

# CURRICULUM VITAE

## LAURENCE W. CARSTENSEN JR. (BILL)

(Thursday, September 06, 2018)

### OFFICE

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### HOME

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### PERSONAL DATA

Born: October 3, 1954  
Place of Birth: Norwalk, Connecticut  
Citizenship: United States  
Marital Status: Married, 3 Children, 5 grandchildren

### EDUCATION

- 1981 Ph.D. University of North Carolina at Chapel Hill  
(Geography/Cartography)  
*Dissertation: A Continuous Shading Scheme for Two-Variable Mapping,*  
Directed by Richard J. Kopec
- 1978 M.A. University of North Carolina at Chapel Hill  
(Geography/Cartography)  
*Thesis: The Testing and Evaluation of the SYMAP ANALYSIS Computer Program,*  
Directed by Richard J. Kopec
- 1976 B.A. University of North Carolina at Chapel Hill  
(Graduated with Honors in Geography)  
*Honors Thesis: The Origins of In-State Students Attending the Sixteen University of North Carolina Schools,*  
Directed by John W. Florin

### TEACHING AND RESEARCH INTERESTS

- Geographic Information Systems, with major emphasis on the use of the computer to manipulate, store, and provide data on demand; also data collection and application of large databases to mapping software. Of special interest is the application of GIS to problems dealing with meteorological data.

- Geographic Information Systems as applied to teaching and learning of both basic and complex Geographic Principles.
- Geographic Education through experiential learning and technology. Geographic Simulation, self-paced and hands-on learning.

## **EMPLOYMENT**

1976-1981	Manager of the Cartographic Laboratory at the University of North Carolina at Chapel Hill.
1981-1983	Assistant Professor of Geography/Regional Analysis, University of Wisconsin-Green Bay.
1983-1988	Assistant Professor of Geography, Virginia Polytechnic Institute and State University.
1988-1999	Associate Professor of Geography, Virginia Polytechnic Institute and State University.
2000 - 2006	Professor of Geography, Virginia Polytechnic Institute and State University.
2006- 2016	Professor and Head of Geography, Virginia Polytechnic Institute and State University.
2016 -	Professor of Geography, Virginia Polytechnic Institute and State University.

## **PROFESSIONAL HONORS AND AWARDS**

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| 1987 | Certificate of Appreciation for "Outstanding Service" to the Cartography Specialty Group of the Association of American Geographers.   |
| 1987 | "Distinguished Teaching Achievement Award" presented by the National Council for Geographic Education. (One of 9 awards for excellence in teaching presented by the NCGE in North America.)                      |
| 1987 | Inducted into Sigma Xi   |
| 1994 | Best Article Related to teaching in a University or College for "GeoSim: A Gis-Based Simulation Laboratory for Introductory Geography", awarded by the National Council for Geographic Education, November, 1994 |

- 1994 Undergraduate Computational Science Award for "GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," awarded by the Ames Laboratory, Iowa State University, US Department of Energy
- 2003 Virginia Tech Alumni Award for Outreach Excellence
- 2003 Distinguished Teaching Achievement Award – National Council for Geographic Education, October, 2003 (One of 9 awards for excellence in teaching presented by the NCGE in North America.)
- 2009 Outstanding Service Award – Southeastern Division of the Association of American Geographers

## PUBLICATIONS

### Books

- 2003 L.W. Carstensen, R.W. Morrill, J.D Eney, *An Atlas of Virginia*, (Blacksburg, VA,: Virginia Geographic Alliance, 2003), 40 pp., ISBN

### Refereed Journals

- 1981 Carstensen, L.W., "Time-Distance Mapping and Time-Space Convergence: The Southern United States, 1950-1975," *Southeastern Geographer.*, Vol. 21, No. 2, pp. 67-83.
- 1982 Carstensen, L.W., "A Continuous Shading Scheme for Two-Variable Mapping," *Cartographica*, Vol. 19., Nos. 3-4, pp. 53-70.
- 1984 Carstensen, L.W., "Perceptions of Variable Similarity on Bivariate Choroplethic Maps," *Cartographic Journal*, Vol. 21., No. 1, pp. 23-29.
- 1985 Carstensen, L.W., "Computer-Assisted Compilation and Drafting: Planning for the Green Bay, Wisconsin Area Street Map," *Cartographica*, Vol. 22, No. 1, 1985, pp. 93-105.
- 1986 Carstensen, L.W., "Bivariate Choropleth Mapping: The Effects of Axis Scaling," *The American Cartographer*, Vol. 13, No. 1, pp. 27-42.
- 1986 Carstensen, L.W., "Developing Regional Land Information Systems: Relational Databases and/or Geographic Information Systems," *Surveying and Mapping*, Vol. 46, No. 1, pp. 19-27.
- 1986 Carstensen, L.W., "Hypothesis Testing Using Univariate and Bivariate Choropleth Maps," *The American Cartographer*, Vol. 13, No. 3, pp. 231-251.

- 1987 Carstensen, L.W., "Teaching Map Reading Through a Tournament," *The Journal of Geography*, Vol. 86, No. 1, pp. 30-31.
- 1987 Carstensen, L.W., "A Measure of Similarity for Cellular Maps," *The American Cartographer*, Vol. 14, No. 4, pp. 345-358.
- 1987 Carstensen, L.W., "A Comparison of Simple Mathematical Approaches to the Centering of Spot Symbols," *Cartographica*, Vol. 24, No. 3, pp. 46-63.
- 1989 Carstensen, L.W., "A Fractal Analysis of Cartographic Generalization," *The American Cartographer*, Vol. 16, No. 3, pp. 181-189.
- 1989 Carstensen, L.W., and Allan B. Cox, "Videodiscs and Surrogate Travel/ The Map-Environment Interface," *Cartographica*, Vol. 26, Nos. 3&4, pp. 1-21.
- 1990 Carstensen, L.W., "Angularity and Capture of the Cartographic Line During Digital Data Entry," *Cartography and Geographic Information Systems*, Vol. 17, No. 3, pp. 209-224.
- 1991 Carstensen, L.W. and J.B. Campbell, "Desktop Scanning for Cartographic Digitization and Spatial Analysis," *Photogrammetric Engineering and Remote Sensing*, Vol. 57, No. 11, pp. 1437-1446.
- 1992 Mahoney, Patricia, L.W. Carstensen, and J.B. Campbell, "Effects of Technological Change on Relief Representation on U.S.G.S. Topographic Maps," *Cartographica.*, Vol. 28, No. 4, pp. 9-31).
- 1993 Carstensen, L.W., C.A. Shaffer, Robert Morrill, & E.A. Fox, "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography", *Journal of Geography*, Vol. 92, No. 5, pp. 217-222.
- 1998 Carstensen, L.W., "GPS and GIS: Enhanced Accuracy in Map Matching through Effective Filtering of Autonomous GPS Points," *Cartography and Geographic Information Systems*, Vol. 25, No. 1, pp. 51-62.
- 2003 L.W. Carstensen, R.W. Morrill, J.D Eney, *An Atlas of Virginia*, (Blacksburg, VA,: Virginia Geographic Alliance, 2003), 40 pp., ISBN 0-9722303-0-0
- 2003 C. W. Bostian, S. F. Midkiff, W. M. Kurgan, L. W. Carstensen, D. G. Sweeney, and T. Gallagher\*, *Broadband Communications for Disaster Response*, *Space Communications*, Vol. 18 Nos 3-4 (double issue), pp. 167-177, 2002 (distributed April 2003)
- 2006 Schiebe, Kevin, L. W. Carstensen, T.R. Rakes & L.P. Rees, Going the Last Mile: A spatial decision support system for wireless broadband communications, *Decision Support Systems*, Vol. 42, No. 2, pp. 557-570.
- 2008 Luebbering, Candice, L. W. Carstensen, J. B. Campbell, & L.S. Grossman. 2008. Expanding Display Size and Resolution for Viewing Geospatial Data: A User Study with Multiple-

