

# DAVID LANTER PHD, GISP, CISA

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## SUMMARY

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Assistant Professor and Director of Fox School Temple University's Master of Science Program in IT Auditing and Cyber Security

Management consultant and enterprise geographic information systems (GIS) solution architect

Designer of innovative, practical, high-performance spatial decision support systems and secure GIS applications, data processing and maintenance capabilities

Leader of multifunctional software and data development teams

Mentor of requirements analysts, business process modelers, user experience and graphical user interface designers, software engineers, geospatial data developers, quality assurance testers, deployment specialists, user educators, information security specialists, and geographers

Fosters collaboration across multiple groups and ensures alignment of programs and continuous improvement meeting evolving business needs across a wide range of businesses, including: government, utilities, transportation, scientific research institutions, and consumer information product development companies

## SKILLS

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Project direction and technical leadership – ensuring objectives are met, while effectively coaching others in developing their skills and abilities

Excellence in budgeting, financial management and profitability, written and verbal communications

Client expectation management, issue identification and resolution - negotiating mutual agreements, with clear communication of status with appropriate frequency and details to all levels of an organization

Expert in software design and engineering, enterprise data architecture, geographic information systems, user-centered design, domain-driven design, service oriented-architecture, geo-spatiotemporal analysis, artificial intelligence, multi-dimensional statistics, scientific visualization, data quality assurance, IT auditing and cybersecurity

## EXPERIENCE

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- 2016-present      Assistant Professor and Director of Graduate Program in Information Technology  
Auditing and Cyber Security and Assistant Professor, *Management Information Systems Department, Fox School of Business, Temple University*

- 2001-2016** *Vice President, CDM Smith*
- Technical direction of large custom software and data development projects
  - Quality assurance, information security and client management of applications development projects
  - Technical sales: proposal writing, client presentations and sales closer fostering repeat business
  - Information Management Discipline Leader
    - Technical knowledge management and sharing, and mentoring of firm's 285 technical specialists in applications development and geographic information systems sub-disciplines
    - Annual R&D program project proposal recruitment, development, prioritization and project execution oversight and delivery
    - Led redesign and development of the firm's technology knowledge sharing web portal supporting the firm's 22 technical, scientific, and engineering disciplines
    - Technical publications, presentations, webinars and workshops
- 2003 - 2008** *Adjunct Professor, Drexel University - Civil, Architectural and Environmental Engineering Department*
- Developed and taught Introduction to Geographic Information Systems (GIS) and Applications of Geographic Information Systems courses to upper-division undergraduates and graduate students
  - Served on PhD dissertation and MS thesis committees, providing technical direction and support to graduate students
- 1998-2001** *Research Director, Rand McNally Corporation*
- Managed data research, compilation, and product quality assurance teams – \$3 million annual budget with 45 staff
  - Designed enterprise data warehousing system, consolidation of the firm's product development databases, and plug 'n play of vendor data for product development
  - Led reengineering of Commercial Atlas and Marketing Guide data and product development systems
- 1996-98** *Software Design Engineer, Microsoft Corporation*
- Developed and led quality assurance program for geographic data and geospatial software capabilities for firm's geography, educational, game multi-media, and web products
  - Invented Microsoft's product quality feedback capabilities for user submitted product errors via the internet
  - Managed product quality assurance teams - \$800,000 annual budget with 16 staff

