Nathan R. Pavlovic

Lead Geospatial Data Scientist
Project Manager
R Resource Coordinator

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Mr. Pavlovic joined STI in 2015. He applies advanced R programming and database management abilities, as well as his knowledge of geographic information systems (GIS) and remote sensing, to support a variety of projects related to wildland fire modeling, air pollution exposure, and air quality data analysis. Mr. Pavlovic is based in STI's Washington DC office.

Mr. Pavlovic works on a variety of projects related to wildland fire and fuels. Using remote sensing and ground-based fire activity data, he calculated wildland fire emissions for the entire United States for the 2014 National Emissions Inventory for the U.S. Environmental Protection Agency (EPA), and calculated wildland fire emissions for 2015 for Canada, Mexico, and the United States. He helped to develop a high-resolution fuel model map for a community wildfire protection plan (CWPP), integrating remote sensing data derived from LiDAR and aerial imagery with other land cover information. Through funding from the Joint Fire Science Program, he assembled a guide assessing fire activity data sets for wildland fire modeling.

Education

- MS, Geography and Geographic Information Science, University of Illinois, Urbana-Champaign
- BA, Biology, Grinnell College

Memberships

- International Association of Wildland Fire (IAWF)
- American Geophysical Union (AGU)

For a list of publications, see **sonomatech.com/ResPub/NRPpub.pdf**.

In much of his work, Mr. Pavlovic uses R and other data science tools for data evaluation and analysis, data visualization, modeling, and forecasting. He recently used R to build an automated tool to assess the impacts of wildland fire on ozone concentrations for any location in the United States. As the R Resource Coordinator, he provides support and guidance for projects and colleagues using the R statistical language while staying current on developments in the R ecosystem.

In addition, Mr. Pavlovic analyzes traffic data and develops transportation-related air pollution exposure metrics to support public health research using R, Python, and ArcGIS. He has supported EPA/National Institute of Environmental Health Sciences (NIEHS) Children's Environmental Health Center investigations of childhood obesity and birth defects, as well as a study of childhood asthma conducted by Partners Healthcare with funding from the National Institutes of Health.

Prior to joining STI, Mr. Pavlovic earned his master's degree in Geography and Geographic Information Science at the University of Illinois at Urbana-Champaign. His master's thesis assessed the geography of wildfire in West Africa. Using R, ArcGIS, and a SpatiaLite database, he wrote image-processing scripts to detect active fires in over 5,000 Landsat satellite images covering 1984 to 2014, and conducted a geospatial analysis of the detected fires. In graduate school, Mr. Pavlovic also used remote sensing data to investigate the impact of the United States foreclosure crisis on urban vegetation.

In addition to using the R language, Mr. Pavlovic has programming experience with Python and JavaScript, and he is confident using high-performance computing systems in a Linux environment. He is skilled in ArcGIS, ENVI, QGIS, and the Microsoft Office suite.