- Monitor High-Resolution Displays. *Cartography and Geographic Information Science*, Vol. 35, No. 3, pp. 203-219
- 2009 Luebbering, Candice & L.W. Carstensen. 2009. Varying Display Size and Resolution for Digitizing Vector and Raster Targets: A Study of Digitizing Performance on Multiple-Monitor High-Resolution Displays. *Cartographica*, Vol. 44, No. 4, pp. 256-273
- 2010 Smith, E.K., Resler, L.M., Carstensen, W., and Kolivras, K. 2010. Modeling the Incidence of White Pine Blister Rust Infection in Whitebark Pine at Alpine Treeline in the Northern Rocky Mountains using GIS. *Arctic, Antarctic and Alpine Research*.
- 2013 Foy, A., Carstensen, L. W., Prisley, S. P., Campbell, J. B., Dymond, R. (in press). Evaluating the Error-Band Geometry Framework to enhance geospatial data fusion. *To appear in Transactions in GIS*.
- 2013 Yu, H., Jiao, Y., Carstensen, L. W. Performance comparison between spatial interpolation and GLM/GAM in estimating relative abundance indices through a simulation study. *Elsevier*, 147, 186-195.
- 2014 Smith-McKenna EK, Malanson GP, Resler LM, Carstensen LW, Prisley SP, Tomback DF ENVIRONMENTAL MODELLING & SOFTWARE 62:85-96
- 2015 Foy AS, Carstensen LW, Prisley SP, Campbell JB, Dymond RL TRANSACTIONS IN GIS 19(4):604-618 (15 pages) 01 Aug 2015

#### Book Chapters

- 1995 Carstensen, L.W., "The Burger Kingdom: Growth and Diffusion of McDonald's restaurants in the United States, 1958-1978", in *Fast Food, Stock Cars & Rock-n-Roll: Place and Space in American Pop Culture*, edited by George O. Carney (Lanham, MD: Rowman & Littlefield, 1995) reprint of a 1981 article originally written while completing graduate school.

#### Software Published

- 1994 Morrill, R.W., J.H. Bayliss, L.W. Carstensen and C.A. Shaffer, "Maps and Mapping" a multi-media tutorial on maps. In the GeoSim series, available free over the Internet.
- 1994 Shaffer, C.A., L.W. Carstensen, and R.W. Morrill, "Mental Maps" a mental mapping simulation. In the GeoSim series, available free over the Internet.
- 1994 Carstensen, L.W., R.W. Morrill, C.E. Reid and C.A. Shaffer, "Migration Modeling of the United States" a multi-media tutorial on migration. In the GeoSim series, available free over the Internet.

- 1994 Shaffer, C.A., L.W. Carstensen and R.W. Morrill, "Migration Modeling" a simulation to model migration. . In the GeoSim series, available free over the Internet.
- 1994 Carstensen, L.W., R.W. Morrill and C.A. Shaffer, "HUMPOP" a multi-media tutorial on world population and environmental issues. . In the GeoSim series, available free over the Internet.
- 1995 Carstensen, L.W., R.W. Morrill and C.A. Shaffer, "Migration and Politics in the United States", a multi-media tutorial on migration and political power. In the GeoSim series, available free over the Internet.
- 1995 Raley, J., C.A. Shaffer, L.W. Carstensen and R.W. Morrill, "MigPol", a simulation showing relationships between migration and congressional representation in the United States. In the GeoSim series, available free over the Internet.
- 1995 Carstensen, L.W., R.W. Morrill, and C.A. Shaffer, "Migration and a Sense of Place", a multi-media tutorial on migration related to place characteristics. In the GeoSim series, available free over the Internet.
- 1995 Hines, D., C.A. Shaffer and R.W. Morrill, "Splace", a simulation showing variations in human and physical characteristics of counties in the United States. In the GeoSim series, available free over the Internet.
- 2003 L.W. Carstensen, R.W. Morrill, J.D. Eney, An Atlas of Virginia – CD-ROM, (Blacksburg, VA: Virginia Geographic Alliance, 2003), ISBN 0-9722303-1-9

#### Reports, Book Reviews, and Proceedings Papers

- 1985 Carstensen, L.W., "Mapping and Topographic Drafting," Book Review appearing in *The American Cartographer*, Vol. 12, pp. 179-180.
- 1986 R. Welch, P. Pole, B. Niemann, L. Carstensen, R. Dahlberg, K. Deucker, M. Wright, P. Zwart, "Research Needs in Presentation Methods which Facilitate Understanding," report of Working Group #8, Workshop on Fundamental Research Needs in Surveying, Mapping, and Land Information Systems workshop, Blacksburg, Virginia, November 17-19, 1985, pp. 53-62.
- 1986 Carstensen, L.W., "Special Report on the Workshop on Fundamental Research Needs in Surveying, Mapping, and Land Information Systems", *The American Cartographer*, Vol. 13, No. 3, pp. 281-283.
- 1986 Onsrud, Harlan & Laurence W. Carstensen, "Special Report on Fundamental Research Needs in Surveying, Mapping, and Land Information Systems," *ACSM Bulletin*, No. 101, pp. 57-58.

- 1986 Carstensen, L.W., "Regional Land Information System Development Using Relational Databases and Geographic Information Systems," *Proceedings*, AUTO-CARTO LONDON, Vol. 1, pp. 505-514.
- 1987 Carstensen, L.W., "An Atlas of the US Economic Growth," Book Review appearing in *The American Cartographer*, Vol. 14, No.2, pp. 186-187.
- 1987 Carstensen, L.W., "Regional Land Information System Development Using Relational Databases and Geographic Information Systems," *The Australian Draftsman*, Vol. 21, No. 1, pp. 8-13.
- 1987 Carstensen, L.W., "An Agricultural Atlas of Scotland," Book Review appearing in *Cartographica*., Vol. 24, No. 3, (in press).
- 1988 Carstensen, L.W., "An Atlas of South Australia," Book review appearing in *Cartographica*, Vol. 25, No. 3, pp. 151-153.
- 1988 Carstensen, L.W. (editor), "Student Honors Competition Winning Papers," a compilation of three student papers presented at the annual meeting of the Association of American Geographers, Phoenix, AZ.
- 1989 Carstensen, L.W., "Access Yosemite National Park: An Atlas and Guide for Visitors with Disabilities," Book Review appearing in *Cartographica*, Vol. 26, Nos. 3 & 4, pp. 159-161.
- 1990 Carstensen, L.W., "Numerical Generalization in Cartography," Book review for *Cartography and Geographic Information Systems*, Vol. 17, No. 2, pp. 173-174.
- 1991 Shaffer, Clifford, L.W. Carstensen, Vincent Miranda, Sheryl Kriss, R.W. Morrill, and E.A. Fox, *Project GeoSim: The First Two Modules*, Technical Report 91-26, Department of Computer Science, Virginia Polytechnic Institute and State University, 54 pp.
- 1991 Carstensen, L.W., "GIS at VPI Balances Liberal Arts and Technical Skills," *GIS World*, Vol. 4, No. 5, pp. 122-125.
- 1991 Carstensen, L.W. "Basic Cartographic Modeling in IDRISI," NCGIA Core Curriculum, Vol. 4 (Laboratory Exercises), (National Center for Geographic Information and Analysis: Santa Barbara, CA).
- 1991 Carstensen, L.W., "Siting of a Downhill Ski Area," NCGIA Core Curriculum, Vol. 4 (Laboratory Exercises), (National Center for Geographic Information and Analysis: Santa Barbara, CA).
- 1991 Carstensen, L.W., "Attribute Data and Relational Databases as GIS Components", NCGIA Core Curriculum, Vol. 4 (Laboratory Exercises), (National Center for Geographic Information and Analysis: Santa Barbara, CA).

- 1993 Carstensen, L.W., software review of *IDRISI* appearing in *Cartography and Geographic Information Systems*, Vol. 20, no. 1, pp. 75-76
- 1993 Carstensen, L.W. and Allan B. Cox, "Teaching Effective Map Use: Position Finding and Environmental Simulation Using Still Photography," *The Virginia Geographer*, Vol. 24, No. 2, pp. 36-45.
- 1995 Carstensen, L.W., "Report on the Comparison of GDT and ETAK data file Suitability for the VEMS project" to Westinghouse Security Systems of Irving, TX, 10 pp.
- 1995 Carstensen, L.W., "Field Verification and Validation (FV&V) Testing of the FN-74 System, Final Report", to Westinghouse Electric Corporation, Communications Systems Division of Linthicum, MD, 95 pp.
- 1995 Carstensen L.W., *Introduction to Geographic Information Systems*, A lab manual to accompany the teaching of Geography 4084, **Introduction to GIS**, 97 pp. (revised annually through 2002)
- 1996 L.W. Carstensen (with introduction by Norah Henry), *Geographic Information Systems from a Geographic Perspective*, text written and edited for use in Introduction to GIS, Geography 4084, 140 pp.
- 1998 Carstensen, L.W. & R.W. Morrill, *Geography for Life Explorers: AMTRAK Across America '98 Field Book*, The field study guide for Geography 5984, AMTRAK Across America '98, 405 pp.
- 1999 Carstensen, L.W. & R.W. Morrill, *Geography for Life Explorers: AMTRAK Across America '99 Exercise Book*, The field study guide for Geography 5984, AMTRAK Across America '99, 80 pp.
- 1999 Carstensen, L.W. & R.W. Morrill, *Geography for Life Explorers: AMTRAK Across America '99 Data Book*, The field study guide for Geography 5984, AMTRAK Across America '99, 103 pp.
- 2000 Carstensen, L.W. & R.W. Morrill, *Geography for Life Explorers 2000: Trip Atlas*: The full color atlas of the 2000 Cross-continent exploration, 45 pp.
- 2001 Carstensen, L.W. & R.W. Morrill, *Geography for Life Explorers 2000: Exercise Book*: The field study Guide for the US and Canada 47 pp.
- 2001 L.W. Carstensen, C.W. Bostian, and G.E. Morgan, "Combining Electromagnetic Propagation, Geographic Information Systems, and Financial Modeling in a Software Package for Broadband Wireless Wide Area Network Design." Proceedings of the International Conference on Electromagnetics in Advanced Applications (ICEAA 01), pp. 799-810, Torino, Italy, September 10-14, 2001.