1989-96	<b>President, Geographic Designs Inc.</b>
	<ul style="list-style-type: none"> <li>• Invented first data provenance and lineage metadata processing capabilities, and awarded first patent in the field of Geographic Information Systems</li> <li>• Designed and led the development of advanced artificial intelligence and metadata-enabled geographic information system data quality and multi-dimensional data discovery and analysis systems</li> <li>• Provided custom applications and information management consulting services to City of Santa Barbara, Southern California Edison, U. S. Parks Service, Verizon (PCS PrimeCo Personal Communications), Federal Geographic Data Committee</li> </ul>
1990-95	<b>Assistant Professor, University of California – Santa Barbara, Dept. of Geography</b>
	<ul style="list-style-type: none"> <li>• Undergraduate and graduate courses in Geographic Information Systems, Digital Cartography, Digital Cartographic Production, and Cartographic Programming</li> <li>• Research in geospatial metadata and quality assurance for National Forest Service and National Science Foundation National Center for Geographic Information and Analysis</li> </ul>
1986-87	<b>Systems Analyst, Grumman Data Systems</b>
	<ul style="list-style-type: none"> <li>• Designed and developed functional specifications for US Air Force real-time, near real-time, and non-real-time Cartographic Applications for Tactical and Strategic Systems (CATSS) and guided prototype development</li> <li>• Designed and developed software for visualizing military assets and war game scenarios of limited nuclear war in European theater</li> </ul>
1985	<b>Software Engineer, Navigation Sciences</b>
	<ul style="list-style-type: none"> <li>• UNIX network administrator, and provided Geographic Information Systems data development support to developers of real-time nautical navigation systems</li> </ul>

## EDUCATION

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2015	<b>Master of Science – IT Auditing and Cybersecurity, Fox School of Business, Temple University</b>
1989	<b>Doctor of Philosophy – Geographic Information Processing, University of South Carolina</b>
1986	<b>Master of Arts – Geographic Information Systems Design, State University of New York at Buffalo</b>
1984	<b>Certificate – Multi-Objective Decision Analysis, Massachusetts Institute of Technology</b>
1984	<b>Certificate – Decision Analysis, Massachusetts Institute of Technology</b>
1983	<b>Bachelor of Arts with honors – Science, Technology and Society: Risk/Hazard studies, Clark University</b>

## CERTIFICATIONS

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**Certified Information Systems Auditor (CISA), ISACA** - Passed CISA exam with score in top 5% of those taking the exam

**Certified Geographic Information Systems Professional (GISP), GIS Certification Institute**

**Certified Outdoor Leader, National Outdoor Leadership School**

## SERVICE

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2020	Moderator of Association for Information Systems' Cybersecurity Expert Panel Discussion, 11/19/2020 Association for Information Systems' Student Scholarship Selection Committee – Committee Member “Cradle to Grave to Cloud” Session moderator, Urban and Regional Information Association (URISA) GIS-Pro 2019 Conference, October 1, 2019, New Orleans, Louisiana. “Cyber Security Expert Panel”, Insurance Council of New Jersey’s Annual Meeting & Conference, October 18, 2019, Monroe Township, New Jersey.
2019	Editorial reviewer – conference research papers:  Twenty-fifth America’s Conference on Information Systems, Cancun, Spring 2019, Reviewed “Technology Mediated Education: A Boon or Bane for Learning Outcomes of Students.”  Twenty-fifth America’s Conference on Information Systems, Cancun, 2019, Reviewed “How the Academics Qualification Influence the Students Learning Development.”  PhD Examining Committee Member – Doctor of Education, Amy Lavin, April 3, 2019  AIS Student Chapter Leadership Conference (Spring) – Competition Judge in Software Innovation Challenge  BBA/MIS Curriculum Redesign (Spring) <ul style="list-style-type: none"><li>• Application Development 1 Curriculum Redesign Group</li><li>• Capstone Curriculum Redesign Group</li></ul>
2005 - present	Urban and Regional Information Systems Association (URISA) <ul style="list-style-type: none"><li>• GIS Leadership Academy – Committee Member, Author, Instructor</li><li>• Curriculum Development Committee, Chairman and Member</li><li>• Workshop Development Committee, Co-Chairman and Member</li><li>• Industry Relations Committee, Member</li></ul>

## AWARDS

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Faculty of the Program Award – Best teacher of the year 2018-2019 in IT Auditing and Cyber Security Master of Science degree program, *Fox School of Business and Management, Temple University*

Values in Action Award (multiple) - for excellence, integrity, initiative, shared commitment, and teamwork, *CDM Smith*

URISA Barbara Hirsch Special Service Award - URISA Leadership Academy Committee, *Urban and Regional Information Systems Association*

ESRI Award for Best Scientific Paper in Geographic Information Systems – Second place, *American Society for Photogrammetry and Remote Sensing*

Fulbright Scholarship, *Portuguese National Center for Geographic Information (CNIG), U. S. Department of State's Bureau of Educational and Cultural Affairs*

