

New Technologies and Interdisciplinary Research on Religion

Co-sponsored by
Political Economy of Religion Program, Taubman Center,
Harvard Kennedy School of Government and
Center for Geographic Analysis, Institute for Quantitative Social Science

Date: March 12 - 13, 2010

Location: Tsai Auditorium, CGIS Building South, Room S010

Address: 1730 Cambridge St., Cambridge, MA 02138

New technologies are permitting researchers from various disciplines to work together to access in various operational formats large quantities of data. For example, technologies such as Geographic Information Systems (GIS) software are innovative ways of collecting and merging together large amounts of data. Google Map and Google Earth are popular tools for spatial visualization that can interface with GIS. Text-mining, a technological tool relevant to the study of religion, draws on information retrieval and data mining creating patterns from large quantities of texts and making them available for scholarly analysis.

The purpose of the two-day conference is to bring together scholars from a wide range of disciplines who are interested in applying these and other new technologies to their research on religion. Conference discussion will focus on the advantages and challenges of applying new technologies to research on religion. Harvard experts as well as scholars from other institutions will show-case their current work in various disciplines using new technologies and forms of analysis. Presentations will focus on combining the content of research on religion with database design, geo-referencing, social network analysis, text-mining, remote-sensing, and spatial-temporal analysis. Spatial-temporal analysis, text-mining, and social network analysis will be discussed as a means of extending and deepening research on religion. Tutorials will be held at the end of each day for small group, hands-on learning. A poster session will display a collection of relevant research activities related to the study of religion.

The interdisciplinary nature of the conference presentations and discussion is critical to exploring promising new research pathways. Scholars working in different fields tend to be isolated from scholars working in other areas. This conference seeks to create a network of scholars working in different disciplines such as sociology, economics, history, political science, and regional studies to become aware of research already being done and define horizons for future research. What is unique about the new technologies is that they permit cross-disciplinary dialogue and collaboration. A main function of the conference will be to foster dialogue among scholars from various disciplines who work on religion and to initiate network-building and collaboration among scholars.

Friday, March 12, 2010**8:00 AM - 8:30 AM**

Registration and Breakfast at Tsai Auditorium

8:30 AM - 9:00 AM

Welcome and Introductions

*Rachel McCleary and Peter Bol***9:00 AM - 10:30 AM****Panel I: Interactive Geospatial Databases***Moderator: James Robson*

The Digital Atlas of the Roman and Medieval Civilization

Michael McCormick and Guoping Huang

Regnum Francorum Online: Interactive Maps and Sources of Early Medieval Europe, 614 - 918

Johan Åhlfeldt

Mapping Religious Cyberspaces: Google and User Generated Religion

*Matthew Zook***10:30 AM - 11:00 AM**

Coffee Break

11:00 AM - 12:30 PM**Panel II: Religion, Data and Technology***Moderator: Peter Bol*

Religion in the Digital Age

Suzanne Preston Blier and Ben Lewis

Words in Space: GIS, Data Mining, and the Visual Display of Religion

John Corrigan

Investigating Idiosyncrasy: Toward a Comprehensive Methodology of Visual Exploration and Analysis for Humanities Scholarship

*Chris Weaver***12:30 PM - 1:30 PM**

Lunch Break

1:30 PM - 3:00 PM**Panel III: Christian Missions and Their Secular Consequences***Moderator: Suzanne Preston Blier*

Temporal-Spatial Analysis of Guatemala's Religious Competition and Affiliation

Rachel McCleary

Christians in Colonial Africa

Nathan Nunn

Religion and Economic Change over a Century: Linking Diverse Historical Data to Understand the Roots of Long-term Change

*Robert Woodberry and Juan Carlos Esparza Ochoa***3:00 PM - 3:30 PM**

Coffee Break

3:30 PM - 5:00 PM**Panel IV: Mapping Religious Adherence***Moderator: Rachel McCleary*

Re-imagining American Religion: Space as a Framework for New Scholarship

David Bodenhamer

The Art and Science of Data Dissemination: An Overview of the Association of Religion Data Archives

