

Curriculum Vitae

Name André Skupin

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Department of Geography
San Diego State University
San Diego, CA 92182-4493
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Professional Experience

August 2005 – current
San Diego State University – Department of Geography
Assistant/Associate Professor (Full Professor effective Fall 2012)

August 1997 – August 2005
University of New Orleans – Department of Geography
Instructor, Assistant/Associate Professor

January 1997 - May 1997
SUNY Buffalo – National Center for Geographic Information and Analysis
Graduate Research Assistant

August 1996 - December 1996
SUNY Buffalo – Department of Geography
Graduate Teaching Instructor

August 1995 - June 1996
SUNY Buffalo – National Center for Geographic Information and Analysis
Graduate Research Assistant

November 1994 - July 1995
Geographic Information Management Systems (GIMS), Midrand, South Africa
GIS Consultant

June 1994 - August 1994
Environmental Systems Research Institute (ESRI) Redlands, California
Software Development and Marketing Departments

January 1994 - May 1994
SUNY Buffalo – Department of Geography
Graduate Teaching Assistant

June 1993 - August 1993
Environmental Systems Research Institute (ESRI), Redlands, California
Software Development Department

April 1992 - July 1992
Technical University Dresden, Germany
Research Assistant
Co-director, ATKIS research group. Director, SICAD-GIS laboratory

August 1991 - November 1991
University of Osnabrück, Germany.
Employed by GTZ (German International Development Agency) for aerotriangulation, land use mapping, and GIS software testing tasks.

Education	August 1992 – August 1998 State University of New York at Buffalo Ph.D. Geography
	September 1987 - March 1992 Technical University Dresden, Germany Dipl.-Ing. Cartography
Languages	English and German fluency
Research interests	Visual Data Mining. Geographic Visualization and Information Visualization. Geographic Data Engineering and Cyberinfrastructures. Semantic Web. Spatio-Temporal Data Transformations.

Publications – Edited Books and Journal Issues

- Agarwal, P., and Skupin, A. (Eds.) (2008) *Self-Organising Maps: Applications in Geographic Information Science*, Chichester, England: John Wiley & Sons, Ltd.
- Skupin, A. and Börner, K. (Eds.) (2007) Mapping Humanity's Knowledge and Expertise in the Digital Domain. Special Theme Issue of *Environment and Planning B*. 34 (5, September): 765-838.
- Leitner, M. and Skupin, A. (Eds.) (2007) Cartography 2007: Reflection, Status, and Prediction (U.S. National Report to the International Cartographic Association). Special Theme Issue of *Cartography and Geographic Information Science*. 34 (2, April): 73-171.

Publications – Journal Articles

- Skupin, A. and Esperbé, A (2011) An Alternative Map of the United States Based on an n-Dimensional Model of Geographic Space. *Journal of Visual Languages and Computing*. doi:10.1016/j.jvlc.2011.03.004
- Boyack, K.W., Newman, D., Duhon, R.D., Klavans, R., Patek, M., Biberstine, J.R., Schijvenaars, B., Skupin, A., Ma, N. and Börner, K. (2011) Clustering More Than Two Million Biomedical Publications: Comparing the Accuracies of Nine Text-Based Similarity Approaches. *PLoS ONE*. 6(3): e18029.
- Schmidt, C.R., Rey, S.L., and Skupin, A. (2011) Effects of Irregular Topology in Spherical Self-organizing Maps. *International Regional Science Review*. 34(2): 215-229.
- Skupin, A. (2011) Mapping Text. *Glimpse | the art + science of seeing*. 3 (7, Winter): 69-77.
- Kolovos, A., Skupin, A., Jerrett, M., and Christakos, G. (2010) Multi-Perspective Analysis and Spatiotemporal Mapping of Air Pollution Monitoring Data. *Environmental Science & Technology*. 44(17): 6738-6744.
- Skupin, A. (2009) Discrete and Continuous Conceptualizations of Science: Implications for Knowledge Domain Visualization. *Journal of Informetrics*. 3 (3): 233-245.
- Ebinger, S. and Skupin, A. (2007) Comparing Different Forms of Interactivity in the Visualization of Spatio-Temporal Data. In: Fuhrmann, S. (Ed.) Special Issue of *Kartographische Nachrichten*. 57 (2, April): 63-70.
- Skupin, A. and Hagelman, R. (2005) Visualizing Demographic Trajectories with Self-Organizing Maps. *GeoInformatica*. 9(2): 159-179.
- Skupin, A. (2004) A Picture from a Thousand Words. *Computing in Science and Engineering*. 6 (5): 84-88.

- Skupin, A. (2004) The World of Geography: Visualizing a Knowledge Domain with Cartographic Means. *Proceedings of the National Academy of Sciences*. 101 (Suppl. 1): 5274-5278.
- Skupin, A. and Fabrikant, S.I. (2003) Spatialization Methods: A Cartographic Research Agenda for Non-Geographic Information Visualization. *Cartography and Geographic Information Science*. 30 (2): 99-119.
- Skupin, A. (2002) A Cartographic Approach to Visualizing Conference Abstracts. *IEEE Computer Graphics and Applications*. 22 (1): 50 - 58.