Research Fellowship, *National Science Foundation's National Center for Geographic Information and Analysis*

Outstanding Research Award, *Sigma Xi Science Honor Society*

Von-Laue Research Scholarship Award, *Perspectives on Nuclear War, Clark University*

The Distinguished Scholar Award, *Fox School of Business, Temple University*

Dean's Certificate of Excellence, *Fox School of Business, Temple University*

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## CONSULTANCY – MANAGEMENT INFORMATION SYSTEMS PROJECT DIRECTION, DESIGN, DEVELOPMENT AND INFORMATION ASSURANCE

### ***CDM Smith – Federal Clients***

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Port of Beirut Explosion Damage Assessment Maps and Reports      Source data research, design, and development of damage location and assessment maps and reports that helped guide field teams through debris fields to locations of hospitals, schools, and utilities in support of recovery response to explosion at the Port of Beirut, Lebanon.

*Client: U.S. Agency for International Development*

Port of Beirut Explosion Debris Relocation Maps      Sourced geospatial datasets and production of maps and that identified landfill sites to move debris to when clearing blocked

	streets for recovery equipment needed in response to explosion at Port of Beirut, Lebanon
Social Vulnerability Index (SoVI) Data Development Tool and Social Vulnerability Analysis Tool Refresh	Debugged and updated social vulnerability index (SoVI) data development application and enterprise social vulnerability and environmental justice decision support application.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Social Vulnerability Analysis – Puerto Rico Flood Hazard Pilot Project	Pilot study applying SoVI Data Development Tool and Social Vulnerability Analysis Tool to social vulnerability analysis of populations at risk in two coastal areas in Puerto Rico from existing and future predicted 500-year flood hazards.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
An Ontological Approach for Detecting Commonalities in US Army Corps of Engineers Civil Works Budget Justifications	Design of data structure, algorithm, and formal language (“ontology”) to support metadata analysis of project work package budget justifications to detect, identify and explain patterns of commonalities and differences.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Flood Risk Management Financial Data Analysis	Data analysis and visualization techniques for evaluating performance of national flood risk management activities and expenditures.  <i>Client: U.S. Department of Defense, Army Corps of Engineers</i>
National Bicycle Facility Inventory Database	Design specifications and quality assurance of Geographic Information System database.  <i>Client: U.S. Federal Highway Administration</i>
Pojoaque Basin Regional Water System’s Geographic Information System	Information systems security plan and data integrity plan.  <i>Client: U.S. Bureau of Reclamation</i>
National Levee Database	System development plan, information assurance plan, and vulnerability testing for public facing geospatially web-based application for the National Levee Database.  <i>Client: U.S. Department of Defense, Army Corps of Engineers</i>
National Levee Database	Improved user experience and interface, enhanced data model and high-performance software design to facilitate ease of use and public access to location, engineering and condition of the Nation’s levee-based flood protection systems.  <i>Client: U.S. Department of Defense, Army Corps of Engineers</i>

Social Vulnerability Analysis	Interactive web-based geospatial visualization and analysis tool for identifying social vulnerabilities of populations at risk from disasters and evaluating alternative civil engineering protection measures to protect populations at risk from storms, floods and other environmental hazards.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Social Vulnerability Data Development	Multi-dimensional statistical data development system for measuring social vulnerability of populations at risk from flooding and environmental hazards.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Navigation Data Explorer	Web-based geo-spatiotemporal data visualizer for identifying and resolving inconsistencies, redundancies, inefficiencies, and lack of transparency and understanding multi-year waterborne commerce information residing among the government's disparate data systems.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Navigation Data Center</i>
Master Docks Plus	Web-based geospatially enabled data development and quality assurance system for enabling the government to manage information pertaining to the Nation's commercial shipping facilities.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Waterborne Commerce Statistics Center</i>
Macro-Economic Visualization	Dynamic web-based interactive global map viewer for running alternative spatial equilibrium models based on changes in US waterborne transportation costs and viewing resulting impacts on global grain commerce  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Enterprise Data Integration	Unification of U. S. Army Corps of Engineers disparate performance management, real-estate management, financial management, project management, maintenance management information systems for an integrated asset management database able to meet the government's needs.  <i>Client: U.S. Department of Defense, Army Corps of Engineers, Institute for Water Resources</i>
Disaster Decision Support	Hurricane debris removal status tracking map production system for daily White House briefings.

