STARS report to **Susan Kamei**, SSI Managing Director, at kamei@usc.edu by **5 pm on Friday, July 16, 2021**.

If you would like to be considered for more than one internship opportunity, please indicate that in your statement of interest, along with your priority ranking.

In addition, SSI is pleased to share information about internships offered by organizations which are accepting applications directly. Applicants interested in applying to the SWCA Environmental Consulting, EH MATTERS, or the Global TechnoPolitics Forum should submit their applications via the links in the internship descriptions below.

For questions or more information please contact Susan Kamei at kamei@usc.edu or Ken Watson, SSI Academic Programs Director at watsonke@usc.edu.

USC Sea Grant Program

The USC Sea Grant Program has undergraduate unpaid internship opportunities that offer the chance to learn about USC Sea Grant efforts and apply geospatial skills to “real world” coastal and environmental issues.

One opportunity is to work with Urban Tides, a USC Sea Grant citizen science initiative focused on documenting our changing coastline and visualizing future sea level rise. Data is collected via the ArcGIS Survey123 app, stored in GIS, and displayed in a public story map. Interns on this project will evaluate the data flow process, organize and analyze data, and develop innovative ways to visualize data.

Another opportunity involves researching and creating a geodatabase of environmental education organizations and initiatives in Los Angeles County. USC Sea Grant has a strong record of connecting ocean sciences and policy to education through partnerships and engaging with local communities. This project would serve as a resource to environmental educators in the community with visualizations and research findings used to identify ongoing efforts, potential partnerships, and gaps.

AdaptLA, a USC Sea Grant led program, takes a regional approach to sea level rise and coastal hazard issues, working with local governments, non-profits, state and federal agencies, communities, and stakeholders to plan and implement adaptation strategies. Since 2013, many coastal communities in Southern California have developed sea level rise planning documents, climate adaptation strategies, and implemented pilot adaptation projects. This project will focus on developing an AdaptLA GIS based story map to organize the wealth of information compiled through AdaptLA and provide a resource for local planners and stakeholders.

Recommended minimum skills/preparation: Experience with story maps.

Ideal skills/preparation: Previously taken SSCI 301: Maps and Spatial Reasoning course.

Southern California Association of Governments (SCAG), Planning Division

As a metropolitan planning organization—the largest in the nation—Southern California Association of Governments (SCAG) is responsible for developing long-range transportation plans and a Sustainable Communities Strategy for a vast and varied region, which includes the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The centerpiece of that planning work is Connect SoCal, our 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The Plan charts a path toward a more mobile, sustainable, and prosperous region by making key connections: between transportation networks, between planning strategies and between the people whose collaboration can make plans a reality.

Connect SoCal is one of many projects that SCAG is responsible for—other projects, for instance, are the Regional Housing Needs Assessment (RHNA) and Environmental Justice (EJ) Analysis. There are numerous projects created to support the development of the aforementioned major projects such as SCAG Data/Map Books, Retail Land Use Studies, Local Profiles, and General Plan Data/Map Books. Geographic information system (GIS), data science, architectural design, mathematics, artificial intelligent, and urban planning backgrounds are key to make these projects successful. As such, SCAG is seeking potential resources to solve a vast array of regional planning and environmental issues (e.g. job/housing imbalance, housing affordability, emerging technologies, etc.). On the other hand, one of SCAG's mission is to provide services to its local partners; one of which is career development for students from local universities in the region. SCAG has been successful with such service from Cal Poly Pomona (CPP), Cal State University Northridge (CSUN), University of California Los Angeles (UCLA), and University of Southern California (USC).

As part of the University Partnership Program with the USC Spatial Sciences Institute, SCAG provides GIS and technical assistance to SSI interns. Under general supervision, students will learn and perform a variety of administrative and technical duties in support of the Research and Analysis Department of Planning Division. These unpaid internship positions will primarily assist in performing spatial database management, mapping and geoprocessing, conducting research and data analysis, and providing GIS services.

Project

- *2020 Annual Land Use Data Development*
 - o Project timeline: Summer 2021 – Winter 2021
 - o Collecting parcel attributes from the County Assessor's Offices
 - o Developing land use correspondence table between County's and SCAG's
 - o Reviewing and updating existing land use based on the information received from the County Assessor's Offices

Project Timeline and Number of Students

Potential candidates will be providing assistance two to three days a week up with at least 10 hours.

Student Qualifications

Ideal candidates should understand whole systems of components workflow—from planning procedures, data geoprocessing, and land use policies to architecture geo-design, environmental impact computational assessments by using computer simulations, modeling, numerical techniques, and statistical data analysis.