Publications – Book Chapters

- Skupin, A. (2010) Spatialization. In: Warf, B. (Ed.) *Encyclopedia of Geography*. Vol. V, SAGE Publications, Inc. 2649-2653 (modified from entry in Encyclopedia of Geographic Information Science)
- Skupin, A. and Skupin, M. (2009) On Written Language in Works of Art and Cartography. In: Cartwright, W., Gartner, G., and Lehn, A. (Eds.) *Cartography and Art*. Berlin/Heidelberg: Springer. 207-222.
- Skupin, A. and Esperbé, A. (2008) Towards High-Resolution Self-Organizing Maps of Geographic Features. In: Dodge, M., Turner, M., and Derby, M. (Eds.) *Geographic Visualization: Concepts, Tools and Applications*. Chichester, England: John Wiley & Sons, Ltd. 159-181.
- Skupin, A., and Agarwal, P. (2008) Introduction: What is a Self-Organizing Map? In: Agarwal, P., and Skupin, A. (Eds.) *Self-Organising Maps: Applications in Geographic Information Science*, Chichester, England: John Wiley & Sons, Ltd. 1-20.
- Skupin, A. (2008) Visualizing Human Movement in Attribute Space. In: Agarwal, P., and Skupin, A. (Eds.) *Self-Organising Maps: Applications in Geographic Information Science*, Chichester, England: John Wiley & Sons, Ltd. 121-135.
- Skupin, A., and Fabrikant, S.I. (2008) Spatialization. In: Wilson, J., and Fotheringham, S. (Eds.) *The Handbook of Geographical Information Science*. Blackwell Publishing, Ltd. 61-79.
- Skupin, A. (2007) Spatialization. In: Kemp, K. (Ed.) *Encyclopedia of Geographic Information Science*, Sage Publications, Inc. 418-422.
- Skupin, A. (2007) Where do you want to go today [in attribute space]? in: Miller, H. (Ed.) *Societies and Cities in the Age of Instant Access*. Springer. 133-149.
- Fabrikant, S.I. and Skupin, A. (2005) Cognitively Plausible Information Visualization. in: Dykes, J., MacEachren, A., and Kraak, M.J. (Eds.), *Exploring Geovisualization*. Amsterdam: Elsevier. 667-690.
- Skupin, A. (2002) On Geometry and Transformation in Map-like Information Visualization. In: Börner, K., and Chen, C. (Eds.) *Visual Interfaces to Digital Libraries (Lecture Notes in Computer Science 2539)*. Berlin: Springer-Verlag. 161-170.
- Mark, D., Skupin, A., and Smith, B. (2001) Features, Objects, and other Things: Ontological Distinctions in the Geographic Domain. In: Montello, D. (Ed.) *Spatial Information Theory: Foundations of Geographic Information Science (Lecture Notes in Computer Science 2205)*. Berlin: Springer-Verlag. 488-502.

Publications – Conference Proceedings (full papers, peer-reviewed)

- Skupin, A. and Hagelman, R. (2003) Attribute Space Visualization of Demographic Change. In: Hoel, E., and Rigaux, P. (Eds.) *Proceedings of the Eleventh ACM International Symposium on Advances in Geographic Information Systems, New Orleans, Louisiana, November 7-8*. New York: ACM Press. 56-62. (acceptance rate: 26%)

- Skupin, A. (2000) From Metaphor to Method: Cartographic Perspectives on Information Visualization. In: Roth, S.F., and Keim, D.A. (Eds.) *Proceedings IEEE Symposium on Information Visualization (InfoVis 2000)*, 9-10 October, Salt Lake City, Utah. Los Alamitos: IEEE Computer Society. 91-97. (acceptance rate: 26%)
- Skupin, A. and Battenfield, B.P. (1997) Spatial Metaphors for Visualizing Information Spaces. *Proceedings AUTO-CARTO 13*. Bethesda: ACSM/ASPRS. 116-125.
- Skupin, A. and Battenfield, B.P. (1996) Spatial Metaphors for Visualizing Very Large Data Archives. *Proceedings GIS/LIS'96*. Bethesda: American Society for Photogrammetry and Remote Sensing. 607-617.
- Skupin, A. (1996) Use of Huffman Trees to Encode Verbal Street Directions. *Salzburger Geographische Materialien*. vol. 24: 1-10.
- Wieshofer, M. and Skupin, A. (1996) Cartographic Expertise at the Hypermedia Frontier: Mapping of Hypermedia Structures and Use of Cartographic Animation as Two Examples. In: Mayer, F. (Ed.) *Wiener Schriften zur Geographie und Kartographie*, vol. 8: 96-105.