Environmental assessment system for reviewing public assistance project funding requests.

*Client: Federal Emergency Management Administration (FEMA)*

### ***CDM Smith – Municipal and Regional Clients***

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Security Architecture & System Security Plan	Guided design of cybersecurity architecture and application security testing of container-based cloud software as a service system being developed for use by US water/sewer utilities to reduce sewage overflows into waterways and meet EPA regulations.
Cybersecurity Risk Management Procedures	<i>Clients: Municipal Water and Sewer Utilities</i> Developed a cybersecurity risk control management plan and techniques for containing ransomware for consultants working with potentially infected GIS databases and files.
Cybersecurity Risk Mitigation Plan	<i>Client: New Bedford, MA</i> Cyber security risk mitigation plan to water utility consultants developing a broader risk control plan and management strategy.
Facility Mapping System	<i>Client: Green Bay Wisconsin Water Utility</i> Cybersecurity, system design, information security, and development of high-performance desktop and mobile web-based facility mapping and utility asset inventory management system for electric, communication, traffic, natural gas, aviation fuel, fire suppression, heating/cooling, water, sanitary sewer, storm-water sewer systems at John F. Kennedy and LaGuardia airports.
Enterprise Data Architecture	<i>Client: Port Authority of New York and New Jersey</i> An integrated data sharing hub for coordinating information exchange among the government's 16 agencies as they develop, add value, and use planning, lands and public works data.
Maintenance Management System	<i>Client: Government of Hong Kong, Special Administrative Region, Housing, Planning and Lands Bureau</i> Web-based computerized maintenance management system for enforcing the U.S. Environmental Protection Agency's National Pollution Discharge Elimination System regulations. Includes permitting, asset inventory, inspection tracking, citizen complaint tracking, and service request and maintenance management work orders.

*Client: Florida Department of Transportation, District 4*

Master Planning Information System	Interactive graphical web-portal providing a common interface to facilitate sharing data, data updates, and software application programs to facilitate sewer-system pump station service area master planning.
	<i>Client: City of Virginia Beach, Public Works Department</i>
Facility Inspection System	Enterprise sewer inspection database and web-based visualization capabilities for monitoring inspection work status, understanding and tracking defects found during inspection, and relating defects with service requests and work orders
	<i>Client: City of Wilmington, Public Works Department</i>
Asset and Work Management System	Automated web-based work management system with key performance indicators to improve response performance of Water, Wastewater, Transportation, and Operations Divisions.
	<i>Client: City of Wilmington, Public Works Department</i>
Quality Assurance of Water, Sewer and High-pressure Fire Systems Data	Data sampling and quality assurance system for assuring the integrity and completeness of data conversion of city-wide water distribution, high-pressure fire, and sewer collection pipe infrastructure systems
	<i>Client: City of Philadelphia, Philadelphia Water Department</i>
Quality Assurance of Sewer System Data	Data sampling and quality assurance system for assuring integrity and completeness of data conversion of 5-borough city-wide sewer collection pipe infrastructure system
	<i>Client: City of New York, Dept. of Environmental Protection</i>
Sewer Inspection Data Protocol	Geospatially enabled interoperable inspection and defect data collection specification and protocol to aid in evaluating the 4,000 miles of sewers serving the 83 municipalities flowing into ALCOSAN's 90 miles of sewer interceptors.
	<i>Client: Allegheny County Sanitary Authority (ALCOSAN)</i>
Water Supply Early Warning System	Integrated monitoring, communication, and notification system used to provide advanced warning of water quality events to water suppliers and industrial intake operators in the Schuylkill and Delaware River watersheds
	<i>Client: City of Philadelphia, Philadelphia Water Department</i>
Capital Improvement Project Planning and Tracking	Integrated workflow management system for enabling the identification of needs, developing project proposals, prioritizing projects, managing the bid and award process, managing funding, and tracking actual versus estimated costs, inspecting and approving payments.
	<i>Client: City of Philadelphia, Philadelphia Water Department</i>

