Mohamed Ali is an associate professor at the Institute of Technology, University of Washington, Tacoma. Ali’s research interests include the processing, analysis and visualization of data streams with geographic and spatial information. For the past decade, he has been building commercial spatiotemporal data streaming systems to cope with the emerging requirements of Big Data.

In summer 2006 Ali visited the database group at Microsoft Research (MSR) where he and his colleagues ramped up the Complex Event Detection and Response (CEDR) project. Then, Ali joined the SQL Server group at Microsoft to productize the CEDR project. CEDR has shipped and brand-named as Microsoft StreamInsight®. Since the first public release of StreamInsight®, Ali has been advocating for “real-time spatiotemporal data management everywhere”; that is the use of StreamInsight® in monitoring, managing and mining real time geospatial information across a diversity of verticals. These verticals include but are not limited to: online advertising, behavioral targeting, business intelligence, computational finance, traffic management, social networking, homeland security, emergency and crisis management. In 2011 Ali began another journey at Microsoft Bing Maps where he landed at the frontline with the Big Data challenge and where he battled various types of spatial search queries.

While at Microsoft, Ali has been also an affiliate of the University Washington where he taught database, data streaming and GIS classes. Ali has recently joined the University of Washington, Institute of Technology where he leads the geospatial data science research team at the Center for Data Science.

Ali has been an active member of the ACM SIGSPATIAL GIS community. He received a Ph.D. in computer science from Purdue University.

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Andrea Ballatore is the research coordinator for the Center for Spatial Studies (spatial@ucsb). In 2013 he received a Ph.D. in geographic information science from University College Dublin with a dissertation on semantic similarity in OpenStreetMap. He has worked as a software engineer in Italy and Ireland, and as a lecturer at the Department of Computer Science at the National University of Ireland, Maynooth. His research is highly interdisciplinary and focuses on representations of place, geo-semantics, and volunteered geographic information at the intersection between computer science, human geography, and media studies.

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Stuart Card has forty years of experience in research for human-computer interaction and wrote the first book to use human-computer interaction in its title. Before retiring from Xerox PARC, he was a Senior Research Fellow and the manager of the User Interface Research group. He is interested in the theory and design of new forms of human-machine interaction. His study of input devices led to the Fitts’s Law characterization of the mouse and to the mouse’s commercial introduction. Other work by him and his group led to a dozen products. He has over 90 papers, 50 patents, and three books in the field of human-computer interaction. He is a Fellow of the ACM, and the recipient of the IEEE Visualization Career Award and the ACM CHI SIGCHI Lifetime Achievement Award. In 2007 he won the Bower Award and Prize from the Franklin Institute for his theoretical studies. Currently, he is a Consulting Professor in the Computer Science Department at Stanford University. He is also a member of the National Academy of Engineering.
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W. Randolph Franklin is a Professor in the Electrical, Computer, and Systems Engineering Department, Rensselaer Polytechnic Institute (Troy, New York). His current major National Science Foundation (NSF) research project is to understand the mathematics of terrain. His most recent NSF project, together with Cutler and Zimmie, was analyzing how levees erode when overtopped, and testing models in a geotechnical centrifuge. Subprojects include compressing terrain while preserving slope, compressing multidimensional environmental data, and extending partial hydrological data to a complete and consistent river network. His research hobby is designing and implementing small, simple, and fast data structures and algorithms for large geometric datasets. Note that efficiency in both space and time can become more important as machines get faster. This research is applicable to computational cartography, computer graphics, computational geometry, and geographic information science. His long-term unreachable goal is to establish terrain modeling on a proper formal foundation that respects its physical properties.

During 2000–2002 Franklin served a rotation to the NSF, as Director of the Numeric, Symbolic, and Geometric Computation Program. He was one of the prime movers of the two Computational Algorithms and Representations for Geometric Objects (CARGO) solicitations, joint between NSF and DARPA/DSO. Franklin has held visiting positions in EECS at UC Berkeley (as Visiting Professor), the U.S. Army Topographic Engineering Center, Ft. Belvoir, the Dipartimento di Informatica e Scienze dell’Informazione, Università degli Studi di Genova, Italy, the Dept. de Science Géodésique, University of Laval, Quebec City, Canada, the Division of Information Technology, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia, and the Institute of Systems Science, National University of Singapore.

