

**WILLIAM A. HUBER, PhD, PSTAT®**[www.analysisandinference.com](http://www.analysisandinference.com)**EXPERIENCE**

**Analysis & Inference, Inc.**, Springfield, PA (2015 – present) – Statistical Consultant  
Analysis and Inference, Inc. is a research and consulting firm specializing primarily in statistics and secondarily in economics and finance. Dr. Huber's capabilities include data analysis, statistical modeling and simulation, sampling, monitoring, inference, regression, data visualization, spatial data, database design and auditing, quality control, decision analysis, process optimization, real estate analysis, geographic information systems, risk analysis, computer programming, and environmental statistics.

**S. S. Papadopoulos & Associates**, Washington, DC (1998 – present) – Associated Expert  
SSPA has a recognized international practice in contaminant studies, environmental engineering, remediation, geochemistry, surface-water hydrology, geographic information systems (GIS), and software development. Dr. Huber complements this expertise with rigorous, defensible statistical assessments of data, optimizing data collection and decisions, statistical support for litigation, and evaluations of conceptual and numerical models applied to data about the environment, occupational health, and risk assessment.

**Quantitative Decisions**, Rosemont, PA (1997 – present) – Owner  
QD provides services in statistical analysis, sampling, litigation support, software development, database design and auditing, geographic information systems, risk assessment, and environmental compliance both independently and collaborating with other consultants. Clients have ranged from US federal regulatory agencies to Fortune 10 companies, international quasi-nongovernmental organizations, research firms, non-profits, academic institutions, and small businesses.

**Fiscal Associates, Inc.**, Newark, DE (2002 – 2014) – Advisor  
Fiscal Associates engages in real estate and energy analysis. In an ongoing collaboration with FA, Dr. Huber was awarded a patent for travel time computation procedures and helped with successful extensions of other patents covering real estate analysis. He also supported the award-winning National Energy Independence Plan (NEIP) with statistical and mathematical analysis and editorial direction.

**X-Interchange, Inc.**, Kansas City, MO (2003 – 2008) – Director

XI provided creative solutions to infrastructure and environmental problems. It optimized remedial operations at contaminated sites, developed logistical solutions, and decommissioned industrial sites. Dr. Huber supplied quantitative economic analysis of potential projects and supported marketing and training activities.

**Haverford College**, Haverford, PA (2005 – 2006) – Visiting Associate Professor of Statistics

Haverford College is a highly ranked small liberal arts institution. Dr. Huber taught undergraduate courses in statistics and exploratory data analysis, supervised thesis work in stochastic differential equations, provided statistical support for undergraduate research and library staff, and trained students in mathematical problem solving.

**Directions Magazine, Inc.** (2000 – 2002) – Editor

Directionsmag.com is the oldest active source of geospatial information technology news and commentary. In the late 1990's, Dr. Huber had contributed a regular series of technical articles on geographic analysis and GIS software development, covering topics ranging from Fourier analysis to steganography. Upon the untimely demise of its founder, Scott Elliott, in 2000, Dr. Huber assumed the Editor's role, ran the magazine successfully for the next year, and helped hire a permanent replacement.

**Pennsylvania State University**, Malvern, PA (1997 – 2003) – Part-time lecturer

This branch of the Penn State University system focuses on graduate degree programs in engineering, information science, and business. Dr. Huber developed and taught innovative courses in geographic information systems and environmental statistics.

**Dames & Moore, Inc.**, Willow Grove, PA and Sacramento, CA (1992 – 1997) – Senior Associate

Dames & Moore provided environmental and geotechnical engineering services to tens of thousands of clients in all sectors. It was a publicly owned engineering company of 3400 professionals in 110 offices worldwide. Coming to D&M through the acquisition of his company IDT, Dr. Huber engaged in project management, marketing, personnel development, and firm-wide technical support for statistics, information management, software development, and risk assessment. He created and led a successful GIS specialty group.