- 2002 Charles W. Bostian, Laurence W. Carstensen, and Dennis G. Sweeney, "Using Geographical Information Systems to Predict Coverage in Broadband Wireless Systems" 27<sup>th</sup> General Assembly of the International Union of Radio Science (URSI), Maastricht, Netherlands, August 17-24, 2002. Paper P2238. Proceedings are available on CD ROM only. 4 pages.
- 2002 P.M.Baldassaro, C.W. Bostian, L.W. Carstensen, and D.G. Sweeney, "Path Loss Predictions and Measurements Over Urban and Rural Terrain at Frequencies Between 900 MHz and 28 GHz," 2002 IEEE AP-S International Symposium, San Antonio, TX, June 16-21, 2002. . Proceedings, Volume 2, pp. 302-305. ISBN 0-7803-7331-6
- 2002 Charles W. Bostian, Laurence W. Carstensen, and Dennis G. Sweeney, "Using Geographical Information Systems to Predict Coverage in Broadband Wireless Systems" 27<sup>th</sup> General Assembly of the International Union of Radio Science (URSI), Maastricht, Netherlands, August 17-24, 2002. Paper P2238. Proceedings are available on CD ROM only. 4 pages
- 2004 Lineback, Neal & L.W. Carstensen, "The World Geography Bowl", The Role of the South in the Making of American Geography: Centennial of the AAG, 2004, Southeastern Division of the Association of American Geographers, pp. 383-386
- 2005 Carstensen, L.W, Geographic Information Systems (GIS) and the Virginia Atlas: Tutorials for Exploring Virginia Data, The Virginia Geographer, Vol. 33, No. 2, pp. 26-39.

## **PRESENTATIONS AT PROFESSIONAL MEETINGS**

### Papers

- 1978 "The SYANAL Program: Area Analysis and SYMAP Maps" to the Southeastern Division of the Association of American Geographers, Athens, GA., This paper won honorable mention in the M.A. student honors competition (November 20, 1978)
- 1980 "The Use of Continuous Shading on Two-Variable Maps" to the Southeastern Division of the Association of American Geographers, Blacksburg, VA. (November 22, 1980)
- 1980 "The Expansion of the McDonald's Corporation in the United States, 1955-1978" to the Southeastern Division of the Association of American Geographers, Blacksburg, VA. (November 20, 1980)
- 1981 "The Burger Kingdom: The Growth and Diffusion of McDonalds in the United States, 1955-1978" to the West Lakes Division of the Association of American Geographers, Milwaukee, WI. (November 21, 1981)
- 1983 "Perception of Variable Similarity on Classified and Continuous Two-Variable Maps" to the Association of American Geographers, 79th annual meeting, Denver, CO. (April 25, 1983)

- 1984 "Digital Production of the Green Bay, Wisconsin Area Street Map," to the Association of American Geographers, 80th Annual Meeting, Washington, D.C., (April 23, 1984)
- 1984 "A Mathematical Approach to the Location of Spot Symbols," to the Southeastern Division of The Association of American Geographers, Birmingham, Ala. (November 20, 1984)
- 1986 "Teaching Map Reading Through a Competitive Tournament" to the Association of American Geographers, 82nd Annual Meeting, Minneapolis, MN. (May 6, 1986)
- 1986 "Regional land Information System Development Using Relational Databases and Geographic Information Systems" to AUTO-CARTO LONDON conference, London, England. (September 16, 1986)
- 1986 "Simulation of Orienteering Using Surrogate Travel Techniques and Videodisc Technology," to the Southeastern Division of the Association of American Geographers, Lexington, KY. (November 25, 1986)
- 1987 "Videodiscs and Surrogate Travel: Applications in the Instruction of Map Use," to the Association of American Geographers, 83rd annual meeting, Portland Oregon. (April 24, 1987)
- 1987 "Computer-Assisted Mapping from Unrectified Soil Survey Field Maps," to the American Society of Agricultural Engineers, 1987 Summer meeting, Baltimore, MD. (Richard K. Byler (AG-ENG) was first author). (June 30, 1987)
- 1987 "Desk Top Scanning for Cartographic Laboratories," to the Southeastern Division of the Association of American Geographers, 1987 Annual meeting, Charlotte, N.C. (November 23, 1987)
- 1988 "Fractal Self-Similarity in Cartographic Line Generalization," to the Association of American Geographers, 84th annual meeting, Phoenix, Arizona. (April 7, 1988)
- 1988 "An Integrated Exercise in GIS using the Map Analysis Package and a Relational Database," to the Southeastern Division of the Association of American Geographers, Mobile, AL. (November 23, 1988)
- 1989 "Map Design and Micro-Computers: Systems Configuration", presentation to the annual meeting of the Association of American Geographers, Baltimore, MD.
- 1989 "A Map Position-Finding Exercise using Still Photography" to the Southeastern Division of the Association of American Geographers, November 22 (co-authored with Allan B. Cox).

- 1990 "Effects of Generalization on Map Feature Representations," to the Application of Geographic Information Systems, Simulation Models, and Knowledge-Based Systems for Landuse Management conference, Blacksburg, VA. (one of three authors, presented by John A. Young)
- 1990 "Computerized Simulations for Introductory Geography Instruction", to the Application of Geographic Information Systems, Simulation Models, and Knowledge-Based Systems for Landuse Management conference, Blacksburg, VA. (one of six authors, presented by Vincent Miranda).
- 1990 "Cartographic Production in GIS," to the Montana GIS Conference, Missoula, MT, Dec 4.
- 1990 "Fractals: Applications in Wildlife and Forest Management" to the Montana GIS Conference, Missoula, MT, Dec 5.
- 1991 "Map Production Techniques in GIS" to the Virginia GIS Conference, Roanoke, VA, October 9.
- 1991 "IDRISI: An Inexpensive Desktop GIS" to the Virginia GIS Conference, Roanoke, VA, October 10 (with Mario Field).
- 1991 "GeoSim: A Geographic Information System-Based Laboratory for Introductory Geography," to the National Council for Geographic Education Annual Meeting, St. Paul, MN, October 25 (with R.W. Morrill).
- 1994 "Geographic Education using GIS: The GeoSim Project" to the Virginia Geographic Information Systems Annual Meeting, Fairfax, VA, 10/27/94
- 1994 "Geography and Educational Technology" to the Geography for Life: Geography Standards and Preservice Teacher Education meeting, Lexington, VA, 12/3/94
- 1998 Carstensen, L.W., "Services and Activities at the Virginia Tech Office of Geographic Information Systems and remote Sensing Research", to the Virginia GIS Conference, Richmond, VA, September 25, 1998.
- 1999 Carstensen, L.W., "GIS & GPS: Mayday Transportation Services", to the Office of GIS and Remote Sensing Research first annual symposium (OGIS), February 17, 1999.
- 1999 Carstensen, L.W. "GETWEBS: The Geographic Engineering Tool for Wireless: Evaluation of Broadband Systems" to the Virginia Geographic Information Systems Conference in Abingdon, VA, October 7, 1999.
- 2000 Carstensen, L.W. "GETWEBS: The Geographic Engineering Tool for Wireless: Evaluation of Broadband Systems" to the Second Annual Office of GIS and Remote Sensing Research Symposium in Roanoke, VA, March 22, 2000.
- 2000 Carstensen, L.W. "GETWEBS: The Geographic Engineering Tool for Wireless: Evaluation

of Broadband Systems” to the Virginia Center for Innovative Technology’s “Is there a Need for a Technology Center of Excellence in Spectral Imaging and Remote Sensing?” conference, Herndon VA, March 23, 2000.

