

Goal-oriented, GIS teacher, analyst, and entrepreneur with over 35 years of experience. Proven track record delivering courses, building programs, nurturing relationships with employers and building consensus and partnerships. Expert in developing and managing multilateral relationships and leading change – from developing strategy, and setting priorities to gaining buy-in among varied stakeholders.

Key Qualifications

Teaching • Research • Strategic Planning • Program Management • Administration • Technology Implementation • Reporting and Analytics • Leadership and Team Building

Education

Ph. D. Department of Environmental Sciences, University of Virginia, [1998]	Charlottesville, VA
M.A. Department of Geography. University of Western Ontario, London, Ontario [1982]	London, Ontario
B.A. (Honors) Department of Geography, University of Western Ontario [1979]	London, Ontario

Professional Experience

UNIVERSITY OF MARY WASHINGTON, FREDERICKSBURG, VA 2007-Present

Department of Geography

Associate Professor, Geography

Director Center for Spatial Analysis and Research (CeSAR)

Accomplishments

- Developed an undergraduate GIS program to accommodate both traditional and non-traditional students.
- Architect of the Master of Science in Geospatial Analysis (MSGA)
- Developed the framework for all undergraduate and graduate level GIS courses
- Generated, tracked and maintained program-related data.
- Managed student internship placement.
- Arranged many interviews for students
- Customized GIS courses for Library of Congress and Law Library of Congress
- Managed working group of students tasked by the Military Advisory Committee of Fredericksburg
 - Report presented to Fredericksburg Chamber of commerce
- founded, secured funding for and administrate the Center for Spatial Analysis (CeSAR)
 - Supervised undergraduate students, and Graduate students, served as academic advisor and managed all aspects related to student employment including vetting process and timesheets.
- Managed all ArcGIS resources and related critical technology interfaces and upgrades.

MSGA Capstone Thesis Supervised

Chris Moulton (2015) Modeling Relative Past and Future Sea Level in the Potomac Estuary through CO-OPS Tidal Station-Centered Spatiotemporal Analysis

Andrew Johnson (2016) Spatial Analysis of Real Estate Valuation in The City of Fredericksburg

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- Paul Rabatin (2016) Situational Awareness Visualization Emergency Management Environment (SAVEME)
- Gelisa Slyer (2016) A Spatial Analysis of crime in Washington DC from 2008-2015: Understanding the Relationship Between Crime Events and Place
- Chris Petroff (2017) Creating Efficiencies with Geographic Information Systems at Stafford Regional Airport
- Gerard Bernhardt (2017) Is Broadband Access Predicted by Demographics? An exploratory and regression analysis of High-Speed Internet Availability in the Commonwealth of Virginia
- Clare Rodenberg (2017) The Holdridge Life Zone System: Testing the Sensitivity of a Climate-Vegetation Model.
- Sarah Bergstresser (2018) Application of least-cost path analysis for a U.S. Route 29 bypass around Charlottesville, Virginia
- Meredith Gregory (2019) Climate Ecosystem Modeling
- Will Gatens (2019) – Spatiotemporal Forecasting Analysis of Violent Events In Syria: Integrating statistical software with GIS to forecast future Violent Events in Syria
- Kaitlin Kean (2020) – Climate Ecosystem Modeling through Machine Learning

THE INFINITY SYSTEMS GROUP, BRECKSVILLE, OH

2005-2007

GIS Division Manager

Infiniti Systems Group was a consulting firm focused on helping clients leverage information technology to secure, manage and transform their own organization. Established in 1995, ISG was headquartered in Brecksville Ohio and has branches in Raleigh, North Carolina.

- Responsible for building and directing GIS development and operations.
- Developed a business plan and initiated both a tactical and strategic plan to focus the division's efforts.
- Project manager for all GIS related activities.
- Responsible for all Sales and Marketing activities.
- Developed all marketing material, identified and contacted business sectors which could benefit from GIS and provided presentations to clients at conferences, personal meetings and through Microsoft Net meeting.
- Established a network of partners companies in an effort to leverage our GIS applications.

ISOSCELES INFORMATION SOLUTIONS, OTTAWA, ON., AND CHARLOTTESVILLE, VA

2000-2005

Co-Founder and Director of Market and Sales

Isosceles was founded by 5 partners in 1999 and focused on the delivery of spatial information solutions. The company developed over 60 internet based applications for federal, provincial, and state government departments as well as corporate customers in both Canada and the U.S. At its peak the company consisted of 24 staff. I opened the U.S. office in 2000. The company was sold in 2005.