**Integrated Data Technologies, Inc.**, Philadelphia, PA (1986 – 1992) –Software developer / statistical consultant / co-owner

IDT published commercial software products and provided software development, database, and statistical consulting services. Dr. Huber provided technical management in all areas and led scientific visualization research funded by the Ben Franklin Partnership of Pennsylvania.

**St. Joseph's University**, Philadelphia, PA (1984 – 1986) – Assistant Professor of Mathematics

Taught 17 semester-length courses in mathematics to undergraduates.

**Time Distribution Services**, New York, NY (1982) – Programmer

Provided custom mainframe programming solutions to support the distribution arm of Time-Life, Inc.

**Oak Ridge National Laboratories**, Oak Ridge, TN (1978 and 1979) – Researcher in physics  
Developed quantum mechanical computer models for an experimental group in atomic spectroscopy and a theoretical group in dielectronic recombination.

**Bryn Mawr College**, Bryn Mawr, PA (1976 – 1978) – Computer operator  
Operated the college computing center during summers and weekends. Provided programming support for college business operations and helped students and professors run and maintain their computing projects.

## EDUCATION

**Columbia University in the City of New York**, (1978 – 1984). M.A., Ph.D., Mathematics.  
Dissertation on classification of graded semisimple Lie algebras.

**Haverford College**, Haverford, PA (1974 – 1978). B.A, double major in Philosophy and Mathematics, with High Honors. College mathematics prizes 1975, 1976, 1977. Phi Beta Kappa.

## REPRESENTATIVE PROJECTS

Market Analysis

**(Large hospital—confidential client.)** Created statistical models of supply and demand for primary medical services within the region served by a hospital and its competitors. Accounting explicitly for spatial relationships, such as the time and cost of travel, these models provided essential information for identifying communities that would experience changes in service resulting from a proposed hospital move.

**(Pharmaceutical marketing firm.)** Estimating the US market for veterinary pharmaceuticals. Developed statistical methods to perform accurate monthly projections of product sales from a large dataset. Implemented the methods in software. Techniques include regularized regression, cross-validation, time series outlier detection, and combining correlated spatial data.

Big Data

**Federal Communications Commission.** Led the statistical analysis underpinning the first National Broadband Map (2009) created by the FCC. Performed literature review, identified relevant variables from several thousand covering demographic, infrastructure, geographic, and topographic information. Developed and tested logistic regression models, then applied them to predict availability and speed of broadband services at 8.3 million Census blocks throughout the United States.

## Litigation Support

**Tyson Foods.** Critical evaluation of a multivariate principal components analysis (PCA) of 80 variables used to generate a “signature” of environmental contamination in the Illinois River Watershed. *State of Oklahoma v. Tyson Foods et al.* (2008).

**US Department of Justice.** Discovered and testified to fundamental flaws in statistical and scientific estimates of natural resources damage. *State of New Mexico, et al., v. General Electric, et al.* (2002).

**Envirosafe Services of Ohio, Inc.** Provided understandable explanations of statistical material produced by expert witnesses and developed independent opinions in a case centering around allegations of the misuse of statistical pollution monitoring tests. *Julia R. Bates, et al. v. Envirosafe Services of Ohio, Inc* (1998).

## Sampling and Monitoring

**ConocoPhillips** Redesigned the groundwater monitoring program at a large refinery and shepherded it through the process of regulatory approval. Ponca City, OK (2004).

**(International manufacturer—confidential client).** Designed and supervised sampling of the soils, sediments, water, and groundwater in and around Cuautla, Mexico. Managed the data and mapping elements of the study. Performed statistical analysis of the results. As principal author of the resulting investigation report and risk assessment, presented and explained the results to Federal regulatory authorities. Provided additional statistical analysis of medical data collected from town residents (2001 – 3).

**(National retail chain—confidential client).** Created a formal sampling plan to evaluate the efficacy of a lead cleanup program at a recycling facility in rural Iowa, using sample compositing to minimize the costs of cleanup and demonstrating its success (1993).