Franklin’s degrees are from Toronto (B.Sc., Computer Science), and Harvard (A.M. & Ph.D., Mathematica Accomodata). Franklin believes that terrain cannot be modeled mathematically while sitting in an office and abstracting away everything that makes this domain unique. To study actual terrain, he has: hiked the Grand Canyon from South Rim to Colorado River and back in a day, hiked most of the U.S. Northeast 115 4,000’ peaks, hiked the Haute Route 164 km. from Chamonix to Zermatt in 12 days, kayaked on the Urubu River, a tributary of the Amazon north of Manaus (while sleeping in hammocks in the jungle), and climbed Kilimanjaro.

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Christian Freksa holds the Chair of Cognitive Systems at the Faculty of Mathematics and Informatics at the University of Bremen, Germany. His research concerns representation and reasoning with incomplete, imprecise, lean, coarse, approximate, fuzzy, and conflicting knowledge about physical environments. Particular emphasis is on qualitative spatial and temporal reasoning. Freksa received a Ph.D. in Artificial Intelligence from UC Berkeley. He carried out research at the Max Planck Institute and at the Technical University of Munich, at the International Computer Science Institute in Berkeley, and at the University of Hamburg. In 2002 he initiated the International Spatial Cognition Quality Network and the Spatial Cognition Research Center in Bremen and Freiburg that he has directed since 2003. Christian Freksa is a Fellow of the European AI society ECCAI.
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Wai-Tat Fu is an Associate Professor at the Department of Computer Science at the University of Illinois at Urbana-Champaign. His research lies at the intersection of cognitive science and human-computer interaction, focusing on domains such as computational cognitive modeling, information search, and intelligent interfaces. Before he joined the University of Illinois in 2006, he was a postdoctoral researcher working with John R. Anderson at Carnegie Mellon University. Prior to that, he worked at the User Interface Research group of Xerox Parc, working with Stuart Card and Peter Pirolli. Fu received his Ph.D. in Cognitive Psychology from George Mason University, under the supervision of Wayne Gray.
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Song Gao, is a third-year Ph.D. student and a research assistant in the Department of Geography at the University of California, Santa Barbara. He holds an M.S. degree from the Institute of RS and GIS, Peking University, and a B.S. degree from the School of Geography, Beijing Normal University, China. His main research interests include Big Geo-Data Analytics and Place-Based GIS, which lie in the new trends of GIScience research. Gao has been investigating the nature of place by harvesting and conflating multiple geospatial data sources including gazetteers, geospatial agencies’ data, online social media and volunteered geographic information based on high-performance spatial computing infrastructure. Most of his research has been published in prominent journals and conference proceedings in GIS, including Transactions in GIS, Computers, Environment and Urban Systems, Environment and Planning B, GIScience, and ACM SIGSPATIAL GIS.

Regarding the professional services, Gao was invited to serve as a peer reviewer for several top ranked journals including Proceedings of the National Academy of Sciences (PNAS), Transactions in GIS (TGIS), Computers, Environment and Urban Systems (CEUS) and International Journal of Geographical Information Science (IJGIS). In addition to his course of study, Gao is sharing his GIS expertise by providing consultation for students at the Center for Spatial Studies’ Help Desk that services academics and students campus wide.

Because of his research excellence in GIS, he was selected as the winner for 2014 Cartography and Geographic Information Society Doctoral Student Awards, the 2014 Jack & Laura Dangermond Graduate Fellowship, and the 2014 UCSB Geography Excellence in Research Award.

