Opportunity Title: Geospatial Data Creation and Curation Fellow
Opportunity Reference Code: USDOT-2022-01

Organization U.S. Department of Transportation (DOT)

Reference Code USDOT-2022-01

How to Apply Click on *Apply* below to start your application.

Description ***Have you ever wanted to influence and improve the effectiveness of geospatial data at the national level? Are you detail-oriented and committed to producing high-quality data products? Join us as we lead the development of new and improved national geospatial transportation products in the era of big data.***

To aid in the accomplishment of its legislative mandates, the Bureau of Transportation Statistics' Office of Spatial Analysis and Visualization has embarked on several exciting new initiatives to harness the power of big data to better understand and visualize the flow of people and goods across the United States' national transportation system. These datasets, which range from a nationwide database of Global Positioning System (GPS) points taken from freight trucks travelling around the country to a repository of the flight times and paths of passenger and cargo aircraft flying through our national airspace, present opportunities for cutting edge and innovative statistical and spatial-analytical techniques never before adopted at Bureau of Transportation Statistics (BTS).

Extracting meaningful statistics from these massive data, which BTS alone possesses as national-scale datasets due to our congressionally-designated role as preeminent provider of transportation statistics in the United States, is an immense undertaking, requiring high-performance computing platforms, strict data security protocols, highly-customized and -sophisticated code, spatially-optimized data storage and retrieval methods, and – of critical importance here – the creation and adaptation of supplemental datasets to query data for specific geographic areas. Office of Spatial Analysis and Visualization (OSAV) is sponsoring a paid, part-time fellowship for current undergraduate students that will provide a unique opportunity to learn about the day-to-day practice of data science, spatial statistics, and geographic information systems (GIS) analysis in a federal statistical agency.

If selected you will be primarily learning and enhancing skills related to the construction of supplemental geospatial layers which can be used to query and analyze these datasets vis-à-vis strategic transportation sites around the country (e.g., ports, airports, highway segments, factories, warehouses/logistics centers) You will be learning directly alongside his or her mentor who will manage these big data projects through the term of your appointment. Through the course of the fellowship, you will learn about an array of topics ranging from the technical (big data, high-powered computing, statistical product development, dataset creation and quality control, metadata maintenance, coding, and data security) to the intrapersonal (reviewing literature, technical writing and communication, and team-working) and the topical (supply chains and logistics, container

port operations, international trade, air cargo, highway congestion, long-distance travel patterns). You will cap off your time with BTS with the chance to tie together these learned skills by developing and carrying out a personalized research project using one of these big datasets.

Who are we? We are the U.S. Department of Transportation's Bureau of Transportation Statistics (BTS) Office of Spatial Analysis and Visualization (OSAV). BTS is an independent federal statistical agency that provides objective, comprehensive, and relevant information on the extent and use of the Nation's transportation systems. OSAV produces geospatial datasets and visualization tools, conducts spatial and network analyses, develops performance measures, prepares maps for BTS publications, coordinates the transportation layer of the National Spatial Data Infrastructure, and publishes the National Transportation Atlas Database (NTAD). OSAV employs high-quality cartography and innovative web applications to produce relevant, timely, and accessible geospatial products and statistical visualizations. Learn more about the work we do at www.bts.dot.gov/maps.

Qualifications

• Demonstrated experience with the Esri suite of products (ArcGIS Desktop, ArcCatalog, ArcGIS Online)
• Knowledge of open and proprietary exchange formats used in GIS-specific applications
• Strong written and verbal communications skills
• A self-starter with the ability to engage with limited supervision and changing outcome goals
• Knowledge of and interest in U.S. transportation systems
• Experience presenting results in a clear, effective, and attractive manner to inform next steps
• Proficiency translating high level business requirements into detailed design specifications
• Ability to collaborate across various offices and work units to obtain information, collaborate on data-related projects, and validate findings and conclusions
• Ability to collaborate with subject matter experts to identify and mitigate data limitations
• Experience using various programming languages to create processes that identify variation, investigate patterns and perform data interpretation against large datasets is a plus, but not required

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree.
- **Discipline(s):**
  - **Business** (2)
  - **Communications and Graphics Design** (1)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (2)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (5)

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  - **Mathematics and Statistics** (10 👁)
  - **Other Non-Science & Engineering** (1 👁)
  - **Social and Behavioral Sciences** (29 👁)
- **Age:** Must be 18 years of age