## ***CDM Smith – Industrial Clients***

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Road Trips™	Commercial web-based teaching aid for helping teach teen drivers safe driving habits. Integrated multi-media learning environment with support for planning practice sessions, guiding practice drives, and logging and evaluating time in the car.
	<i>Client: State Farm Insurance Company</i>
Teen Driver Safety Website	Experimental web-based teaching aid for helping teach teen drivers safe driving habits. Integrating multi-media learning environment with support for planning practice sessions, guiding practice drives, and logging and evaluating time in the car.
	<i>Client: Children's Hospital of Philadelphia</i>
Website Evaluation System	Scientific research platform for conducting experiments to test the dose-response relationship and efficacy of web-based multi-media informational interventions. Includes test subject management, instrumentation and data collection capabilities.
	<i>Client: Children's Hospital of Philadelphia</i>

## ***Rand McNally Corp.***

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Research Director	Led global, national and local products' geospatial data development and cartographic quality assurance teams
Enterprise Data Architecture	Integrated data and information product production system for pragmatically consolidating disparate product development environments and transitioning to plug-and-play corporate and commercial off the shelf datasets
Commercial Atlas Production System	Reengineered production macro-economic U.S. data and Commercial Atlas and Marketing Guide product development systems.

## ***Microsoft Corp.***

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Quality Assurance Lead	Developed and directed geo-modeling quality assurance program for Microsoft's Interactive Media Division's Geography Business Unit's US and international product lines.
Feedback Wizard	Map and data error reporting wizard for providing feedback from geography products to Microsoft over the internet. Metadata rich

Encarta Virtual Globe  
Encarta World Atlas  
Streets & Trips  
Trip Planner  
Streets Plus  
AutoRoute Express

error reports enabled bug reproduction and detection of data source defects and product production process flaws. Feedback wizard provided basis for Microsoft's "report-error" capability integrated within Microsoft's Office desktop products.

BugWadi

Server-side capabilities and front-end tools for reproducing errors and identifying quality issues in data sources from automated error reports sent in from desktop map product users via Feedback Wizard (see above).

## ***Geographic Designs Inc.***

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President	Led sales, design and development of custom and commercial off the shelf artificial intelligence-based geospatially enabled products and management consulting services.
NSDI Explorer	Interactive geo-spatiotemporal data browsing of clearing house websites of the National Spatial Data Infrastructure (NSDI).  <i>Client: Federal Geographic Data Committee</i>
Geographic Information Explorer	Object-oriented data visualization system for scientific visualization, exploration, and finding geo-spatiotemporal co-variation in disparate datasets.  <i>Client: Southern California Edison</i>
Geolineus Versions 1.0 – 3.0	Enterprise data provenance and quality assurance and maintenance system for enterprise GIS.  <i>Clients: 75 National, state, local and international government agencies, universities, and private companies</i>
FindArc/FindGrass	Computer network search spiders for geographic information system data discovery, metadata extraction and documentation
Multi-source Water Supply Management	Geospatial visualization for management of: reservoir water supply, reservoir water to recharge ground water supply, and alternative ground water pumping strategies with optimized tradeoff for seawater intrusion into aquifer.  <i>Client: City of Santa Barbara, Public Works Department</i>

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## ***Grumman Data Systems***

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Cartographic Applications for Tactical and Strategic Systems (CATSS)	Designed and wrote functional specifications and led development of proof of concept prototypes for reusable plug-and-play functional geospatial software library to support real-time, near real-time, and non-real time applications.  <i>Client: U.S. Airforce, Rome Airforce Development Center</i>
Warfare Simulation	Developed desktop map-based application for visualizing limited nuclear war scenarios between USSR and NATO forces in European theater.