Gao has also gained industry experience and has benefited from valuable internships at both Esri Inc. and the Apple Maps team.
Mark Graham is an Associate Professor at the Oxford Internet Institute, a Research Fellow at Green Templeton College, and an Associate in the University of Oxford’s School of Geography and the Environment. He has published articles in major geography, communications, and urban studies journals, and his work has been covered widely in the international press. He is an editorial board member of Information, Communication, and Society, Geo: Geography, Environment and Planning A, and Big Data & Society. He is also a member of DFID’s Digital Advisory Panel and the ESRC’s Peer Review College. In 2014 Graham was awarded a European Research Council Starting Grant to lead a team to study “knowledge economies” in Sub-Saharan Africa over five years. This will entail looking at the geographies of information production, low-end (virtual labor and microwork) knowledge work, and high-end (innovation hubs and bespoke information services) knowledge work in fifteen African cities.
Karl Grossner is a geographer (Ph.D. 2010, UC Santa Barbara) currently working at Stanford University Libraries as a digital humanities research developer. In that position, he collaborates with humanities and social science faculty PIs in year-long engagements on medium- to large-scale digital research projects which have important geospatial and historical components (e.g., citynature.stanford.edu, orbis.stanford.edu, and catalhoyuk.stanford.edu). Each project is associated with one or more of his ongoing research interests, which include spatial-temporal and semantic data models, and linked data for historical gazetteers, digital atlases, and distributed scientific data stores. Grossner is co-founder and co-chair of GeoHumanities SIG, a special interest group of the Alliance of Digital Humanities Organizations.
Darren Hardy is a GIS Software Engineer at Stanford University, where he develops open-source geospatial digital library software and services. His interdisciplinary research focuses on crowd-sourcing geographic information, geospatial data discovery and management, and spatial effects on information behaviors. He earned Ph.D. and M.A. degrees in Environmental Science and Management from the University of California, Santa Barbara, and B.S. and M.S. degrees in Computer Science from the University of Colorado at Boulder.
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Stephen C. Hirtle is Professor in School of Information Sciences at the University of Pittsburgh, with joint appointments in the Department of Psychology and in the Intelligent Systems Program. He directs the Spatial Information Research Group at the University of Pittsburgh, which conducts research on the structure of cognitive maps, navigation in real and virtual spaces, information visualization and computational models for spatial cognition. He received a bachelor’s degree from the Grinnell College in mathematics and psychology in 1976 and a Ph.D. from University of Michigan in Mathematical Psychology in 1982. He was the founding co-editor of Spatial Cognition and Computation and past-president of the Classification Society of North America.

Hirtle’s research interests center on spatial information theory with focus understanding how spatial concepts are represented, accessed and utilized in a variety of spatial tasks, such as wayfinding. The development of wayfinding tools, such as the library locator at Pitt, allow for facilitating spatial tasks and is part of a general interest in cognitive science, geographic information systems, information visualization, and data mining.

Hirtle has had visiting appointments in Geoinformatics at the University of Augsburg in Germany, Geoinformation at the Technical University of Vienna in Austria, Computer Science at Molde College in Norway, and the Artificial Intelligence Research Group at the Auckland University of Technology in New Zealand. He hosted the Third International Conference on Spatial Information Theory (COSIT’97), in the Laurel Highlands, outside of Pittsburgh, PA, in October 1997. He has also served on the Board of the University Consortium for Geographic Information Science and numerous reviews panels for the National Science Foundation, the National Institutes of Health, and the FWF in Austria.

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Yingjie Hu is a Ph.D. candidate in the Geography Department at the University of California, Santa Barbara. He works with Krzysztof Janowicz in the Space and Time Knowledge Organization (STKO) Lab. His research interests include geospatial semantics, information retrieval, Semantic Web, and spatial analysis. Hu has also been a summer research intern in Esri’s Application Prototype Lab at Redlands. Before coming to UCSB, he was an M.A. student at the Geography Department of East China Normal University, where he participated in research projects on geovisualization, geocollaboration, and geospatial services.
Jon Jablonski is a librarian and geographer. He is the head of the Map & Imagery Laboratory at the UCSB Library. At UCSB, and previously at the University of Oregon, the map libraries serve as a spatial data center for campus. The physical collections of maps and photographs are controlled and organized through a variety of information systems. Ultimately these are arranged twice spatially: first as to how the materials relate to the surface of the earth; second as a large mass of physical and digital objects that must be managed as artifacts.

In his research, Jablonski studies how people form Information Places—informal, ad hoc grounds for information seeking and transfer. He is currently attempting to insert these ideas into the implementation of a large new library building. Most specifically, he observes how mobile communications technologies allow more independent travel among Chinese youth, ultimately leading to more personal freedom and political friction.
Donald Janelle (B.A., Geography, University of Southwestern Louisiana; Ph.D., Geography, Michigan State University) was a Research Professor at the University of California, Santa Barbara until February 2014. He served as Program Director for the Center for Spatial Studies (spatial@ucsb) and for the Center for Spatially Integrated Social Science (CSISS). He was on the faculty of the U.S. Air Force Academy for four years and on the faculty of Western University (formally University of Western Ontario) for 30 years, where he chaired the Department of Geography for five years and served as Assistant Vice Provost. He edited The Canadian Geographer, the official refereed journal of the Canadian Association of Geographers, and chaired the Publications Committee for the Association of American Geographers.