Roger Finke

Impacting the World with Data: From a Million Data Points to Maps that Tell a Story

*Brian Grim***5:00 PM - 6:00 PM**

Poster session in the foyer outside Tsai Auditorium

Saturday, March 13, 2010

8:00 AM - 8:30 AM

Breakfast at Tsai Auditorium

8:30 AM - 10:30 AM

Panel V: Religion in China *Moderator: Lex Berman*

Historical GIS and Chinese Religion: An Example

Peter K. Bol

Network Analysis of Tibetan Buddhist Monasteries and Leaders

Gray Tuttle

GIS Network Analysis and Historical Socioeconomic Relations between Muslims and Buddhists in Northwest China

Karl Ryavec

Technical Issues in the Study of Local Chinese Religion and the Necessity of Breaching Disciplinary Walls

James Robson

10:30 AM - 11:00 AM

Coffee Break

11:00 AM - 12:30 PM

Panel VI: Religious Cultural Patterns across Geography *Moderator: Sumeeta Srinivasan*

Irrigation, Cultural Individuation, and Global Networks: GIS Approaches to the History of Religion in the Alluvial Putian Plain of Southeast China

Kenneth Dean

Sacred Lakes and Sacred Mountains: Phoenician Sacred Spaces in the Mediterranean

Joseph A. Greene

Cultures, Clashes and Peace

Murat Iyigun and Erin Fletcher

12:30 PM

Announcement of the Winner of the Poster Session

This conference was funded by the Harvard Provost Office, Warburg Fund, Center for Geographic Analysis, Taubman Center for State and Local Government, and Sigma Xi (Harvard).

Panel I

The Digital Atlas of Roman and Medieval Civilization

Michael McCormick

Abstract: *The Digital Atlas of Roman and Medieval Civilization is a GIS solution to the problem of analyzing spatially the historical and archaeological evidence for the origins of western civilization in the first 1500 years of our era. DARMC contains dozens of data layers in several geodatabases, that is, databases whose data is georeferenced or specified in terms of decimal degrees of latitude and longitude. For the study of religion, one can, for instance, easily analyze and resolve long-standing debates such as the spatial relation of Christian monasteries to the bishop, local religious authority. Other geodatabases allow spatial approaches to early medieval monasticism, the spread of Cluniac monasticism or the late medieval preaching orders, the rise of universities in Europe, the enduring impact of the Roman road network, and so on.*

Michael McCormick is Francis Goelet Professor of Medieval History at Harvard University. He received his Ph.D. from the Université catholique de Louvain in 1979. He served on the faculty of the Department of History of the Johns Hopkins University from 1979 to 1991, and was Research Associate at Dumbarton's Oaks from 1979 to 1987. He has written numerous monographs and articles, including *Origins of the European Economy. Communications and Commerce, A.D. 300-900* (Cambridge University Press, Cambridge, U.K.; 2001) which won the Haskins Medal 2005 of the Medieval Academy of America, was short-listed for the British Academy Book Award (best non-fiction book published in the UK, 2002) and won the Ranki Prize of the Economic History Association for the best book of 2001 and 2002 in European economic history. McCormick has been awarded fellowships by the John Simon Guggenheim Foundation, the American Council of Learned Societies, the Alexander von Humboldt Stiftung, the Gerda Henkel Stiftung, the Max-Planck-Institut für europäische Rechtsgeschichte, Frankfurt-am-Main, Commission internationale d'histoire médiévale, etc. The Andrew W. Mellon Foundation honored him with its Distinguished Achievement Award in 2002. He is a Fellow of the Medieval Academy of America, the American Philosophical Society, and a Corresponding Member of the Monumenta Germaniae historia, Munich and of the Classe des Lettres, Académie royale de Belgique. He is currently working on natural scientific approaches to the ancient and medieval past including the history of human health and the environment, and the application of computer science to the study of ancient texts. His next book will treat: *Charlemagne's Survey of the Holy Land: Wealth, Personnel and Buildings of a Mediterranean Church between Antiquity and the Middle*

Ages.