Expected Outcomes

The major expected outcomes for students would be regional planning knowledge and enhancement in GIS and programming skills (e.g., Python, SAS, R, VBA, etc.). SCAG utilizes state of the art technologies and methodologies to support and develop Connect SoCal. As such, students would learn how to work professionally with SCAG staff and achieve potential skills such as collaboration, communication, presentation, and organization.

SWCA Environmental Consulting

Are you curious and passionate about how we can use maps and spatial data to tell the story of our natural world? SWCA Environmental Consultants is seeking GIS interns! This position will be a companywide resource and assist veteran GIS professionals with cartography and data management to support environmental projects managed by archaeologists, biologists, planners, and more.

Flexible schedule working from 10 to 40 hours a week with the opportunity for extension.

May sit in any of the local offices in Pasadena or work remotely. This is a paid internship.

Expected Outcomes

- Effectively communicate with other project team members and stakeholders in a timely and clear fashion.
- Implement and complete tasks and responsibilities delegated by GIS Leads.
- Take positive action and accountability for assigned work.
- Help support GIS/cartographic capabilities by creating map products supporting cultural, paleontological, and natural resource projects using Esri products and tools.
- Work with GIS Specialists and Leads to prepare field equipment, maps, and data dictionaries for

field staff; post-process and manage field data; and create map products using established protocols and templates.

- Support GIS workload with the team to ensure that productivity goals are met and that projects are delivered on time and on budget.
- Maintain a collaborative work environment between project managers and GIS staff.
- Help ensure quality of work is consistent with SWCA's standards and practices alongside other GIS team members.
- Use Esri ArcGIS Desktop, primarily ArcGIS Pro, for editing data, analyses, and cartography, including the use of geoprocessing tools, symbolizing features, importing/exporting a wide range of data and file types, and producing report quality and field maps in a reasonable amount of time.
- Data management and support for tablet data collection including Collector, Field Maps, and Survey123
- Help design, create, maintain, and QA/QC geospatial databases using ArcGIS, Microsoft Excel, and peripheral software.

To apply for this position, please submit your materials directly to the hiring department via their website below and notify Ken Watson at watsonke@usc.edu if you would like clearance to register in SSCI 397: Spatial Sciences Internship.

Application: <https://careers-swca.icims.com/jobs/11408/gis-intern/login>

EH MATTERS

For Fall Semester 2021, the USC Environmental Health Centers is seeking applicants for its EH MATTERS Program.

EH MATTERS offers USC undergraduate students from under-represented groups a paid, two-year, three-semester per year internship to build capacity of diverse students to engage in environmental health sciences and community health disparities research. Rising sophomores and rising juniors are encouraged to apply.

This community-engaged environmental health research program will expand students' understanding of fundamental concepts in environmental health, exposure, susceptibility, risk, and health disparities. This formal training will provide a basis for a firm academic understanding of community environmental health disparity issues and firsthand experiences that look at environmental health through the lens of environmental justice.

Each EH MATTERS intern will be paired with a faculty research mentor with whom they will work for their two-year program. The mentors include [Dr. An-Min Wu](#), [Dr. Rima Habre](#), and [Dr. Jill Johnston](#) of the Spatial Sciences Institute.

Application deadline is August 8, 2021. The program will begin mid-September.

Apply here: [EH MATTERS - USC Environmental Health Centers](#)

Global TechnoPolitics Forum

The Forum is a not-for-profit 501C (3) educational institution registered in California. It is an independent, non-partisan, innovative, dynamic, and task force organization. Its mission is to shape the public debate and facilitate global coordination at the intersection of technology and geopolitics.

The Forum is growing fast, and interns are central to our efforts as we champion a path forward to a sustainable future. Our internship program offers opportunities to gain valuable work experience, explore a career path, gain an edge in the job market, develop, and refine work skills, and gain confidence. We seek interns who are committed to our mission, are talented, enthusiastic, effective communicators, entrepreneurial, collegial, and enjoy the fast pace of learning and growth.

The mapping intern will work as part of a team to support the research process of defining, collecting, coding, and mapping the data. Data sets may include but not be limited to geography and climate; population centers; resource/commodity locations which might drive development; existing transport, communications, and industrial infrastructure; existing military bases and infrastructure; industry and infrastructure sources of financing; types of government practices related to rule of law and digital governance; levels of economic and political partnerships in the area, etc.

International students are welcome to apply, but candidates must be authorized to work in the United States since we do not sponsor visas for interns.

Apply here: <https://www.surveymonkey.com/r/LW7G3G5>