## PRESENTATIONS

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Professional Workshop	“Leadership Styles and Situational Leadership”, Urban Regional Information System Association’s Virtual GIS Leadership Academy, April 12-16, 2021
Invited Lecture	“Getting Started with the NIST Risk Management Framework”, ISACA Philadelphia Chapter, Winter Webinar Invited Lecture, March 19, 2021
Invited Lecture	“Detecting Commonalities in Asset Management Budget Justifications”, National Association of Business, Economics and Technology’s 43rd Annual Meeting and Virtual Conference, October 23, 2020
Invited Lecture	“Geospatial Data Dissemination Risk and Control”, Urban Regional Information System Association’s 58th Annual Conference, September 30, 2020
Invited Lecture	“Risk and Control of Geospatial Data Dissemination”, ISACA Philadelphia Chapter’s Winter Webinar for Continuing Professional Education, February 21, 2020
Invited Lecture	“Business Continuity and Resiliency Planning”, at GIS-Pro Conference of Urban Regional Information Systems Association, September 30, 2019, New Orleans, Louisiana
Invited Lecture	“Business Continuity and Disaster Recovery”, Children’s Hospital of Philadelphia’s Information Technology Department’s Cyber Security Month Celebration, October 24, 2019
Invited Lecture	“Information Technology Auditing and Cyber Security”, Insurance Council of New Jersey’s Annual Meeting & Conference, October 18, 2019, Monroe Township, New Jersey
Invited Lecture	“Data Modeling – Getting it Right”, delivered to AIS - Temple University Student Group, March 15, 2019
Invited Lecture	“Data Provenance Metadata and Security by Design” delivered to ISACA Philadelphia Chapter, February 22, 2019
Invited Lecture	“Social Vulnerability Analysis for Spatial Decision Support”, delivered at Temple University’s GIS Day, November 14, 2018

## PUBLICATIONS

### *Book Chapters – Peer Reviewed*

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- Analysis of Asset Management Investments Lanter, D.P., 2021. "Detecting Commonalities in Asset Management Budget Justifications", in Booker, J.D., Belloit, J.D., Myers, C.J. and Sigmond, N.C., National Association of Business, Economics and Technology 2020 Peer-Reviewed Proceedings of 2020 Virtual Conference. pp. 156-169.
- Social Vulnerability eXplorer (SV-X) Lanter, D.P., Durden, S., Baker, C., and Dunning, C.M., 2017 (August), "Social Vulnerability eXplorer (SV-X)", in Proceedings of the Coastal Structures & Solutions to Coastal Disasters Joint Conference; Coasts, Oceans, Ports and Rivers Institute (COPRI); American Society of Civil Engineers.
- User Centered Design Lanter, D.P. and R. Essinger, 2017 (March), "User Centered Design", in *International Encyclopedia of Geography: People, the Earth, Environment and Technology*, New York: John Wiley and Sons.
- Geoprocessing, Workflows, and Provenance Tullis, J.A., J.D. Cothren, D.P. Lanter, X. Shi, W.F. Limp, R.F. Linck, S.G. Young and T. Alsumaiti, 2015 (October), "Geoprocessing, Workflows, and Provenance", in *Remote Sensing Handbook: Remotely Sensed Data Characterization, Classification, and Accuracies*, edited by P. Thenkabail, Vol. 1., pp. 401-422, Boca Raton, FL: CRC Press.
- Database Design Lanter, D.P., 2008, "Database Design" in *Encyclopedia of Geographic Information Science*, edited by K. Kemp, Thousand Oaks: Sage Publications.
- Data Conversion Lanter, D.P., 2008, "Data Conversion" in *Encyclopedia of Geographic Information Science*, Edited by K. Kemp, Thousand Oaks: Sage Publications.
- Data Quality Assurance Lanter, D.P. 1998. "A Three-Part Approach to Geographic Data Quality Assurance." *Data Quality in Geographic Information*, Edited by Robert Jeansoulin and Michael F. Goodchild, Paris: Editions Hermes.
- GIS for Sustainable Development Michener, W.K., Lanter, D.P., and Houhoulis, P.F. 1997. "Geographic Information Systems for Sustainable Development: A Review of Applications and Research Needs." *Sustainable Development in the South Eastern Coastal Zone*, pp. 89-110 Editors: F. J. Vernberg et al., Columbia: University of South Carolina Press.