Regnum Francorum Online. Interactive Maps and Sources of Early Medieval Europe 614 - 918

Johan Ahlfeldt

Abstract: *Regnum Francorum Online is a geospatial database with the aim of referencing historical events in time and space, by agency and institution and present the data about these events on interactive maps. This far, more than 14,000 events have been referenced in time, by location (place of event, property, institution), agents and various properties of the event and its components, constituting metadata that are available for further temporal and spatial analysis. Short quotes from source documents, describing the status and offices of agents, character of property, church institutions and church patrons are also maintained. The events are connected to their evidence in full-text source documents, maintained in digital libraries and databases on the internet, such as the digital Monumenta Germaniae historica, Regesta Imperii, Gallica, Bibliothèque nationale de France, and Google Books. This is enabled by unique and persistent identifiers of these editions and the possibility to even reference individual documents by page or number, in terms of direct linking or embedding. Most of the surviving documents from this period relates to church institutions which makes it especially suitable for analysis of the cultural, economical and political role of monasteries and bishoprics in the early medieval society. For instance, the database application can produce maps of the property development of monasteries by time and origin of property and the distributions of church patrons, at any given time and political context, within the limits of the database. Comparison can be made to distribution of fiscal property and economic activity like minting. A number of background maps have also been digitized that enables further comparison of monasteries with church provinces, political territories and road network.*

Johan Ahlfeldt is a doctoral student in Sociology at Uppsala University, Sweden, with interdisciplinary affiliation with sociology of law and public health since many years. His thesis concerns the use of human tissue and personal data for various medical purposes in state and society, and its legal and social implications in a historical perspective (1960s to present). He also has a broader research interest in historical sociology (study of social movements) and historical GIS (study of early medieval Europe), including tools for online publications and methodology, and is the author of the historical database application Regnum Francorum Online (www.francia.ahlfeldt.se).

Mapping Religious Cyberscapes: Google and User Generated Religion

Matthew A. Zook

Abstract: *User generated information is more and more prevalent on the Internet and increasingly much of this content is spatially referenced. While there is a wide range of place related information available online, this paper introduces the metric of the number of user generated Google Maps placemarks containing specific keywords (e.g., Islam, Hinduism, Buddhism, church, etc.) to plot the contours of religious practice worldwide. These cyberscapes convey aspects of the material world undetectable by other methods and provide a fine grain mapping of religion as represented by online user activity. Although representations within Google Maps can often accurately mirror trends in the physical world, it is important to be aware of how the many power-relationships and divides in the offline world can exclude certain places and certain types of knowledge in online representations. We are thus left to ask, to what extent can virtual representations reveal useful information about material trends and places, or to what degree are those representations reinforcing the power of the most networked elements of society and the ways in which they choose to represent place?*

Matthew A. Zook is an associate professor in the Geography department at the University of Kentucky in Lexington, KY. His interest centers on the impact of technology and innovation on human geography. He has an extensive record of articles in peer-reviewed academic journals such the *Annals of the Association of American Geographers*, *Journal of Economic Geography*, *GeoForum*, *Environment and Planning A*, *Journal of Transportation Geography* and *International Journal of Urban and Regional Research*. His first book *The Geography of the Internet Industry: Venture Capital, Dot-coms and Local Knowledge* was published by Blackwell in 2005 as part of its Information Age Series, M. Castells (Series Editor). His blog www.floating-sheep.org is dedicated to mapping and analyzing user generated information about places to provide one glimpse of what the “internet” knows about particular places.

Panel II Religion in the Digital Age Suzanne Preston Blier

Abstract: *This paper addresses the realities and potentials of religion and its study in the digital age. Among other things I address the ways in which new technologies, most importantly GIS, can help us both to document and interrogate key aspects of local and global religious experience. I also take up questions of associated theoretical engagements. Part of my presentation will focus on Africa in terms of both present day engagements and historical vantages. My larger focus is on the ways that new technologies enrich and challenge our understanding of the complex worlds of religious belief and practice in terms of what is possible now for*

individual scholars in terms of this technology, and what is likely to be possible in the future.

