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As Chief Scientist of GIS and geospatial data science company the [Environmental Systems Research Institute \(aka Esri\)](#), **Dawn Wright** is responsible for strengthening the scientific foundation for Esri software and services (especially in the environmental and conservation sciences), while representing Esri to the national/international scientific community. She maintains an affiliated faculty appointment as Professor of Geography and Oceanography in the [College of Earth, Ocean, and Atmospheric Sciences](#) at Oregon State University. Dawn's research interests include environmental informatics, seafloor mapping and tectonics, and ocean conservation. She received an Interdisciplinary Doctorate in Physical Geography and Marine Geology from the University of California, Santa Barbara. Dawn is also currently into road cycling, apricot green tea gummy bears, 18th-century pirates, her dog [Riley](#), and SpongeBob Squarepants. Follow her on Twitter [@deepseadawn](#).

Have I Been a Data Scientist from the Start?

In the early 1990s the author came of age as the technology driving the geographic information system or GIS was beginning to successfully “handle” geospatial data at a range of scales and formats, and a wide array of information technology products emerged from an expanding GIS industry. However, that small community struggled to reflect the diverse research efforts at play in understanding the deeper issues surrounding geospatial data, and the impediments to that effective use of that data. It was from this need that geographic information science or GIScience arose, to ensure in part that GIS did not fall into the trap of being a technology in search of applications, a one-time, one-off, non-intellectual “bag of tricks” with no substantive theory underpinning it, and suitable only for a static period of time (e.g., Goodchild, 1992). The community has since debated the issue of “tool versus science” which has also played a role in defining GIS as an actual profession. In turn, GIS has contributed to “methodological versus substantive” questions in science, leading to understandings of how the Earth *works* versus how the Earth should *look*. In the author's experience, the multidimensional structuring and scaling data, with integrative and innovative approaches to analyzing, modeling, and developing extensive and spatial data from selected places on land and at sea, have revealed how theory and application are in no way mutually exclusive, and it may often be application that advances theory, rather than vice versa.

Increasingly, both the system and science of geographic information have welcomed strong collaborations among computer scientists, information scientists, and domain scientists to solve complex scientific questions. As such, they have paralleled the emergence and acceptance of “data

science.” And now that we are squarely in an era of regional- to global-scale observation and simulation of the Earth, produce data that are too big, move too fast, and do not fit the structures and processing capacity of conventional database systems, the author reflects on the potential of the GIS/GIScience world to contribute to the training and professional advancement of data science.