Janelle’s research and publications are based broadly within geography and affiliated social and behavioral sciences. Primary themes include space-time analyses of individual behavior, the time-geography of cities, the temporal-spatial ordering of social systems, locational conflict analysis, social issues in transportation, and the role of space-adjusting technologies in structuring new patterns of social and economic organization. He is a recipient of the Edward L. Ullman Award for Career Contributions to Transportation Geography and the 2009 Ronald F. Abler Honors Award for Distinguished Service from the Association of American Geographers (AAG). Janelle has authored more than 100 journal articles and book chapters, and has co-edited five books. The three most recent include: Information, Place, and Cyberspace: Issues in Accessibility; WorldMinds: Geographical Perspectives on 100 Problems; and Spatially Integrated Social Science.

Janelle’s retirement from the Center for Spatial Studies was short lived; he is currently on recall until September 2015 developing an archive related to the history of GIS at UCSB.
Krzysztof Janowicz is an Assistant Professor for Geographic Information Science and Geoinformatics at the Geography Department of the University of California, Santa Barbara. He is the program chair of the Cognitive Science Program, one of two Editors-in-Chief of the Semantic Web Journal, a Faculty Research Affiliate of the Center for Information Technology and Society, and the community leader of the 52° North semantics community. Janowicz is running the STKO Lab, which investigates the role of space and time for knowledge organization. Prior to coming to UCSB, Janowicz was an Assistant Professor at the GeoVISTA Center, Department of Geography at The Pennsylvania State University. Before that he was working as postdoctoral researcher at the Institute for Geoinformatics (ifgi), University of Münster in Germany for the international research training group on Semantic Integration of Geospatial Information and the Münster Semantic Interoperability Lab (MUSIL). Methodologically, Janowicz’s niche is the combination of theory-driven (e.g., semantics) and data-driven (e.g., data mining) techniques.
Bin Jiang is Professor in Geoinformatics and Computational Geography at University of Gävle, Sweden. He is also affiliated to Royal Institute of Technology (KTH) at Stockholm via KTH Research School. He worked in the past with The Hong Kong Polytechnic University and the University College London’s Centre for Advanced Spatial Analysis. He is the founder and chair of the International Cartographic Association Commission on Geospatial Analysis and Modeling. He has been coordinating the NordForsk-funded Nordic Network in Geographic Information Science. His research interest is geospatial analysis and modeling, in particular topological analysis of urban street networks in the context of geographic information systems. He is Associate Editor of international journal Computer, Environment and Urban Systems.
Christopher Jones is Professor of Geographical Information Systems at Cardiff University, having held posts previously at the British Geological Survey, BP, University of South Wales and the University of Cambridge. His current research focuses on the subject of geographical information retrieval (GiR), but he has worked on issues of spatial data integration, multi-scale spatial databases, 3D geo-spatial modelling and cartography, with a particular focus on map generalization and the development of methods for spatial conflict resolution. He has held research grants from several UK research councils, industrial sources, and from the EC. With regard to GiR, he led the EC-funded project SPIRIT—Spatially-Aware Information Retrieval on the Internet—which pioneered methods for geographically-oriented access to web documents, including spatio-textual indexing methods, place name ontologies and spatial search engine architectures. In the EC project Tripod, he led research on gazetteer services, extraction and generation of spatial natural language (for photo captioning) and semantic enrichment of 3D city models. Research in the EC Recognition project resulted in improved methods for meta-gazetteer design and exploitation of social media to characterize the personality of places. A project on vernacular place names was funded by Ordnance Survey and resulted in the People’s Place Names web survey. He has organized (with Ross Purves) the GiR workshop series since its inception in 2004. He also has experience of commercial exploitation of research, having initiated a start-up company to develop the Maplex system for automated map labelling which is now a world-leading product (part of the ESRI ArcGIS system), and used by organisations such as Harper Collins, to create the Times Atlas of the World, and the AA and Rand McNally for their road atlases.
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Teenie Matlock (Ph.D., University of California, Santa Cruz) is founding faculty in Cognitive and Information Sciences in the School of Social Sciences, Humanities and Arts, at University of California, Merced, where she holds the McClatchy Chair of Communications and serves as the Director of the Center for Climate Communication. She is also affiliate faculty in the Institute for Cognitive and Brain Sciences at UC Berkeley. A cognitive scientist who combines theory and methods from linguistics and psychology, she is the author of 75 articles on language and cognition, including many articles on spatial language. Matlock serves on the Editorial Board for *Metaphor & Symbol* as well as *Environmental Communication*, and is Associate Editor for *Cognitive Linguistics*. She is a standing member of NIH Language and Communication study section and serves on the Cognitive Science Society governing board. Her research is currently funded by IARPA and NSF.
Stephen McDonald has worked as a programmer on emerging technologies for more than 30 years. He was co-developer of OpenGeoPortal, a portal to institutional spatial resources. It provides innovative, Solr-based spatial search of tens of thousands of data layers. McDonald is completing an M.S. in Computer Science from Tufts University. His thesis, Spatially Searching the Web’s Data, crawls the web to discover spatial resources in various formats and client side rendering for visualization. He is currently lead developer of Harvard’s WorldMap.
Grant McKenzie is a doctoral candidate in the Department of Geography at the University of California, Santa Barbara. He holds a Master of Applied Science degree from the University of Melbourne (2008), an Advanced Diploma in Geographic Information Science from the British Columbia Institute of Technology (2004) and a Bachelor’s degree in Geography from the University of British Columbia (2002). Prior to beginning his Ph.D., Grant was a founding member of the Seattle based start-up Spatial Development International and worked as a geospatial software developer for the Engineering Consulting firm CH2M Hill.
Vanessa Murdock is a Principal Applied Researcher in Microsoft’s Bing Relevance Sciences group for the past two years. Her research there focuses on leveraging social media to improve local search. Previously Murdock worked at Yahoo! Research in Barcelona, Spain, as a Senior Research Scientist. At Yahoo! Research she led the Geographic Context and Experience Group, doing research on topics related to geographic information retrieval and user-generated content. She has been awarded 8 patents, and has more than 30 patent applications pending, resulting in a Master Inventor Award from Yahoo! (2012). She received the OAA Award for Outstanding Achievement by a Young Alum from the University of Massachusetts in 2014.