- 2000 “Geography and the ACITC”, presentation to the William Preston Society of Virginia Tech, Blacksburg, VA, September 1, 2000
- 2000 “GETWEBS: An Interdisciplinary research project for Wireless Deployment”, to the Wireless Opportunities Workshop, Herndon, VA, September 25, 2000
- 2000 “GETWEBS: Software for High Speed Internet access deployment”, Virginia GIS conference, Richmond, VA, October 26, 2000
- 2001 “GETWEBS: An Interdisciplinary Educational Approach to Broadband Wireless System Design”, National Science Foundation Wireless Technology Grantees Workshop, Washington, DC (National Academy of Science), February 21, 2001.
- 2001 L.W. Carstensen, C.W. Bostian, and G.E. Morgan, "Combining Electromagnetic Propagation, Geographic Information Systems, and Financial Modeling in a Software Package for Broadband Wireless Wide Area Network Design." to the International Conference on Electromagnetics in Advanced Applications (ICEAA 01), Torino, Italy, September 10-14, 2001.
- 2002 Carstensen, L.W., “GETWEBS design software: A MapObjects Application for Design of Wireless Telecommunications” to the third annual Office of GIS and Remote Sensing Research Symposium, Roanoke, VA, March 13, 2002
- 2002 Charles W. Bostian, Laurence W. Carstensen, and Dennis G. Sweeney, “Using Geographical Information Systems to Predict Coverage in Broadband Wireless Systems” 27<sup>th</sup> General Assembly of the International Union of Radio Science (URSI), Maastricht, Netherlands, August 17-24, 2002.
- 2002 P.M.Baldassaro\*, C.W. Bostian, L.W. Carstensen, and D.G. Sweeney, “Path Loss Predictions and Measurements Over Urban and Rural Terrain at Frequencies Between 900 MHz and 28 GHz,” 2002 IEEE AP-S International Symposium, San Antonio, TX, June 16-21, 2002. . Proceedings, Volume 2, pp. 302-305. ISBN 0-7803-7331-6
- 2003 Carstensen, L.W., C Bostian & G. Morgan, “After GETWEBS: Virginia Tech Geography’s Continuing Research into Spatial Modeling for Wireless Systems”, 2003 IEEE Topical Conference on Wireless Communication Technology and NSF Wireless Grantees Workshop, Honolulu, HI, October 17, 2003
- 2004 Carstensen, L.W., “GETWEBS design software: A MapObjects Application for Design of Wireless Telecommunications” to the Wireless Opportunities Workshop, September 27, 2004

- 2004 Carstensen, L.W., C. Bostian and G. Morgan, "Wireless Research in the Department of Geography at Virginia Tech" to the Virginia GIS conference, Roanoke, VA November 8, 2004
- 2004 Carstensen, L.W., "GETWEBS design software: A MapObjects Application for Design of Wireless Telecommunications" to the Wireless Opportunities Workshop, Blacksburg, VA, September 27, 2004
- 2004 Carstensen, L.W., C. Bostian and G. Morgan, "Wireless Research in the Department of Geography at Virginia Tech" to the Virginia GIS conference, Roanoke, VA November 8, 2004
2005. Kennedy, L.M., D. Kramar, L.W. Carstensen, and W. Goodale, "Spatial Patterns of Common Loon Blood Mercury Levels in the Rangeley Lakes, Maine." Poster presented at the 101st annual meeting of the Association of American Geographers, Denver, CO. April 5, 2005
- 2005 North, C. & L.W. Carstensen, "Ultra-High Resolution Interactive Information Visualization ", ARDA Kick-Off Meeting, Tampa, FL, February 22, 2005
- 2005 Carstensen, L.W. & C. North, "Ultra-High Resolution Interactive Information Visualization", OGIS Symposium, Blacksburg, Virginia, April 29, 2005
- 2005 North, C. & L.W. Carstensen, "Ultra-High Resolution Interactive Information Visualization", ARIVA Annual Meeting, Orlando, FL, November 30, 2005
- 2006 Carstensen, L. W. and Candice Luebbering, "Map Reading Efficiency on Variable Format High-Resolution Displays," Chicago, IL, Association of American Geographers Annual Meeting, March 10, 2006
- 2006 Luebbering, Candice, and L. W. Carstensen, "Effectiveness of the Gigapixel Display for Interpretation of Geospatial Data", Blacksburg, VA, OGIS Symposium, April 21, 2006 (POSTER)
- 2006 Foy, Andrew, and L. W. Carstensen, "Application of Spatial Uncertainty Models to Automate and Enhance Data Fusion: A Raster Modeling Approach", Blacksburg, VA, OGIS Symposium, April 21, 2006 (POSTER)
- 2006 Poudel, Om, and L. W. Carstensen, "Identifying Barriers and Least Cost Paths for Autonomous Vehicle Navigation Using LIDAR Data", Blacksburg, VA, OGIS Symposium, April 21, 2006 (POSTER)
- 2009 A. Dalton & L.W. Carstensen. 2009. Autonomous Vehicle Path Planning with Remote Sensing Data. Association of American Geographers annual Meeting, Las Vegas, NV, March 22, 2009.

- 2010 L.W. Carstensen, "Professional Department Head's for geography: Do budgets override academics in today's university setting?" Association of American Geographers annual Meeting, Washington, DC, April, 17, 2010

#### Workshops

- 1985 "The MENTMAP system for Mental Map analysis on the IBM-PC." to the Association of American Geographers, 81st Annual Meeting, Detroit, MI. (April 22, 1985)
- 1987 "The Map-Environment Interface: Surrogate Travel by Videodisk," hardware and software demonstration at the AUTO-CARTO VIII meeting, Baltimore, MD. (April 1, 1987)
- 1989 "Theoretical Accuracy and Scale" presented in the Map Critique Workshop, annual meeting of the Association of American Geographers, Baltimore, MD.
- 1990 "Cartography and Geographic Information Systems," workshop presented to the Montana GIS Conference, Missoula, MT, Dec. 3 (with Paul Wilson, GEOG - University of Montana).
- 1991 "Cartography and Geographic Information Systems," workshop presented to the Montana GIS Conference, Bozeman, MT, Dec. 3 (with Paul Wilson, GEOG - University of Montana).
- 1992 "Farm-Scale Computer Mapping," workshop presented at the Crop and Pest Management School at Montana State University, Jan. 15. (developed during 12/91, presented by John Wilson and Christine Ryan of MSU).
- 1992 "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," workshop presented to the Southeastern Division of the Association of American Geographers, Louisville, KY. Nov. 23 (with R.W. Morrill).
- 1992 "Cartography and Geographic Information Systems," workshop presented to the Montana GIS Conference, Butte, MT, Dec. 1 (with Paul Wilson, GEOG - University of Montana).
- 1993 "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," workshop presented to the Association of American Geographers, Atlanta, GA, April 6 (with R.W. Morrill).
- 1993 "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," workshop presented to the Southeastern Division of the Association of American Geographers, Greensboro, NC, November 11/22/93 (with R.W. Morrill).
- 1994 "Project GeoSim: Software for Interactive Learning in Introductory Geography," workshop presented to the National Council for Geographic Education annual meeting, Lexington, KY, 11/3/94 (with R.W. Morrill).

- 1994 "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," workshop presented to the Southeastern Division of the Association of American Geographers, Virginia Beach, VA, 11/21/94 (with R.W. Morrill).
- 1995 "Project GeoSim: A GIS-Based Simulation Laboratory for Introductory Geography," workshop presented to the Association of American Geographers, Chicago, IL, 4/13/95
- 1995 "Geosim Software in the Classroom" workshop presented to the National Council for Geographic Education, San Antonio, TX, 10/27/95.