Publications – Conference Proceedings (full papers, not peer-reviewed)

- Burns, R. and Skupin A. (2009) Visualization of Attribute Spaces Involving Places, People and Utterances. *Proceedings of 24th International Cartographic Conference, Santiago, Chile November 15-21, 2009*. (CD-ROM)
- Skupin, A. and Skupin M. (2008) Partners in ConText: On Written Language in Works of Art and Cartography. *Symposium "Cartography and Art – Art and Cartography," February 1-2, 2008, Vienna, Austria*. (CD-ROM)
- Lacayo, M. and Skupin, A. (2007) A GIS-based Visualization Module for Self-Organizing Maps. *Proceedings of 23rd International Cartographic Conference, Moscow, Russia, August 4-10, 2007*. (CD-ROM)
- Skupin, A. and de Jongh, C. (2005) Visualizing the ICA – A Content-based Approach. *Proceedings of 22nd International Cartographic Conference, A Coruña, Spain, July 9-16, 2005*. (CD-ROM)
- Skupin, A. (2003) A Novel Map Projection Using an Artificial Neural Network. *Proceedings of 21st International Cartographic Conference, Durban, South Africa, August 10-16: 1165-1172*. (CD-ROM)
- Skupin, A. (2001) Cartographic Considerations for Map-like Interfaces to Digital Libraries. *First ACM+IEEE Joint Conference on Digital Libraries (JCDL '01). Workshop on Visual Interfaces to Digital Libraries. June 28, Roanoke, Virginia*. <http://vw.indiana.edu/visual01/skupin.pdf>

Publications – Conference Proceedings (extended abstracts, peer-reviewed)

- Skupin, A. (2010) Tri-Space: Conceptualization, Transformation, Visualization. *Sixth International Conference on Geographic Information Science (GIScience 2006), Zürich, Switzerland, September 2010*. (acceptance rate: 66%)
- Skupin, A. and Liggio, R. (2006) Label Determination for Document Spatialization. In: Raubal, M., Miller, H., Frank, A.U., and Goodchild, M. (Eds.) *Fourth International Conference on Geographic Information Science (GIScience 2006), Münster, Germany, September 2006*. IfGIprints vol. 28, Münster: Institut für Geoinformatik. 179-181. (acceptance rate: 53%)
- Skupin, A. (2002) Geometry, Resolution, Projection: A Geographic Reading of the SOM Method. *Second International Conference on Geographic Information Science (GIScience 2002), September 25-28, 2002, Boulder, Colorado*. Santa Barbara: University of California Regents. 272-274. (acceptance rate: 67%)

- Reviews**
- Skupin, A. (2003) Review of the Journal *Information Visualization*. *D-Lib Magazine* 9(9).
<http://www.dlib.org/dlib/september03/09journalreview.html>
- Skupin, A. (2002) Review of *Introduction to Geographic Information Systems* by Kang-tsung Chang.
Transactions in GIS 6(3): 342-343.

Own Work Featured

- Skupin, A. (2005) *In Terms of Geography*, featured in:
- Börner, K. (2010) *Atlas of Science*. MIT Press.
 - *Issues in Science and Technology* 27(Spring 2011): 2, 74-75.
- Skupin, A. (2000, 2002, 2004) as central topic of:
- Schubbach, A. (2009) Die Maßlose Darstellung von Bildern. In: Reichle, I., Siegel, S. (Eds.) *Maßlose Bilder: Visuelle Ästhetik der Transgression*, Fink-Verlag: 67-84.

Invited Presentations

- How to Map Practically Anything: Towards a Cartography of High-Dimensional Space*. **School of Geoinformation, Carinthia University of Applied Sciences**, Villach, Austria, May 29, 2012.
- How to Map Practically Anything: Towards a Cartography of High-Dimensional Space*. **Department of Geography, University of California – Santa Barbara**, April 26, 2012.
- Visualizing the Medical Sciences: A Self-Organizing Map Approach*. **Biomedical Informatics Division, University of California – San Diego**. Feb 17, 2012.
- How to Map Practically Anything: Towards a Cartography of High-Dimensional Space*. **Department of Forestry and Wood Science, University of Stellenbosch**, South Africa, January 19, 2012.
- How to Map Practically Anything: Towards a Cartography of High-Dimensional Space*. **South African Agricultural Research Council**, Pretoria, South Africa, January 11, 2012.
- How to Map Practically Anything: Towards a Cartography of High-Dimensional Space*. **Department of Geography, University of Utah**, November 18, 2011.
- Standards for Science Metrics, Classification, and Mapping*. Workshop funded by the James S. McDonnell Foundation and the Cyberinfrastructure for Network Science Center. **Indiana University**, Bloomington, Indiana, August 11-12, 2011 (invitation-only workshop)
- Keynote lecture at Workshop *Mining the Digital Traces of Science – Toward Interactive Visualization of Science Dynamics*. **Center for Research in Applied Epistemology, Paris IdF Complex Systems Institute**, Paris, France, March 22-25, 2011.
- Visualizing Déjà Vu: A Computational Exploration of Geographic Attribute Space*. **Humanities Institute of Ireland**, Dublin, Ireland, November 16, 2010.
- Visualizing Déjà Vu: A Computational Exploration of Geographic Attribute Space*. Cultural Dimensions of Innovation. International Conference. **University College Dublin**, Ireland, November 15-16, 2010.
- Tri-Space: Conceptualize, Compute, Visualize*. **Waldo Tobler Distinguished Lecture in Geographic Information Science**. AAG Annual Meeting, Washington, DC, April 16, 2010.
- Mapping of Science and Semantic Web*. Workshop funded by National Science Foundation. **Indiana University**, Bloomington, Indiana, March 4-5, 2010 (invitation-only workshop)

Geographically Informed Conceptualizations of Science: Implications for Knowledge Domain Visualization. Modelling Science – Understanding, Forecasting, and Communicating the Science System, Workshop funded by the **Royal Netherlands Academy of Arts and Sciences**, Amsterdam, Netherlands, October 6-9, 2009 (invited workshop speaker)

Current Research in Visualization of High-Dimensional Data. **International Institute for Social History**, Amsterdam, Netherlands, October 5, 2009.