Map Quality	Lanter, D.P. and H. Veregin 1997. "Microsoft's University Map Bash: Map Errors, Core Concepts, Instructional Guide, and Student Exercise Workbook." Redmond: Microsoft Corp.
Spatial Analysis	Lanter, D.P. 1994. "Comparison of Spatial Analytic Applications of GIS", <i>Environmental Information Management and Analysis: Ecosystem to Global Scales</i> , Editors: Michener, W.K. et al., pp. 413-425, London: Taylor & Francis.
Database Design	Stein, R.S. and Lanter, D.P., 1990, "Considerations for Archaeology Database Design", <i>Interpreting Space: Geographic Information Systems and Archaeology</i> , Editors, K. Allen, S.W. Green, and E. Zubrow, London: Taylor and Francis.

#### ***Journal Articles – Peer Reviewed***

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Data Quality	Veregin, H. and Lanter, D.P. 1995. "Data Quality Enhancement Techniques in Layer-Based Geographic Information Systems." <i>Computers, Environment and Urban Systems</i> , Vol. 19, No. 1.
Metadata	Lanter, D.P. 1994. "A Lineage Metadata Approach to Removing Redundancy and Propagating Updates in a GIS Database", <i>Cartography and Geographic Information Systems</i> , Vol. 21, No. 2, pp.91-98.
Spatial Analysis	Giordano, A., Veregin, H. Borak E., and Lanter D., 1994, "A Conceptual Model of GIS-based Spatial Analysis." <i>Cartographica</i> , Vol. 31, No.4, pp. 44-57.
Data Management	Lanter, D.P., 1993, "A Lineage Meta-Database Approach Towards Spatial Analytic Database Optimization." <i>Cartography and Geographic Information Systems</i> , Vol. 20, No. 2, pp. 112-121.
Data Quality	Sorensen, P.A. and Lanter, D.P., 1993. "Two Algorithms for Determining Partial Visibility and Reducing Data Structure Induced Error in Viewshed Analysis", <i>Photogrammetric Engineering and Remote Sensing</i> , Vol. 59, No.7., pp. 1149-1160.
Data Quality	Lanter, D.P. and Veregin, H., 1992, "A Research Paradigm for Error Propagation in Layer-Based GIS." <i>Photogrammetric Engineering and Remote Sensing</i> , Vol. 58, No.6., pp.825-833.

Metadata	Lanter, D.P., 1991, "Design of a Lineage-Based Meta-Database for GIS", <i>Cartography and Geographic Information Systems</i> , Vol. 18 No. 4, pp. 255-261.
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## Miscellaneous Publications

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Geospatial Data Risk	Lanter, D. 2021. "Geospatial Data Dissemination Risk and Control", in Proceedings of GIS-Pro 2019, Urban Regional Information System Association, Des Plaines, Illinois. pp. 109-130
Map Quality	Lanter, D.P. and H. Veregin, 1997, <i>Microsoft's University Map Bash: Map Errors, Core Concepts, Instructional Guide, and Student Exercise Workbook</i> , Redmond: Microsoft Corp.
Patent	Lanter, D.P., 1993, "Method and Means for Lineage Tracing of a Spatial Information Processing and Database System." Patent No. 5,193,185. United States Dept. of Commerce Patent and Trademark Office. (Note: 1 <sup>st</sup> patent in the field of Geographic Information Systems)
Artificial Intelligence	Lanter, D., 1992, <i>Intelligent Assistants for Filling Critical Gaps in GIS, Technical Publication 92-4</i> , Santa Barbara: National Center for Geographic Information and Analysis.
Data Management	Lanter, D., 1992, <i>GEOLINEUS: Data Management and Flowcharting for ARC/INFO, Technical Software Series S-92-2</i> , Santa Barbara: National Center for Geographic Information and Analysis.
User Centered Design	Lanter, D.P. and Essinger, R., 1991, <i>User-Centered Graphical User Interface Design for GIS, Technical Publication 91-6</i> , Santa Barbara: National Center for Geographic Information and Analysis.
Data Quality	Lanter, D.P., 1990, <i>Lineage in GIS: The Problem and a Solution, Technical publication 90-6</i> . Santa Barbara: National Center for Geographic Information and Analysis.