## **INVITED LECTURES**

- 1983 "Geographic Data Bases: Creation Techniques and Limitations," to the Conference on Computer Applications in Planning, Richmond, VA. (November 5, 1983)
- 1987 "Orienteering: A Videodisc Simulation," to the Departments of Education and Geography, University of Maryland-Baltimore County (with Allan B. Cox). (April 2, 1987)
- 1994 "GIS Programs at Virginia Tech" to the graduate seminar, department of Landscape Architecture, Virginia Tech, 9/9/94.
- 1995 "GIS Courses available at Virginia Tech" to the Earth Sciences Honor Society, Virginia Tech, 4/21/95
- 2001 "GETWEBS: Don't Become a Geography Island - Lessons from Interdisciplinary Education" to the Geography Club, University of North Carolina at Greensboro, April 11, 2001
- 2001 "Mathematical Solutions to the Interpolation Problem for the Production of Isoline Maps" to the Introductory Cartography Class, University of North Carolina at Greensboro, April 11, 2001.
- 2001 Invited Panelist in Adapazari, Turkey – Microzonation for Earthquake Mitigation project of the World Institute for Disaster Risk Management, June 19-20, 2001

## **GRANTS**

- 1984 Principal Investigator, CORE Grant from the Commonwealth of Virginia to study "Perceptions of Bivariate Choropleth Maps" Award: \$ 700.00
- 1985 Principal Investigator, CORE Grant from the Commonwealth of Virginia to study "Visual Map Comparison and Measures of Map Correspondence" Award: \$ 500.00
- 1985 WDBJ television, \$ 350.00, Principal Investigator, "A Geographic Information System Approach to the determination of a Microwave Viewshed from Poor Mountain".

- 1986 Principal Investigator, CORE Grant from the Commonwealth of Virginia to study "Toward More Efficient Cartographic Displays for Users of geographic Information Systems" Award: \$ 1,500.00
- 1986 Learning Resources Center \$ 2,000.00, Co-Investigator, "A Videodisc Simulation Exercise for Orienteering with Map and Compass," with Allan B. Cox (GEOG).
- 1986 Soil Conservation Service, USDA \$ 1,496.00, Co-Investigator, "Computer-Assisted Preparation of Soils Maps from Unrectified Field Sheets," . with V. Shanholz and R. Byler - AG. ENG.
- 1986 Virginia Tech Educational Foundation \$ 1000.00, Recipient, Travel Grant to present a paper entitled "Land Information Systems using Relational Databases and Geographic Information Systems"
- 1986 College of Arts and Sciences, Virginia Tech, \$ 40,000.00, Co-Investigator, "A Microcomputer Laboratory for Excellence in Undergraduate Instruction in Cartography and Remote Sensing," a proposal prepared for the State Council for Higher Education in Virginia (SCHEV) requesting the necessary computer and peripheral equipment for the Spatial Analysis Laboratory in the Department of Geography. with J.B. Campbell (GEOG)
- 1987 U.S. Army Construction Engineering Research Laboratory, Champaign, IL., \$6,037.50, Co-Investigator, "Orienteering Videodiscs - Surrogate Travel" with Allan B. Cox (GEOG)
- 1987 U.S. Army Humphreys Engineering Center Support Activity Branch, Fort Belvoir, VA, \$3,406.30, Co-Investigator, "Short Term Student Contract for Generation of Country or Regional Temperature Index Maps," with John A. Young (GEOG)
- 1987 Fifth Planning District Commission, Roanoke, VA, : \$ 350.00. Principal Investigator, "Cadastral Mapping to a Planimetric Base: Roanoke, VA,"
- 1987 Virginia Tech Educational Foundation, \$ 610.00 Recipient, Travel Award from the to travel to Springfield, MO to receive a Distinguished Teaching Award from the National Council for Geographic Education.
- 1989 General Dynamics Corporation \$43,000, Co-Investigator, "The Digital Chart of the World," with J.B. Campbell, C.A. Shaffer (CS) and E.A. Fox (CS)
- 1989 Co-Investigator, "CIT matching - The Digital Chart of the World," funded by the Center for Innovative Technology. (with J.B. Campbell, C.A. Shaffer (CS) and E.A. Fox (CS)) Award: \$33,000
- 1991 Virginia Tech SARSA, \$9,500 Co-Investigator, "Satellite Image Interpretation of Agricultural Land Uses in the Brazilian Amazon: A Test of SPOT", with John Browder (UAP) and J.B. Campbell (GEOG)



- 1991 Intel Corporation \$35,752, Co-Investigator, "Enhanced Surrogate Travel Simulations Using DVI Technology: Navigation and Way Finding," with E.A. Fox, (CS)
- 1991 Virginia Geographic Alliance \$41,793, Co-Investigator, "1992 Virginia Summer Geography Institute for K-12 Teachers (with R.W. Morrill)
- 1992 National Science Foundation - Undergraduate Curriculum and Course Development in Engineering, Mathematics and the Sciences Program, \$107,940. Co-Investigator, "GeoSim: A Geographic Information System-Based Laboratory for Introductory Geography" with R.W. Morrill, Clifford Shaffer, and E.A. Fox.
- 1992 U.S. Department of Education, Fund for the Improvement of Post-Secondary Education (FIPSE), \$149,571. Co-Investigator, "GeoSim: A Geographic Information System-Based Laboratory for Introductory Geography" with R.W. Morrill, Clifford Shaffer, and E.A. Fox.
- 1992 Virginia Geographic Alliance \$43,553, Co-Investigator, "1993 Virginia Summer Geography Institute for K-12 Teachers, with R.W. Morrill.
- 1992 Virginia Geographic Alliance, \$750. Travel Award for the NCGE: ArcView project, (travel to Redlands, CA).
- 1992 Environmental Systems Research Institute, \$1,500. NCGE: ArcView Project, grant of Educational Materials, (with R.W. Morrill)
- 1993 Site License Committee of Virginia Tech, \$3,220, Site License for Atlas\*GIS software, with Zorica Budic (UAP) and Paul Bolstad (FOR)
- 1993 Virginia Geographic Alliance, \$18,300. National Standards in Geography: Conference for Pre-service Teacher Educators, with R.W. Morrill (GEOG), Bert Milburn (teacher), Lillian Van Lear (teacher), and Melanie Biermann (EDTC).
- 1994 Virginia Geographic Alliance, \$21,580, Geography for Life: Preservice Teacher Education Summer Institute. with R.W. Morrill.
- 1995 SpaceVest, \$54,007, Space Market Investment Overview, 1996. With George Morgan, J Sirgy, and S. Midkiff.
- 1997 Virginia Geographic Alliance, \$39,000, Geography for Life Explorations(AMTRAK trip across the United States), 1998 summer institute for Virginia teachers and students. with R. W. Morrill
- 1997 Virginia Tech College of Arts and Sciences, \$8,500, Geography for Life Explorations(AMTRAK trip across the United States), 1998 summer institute for Virginia teachers and students. with R.W. Morrill
- 1997 National Geographic Society, \$50,000 to support the activities of the Virginia Geographic Alliance for 1998-1999. with R.W. Morrill

- 1998 Reflexions, Inc.: \$7,450, "Prototype: Antarctic Science Information and Analysis System" (with Alan Moore)
- 1998 Environmental Protection Agency: \$25,000, "Research, Development, and a Feasibility Study of Telemetry/Remote Control for Small Water Systems in a Geographic Information System Environment: A Case Study of the Tazewell Water System, Virginia" (with Center for Wireless Technology, Va. Water Center, Tammin Younos)
- 1998 Virginia Center for Innovative Technology: \$25,000, "The Virginia Center for Applications of Geographic Information Systems and Remote Sensing" (with James Campbell, Randolph Wynne, Jeff Waldon, Carl Zipper, Richard Oderwald)
- 1998 Virginia State Police: \$13,500 "Cost Analysis for the new Virginia State Police Radio System" (with Communications Network Services, Center for Wireless Telecommunications)
- 1998 Iridium LLC: \$15,358, "Worldwide Cellular Coverage: A Prototype Database for Cellular Telecommunications Market Analysis" (with Christie Thompson - SAWBUC)
- 1998 Virginia Geographic Alliance: \$25,000, Geography for Life Explorations (AMTRAK trip across the United States), 1999 summer institute for Virginia teachers and students. with R. W. Morrill
- 1998 National Geographic Society: \$50,000 to support the activities of the Virginia Geographic Alliance for 1998-1999. with R.W. Morrill
- 1998 Commonwealth of Virginia: \$25,000 to support the activities of the Virginia Geographic Alliance for 1998-1999. with R.W. Morrill
- 1999 National Geographic Society: \$50,000 to support the activities of the Virginia Geographic Alliance for 1999-2000. with R.W. Morrill
- 1999 Commonwealth of Virginia: \$50,000 to support the activities of the Virginia Geographic Alliance for 1999-2000. with R.W. Morrill
- 1999 National Science Foundation: \$199,611 "The Geographic Engineering Tool for Wireless: Evaluation of Broadband Systems (GETWEBS)" (with C. Bostian, G. Morgan).
- 2000 Virginia Geographic Alliance: \$38,500, Geography for Life Explorations (Amtrak and Via Rail across the United States and Canada) 2000 Summer Institute for Virginia teachers and out of state teachers. With R.W. Morrill; Co-PI
- 2000 National Geographic Society: \$50,000 to support the activities of the Virginia Geographic Alliance for 2000-2001, with R.W. Morrill and Joseph Eneyd (JMU); Co-PI