Collaborative Visualization for Collective, Connective, and Distributed Intelligence. Media X Summer Institute Workshop, **Stanford University**, Stanford, California, August 12-14, 2009. (invited guest speaker)

Mapping the History and Philosophy of Science, Workshop funded by National Science Foundation and James S. McDonnell Foundation, **Indiana University**, Bloomington, Indiana, June 17-18, 2009. (invitation-only workshop)

NCGIA @ 20. International Symposium on Geographic Information Science. **National Center for Geographic Information and Analysis**, Santa Barbara, California, December 11-12, 2008.

Geographic Approaches to the Visualization of High-Dimensional Space. **Department of Computer Science, San Diego State University**, October 14, 2008.

Albany, Baton Rouge, Santa Barbara: There Goes the Neighborhood – in n-Dimensional Space! **Computational Science Research Center, San Diego State University**, November 30, 2007.

Surrogate Buses, Feminist Navigation, and Other Curious Sights in Attribute Space. **Department of Geography, San Diego State University**, September 21, 2007.

Of Neurons and Déjà Vu: A New Approach to Visualizing Geographic Movement. **Department of Geography, University of Zurich**, Switzerland, July 12, 2007.

GIS v2.0: Geographic Exploration of n-Dimensional Space. **University of Redlands**, Redlands, California, October 25, 2006.

Travels in Attribute Space. **NSF IGERT Program in Interactive Digital Multimedia, University of California at Santa Barbara**, March 3, 2006.

Visualizing Scholarly Knowledge: Current Approaches and Geographic Contributions. **Department of Geography, University of California at Santa Barbara**, March 2, 2006.

Toward Improved Visualization of Uncertain Information. **National Academy of Sciences**, Washington, DC. March 3-4, 2005.

Spatialization. EnVISION 05: Exploring a New Visualization Infrastructure. **Silicon Graphics Campus**, Mountain View, California, January 19, 2005.

Toward Map-like Visualization of Knowledge Domains. **Department of Computer Science, University of New Orleans**, November 19, 2004.

SOMwhere in Geography. **Department of Geography, University at Buffalo**, October 10, 2003.

Wormholes on the Interstate, Counties Colliding, and Other Oddities. **IGERT program and National Center for Geographic Information and Analysis (NCGIA), University at Buffalo**, Buffalo, New York, October 10, 2003.

Santa Barbara – Honolulu – San Francisco: Travels by Car along the Attribute Highway. **University of California at Santa Barbara**, May 8, 2003,

A Different Kind of Cartography: Computation and Cognition in the Mapping of Non-Geographic Information. **Center for Advanced Computational Studies, University of Louisiana,** Lafayette, Louisiana, May 2, 2003.

Integration of Artificial Neural Networks and Cartographic Design in a Visualization of AAG Conference Abstracts. **University of Southern Mississippi,** February 8, 2002, Hattiesburg, Mississippi.

Other Presentations

A Pictorial Transect of the United States [in Attribute Space]. Workshop on Cartography and Narratives, June 11-13, 2012, ETH Zurich, Switzerland.

Visualizing the Medical Sciences: A Self-Organizing Map Approach. Association of American Geographers Annual Meeting, February 24-28, 2012, New York, NY. (with Joseph Biberstine and Katy Börner)

Exploratory Analysis of Snow Dynamics for the Northern Hemisphere. Association of American Geographers Annual Meeting, April 12-16, 2011, Seattle, WA. (with Ninghua Wang and Trent Biggs)

Tri-Space: Conceptualization, Transformation, Visualization. International Conference on Geographic Information Science (GIScience 2010), September 14-17, 2010, Zürich, Switzerland.

An Alternative Map of the United States Based on an n-Dimensional Model of Geographic Features. Association of American Geographers Annual Meeting, April 14-18, 2010, Washington, DC. (with Aude Esperbé)

A Tri-Space Approach to Systematic Visual Data Exploration. Association of American Geographers Annual Meeting, March 22-27, 2009, Las Vegas, Nevada.

A High-Resolution Representation of n-Dimensional Geographic Space. GeoViz 2009, March 3-5, 2009, Hamburg, Germany. (with Aude Esperbé)

Partners in ConText: On Written Language in Works of Art and Cartography. Symposium “Cartography and Art – Art and Cartography,” February 1-2, 2008, Vienna, Austria. (with Marinta Skupin)

Comparative Visual Analysis of “Cartography” using Content- and Network-based Approaches. Workshop of the Commission on Visualization and Virtual Environments, International Cartographic Association, August 2-3, 2007, Helsinki, Finland. (with Wyson J. Pang)

Label Determination for Document Spatialization. International Conference on Geographic Information Science (GIScience 2006), September 21-23, 2006, Münster, Germany. (with Robert Liggio)

Conceptualizing n-dimensional Data in the Context of Spatialization Methods. ICA Workshop on Visualization, Analytics, and Spatial Decision Support, September 20, 2006, Münster, Germany.

