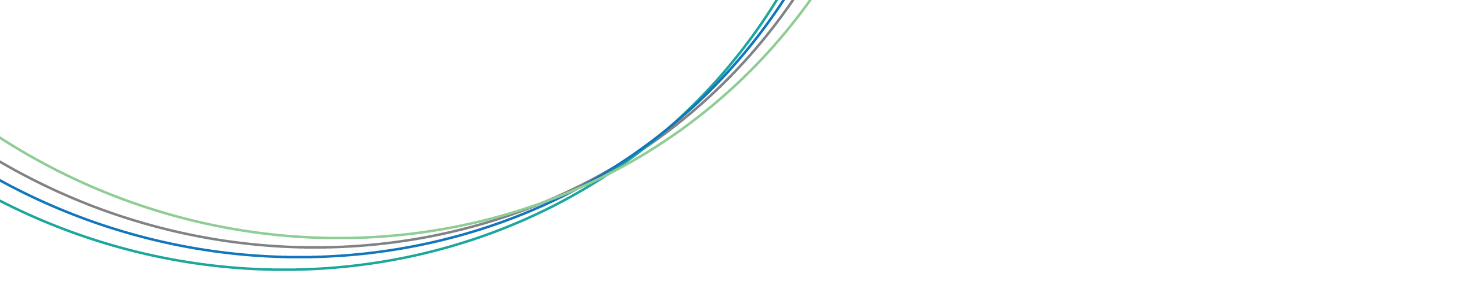
A picture containing clock

Description automatically generated**Description of Role**

**Senior Data Scientist – Socioeconomic Modeling**

The Senior Analyst will be responsible for the development of SANDAG’s regional and sub-regional socioeconomic forecasting system. This system includes economic, demographic and land use modeling and integrates with the agency’s travel model. This role will lead the design and development effort of the forecasting system, and perform hands-on development work, as needed. In managing the overall effort this role also includes managing work by consultant(s) and coordination and communication with other groups to ensure overall system requirements are met. This position is also responsible for performing and delivering ad-hoc statistical analyses as required by the agency.

***Economic and Demographic Analysis and Modeling (EDAM) Program***

As a premier multi-modal planning and project implementation agency, SANDAG relies on the quality and capacity of our Transportation, Demographic, Economic, and Land Use Modeling programs supported by a team of highly skilled professionals support a variety of projects including long-range coordinated transportation, economic, and land use plans, corridor studies, major transit investment studies, infrastructure development studies, and air quality plans. As regional planning needs, travel behaviors, and socioeconomic conditions change, the demands and expectations of our modeling program has increased. To meet these challenges, SANDAG has committed the resources necessary to develop and maintain a robust, agile, and integrated modeling infrastructure to support policy development and decision making.

The Economic and Demographic Analysis and Modeling (EDAM) team develops socioeconomic forecasts of population, housing, employment, income, and land use for the San Diego Region. This includes analyses at the regional level as well as jurisdictions, community planning areas, ZIP Codes, and to the parcel level. The group also conducts analyses to support research, economic, and planning studies as well as policy development initiatives. The team also maintains the agency’s economic modeling system and generates forecasts for understanding future revenues and for the regional transportation plan.