Suzanne Blier is the Editor-in-Chief of an electronic media project at Harvard called Baobab: Visual Sources in African Visual Culture, which is an interactive database of images on African art and material culture. She has done extensive research in the West African countries of Benin and Togo. She is the recipient of numerous scholarly awards, including those from the John S. Guggenheim Foundation, the American Council of Learned Societies, the Social Science Research Council, the Fulbright-Hays Award, the Getty Center for the History of Art and the Humanities, and the Seaver Institute. Professor Blier has been active in bringing African art into the mainstream of art historical study and has also curated a number of exhibitions on African art. In addition to numerous articles, her books include: *Art of the Senses: African Masterpieces from the William and Bertha Teel Collection* (2004), which she edited; *Butabu: Adobe Architecture of West Africa* (2003), co-authored with James Morris; and *A History of Art in Africa* (2001), co-authored with Monica Blackmun Visona, Robin Poynor, Herbert M. Cole, Michael D. Harris, and Rowland Abiodun. Additional books include the forthcoming *Imaging African Amazons: The Art of Dahomey Women Warriors*; *African Royal Art: The Majesty of Form* (Calmann & King, 1998); *African Vodun: Art, Psychology, and Power* (University of Chicago Press, 1995), which received the Charles Rufus Morey Award for distinguished book in art history written in 1996; and *The Anatomy of Architecture: Ontology and Metaphor in Batammaliba Architectural Expression* (Cambridge University Press, 1987), which was awarded the Arnold Rubin Outstanding Publication Award in African Art scholarship. Professor Blier holds a Ph.D. in art history and archaeology from Columbia University, where she was also a professor, and a B.A. from the University of Vermont. She has also held teaching positions at Northwestern University and Vassar College.

Words in Space: GIS, Data Mining, and the Visual Display of Religion John Corrigan

Abstract: *This paper illustrates how a focus on space can affect perception about the historical manifestation of religion. Data about religion and culture mined from the Early American Imprints and Early English Books Online digital databases is geocoded and displayed visually in patterns that both reinforce and challenge interpretations of religion in the Atlantic world. The paper addresses issues at stake in the collaboration of humanities scholarship with scientific and quantitatively-oriented research and suggests how the spatial turn currently underway across a range of disciplines offers opportunity for advancing interdisciplinary investiga-*

tion. In order for such collaboration to advance, humanities researchers, in religion and in other fields, must take steps to influence the invention of spatial, data mining, and other technologies in ways that make them responsive to humanities research agendas. Humanities researchers are at a disadvantage when they seek to adapt technologies that have been constructed with an eye to scientific and social-scientific ontologies and strategies of persuasion.

John Corrigan is the Lucius Moody Bristol Distinguished Professor of Religion and Professor of History at Florida State University. He has served as regular or visiting faculty at the University of Virginia, Harvard, Arizona State University, Oxford, University of London, University of Halle-Wittenberg, University College (Dublin) and as a visiting scholar at the American Academy in Rome. His books include *The Hidden Balance* (Cambridge University Press, 1987); *The Prism of Piety* (Oxford University Press, 1991); *Religion in America* (coauthor, Prentice Hall, 1992, 1998; 2003; 2009); *Jews, Christians, Muslims* (coauthor, Prentice Hall, 1998); *Readings in Judaism, Christianity and Islam* (coeditor, Prentice Hall, 1998); *Emotion and Religion* (coauthor, Greenwood, 2000); *Business of the Heart: Religion and Emotion in the Nineteenth Century* (University of California Press, 2002); *Religion and Emotion: Approaches and Interpretations*, ed., (Oxford, 2004), *French and Spanish Missions in North America*, with Tracy Leavelle (California Digital Library/University of California-Berkeley 2005); *The Oxford Handbook of Religion and Emotion*, ed., (Oxford, 2008); *Religious Intolerance in America: A Documentary History*, with Lynn Neal (University of North Carolina Press, 2010); *Religion in American History*, co-edited with Amanda Porterfield (Blackwell, 2010); and *The Spatial Humanities*, co-editor (Indiana University Press, 2010). He is co-editor, with Amanda Porterfield, of the journal *Church History: Studies in Christianity and Culture*, editor of the *Chicago History of American Religion* book series published by the University of Chicago Press and co-editor of *The Spatial Humanities* book series recently launched by Indiana University Press.