Spatialization of Demographic Trajectories. Association of American Geographers Annual Meeting, March 7-11, 2006, Chicago, Illinois. (with Dr. Ron Hagelman)

Where do you want to go today [in attribute space]? Symposium on Societies and Cities in the Age of Instant Access, November 10-12, 2005, Salt Lake City, Utah.

In Terms of Geography. Conference on Spatial Information Theory (COSIT), September 14-18, 2005, Ellicottville, New York.

Visualizing the ICA – A Content-based Approach. 22nd International Cartographic Conference, July 9-16, 2005, La Coruña, Spain. (with Charles de Jongh)

Building a multi-year database of AAG conference abstracts. Association of American Geographers Annual Meeting, April 5-9, 2005, Denver, Colorado. (with Shujing Shu)

Building a System for Map-like Visualization of Text Documents. Geovisualization Developers Workshop, International Cartographic Association, Commission on Visualization and Virtual Environments, October 20, 2004, College Park, Maryland.

An Attribute Space Method for Visualizing Patterns of Human Movement. Association of American Geographers Annual Meeting, March 14-19, 2004, Philadelphia, Pennsylvania.

Attribute Space Visualization of Demographic Change. 11th ACM International Symposium on Advances in Geographic Information Systems, New Orleans, Louisiana, November 7-8, 2003. (with Dr. Ron Hagelman)

A Novel Map Projection Using an Artificial Neural Network. 21st International Cartographic Conference, August 10-16, 2003, Durban, South Africa.

The World of Geography: Visualizing a Knowledge Domain with Cartographic Means. National Academy of Sciences Sackler-Colloquium on Mapping of Knowledge Domains, May 9-11, 2003, Irvine, California.

Going SOMwhere? Association of American Geographers Annual Meeting, March 5-8, 2003, New Orleans, Louisiana.

Geometry, Resolution, Projection: A Geographic Reading of the SOM Method. Poster Presentation. Second International Conference on Geographic Information Science (GIScience 2002), September 25-28, 2002, Boulder, Colorado.

A Geographic Interpretation of the Self-Organizing Map. Association of American Geographers Annual Meeting, March 19-23, 2002, Los Angeles, California.

Cartographic Considerations for Map-like Interfaces to Digital Libraries. First ACM+IEEE Joint Conference on Digital Libraries. Workshop on Visual Interfaces to Digital Libraries. June 28, 2001, Roanoke, Virginia.

Cartographic Design for Map-Like Visualization of Information Spaces. Association of American Geographers Annual Meeting, February 27 - March 3, 2001, New York, New York.

Experiments in Scalable Spatialization of Textual Information. GIScience 2000 – First International Conference on Geographic Information Science. October 28-31, 2000, Savannah, Georgia.

From Metaphor to Method: Cartographic Perspectives on Information Visualization. IEEE Symposium on Information Visualization (InfoVis 2000), October 9-10, Salt Lake City, Utah.

Interactive Visualization of AAG Paper Abstracts. Association of American Geographers Annual Meeting, April 4-8, 2000, Pittsburgh, Pennsylvania.

Revisiting Töpfer: Implications of the Radical Law for Scalable Spatialization. Third Workshop on Progress in Automated Map Generalization. International Cartographic Association, Working Group on Map Generalization, August 12-14, 1999, Ottawa, Canada.

Abstract Maps: Application of a Spatialization Procedure to AAG Paper Abstracts. Association of American Geographers Annual Meeting, March 23-27 1999, Honolulu, Hawaii.

Spatialization in Support of Web Navigation - A Keyword-Based Approach. GIS/LIS '98 Annual Conference & Exposition. November 10-12, 1998, Ft. Worth, Texas.

Spatial Metaphors for Visualizing Information Spaces. 1997 ACSM/ASPRS Annual Convention & Exhibition. AUTO-CARTO 13, April 7-10, 1997, Seattle, Washington

Spatial Metaphors for Visualizing Very Large Data Archives. GIS/LIS '96 Annual Conference & Exposition. November 19-21, 1996, Denver, Colorado.

Use of Huffman Trees to Encode Verbal Street Directions. International Symposium for Applied Geographic Information Technology AGIT '96, July 3-5, 1996, Salzburg, Austria.

Awards, Funded Research, and Stipends

Fall 2011

Finalist, International Institute for Information Design (IIID) Awards

Collaborators: Katy Börner, Joseph Biberstine, Russell Duhon, Elisha Hardy (Indiana University)

Fall 2010

Finalist, NSF/Science Visualization Challenge

Collaborators: Katy Börner, Joseph Biberstine, Russell Duhon, Elisha Hardy (Indiana University)

Fall 2010 – Spring 2013

National Science Foundation

Project Title: “Geographic Information Science and Technology BoK2: Foundational Research”

Collaborators: Sean Ahearn, Hunter College, Michael DeMers, New Mexico State University, Brandon Plewe, Brigham Young University.

Fall 2009 – Spring 2010

National Institutes of Health

Project Title: “Accuracy of Models for Mapping the Medical Sciences”

Collaborators: Kevin Boyack, SciTech Strategies Inc., Katy Börner, Indiana University, Bob Schijvenaars, Collexis Holdings Inc.