- 2000 Commonwealth of Virginia: \$50,000 to support the activities of the Virginia Geographic Alliance for 2000-2001, with R.W. Morrill and Joseph Eney (JMU); CO-PI
- 2000 Virginia Atlas Project: Virginia Geographic Alliance, \$73,131 with R.W. Morrill and Joseph Eney (JMU), 2001-2002; CO-PI
- 2000 “Exploring the New Virginia Atlas”: National Geographic Society, \$32,020, with R.W. Morrill and Joseph Eney (JMU), 2001-2002; CO-PI
- 2000 A Proposal to Study Henry and Patrick Counties to Determine the Options for LMDS Service: Henry County, VA, \$155,402, with Charles Bostian (EcpE) and George Morgan (FIN); Co-PI in charge of the Geographic Analysis
- 2000 NSF Digital Government: Testbed for High-Speed 'End-to-End' Communications in Support of Comprehensive Emergency Management, National Science Foundation, \$250,000, with Charles Bostian (EcpE) and Scott Midkiff (EcpE), CO-PI in charge of the Geographic Analysis and software development for GIS operations
- 2000 Geographic Information Systems in Support of Market Analysis, Advance Auto Parts, \$6,375, Principal Investigator
- 2001 Cumberland Plateau Planning District Commission: \$96,229 “The Town of Grundy Wireless Telecommunications Study”, with Kent Nakamoto (MAR), principal investigator
- 2001 Virginia Geographic Alliance: \$46,000, Geography for Life Explorations (Amtrak and Via Rail across the United States and Canada) 2002 Summer Institute for Virginia teachers and out of state teachers. With R.W. Morrill; Co-Principal Investigator
- 2001 Commonwealth of Virginia: \$50,000 to support the activities of the Virginia Geographic Alliance for 2001-2002, with R.W. Morrill and Joseph Eney (JMU); CO-PI
- 2001 Travel Grant, Virginia Tech Foundation, paper presentation at the International Conference on Electromagnetics in Advanced Applications, Torino, Italy, \$1000
- 2003 Lockheed Martin Corporation: “Digital Radio Test and Verification”, funded from September – December, 2003, \$35,000, Co-PI with Dennis Sweeney (ECE)
- 2004 Lockheed Martin Corporation: “A GIS Evaluation of Geographic Effects on Signal Propagation at 150 – 900Mhz. Frequencies”, funded from January 1, 2004 – December 31, 2004, \$80,000, CO-PI with Dennis Sweeney (ECE)
- 2004 Virginia Geographic Alliance: \$60,000, Geography for Life Explorations (Amtrak and Via Rail across the United States and Canada) 2004 Summer Institute for Virginia teachers. With R.W. Morrill; Co-Principal Investigator
- 2004 NAVIAR Orlando TSD Contracts Department: “Developing the Joint Unmanned Systems Experimentation and Research (JOUSTER) Site”, with Charles Reinholtz (ME),

\$12,200,000.

- 2005 Lockheed Martin Corporation: "A GIS Evaluation of Geographic Effects on Signal Propagation at 150 – 900Mhz. Frequencies", NEW funded from January 1, 2005 – December 31, 2005, \$45,000, PI (50%) with Co-PIs James B. Campbell (GEOG) and Dennis Sweeney (ECE)
- 2005 Advanced Research and Development Activity (ARDA) "Ultra-High Resolution Interactive Information Visualization", Proposal submitted in Response to BAA number HM1582-04-BAA-0007 for the Geo-Spatial Intelligence Information Visualization Program, submitted February,16, 2005, \$497,933 (Co-PI (20%) with Chris North (CS))
- 2005 National Geospatial Intelligence Agency (NGA) University Research Initiatives, BAA HM1582-05-BAA-0002 "Application of spatial uncertainty models to automate and enhance data fusion" NGA Sub-topic Area 4: Next Generation Data Fusion, submitted March, 25, 2005, NEW funded for August 16, 2005 – August 15, 2007, requested amount \$449,633, CO-PI (36%) with Steve Prisley (FOR).
- 2005 Lockheed Martin Corporation: "'GIS Applications for Efficient and Effective Sensor Placement and Monitoring Locations for the Intelligence & Homeland Security Systems Line of Business of Integrated Systems & Solutions", PI (100%), \$55,000
- 2006 Nutech Solutions, Inc.: "Geographic Data Visualization on High-Resolution Displays", Co-PI (20%) with Chris North (CS)
- 2008 Institute for Local Self-Reliance: "An Organics Recycling Planning Tool using GIS Modeling", PI (90%) with Thomas Dickerson, \$8,000.
- 2008 College of Natural Resources Local-Scale Factors Affecting White Pine Blister Rust Incidence in Whitebark Pine (*Pinus Albicaulis*) at Alpine Treeline: A Pilot Study, \$5,000
- 2009 Virginia Department of Mines, Minerals and Energy: "Inventorying Residual Biomass to Identify Opportunities for New Revenue Streams in the Commonwealth: Building One Common Database through Collaboration & Integration," \$5,000
- 2010 US Department of Agriculture: Graduate Training Program in Quantitative Sciences for Sustaining Forest Resources Burkhardt H; Carstensen L; Prisley S; Radtke P; Reynolds M; Thomas V; Wynne R USD 236,000
- 2014 Institute for Creativity Arts and Technology: "A unique platform for three-dimensional meteorological immersion and exploration", \$25,000
- 2015 Virginia Geographic Alliance: \$41,508, Geography for Life Explorations (Amtrak and Via Rail across the United States) 2016 Summer Institute for Virginia teachers. With R.W. Morrill; Co-Principal Investigator

## PROFESSIONAL AFFILIATIONS AND SERVICE ACTIVITIES

### Affiliations

- Association of American Geographers
- Cartography Specialty Group of the Association of American Geographers
- GIS Specialty group of the Association of American Geographers
- Southeastern Division of the Association of American Geographers

### Elected National Offices

- 1986-1987 Academic Director of the Cartography Specialty Group of the Association of American Geographers.
- 1988-1989 Vice-chair of the Cartography Specialty Group of the Association of American Geographers.
- 1989-1990 Chair of the Cartography Specialty Group of the Association of American Geographers.

### Other National Service Activities

- 1985 Editor of the first Membership Directory of the Cartography Specialty Group of the Association of American Geographers.
- 1991-1999 Book review Editor *Cartography and Geographic Information Systems*
- 1997 Virginia State representative to the Steering Committee Southeastern Division of the Association of American Geographers
- 1998 – present Webmaster – Southeastern Division of the Association of American Geographers
- 1999 Virginia Representative to the World Geography Bowl Committee - Southeastern Division of the Association of American Geographers
- 2000 Member of the Honors Committee - Southeastern Division of the Association of American Geographers – Chapel Hill, NC, November 19-21, 2000
- 2000 - Judge and Moderator of the Final Round, National Geographic Society Virginia State Geographic Bee,
- 2001 - Organizer and Co-Chair of the World Geography Bowl, Annual Meeting of the Association of American Geographers, New York, NY, March 22, 2001

- 2001 Chair of the Honors Committee - Southeastern Division of the Association of American Geographers – Lexington, KY, November 18-20, 2001
- 2001 - present World Geography Bowl Committee Organizer & Chair (SEDAAG and the AAG meeting bowls annually)

#### Conference Participation

- 1983 Organizer and Chair of Cartography Specialty Group Session, "Choropleth Mapping and Correlation" at the 79th annual meeting of the Association of American Geographers, Denver, CO.
- 1983 Moderator of Panel Discussion on State and Regional Atlases, Southeastern Division of the Association of American Geographers, Orlando, FL.
- 1984 Chair of Session, "Cartography: Past, Present, and Future," at the 80th annual meeting of the Association of American Geographers, Washington, D.C.
- 1984 Invited Participant representing the Cartography Specialty Group of the Association of American Geographers at the NACIS IV meeting, Pittsburgh, PA.
- 1984 Discussant of a paper titled "Distortion on Urban Cognitive Maps," by Robert Lloyd at the Southeastern Division of the Association of American Geographers, Birmingham, AL.
- 1985 Organizer and Chair of the workshop "Microcomputers in Cartographic Education" for the Cartography Specialty Group of the Association of American Geographers, Detroit, MI.
- 1985 Member of the Program Committee for the Annual Meeting of the Southeastern Division of the Association of American Geographers, Chapel Hill, N.C.
- 1985 Chair of Session "Cartography and Geographic Information Systems" at the Annual Meeting of the Southeastern Division of the Association of American Geographers.
- 1986 Chair and Organizer of Workshop on "Microcomputers in Cartographic Education," Annual Meeting of the Association of American Geographers, Minneapolis, Minnesota
- 1986 Chair and Organizer of a Panel Discussion "Certification and Standardized Curricula in Cartographic Education," Annual Meeting of the Association of American Geographers, Minneapolis, Minnesota.
- 1986 Chair of Paper Session "Computer Cartography," Annual Meeting of the Association of American Geographers, Minneapolis, MN.