- Opened U.S. branch office of Isosceles, focused on aviation, engineering and facilities markets.
- Established strategic plan to identify new clients in the U.S. by analyzing current market and identifying market sectors that had not embraced GIS technology but were clearly in position to benefit from it.
- Designed and conducted market research through literature reviews and phone surveys and performed a financial analysis to identify the feasibility of entering into new markets.
- Directed business focus to the delivery of web based intelligent visual solutions based on the integration of relational databases and GIS technology to provide a total solution to clients.

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- Worked with vendors such as Autodesk, ESRI, Tririga and Infracycle to create cutting-edge strategy combining GIS technologies with applications that had no mechanism for leveraging spatial components within their applications.
- Key market focus included Environment (NOAA -Flood mapping), Airports (AIS) and Facilities Management

SOUTHERN ILLINOIS UNIVERSITY, CARBONDALE, IL

1999-2000

Department of Geography

Assistant Professor

- Responsible for establishing and maintaining the department's GIS lab facility that included 25 networked NT workstations running ERSI software.
- Developed curriculum for Introductory and Advanced GIS courses.
- Advised graduate students and conducted graduate seminars.

UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE, VA

1998-1999

Department of Environmental Sciences

Research Post-Doc

- Participated in The Virginia LTER Bird Diversity project, researching activities of the VCR/LTER. Built a GIS database for Bird Survey data. Conducted statistical analysis of bird data using a GIS and SAS to determine the impact the sea-level rise in barrier island bird populations.
- Participated in The Vegetation/Ecosystem Modeling and Analysis Project (VEMAP), a multi-institutional, international effort to evaluate the sensitivity of terrestrial ecosystems and vegetation processes to altered climate forcing and elevated atmospheric CO2.

ENVIRONMENT CANADA, OTTAWA, ON

1982-1992

Research Scientist

- Developed and implemented a graphical interface to the Canada Geographic Information System (CGIS)
- Moved into systems administration and PC application development focusing on the development of a PC based GIS application.
- Lead a directorate wide investigation into climate change effects on terrestrial ecosystems. Research based on the development and application of multivariate statistical models and GIS to illustrate the potential impacts of climate change to Canada's ecological resources.

Courses Taught

- Introduction to GIS
- Advanced Spatial Analysis
- Spatial Statistics and Modeling.
- GIS Programming with Python
- Faculty Workshops in GIS
- Custom GIS short courses:
 - Library of Congress
 - Various County Agencies
 - School boards (introducing GIS to teachers)

University Service

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2019 – Present

- Director, Center for Spatial Analysis and Research (CeSAR)
- Campus administrator for ESRI software

2017- 2019

- College of Arts and Sciences Curriculum committee.
- Director, Center for Spatial Analysis and Research (CeSAR)
- Campus administrator for ESRI software

2013-2016

- Member of the budget committee.
- Director, Center for spatial analysis and research (CeSAR)
- Campus administrator for all geospatial software

2010-2012

- Member of the Faculty Senate, College of Arts and Sciences.
- Chair, GIS Working Group.
- Director, Center for spatial analysis and research (CeSAR)
- Campus administrator for ESRI software

2009 – 2010

- Chair, GIS Working Group.
- Chair, Campus Academic Resource Committee (CARC).
- Campus Manager, Microsoft Development Network.

2008 – 2009

- Digital Initiatives Committee.
- Chair, GIS Working Group.
- Chair, Campus Academic Resource Committee (CARC).
- Campus Manager, Microsoft Development Network.

Program Review

MS GIS program, University of Redlands, Redlands California. Completed a 2-day review of the program, submitting final report to the Ms. Sheila Lloyd, Director of assessment. September 21-12.

Grants

- 2016 “Mapping the Distribution of Long-lasting Insecticide-treated Nets (LLINs) in Africa: A preliminary assessment of population at Risk”. International Federation of Red Cross Crescent Societies, Chemin des Crets 17, 1211 Petit Saconnex, Geneva, Switzerland
- 2013 “A Geospatial Analysis of UMW Admissions Data 2007-2013.” Office of Admissions, UMW, (\$3,272.56)
- 2013 “A longitudinal time series analysis capturing and quantifying the areal extent of the backbarrier/lagoon and island features of the Virginia barrier islands. “ Randolph Macon College, (Michael Fenster, P.I.) (\$3,983.05)
- 2012 “Assessment of Inputs Leading to Water Quantity Issues in a Small Watershed near Potomac, Maryland”. National Park Service, Chesapeake Watershed Cooperative Ecosystem Study Unit (\$17,938.84)
- 2011 “Spatial characterization of karst features in Virginia”, Department of Mines Minerals and Energy, Virginia. (\$5,500)