Fall 2009 – Spring 2010

California Air Resources Board

Project Title: “Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort”

Collaborators: George Christakos, Dept. of Geography, San Diego State University, Alexander Kolovos, SAS Institute Inc., Michael Jerrett, UC-Berkeley

2009

Dept. of Geography *Shared Visions* Award

Project Title: “Mapping Curricular Content onto a Body of Knowledge: A Pilot Study involving SDSU GIScience Courses and the Geographic Information Science and Technology Body of Knowledge”

2007 – 2008

White House Office of National Drug Control Policy

Project Title: “Counterdrug Technology Assessment Center (CTAC) Target Mapping System: Phase I and Phase II”

Collaborators: Eric Frost, Dept. of Geological Science & Center for Homeland Security, SDSU, Doug Stow, Piotr Jankowski, Ming-Hsiang Tsou, Dept. of Geography, SDSU

September 2006

Best Presentation Award

Fourth International Conference on Geographic Information Science (GIScience 2006) Münster, Germany.

Spring 2006

University Grants Program Award

Project Title: “Database and Software System for Spatializing Text Documents”

July 2005

Maturing Scholars Award
U.S. National Committee of the International Cartographic Association.
Travel grant for attending the ICA Meeting in La Coruña, Spain.

August 2003

Young Scholars Award
U.S. National Committee of the International Cartographic Association.
Travel grant for attending the ICA Meeting in Durban, South Africa.

June 2002 – May 2005

Louisiana Board of Regents Research Competitiveness Award
Project Title: "Map-Like Visualization of Textual Information Spaces: Integration of Geographic Principles and Cartographic Techniques to Support Visual Data Exploration"
Principal Investigator and Project Director

Summer 2002

Liberal Arts Faculty Development Award
Project Title: "Implementation and Evaluation of Scale-Dependent Visualization of Text Documents"

Summer/Fall 2001

Student Technology Fee Award
Project Title: "Support for Instruction in Location-Aware Mobile GIS Technology"

Summer/Fall 2000

Liberal Arts Faculty Development Award
Project Title: "Integration of Artificial Neural Networks with Cartographic Design Principles in the Visualization of Non-Geographic Information"

July 1996

Best Student Paper Award
International Symposium for Applied Geographic Information Technology (AGIT) Salzburg, Austria

September 1992 – January 1994

Scholarship of the German Academic Exchange Service (DAAD) for studies at the State University of New York at Buffalo

Courses Taught

San Diego State University

Geographic Information Systems (7x): Fall 2005 – 2007, Spring 2008, Fall 2009 – 2011
GIS Applications (3x): Spring 2007, Spring 2010 – 2011
Map Investigation (6x): Fall 2005, Spring 2007 – 2011
Animated & Interactive Cartography (4x): Spring 2006, Fall 2007, Fall 2009 – 2010
Seminar Geovis. & Geocomp. (2x): Fall 2006 – 2007 (team-taught with Dr. Serge Rey)
Seminar Knowledge Visualization (2x): Spring 2009, Fall 2011

University of New Orleans

GIS Theories and Concepts (10x): Fall 1997 – 1998; Spring 1998 – 2005
GIS Applications (6x): Spring 1999; Fall 2000 – 2004
GIS Seminar (6x): Spring 1998 – 2002; Spring 2004
Fundamentals of Mapping and GIS (9x): Fall 1997 – 2004; Spring 1999
Computer Cartography (3x): Spring 1998, 2000, 2002
Animated and Hypermedia Cartography (4x): Fall 1999, 2000; Spring 2003, 2005

University at Buffalo

Maps and Mapping: Fall 1996

Graduate Supervision San Diego State University

Currently serving as major professor for Fangming Du and Marilyn Stowell (M.S. Geography)

Currently serving as committee member for Brandon Devine (M.A. Linguistics), Alexander Jarman (M.A. Art History), Chaitra Manjunath (M.S. Computer Science), Yelena Granovskaya (M.S. Geography), Geoffrey Fouad, Grant Fraley, Martin Swobodzinski, and Ninghua Wang (Joint PhD Program SDSU-UCSB)

Martin Lacayo, *An Integrated Toolset for Exploration of Spatio-Temporal Data using Self-Organizing Maps*, M.S. Geography, May 2011 (Major Professor)

Jennifer Smith, *Effective Color Schemes for 3D Animations of Urban Landscapes With a Spatial and Temporal Dimension*, M.S. Geography, May 2011 (Committee Member)

Miteshbharthi Gosai, M.S. Computer Science, May 2011 (Committee Member)

Steven Ehrenfeld, M.A. Linguistics, May 2011 (Committee Member)

Diana Smith, *Formalizing and Evaluation Principles of Web-based Animated Cartography Using Sea Ice Examples*, M.S. Geography, May 2010 (Committee Member)

Chintan Sheth and Darshini Gajab, *GIS Java Multimedia Map Tool for Significant Wars (1775 to present)*, M.S. Computer Science, May 2010 (Committee Member)

Rahul Choudhary, *Java Based Dynamic Civil War Interactive Map*. M.S. Computer Science, November 2009 (Committee Member)

Ryan Burns, *Spatializing Places, People, and Utterances - A Case Study Involving San Diego Neighborhoods*, M.S. Geography, May 2009 (Major Professor)