## Regulatory Compliance

**Multiple clients, including DuPont, Ciba-Geigy, American Cyanamid, and Exxon.** Through FOIA, obtained and analyzed New Jersey’s databases of 15,000 regulated industrial facilities to identify those that would be most affected by proposed changes in environmental regulations. Assisted clients in public meetings to make the state aware of these consequences and to suggest more equitable formulas to determine permit fees (1989 – 1992).

## Statistical Review

**United States Environmental Protection Agency.** One of three peer reviewers responsible for a comprehensive assessment and critical review of the *Statistical Analysis of Groundwater Monitoring. Data at RCRA Facilities—Unified Guidance* (2005).

## Database Design and Management

**CC:Control.** Designed and led the development of a comprehensive relational database used at 100 sites to manage, statistically analyze, and visualize large groundwater monitoring datasets. It included robust outlier detection and quality control procedures (1990 – 1995).

## Data Visualization and Communication

**(Confidential client).** Designed and prepared innovative graphics to analyze and understand a large database of groundwater monitoring measurements made at one thousand Long Island gas stations (2010).

**Mohawk Chemicals, Mountain View, CA.** Mapping and three-dimensional visualization of contamination and geological structures. Designed programs to sample soils, soil gas, groundwater, and geotechnical parameters. Created visualizations of integrated datasets and presented them to state regulatory agencies (1999).

**Trane, Lacrosse, WI.** Performed innovative exploratory analysis of monitoring and sampling data to identify hidden, inaccessible sources of soil and groundwater contamination. Developed maps and graphs to communicate findings to corporate executives and state regulators. Managed the ensuing remediation project, a soil vapor extraction system (1992 – 1993).

## Decision Analysis and Support

**Alterra (Wageningen).** Developed mathematical models of the utility of agricultural land in the Netherlands based on use, location and proximity. Built software prototypes to support and optimize land redistribution (2003).

**FMC Corporation.** Employed influence diagrams and decision modeling to lead experts in identifying critical risks in managing environmental liabilities at industrial properties (1996).

## Research

**National Energy Independence Plan (NEIP).** Scientific, mathematical, and statistical modeling of energy markets and alternative energy plans. Editorial assistance with award-winning reports and presentations (2009 – present).

**GridRoute.** US patent 8332247 awarded for algorithms integrating vector and raster data structures to support high-speed, large-volume computation of travel times utilizing networks embedded within a spatially extensive matrix (2007 – 2012).

**Groundwater Data Visualization (Ben Franklin Partnership of PA).** Secured and directed a \$100K research grant to develop PC software for innovative visualization of spatial data (1991).

## PROFESSIONAL ACTIVITIES

**Treasurer,** American Statistical Association-Philadelphia 2016 – present.

**Newsletter Editor**, American Statistical Association-Philadelphia 2014 – 2016.

**Editorial Board**, *Risk Analysis* 2009 – 2013.

**Elected moderator** of the professional statistics and GIS communities on the Web at <http://stats.stackexchange.com> 2011 – present.

**Best reviewer award**. Society for Risk Analysis 2009.

**Organizer, Haverford College Problem Solving Group**. 2005 – present.

**Author of over 40 open source software programs** to perform statistical and geometric analysis and visualization of data.

## TEACHING

**Regression Methods**. Math 8406, Villanova University, 2015.

**Environmental Statistics in Pennsylvania**. 8-hour workshop. PA Council of Professional Geologists, 2010 and 2011.

**Spatial Statistics**. 40-hour workshop, 2007. 8-hour workshop on the web. NITL, 2010

**Introduction to GIS**. Geology 328, Bryn Mawr College, 2007.

**Problem Solving**. Weekly undergraduate seminar at Haverford College, 2005 – present.

**Introduction to Statistics**. Math 103, Haverford College, 2006.

**Statistics**. Math 203, Haverford College, 2006.

**Exploratory Data Analysis**. Math 209, Haverford College, 2005.

**Environmental Statistics**. Computer Engineering 597, Penn State-Great Valley, 2001.

**Environmental GIS**. Systems Engineering 597, Penn State-Great Valley, 1997 – 2003.

**Environmental Sampling**. Two-day course developed and taught for Government Institutes, 1994 – 1995