- 1986 Discussant of a paper entitled "35 mm. Remote Sensing from a Remotely Controlled Model Aircraft Platform," at the annual meeting of the Southeastern Division of the Association of American Geographers, Lexington, KY.
- 1987 Chair of paper session "Map Design", Association of American Geographers, 83rd annual meeting, Portland, Oregon.
- 1987 Member of the Committee on Computers in Education, National Council for Geographic Education
- 1987 Chair of the Committee on Education, Cartography Specialty Group Association of American Geographers
- 1987 Chair of the Committee on Awards, Cartography Specialty Group Association of American Geographers
- 1988 Organizer and Chair of "Student Honors I and II" sessions at the annual meeting of the Association of American Geographers, Phoenix, AZ.
- 1988 Paper Discussant "Computer-Animation of a Simulated Tropical Cyclone", at the Southeastern Division of the Association of American Geographers, Mobile, AL.
- 1989 Organizer and Chair of session "Ethics in Cartography" at the annual meeting of the Association of American Geographers, Baltimore MD.
- 1990 Organizer and Chair of session "Ethics in Cartography" at the annual meeting of the Association of American Geographers, Toronto, Ont. CANADA
- 1990 AUTO-CARTO 10 - program committee
- 1993 Paper Discussant, "Visual Judgments of Map Similarity: Matching Features" at the annual meeting of the Southeastern Division of the Association of American Geographers, Greensboro, NC.
- 1994 Paper Discussant, "Learning Climates with Neural Networks" at the annual meeting of the Southeastern Division of the Association of American Geographers, Virginia Beach, VA 11/22/94.

Manuscript Reviews: Journals

I am an occasional reviewer for the following scholarly journals:

*The Professional Geographer*  
*Photogrammetric Engineering and Remote Sensing*  
*Cartographica*  
*Cartography and Geographic Information Systems*  
*The Journal of Geography*

### Manuscript Reviews: Books

- 1989 Prentice-Hall Publishers, two chapters of a proposed text book on Map Reading
- 1992 National Center for Geographic Information and Analysis, review for *Map Generalization: Making Decisions for Knowledge Representation*
- 1994 Wiley and Sons Publishers, review of the upcoming 6th edition of *Elements of Cartography*

### Proposal reviews for The National Science Foundation

- 1987- Regular reviewer of research proposals for the Geography and Regional Science Division
- 1990 - 1992 Panel Review Participant "Instrumentation and Laboratory Improvement" program, Washington, DC (annually for 3 years)

## **STUDENTS**

### Committee Chair (completed)

- 1985 Julia Elizabeth King, *The Communication of Profile Perspective Maps: A Perceptual Study*, Master of Science - Geography
- 1987 Timothy C. Herbert, "SOLGIS: A Soils Geographic Information System," (non-thesis) Master of Science - Geography
- 1987 Allan B. Cox, *Map Position Finding from Non-Motion Photographic Images*, Master of Science - Geography.
- 1989 Alkmini Katsada, "Rating Forest Fire Occurrence Danger Using Geographic Information Systems Technology," non-thesis project for the Master of Science - Geography.
- 1991 Patricia Mahoney, *Analysis of Technological Change and Relief Representation in U.S.G.S. Topographic Maps*, Master of Science - Geography.
- 1991 John A. Young, *Effect of Automated Cartographic Generalization on Linear Map Features*, Master of Science - Geography.
- 1992 Limei Ran, *Single Digital-Photo Correction for a GIS Application and Error Analysis*, Master of Science - Geography.



- 1992 Neeta Mehrotra, *An Automated Method for Locating Sinkholes in Montgomery County, Virginia Using Digital Elevation Models*, Master of Science - Geography.
- 1993 Loretta Bush, *Evaluating the Accuracy of Line Thinning Algorithms after Processing Scanned Data*, Master of Science - Geography.
- 1994 Matthew Miller, *An Historical Examination of Water Powered Mill Sites and Markets using Geographic Information System Analysis: Augusta County, Virginia, 1880-1885*, Master of Science - Geography.
- 1995 John Bayliss, *Map Position Finding Accuracy in a Computer Simulated Environment*, Master of Science - Geography
- 1996 Dennis Mitchell, *School Consolidation, Bus Routing and GIS: The Pendleton County, WV Case Study*, Master of Science - Geography
- 1997 Paul Bloom, *Administrative and Political Implications of GIS Implementation within the Fire Service A Case Study of Norfolk, VA* – Master of Science - Geography
- 1998 Robert Heselton, *Elevation Effects on GPS Positional Accuracy*, Master of Science - Geography
- 1999 Richard Easterbrook, *Predictive Probability Model for American Civil War Fortifications using a Geographic Information System*, Master of Science – Geography
- 2001 Paige Baldesaro, *RF and GIS: Field Strength Prediction for Frequencies between 900 MHz and 28 GHz.*, Master of Science - Geography
- 2001 Manin Dodd, *The Validity of Using a Geographic Information System’s Viewshed Function as a Predictor for the Reception of Line-of-Sight Radio Waves*, Master of Science - Geography
- 2001 Scott Rose, *The Effect of Digital Elevation Model Resolution on Wave Propagation Predictions at 24Ghz*, Master of Science - Geography
- 2001 JD Leach, *Prediction of Building Count and Dimensions from U.S. Census Data Using Multiple Regression*, Master of Science - Geography
- 2001 Deborah Wenner, *“The Virginia Grassland GIS”* – (non-thesis), Master of Science – Geography
- 2002 Jonathan Wingo, *“Using Modified Personal Digital Assistants in Disaster Management”* – (non-thesis), Master of Science – Geography
- 2002 Ryan Spencer, *“Modeling and Measuring GIS Viewshed Processing Speed on Different Digital Elevation Model Resolutions for Line of Sight Radio Wave Propagation – (non-thesis)*, Master of Science – Geography

- 2002 Brent Holoviak, "Application of Ancillary Data In Post-Classification To Improve Forest Area Estimates In A Landsat TM Scene", Master of Science – Geography
- 2003 Jason Cash, "Using Light Detection and Ranging (LiDAR) Imagery to Model Radio Wave Propagation", Master of Science – Geography
- 2004 David Kramar, "Estimating Hg Risk to the Common Loon (*Gavia immer*) in the Rangeley Lakes Region of Western Maine: A Regression Based GIS Model", Master of Science – Geography
- 2005 Alex Zendel, "Investigating the Role of Location-Allocation Models in Planning the Locations of Dry Fire Hydrants", Master of Science – Geography
- 2005 Matthew Germroth, "GIS and Satellite Visibility: Viewsheds From Space", Master of Science – Geography
- 2005 Christopher Stahl, "Accumulated Surfaces & Least-Cost Paths: A GIS Model for Autonomous Ground Vehicle Navigation", Master of Science - Geography
- 2005 Li Qing, "GIS Aided Radio Wave Propagation Modeling and Analysis", Master of Science - Geography
- 2005 Sean Wohltman, "Instantaneous GIS Based Navigation for Sailboats: An Anisotropic Routing Approach", Master of Science - Geography
- 2006 Ethan Knocke, "Modeling Flash Floods in Small Ungaged Watersheds using Embedded GIS," Master of Science – Geography
- 2007 David Arnold. "Environmental Justice in Virginia's Rural Drinking Water: Analysis of Nitrate Concentrations and Bacteria Prevalence in the Household Wells of Augusta and Louisa County Residents." Master of Science – Geography.
- 2007 Charles Appler, "A GIS Analysis of Residential Infill Development in Fairfax County, VA from a Citizen Drainage Complaints Perspective", Master of Science - Geography
- 2007 Candice Luebbering, "Beyond the Bezel: Utilizing Multiple Monitor High-Resolution Displays for Viewing Geospatial Data"
- 2007 Benjamin Turko, "A GIS-Based Viewshed Optimization Algorithm"
- 2007 Om Poudel, "Identifying Barriers and Least Cost Paths for Autonomous Vehicle Navigation Using Lidar Data"
- 2008 Aaron Dalton." Autonomous Vehicle Path Planning with Remote Sensing Data."
- 2011 Andrew Foy. July 2011. "GIS Uncertainty: Making sense out of spatial uncertainty."