Akshay Pottathil, *Data Fusion and Pattern Recognition for Homeland Security*, M.S. Homeland Security, May 2009 (Committee Member)

Gregg Verutes, *Discourse Maps – A Usability and Evaluation Study of a PPGIS*, M.S. Geography, December 2008 (Committee Member)

Charles Schmidt, *Effects of Irregular Topology in Spherical Self-Organizing Maps*, M.S. Geography, December 2008 (Co-Chair)

Philip Stephens, *Using Spatial Analysis to Assess the Distribution of Hubzones in California*, M.S. Geography, April 2008. (Committee Member)

Aude Esperbé, *Towards High-Resolution Self-Organizing Maps of Geographic Features*. M.S. Geography, March 2008. (Major Professor)

Heather Kwiatkowski, *An Ethnoarchaeological Examination of Peña Blanca, An Indigenous Community in Northern Baja*, M.A. Anthropology, March 2008. (Committee Member)

Vinay Kukreja, *Icosahedron-Based Spherical Self-Organizing Map*. M.S. Computer Science, May 2007. (Committee Member)

Vanessa Phan, *Loading of Heavy Metals and Petroleum Hydrocarbons from San Diego International Airport into San Diego Bay, California*. Master of Public Health, May 2007. (Committee Member)

University of New Orleans

Robert Liggio. *Experiments in Interactive Labeling of Point Spatializations Using TF*IDF Variations*. M.A. Thesis, June 2005. (Major Professor)

Samara Ebinger. *Comparing Different Levels of Interactivity in the Visualization of Spatio-Temporal Data*. M.A. Thesis, June 2005. (Major Professor)

John Davis, M.A., Non-Thesis Option, May 2005, (Committee Member)
Eneida Allison, M.A., Non-Thesis Option, Dec 2004 (Major Professor)
Frank Desimone, M.A., Non-Thesis Option, Dec 2004. (Committee Member)

Heather Evans. *Identification of Areas of Key Habitat for a Connected Nature System in Louisiana using GIS*. M.A. Geography, May 2004. (Committee Member)

Sabrina Li. M.A., Non-Thesis Option, Dec 2003. (Major Professor)
Caitlin Stone. M.A., Non-Thesis Option, Jul 2003. (Committee Member)
Elena Janssen. M.A., Non-Thesis Option, May 2003. (Committee Member)
Martha Faures. M.A., Non-Thesis Option, Dec 2002. (Major Professor)

Kermit Lewis. *Land Cover Change Analysis in Coastal Louisiana Using Multitemporal Remotely Sensed Data*. M.A. Geography, May 2002. (Committee Member)

Greg Hymel. *Computer Simulated Testing of Transect Spacing Intervals for the Submersed Aquatic Vegetation Early Warning System (SAVEWS)*. M.A. Geography, Dec 1999. (Major Professor)

Other Institutions

Currently serving as committee member for Jochen Wendel (PhD Program, University of Colorado – Boulder)

Stacy Rebich, University of California – Santa Barbara, *Thematic and affective content in textual and visual communication about climate change*. Ph.D. Geography, August 2011 (Committee Member)

Cedric Gabathuler, University of Zurich, Switzerland, *Web-based Self-Organizing Maps for Exploration of Swiss Census Data*, M.S. Geography, May 2009 (Co-Advisor)

Outside Examiner

Michael Bui, School of Information Technologies, University of Sydney, Australia, *Path finding on a Spherical Self-Organizing Map Using Distance Transformations*, M.Sc. Thesis, June 2008.

Jun Yan, Dept. of Geography, University at Buffalo, *Geographic Knowledge Discovery in Spatial Interaction with Self-Organizing Maps*. Ph.D. Thesis, July 2004.

Other Professional Activities and Service

Nov 2009 – current: Science Advisor, Habitat Journey project, San Diego Natural Hist. Museum

Aug 2009 – current: Partner, World Resources Simulation Center (WRSC)

Mar 2009 – current: Program Director, ESRI Development Center, SDSU

Jan 2009 – current: Advisory Panel, San Diego Association of Governments (SANDAG) Activity-Based Transportation Model Development

Fall 2008 – current: Chair, Computing Committee, Department of Geography, SDSU

Summer 2006 – current: Membership Committee, University Consortium for Geographic Information Science (UCGIS)

Apr 2005 – current: Advisory Board, *Places & Spaces: Cartography of the Physical and Abstract* (traveling exhibit of cartographic and knowledge domain maps)

Jun 2002 – current: Corresponding Member, Commission on GeoVisualization, International Cartographic Association

Feb 2012: Panel Member, *Making journal articles 'live': turning academic writing into scientific dialog*, Association of American Geographers Annual Meeting, New York.