Murdock publishes regularly in the field of information retrieval, and is active in the scientific community, reviewing for conferences and journals, organizing workshops and tutorials, and serving on the organizing committees for international conferences.

Murdock received a B.S. in Computer Science from Colorado State University in 2001 and an M.S. and Ph.D. in Computer Science from the University of Massachusetts Amherst in 2005 and 2006, respectively. She also holds a Bachelor of Music, and worked as a professional musician for 10 years prior to her career in computer science.
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Prior to joining UC Merced, he was a post-doctoral researcher with the Sapphire Scientific Data Mining group in the Center for Applied Scientific Computing at Lawrence Livermore National Laboratory. (So, if you are counting, he is now at his fifth UC institution!) Newsam is the recipient of a U.S. Department of Energy Early Career Scientist and Engineer Award, a U.S. National Science Foundation Faculty Early Career Development (CAREER) Award, and a U.S. Office of Science and Technology Policy Presidential Early Career Award for Scientists and Engineers (PECASE). He is the founding co-director of the UC Merced Spatial Analysis and Research Center (SpARC) and is the vice-chair of the Association for Computing Machinery (ACM) special interest group on spatial information and analysis (SIGSPATIAL). He is also a founding associate editor of the ACM Transactions on Spatial Algorithms and Systems. His research interests include image processing, computer vision, pattern recognition, and data mining with a particular focus on geographic information science and systems.
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Ed Parsons is the Geospatial Technologist of Google, with responsibility for evangelizing Google’s mission to organize the world’s information using geography. In this role he maintains links with universities, research and standards organizations that are involved in the development of Geospatial Technology.

Parsons is based in Google’s London office, and anywhere else he can plug in his laptop. He was the first Chief Technology Officer in the 200-year-old history of Ordnance Survey, and was instrumental in moving the focus of the organization from mapping to Geographical Information. He came to the Ordnance Survey from Autodesk, where he was EMEA Applications Manager for the Geographical Information Systems (GIS) Division.

He earned a Master’s degree in Applied Remote Sensing from Cranfield Institute of Technology and holds an Honorary Doctorate in Science from Kingston University, London and is a fellow of the Royal Geographical Society.