**Job Responsibilities**

* Lead the effort to design the agency’s new socioeconomic forecasting system, including the methodology, approach, and data to be utilized. This will include consultation and working with senior economic and demographic modelers. This will also include working with (1) key stakeholders of the system to ensure it meets their requirements, and (2) technical groups to manage development resources such as data, spatial systems, computing environments, etc.
* Lead all support related efforts, including complete and thorough documentation of all systems generated by your group, as well as creating and giving presentations to technical and non-technical audiences. Lead the effort to respond to ad-hoc questions and requests, systematically tracking responses to ensure all requests are met in a timely manner and can be easily found and referenced in the future.
* Perform ad-hoc analyses as needed by the agency, typically involving statistical analysis of various data sources. This would include determining the data to be used, developing the methodology, and writing the statistical programming required to generate the results. It would also include effectively communicating the results and supporting their use and answering questions as the arise.
* Effectively communicate the status of the development effort to key stakeholders, including development of and status related to Key Performance Indicators. Lead the communication effort regarding details of the functional system to both internal and external audiences via written reports and presentations.
* Develop and foster good working relationships with other groups within the agency so as to become the resource others in the agency come to with questions about socioeconomic data and situations. Be the agency’s subject matter expert (SME) for all socioeconomic matters by effectively responding to all questions and/or requests. Become a resource within the agency others want to contact, enjoy working with, and feel confident can address their questions.
* Develop a particularly good working relationship with agency’s data science group and help to support their efforts. This could include working together on certain projects, consulting on methodology and other issues, or helping to design their analytical workspace and recommendation of analytical and data tools.
* Prepare Requests for Proposals (RFPs) including scopes of work and project budgets; evaluate competitive project proposals and participate in the selection of consultants; manage consultant performance and ensure projects are completed on schedule, within the prescribed budget, and with a high-level of effectiveness.
* Coordinate regional econometric model development to support activities in the Regional Transportation Plan, Regional Comprehensive Plan, Smart Growth Incentive Program, Transit Oriented Development Strategies, and other major highway, transit, and infrastructure investment studies.

**Experience and Qualifications**

Numerous factors contribute to an individual’s ability to be successful in any given role. For this position, we are searching for a candidate who has an aptitude for analytical thinking and problem solving who is organized, flexible, and can be relied upon to meet deadlines while working on multiple projects. Excellent communication skills, the ability to work collaboratively, dynamic and strong interpersonal skills, and the use of sound judgment are important.

The minimum education, training, and experience qualifications include a bachelor’s degree with major coursework in demography, economics, urban planning, statistics, geography, or related field and one to four years of recent work experience in the development, maintenance, and analysis of information used for local and regional planning, preferably in a demographic/economic research-oriented field. An advanced degree is desirable.

* Demonstrated experience developing and applying integrated demographic and economic models; a strong understanding of regional demographic and economic interaction; demonstrated knowledge of the principles and practices of econometrics, and small area demographic forecasting.
* Experience in, or demonstrated knowledge of, the development of various types of land use models that utilize historical trends, land use inventories, zoning policies, highway networks, and employment and households at various levels of geography.
* Development of systems that seek to quantify the relationship between changes in land use and/or the transportation network and the resulting impacts on population and job growth, especially at the micro-level (block and/or parcel). Experience using software systems such as UrbanSim, CUBE Land, PECAS, GLUM, etc. highly desirable.
* Knowledge of a variety of machine learning techniques and their real-world advantages/drawbacks. Techniques include supervised learning such as linear regression and classification techniques like nearest neighbor, decision trees, logistic regression, and support vector machines, as well as unsupervised learning such as k-means and hierarchical clustering. Use of dimension reduction algorithms, ensembles such as random forest, and gradient boosting algorithms.
* Experience using Python (or R) is required, and Python libraries such as NumPy, Pandas, Matplotlib, SciPy, scikit-learn, TensorFlow, Seaborn. Experience pulling and manipulating data in relational databases via SQL is required. Alternatively, experience using SAS and statistical procedures (PROC Means, Freq, Corr, ANOVA, SQL), DATA step options, and Macros is acceptable. Experience with ArcGIS (or another GIS) is a plus.
* Ability to keep complex project on track, manage competing demands, and effectively communicate impact of changes to schedule. Ability to determine early on if your own efforts or those of you team are behind schedule and to provide revised timing.
* Ability to communicate highly technical information effectively, both orally and in writing; ability to prepare and deliver public presentations and recommendations regarding various program elements to upper management, community groups, and other audiences.
* Demonstrated ability to establish and maintain effective working relationships with those contacted in the course of work including local, state, and federal agencies, other government officials, community groups, the public, and media representatives; ability to gain cooperation and consensus through discussion and persuasion.

**How to apply**

Submit your cover letter and resume/vitae to: David Tedrow, Manager Economic and Demographic Analysis and Modeling [David.Tedrow@SANDAG.org](mailto:David.Tedrow@SANDAG.org)

Positions are open until filled.

FY 2022 Classification Salary Range Table can be found [here](https://www.sandag.org/organization/jobs/pdfs/SalaryRangeTable.pdf).

[About SANDAG](https://www.sandag.org/index.asp?fuseaction=about.home)