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- 2012 "High-resolution Terrain Modeling for Landslide Risk Assessment". Department of Mines Minerals and Energy, Virginia. (\$5,500)
- 2009 "Quantifying Shoreline change in the Virginia Barrier Islands." Randolph Macon College, (Michael Fenster, P.I.) (Grant \$4,500)
- 2009 "Identifying, locating and developing a GIS repository for the development of k-12 GIS curriculum course development." Virginia Geographic Alliance. (\$4,500)
- 2008 "Barrier Island GIS data development. Deliverable: translation of legacy data into ArcGIS." Randolph Macon College, (Michael Fenster, P.I.) (\$4,500)

Papers Reviewed

- 2010 *Journal of applied Geography*. "Sensitivity of GIS derived terrain variables at multiple scales for modelling stoat (*Mustela erminea*) activity."
- 2010 *ESRI Press*. "Making Spatial Decisions - Richer or Poorer in Chicago." GIS Laboratory Review and Assessment.
- 2008 *Geographical Bulletin*. "Mapping the Worlds Diversity."

Presentations

- 2010 "A Methodology for assessing shoreline change in ArcGIS." Association of American Geographers Annual Meeting, Washington, DC
- 2009 "Retooling Historic Data with ArcGIS" Southeastern Division of the Association of American Geographers Annual Meeting, Knoxville, TN
- 2009 Invited speaker. "GIS and Virginia Downtown Associations – What is GIS and What Can It Do for You?" Annual Virginia Downtown Association Meeting. Fredericksburg, VA.
- 2009 "First Steps: Building a GISc Program at the University of Mary Washington." Association of American Geographers Annual Meeting, Las Vegas, NV
- 2009 Invited Speaker. "First Steps: Building the GIS Program at the University of Mary Washington." American Association for History and Computing, sessions at the annual meeting of the American Historical Association, New York City, NY
- 2008 "Preparing for GIS: A UMW initiative to develop a GIS Program." Fredericksburg Technology Breakfast presentation. Fredericksburg, VA
- 2008 "Emerging Technology Improving Business through Visualization." Fredericksburg Regional Alliance. Fredericksburg, VA
- 2006 Invited speaker, "Preparing Your Airport for GIS: The CAD to GIS transition." Pennsylvania Aviation Conference. Wilkes-Barre PA
- 2006 "Spatial Information Management for Airports." Virginia Aviation Conference. Lynchburg VA
- 2005 Invited speaker. "GIS applications and Airports: A case study." Hershey Aviation Conference. Hershey PA
- 2003 Invited speaker, "Airports and GIS". Hershey Aviation Conference. Hershey, PA
- 1991 Invited speaker, "Terrestrial ecosystems and climate change." GIS '91, Vancouver, BC.

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- 1990 Poster Session. "Modeling the Impacts of Climatic Change on Canada's Ecosystems: A GIS approach." Second World Climate Conference, Geneva, SW
- 1990 Invited speaker. "Modeling the Impacts of Climatic Change on Terrestrial Ecosystems." Indiana GIS '90. Videotaped for resale. Bloomington, IN
- 1990 "Impacts of Climate Change: A Canadian Wildlife Service Perspective." A CWS Workshop on Climate Change, Edmonton, AB
- 1990 Invited speaker, "Ecosystem Sensitivity and Climate Change." Petawawa National Forestry Institute, Petawawa, ON
- 1990 "Assessing the Sensitivity of Canada's Ecosystems to Climatic Change." Landscape-Ecological Impact of Climatic Change, Lunteren, NL
- 1989 Invited speaker. "The Application of a GIS in Climate Change Modeling." Global Climate Change Branch, U.S. EPA, Corvallis, OR
- 1988 Invited speaker, "Climatic Change: NAWMP Considerations. North American Wildlife Management Plan (NAWMP) Management Board. Baton Rouge, LA

Publications

Schimel, D., J. Melillo, H. Tian, AD McGuire, D. Kicklighter, T. Kittel, N. Rosenbloom, S. Running, P. Thornton, D. Ojima, W. Parton, R. Kelly, M. Sykes, R. Neilson, and B. Rizzo. 2000. Contribution of increasing CO₂ and climate to carbon storage by ecosystems of the United States. *Science* 287:2004-2006.

VEMAP members. 1996. "Vegetation/Ecosystem Modeling and Analysis Project (VEMAP): Comparing Biogeography and Biogeochemistry Models in a Continental-Scale Study of Terrestrial Ecosystem Responses to CO₂ doubling." *Global Biogeochemical Cycles*.

Rizzo, B. and E.B. Wiken. 1992. "Assessing the sensitivity of Canada's ecosystems to climatic change". *Climatic Change*, 20:81-95.

Manning, E., B. Rizzo, and E. Wiken. 1990. "Conservation strategies, sustainable development and climatic change". In G. Wall and M. Sanderson, editors, *Climate Change: Implications for*