- 2011 Matthew Miller. October 2011. "Intervisibility Uncertainty in GIS applications."
- 2012 Kathryn Proxiv. May 2012. "Terrain and Landcover Effects of the Southern Appalachian Mountains on the Rotational Low-Level Winds of SuperCell Thunderstorms."
- 2013 Charles Staton. July 2013. "Citizens as Sensors: Examining Tsai's Camera algorithm using a Location Based Social Network and smartphone GPS capabilities."
- 2014 David Kramar. "Evaluation, assessment, and determination of risk to high trophic level piscivores in the Mid-Atlantic: A spatial and comparative case study of mercury in Virginia and New England bald eagle populations."
- 2015 Daniel Moore. "A Zone-Based Multiple Regression Model to Visualize GPS Locations on a Surveillance Camera Image."
- 2015 Leslie Harwood. "Assessing the Relationship between Connected Vehicle Alert Validity Using LIDAR-Derived Models of the Earth"
- 2017 Trevor White: "

Committee Chair (work in progress as of 9/6/2018)

Yanshen Sun (MS)  
 Josh Starner (MS)  
 Eric West (MS)  
 Hudson Chase (MS)

Masters Degree Advisor\* or Committee Member – Complete list

Ghaleb Abdalla - Computer Science (completed 1993)  
 Kevin Allen\* - Geography  
 Mohammad Al-Smadi - Biological Systems Engineering (completed 1998)  
 Keith Appler\* – Geography (completed 2007)  
 David Arnold\* – Geography (completed 2007)  
 Leonard Baer - Geography (completed 1994)  
 Paige Baldessaro\* – Geography (completed 2001)  
 David Boldery - Computer Science (completed 1990)  
 Christopher Bunin – Geography (completed 2000)  
 Jason Cash\* – Geography (completed 2003)  
 Samuel Chambers\* – Geography (completed 2002)  
 Fay E. Cotton - Fisheries and Wildlife (completed 1991)  
 Joseph B. Curd - Geography (completed 1988)  
 Aaron Dalton\* - Geography (completed 2008)  
 Christopher Deckert - Forestry (completed 1994)  
 Nilesh Dingra - Civil Engineering (completed 1996)

Mannin Dodd\* – Geography (completed 2001)  
 Jianxun Dong - Urban Affairs and Planning (completed 1997)  
 Andrew Foy – Geography (MS – completed 2007)  
 Jonathan Frentzel – Mechanical Engineering (completed 2005)  
 Matthew Germroth – Geography (completed 2005)  
 Ted G. Goldsmith - Civil Engineering (completed 1987)  
 Qing Guo - Urban Affairs and Planning (completed 1997)  
 Evan Hart\* - Geography (completed 1996)  
 Leslie Harwood\* - Geography (Completed 2015)  
 Brandon Herrington – Geography  
 James Hutchings – Geography (completed 2005)  
 Brent Holoviak – Geography (completed 2002)  
 Eric Jeronimous – Urban Affairs and Planning (completed 2001)  
 David Kenney - Forestry (completed 1990)  
 Ethan Knocke\* – Geography (completed 2006)  
 David Kramar\* – Geography (completed 2004),  
 Sheryl Kriss - Computer Science (completed 1991)  
 Jamison Leach\* – Geography (completed 2001)  
 Candice Leubbering\* – Geography (completed 2007)  
 Paula L. Marques - Urban Affairs and Planning (completed 1988)  
 Priti Mathur - Geography (completed 1989)  
 Margaret G. Mayers - Geography (completed 1987)  
 Michael McGahee – Geography (completed 2009)  
 Matthew Miller\* – Geography (completed 1989)  
 Matthew Miller\* – Geography  
 Vincent Miranda - Computer Science (completed 1991)  
 Daniel Moore\* - Geography (completed 2015)  
 Maneesha Nabar - Urban Affairs and Planning  
 Elizabeth Noble - Geography  
 Michael O'Brien - Landscape Architecture  
 Vishal Pahuja – Urban Affairs and Planning (Completed 2001)  
 Robert Perry - Geography  
 Sherry Perry - Geography (completed 1987)  
 Om Poudel\* – Geography (completed 2007)  
 Li Qing\* – Geography (completed 2005)  
 Tim Ratcliff - Geography  
 Christopher Ratigan – Geography (completed, 2000)  
 Scott Rose\* – Geography (completed 2001)  
 Lisa Sanders - Geography  
 Jignesh Shah - Urban Affairs and Planning (completed 1997)  
 Emily K. Smith – Geography (completed 2009)  
 Parinya Somkliancharoen - Urban Affairs and Planning (completed 1997)  
 Ryan Spencer – Geography (completed 2002)  
 Christopher Stahl\* – Geography (completed 2005)  
 David Sterling – Geography (completed 2004)  
 Michael T. Story - Geography (completed 1987)  
 Travis Thekkudan – Geography (completed 2008)

Nirupama Thiruvengadam - Computer Science (completed 1993)  
 Ben Turko\* – Geography (completed 2007)  
 Ashwini, Waukchaure – Urban Affairs and Planning (completed 2001)  
 Debra Wenner\* – Geography (completed 2001)  
 Sean Wohltman\* – Geography (completed 2005)  
 Alex Zendel\* – Geography (completed 2005)

Doctoral Degree Advisor\* or Committee Member

Sanam Aksha – Geospatial and Environmental Analysis  
 Mohammad, Al-Smadi – Biological Systems Engineering (completed 2007)  
 Robert Ball – Computer Science (completed 2006)  
 Sheri Chandler - Fisheries and Wildlife  
 Andrew Foy\* - Geospatial and Environmental Analysis (in progress)  
 You Tong Fu - Biological Systems Engineering (completed 2003)  
 Timothy Gallagher – Electrical Engineering (completed 2004)  
 Matthew Heric - Education (completed 1996)  
 Wesley Kleene - Agricultural Engineering (completed 1995)  
 Colin Klipsch - Computer Science (completed 1995)  
 David Kramar\*, Geospatial and Environmental Analysis (in progress)  
 Yu-Fai Leung - Forestry (completed 1998)  
 Weiping Li - Agricultural Engineering (completed 1993)  
 Zenah Orndorff – Crop Soil Environmental Science (completed 2001)  
 Karen Poiani - Biology (completed 1991)  
 Gangling Ren - Biological Systems Engineering  
 Lauren Shupp – Computer Science (completed 2007)  
 Emily Smith – Geospatial and Environmental Analysis (completed 2014)  
 Robert Weih - Forestry (completed 1991)  
 Jeremy Wimpey – Geospatial and Environmental Analysis (completed 2009)  
 Elizabeth Yost – Computer Science (completed 2006)  
 Hao Yu – Fisheries and Wildlife  
 Wang Zheng - Agricultural Engineering

**INSTITUTIONAL SERVICE**

Departmental

1983-	Director of Computer Laboratories, Department of Geography
1983 -	Usual load of standard departmental committees
1983-1990	Manager of computer accounts and liaison to the computer center, Department of Geography
1983- 1996	Supervisor of the Cartographic Laboratories and Darkroom, Department of Geography

- 1986- Co-op coordinator for the Department of Geography
- 1983-1990 Faculty Advisor to the Student Chapters of the American Congress on Surveying and Mapping and the American Society for Photogrammetry and Remote Sensing
- 1988-1991 Graduate Director and Chair of the Committee on Graduate Studies, Department of Geography
- 1993- Network Liaison to Communication Network Services
- 1996 - Career Advisor, Department of Geography – GIS and Remote Sensing
- 2006 – 2016 Department Head, Department of Geography – Virginia Tech

College of Arts and Sciences

- 1988-1991 Curriculum Committee
- 1991- Long Range Planning Committee - Student Development Sub-committee
- 1994 - 1995 Chair, Internal Committee for the five year review of the department of Geography, Virginia Tech