Mar 2011: Jury Member, MDTS11 Collaborative Challenge, Paris, France

Spring 2011: Program Committee, *15th International Conf. on Information Visualization (iV11)*, London, UK

Sep 2010 – Feb 2011: Program Committee, *GeoViz Hamburg 2011*, Workshop organized by HafenCity University Hamburg and International Cartographic Association

Apr 2010 – Dec 2011: Chair, Policy Advisory Committee, Dept. of Geography, SDSU

Apr 2010 – Mar 2011: Personnel Committee, Dept. of Geography, SDSU

Spring 2010: Program Committee, Information Visualization 2010, London, UK

Jun 2009: Invited Participant, *Designing the WRSC (World Resources Simulation Center) Prototype*, Roundtable event organized by Global Energy Network Initiative (GENI), Oceanside, California

Mar 2009: Invited Participant, VisMaster Expert Workshop, Hamburg, Germany

Mar 2009: Panel Member, *Neogeographers meet Paleogeographers*, Association of American Geographers Annual Meeting, Las Vegas.

Fall 2008 – Spring 2009: Chair, Personnel Committee, Department of Geography, SDSU

Apr 2008: Panel Member, *Geographies of Information Society*, Association of American Geographers Annual Meeting, Boston.

Fall 2007: International Program Committee, Virtual Geographic Environments – Int. Conference on Developments in Visualization and Virtual Environments in Geographic Information Science, The Chinese University of Hong Kong

Jul 2007: Invited Participant, Visualization Summit – Workshops on Geovisualization and Visualization Software Infrastructure, Zurich, Switzerland

Summer 2006 – Summer 2009: Chair, Membership Committee, University Consortium for Geographic Information Science (UCGIS)

Fall 2006 – Spring 2008: Research Committee, College of Arts and Letters, SDSU

Winter 2005/06: Program Committee, Diagrams 2006 - Fourth International Conference on the Theory and Application of Diagrams, Stanford University

Apr 2005: Co-Organizer/Chair, Sessions on Mapping Humanity's Knowledge and Expertise in the Digital Domain, AAG Annual Meeting, Denver

Apr 2005: Judge, Student Illustrated Paper Competition, AAG Annual Meeting, Denver

Aug 2004 – Aug 2005: Reappointed to UNO Faculty Council Comm. on Academic Computing

Summer 2004: Reviewing Editor, Special Issue of *Journal of Digital Libraries*

Summer 2004: Program Committee, Third International Symposium on Knowledge Domain Visualization, London, United Kingdom

Summer 2003: Program Committee, International Workshop on Information Visualization Interfaces for Retrieval and Analysis, Houston, Texas

Mar 2003: Co-Organizer/Chair, Spatialization Sessions, AAG Annual Meeting, New Orleans

Summer/Fall 2002: Co-Author of Position Paper on Spatialization as a UCGIS Research Priority (with Sara Fabrikant and Helen Couclelis, University of California at Santa Barbara)

Fall 2002: Program Committee, 99th Annual Meeting, Association of American Geographers, New Orleans, Louisiana

Mar 2002 – Mar 2004: Secretary/Treasurer, GIS SG, Association of American Geographers

Mar 2002: Co-Organizer/Chair, Spatialization Sessions, AAG Annual Meeting, Los Angeles

Spring 2002: Program Committee, 2nd International Workshop on Visual Interfaces to Digital Libraries, Portland, Oregon

Oct 2001 – Aug 2005: UNO College of Liberal Arts Committee on Academic Computing

Aug 2001 – July 2004: UNO Faculty Council Committee on Academic Computing
Jun 2001: Invited onto Expert Panel on Research Challenges and Opportunities, 1st International Workshop on Visual Interfaces to Digital Libraries, Roanoke, Virginia
May 2001: Representative of Great Cities Universities (GCU) Coalition at Workshop on Urban Digital Government, Los Angeles, California
Mar 2001 – Mar 2003: Delegate of the Association of American Geographers (AAG) to the University Consortium for Geographic Information Science (UCGIS)
Mar 2001 – Feb 2003: UNO College of Liberal Arts Courses & Curriculum Committee
Feb 2001: Co-Organizer/Chair, Spatialization Session, AAG Annual Meeting, New York
Dec 2000 – Aug 2005: Geography Department Liaison with UNO Library
Nov 2000: Hypermedia and Animation Workshop, Universidad de Panamá, Panamá
Jul 1999: GIS Course and Workshop, Universidad Centroamericana, El Salvador

Peer Reviews for:

Annals of the Association of American Geographers
Cartographica
Cartography and Geographic Information Science (CaGIS)
Communications of the ACM (CACM)
Computers and Geosciences
Computers and Graphics
Computers, Environment and Urban Systems (CEUS)
Environmental Modelling & Software
Environment and Planning B
Geography Compass
Geomorphology
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Information Visualization
International Journal of Geographical Information Science (IJGIS)
International Regional Science Review
Journal of the American Society for Information Science and Technology (JASIST)
Journal of Geography
Journal of Geographical Systems
Journal of Intelligent Information System (JIIS)
Journal of Spatial Information Science (JoSIS)
Online Journal of Space Communication
Professional Geographer
Transactions in GIS
URISA Journal
Conference on Visualization and Data Analysis (VDA 2009)
IEEE Information Visualization Conference (InfoVis 2010 & 2011)
IEEE Conference on Visual Analytics Science & Technology (VAST 2011)

Review Panel Member, National Science Foundation

Ad-hoc Reviewer, National Science Foundation

Membership in Association of American Geographers (AAG)
Prof. Organizations: Association for Computing Machinery (ACM)
Institute of Electrical and Electronics Engineers (IEEE) Affiliate
IEEE Computer Society