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Sathya Prasad works at Esri in Redlands, with the Applications Prototype Lab in the role of an Applied Research Architect. Prasad has spent more than nine years in the software and GIS industry and has extensive experience with Mobile, Web, Spatial and Cloud technologies. Prasad enjoys solving hard problems especially in the GIS and spatial world and coming up with very creative solutions. His background is in both computer science and business education.
Ross Purves is an Associate Professor at the Department of Geography of the University of Zurich. His research interests focus on understanding how we can not only improve access to information through geography, but also use geography to better understand and integrate data from differing sources. Over the last decade he has worked on various aspects of Geographic Information Retrieval, trying to bring a geographic perspective to retrieving both text and images. Along with Chris Jones he organises the long running series of workshops on Geographic Information Retrieval (e.g., http://www.geo.uzh.ch/~rsp/gir14/) and in recent years he has tried to explore how notions of place might productively be used to not only improve search, but also explore geography in new ways.
Lael Schooler is Professor of Psychology at Syracuse University in upstate New York. Most recently, he was a Senior Research Scientist at the Center for Adaptive Behavior and Cognition at the Max Planck Institute for Human Development in Berlin. Much of Lael’s work investigates computational models of simple heuristics—cognitive processes that use limited information to make effective decisions in an uncertain world.
Peter M. Todd is Provost Professor of Cognitive Science, Psychology, and Informatics at Indiana University, Bloomington. He grew up in Silicon Valley, studied mathematics and electronic music at Oberlin College, received an MPhil in computer speech and language processing from Cambridge University and an M.A. in Psychology from UCSD, and developed neural network models of the evolution of learning for his Ph.D. in psychology at Stanford University. In 1995 he moved to Germany to help found the Center for Adaptive Behavior and Cognition (ABC), based at the Max Planck Institute for Human Development in Berlin, serving as co-director with director Gerd Gigerenzer. The Center’s work was captured in the books Simple Heuristics That Make Us Smart (Oxford, 1999) and Ecological Rationality: Intelligence in the World (Oxford, 2012). Todd returned to the U.S. in 2005 to set up the ABC-West lab at Indiana University in Bloomington. His ongoing research interests cover the interactions between and co-evolution of decision making and decision environments, focusing on the ways that people and other animals search for resources—including mates, information, and food—in space and time. His most recent book is Cognitive Search: Evolution, Algorithms, and the Brain (Todd, Hills, & Robbins, eds.; MIT Press, 2012).
Barbara Tversky is a cognitive scientist who has worked on memory, categorization, spatial language and thinking, event perception and cognition, diagrammatic reasoning, creativity, and gesture. She has enjoyed collaborating with computer scientists, linguists, philosophers, engineers, educators, biologists, chemists, geographers, artists, and designers on a range of projects. She has served on many editorial boards as well as national and international governing boards and conference organization committees. She is Professor of Psychology Emerita at Stanford University and Professor of Psychology at Columbia Teachers College. She is a member of the American Academy of Arts and Sciences and a Fellow of the Cognitive Science Society, the Society for Experimental Psychology, and the Association for Psychological Science.
Kathy Weimer, MLIS, is a Professor at the Texas A&M University Libraries, and manages the Map & GIS Library, recipient of Esri’s “Special Achievement in GIS” award in 2014. She received her B.S. from Texas A&M University and MLIS from Louisiana State University. Her research focus is on the use of maps and GIS data in libraries, georeferencing historic maps, geoparsing, and gazetteer development. She is project director for “Mapping Historic Aggieland” and co-editor of the Journal of Map & Geography Libraries. Weimer received the Association of Former Students Distinguished Achievement in Librarianship Award in 2008 and Chair of the American Library Associations’ Map and Geospatial Information Round Table in 2010. She co-founded the GeoHumanities Special Interest Group of the Alliance of Digital Humanities Organizations (ADHO) and is pursuing doctoral studies in Geography.
May Yuan (B.S. 1987 National Taiwan University; M.S. 1992 and Ph.D. 1994 State University of New York at Buffalo) studies temporal GIS and its applications to geographic dynamics. Over the last 20 years, her research has developed new approaches to represent geographic processes and events in GIS databases to support space-time query, analytics and knowledge discovery. Her publications (75+) span fundamental and applied GIScience by developing new GIS data models and analysis methods to address environmental, ecological, and social problems, such as wildfire risk, tornado hazard, air pollution, species distribution, trophic dynamics, infectious disease, hazardous waste transport, and offender monitoring. Her recent work expands to cyber GIS and spatial big data. Her research has been supported by NSF, NASA, DoD, DHS, DoJ, DoE, NOAA, USGS, state government agencies, and the industry. She is a member of Mapping Science Committee at the National Research Council (2009–2014), Associate Editor of the International Journal of Geographical Information Science, member of the editorial boards of Annals of American Association of Geographers and Cartography and Geographical Information Science, and member of the academic committee of United States Geospatial Intelligence Foundation.