Investigating Idiosyncrasy: Toward a Comprehensive Methodology of Visual Exploration and Analysis for Humanities Scholarship

Chris Weaver

Abstract: *Research is a complex process of exploration and analysis that encompasses observation, collection, interpretation, discourse, and collaboration. Visual analytics is a young subdiscipline of the computational sciences that seeks to facilitate this process by augmenting innate human visual and cognitive capabilities with interactive computational tools. Although useful applications of visual analysis now exist in many domains that involve complex, voluminous information sources, including intelligence, emergency re-*

sponse, finance, epidemiology, and historical geography, there is of yet little support for an open-ended, user-driven process of broad and deep information engagement in which data processing, graphical depiction, and human interaction are dynamically determined by evolving research needs and goals. In this talk, I will present possibilities for augmenting the fundamentally interpretive nature of humanities scholarship by facilitating an ongoing idiosyncratic reasoning process using existing techniques and emerging ideas from visual analytics.

Chris Weaver is an Assistant Professor in the School of Computer Science and Associate Director of the Center for Spatial Analysis at the University of Oklahoma. He holds a B.S. in Chemistry and Mathematics from Michigan State University and an M.S. and Ph.D. in Computer Science from the University of Wisconsin-Madison. He was post-doctoral Research Associate with the GeoVISTA Center in the Department of Geography at Penn State, where he helped to found the North-East Visualization and Analytics Center. His research in information visualization and visual analytics focuses on synthesis of visual query interfaces for exploring and analyzing heterogeneous multidimensional data sets.

Panel III

Temporal-Spatial Analysis of Guatemala's Religious Competition and Affiliation

Rachel M. McCleary

Abstract: *Since the late 1800s, Protestant, particularly Evangelical and Pentecostal, churches have been competing with the once-monopolistic Roman Catholic Church. This study examines religious competition of Protestants with Roman Catholicism using data from the ledgers of the dance workshops (morerias). The dances in Guatemala are directly related to Roman Catholicism, for example, they are performed on a town's saint's day. Data in the ledgers beginning in the 1900 until 2009 permit an analysis of where the dances are no longer being performed. Using data on religious affiliation in Guatemala combined with the ledger data allows an analysis of where the Evangelicals are gaining converts. The second phase of the project entails analyzing where the resources once used for the performance of the dances is now being invested.*

Rachel M. McCleary is Senior Research Fellow, Taubman Center, Harvard Kennedy School of Government, Harvard University, Associate Research Fellow of the Hoover Institution, Stanford University, and Visiting Scholar, American Enterprise Institute. McCleary's work is interdisciplinary with theoretical grounding in the fields of political science, sociology, and economics. Within these disciplines, she conducts research on the political economy of religion. Her research focuses on how religion interacts with economic performance

and the political and social behavior of individuals and institutions across societies. McCleary studies how religious beliefs and practices influence productivity, economic growth, and the maintenance of political institutions such as democracy. Her books include, *The Oxford Handbook of the Economics of Religion*, (editor), Oxford University Press 2010; *Global Compassion: Private Voluntary Organizations and U.S. Foreign Policy since 1939*, Oxford University Press, 2009; *Dictating Democracy: Guatemala and the End of Violent Revolution*, University of Florida Press, 1999.

Christians in Colonial Africa

Nathan Nunn

Abstract: *Combining historic information on the locations of Catholic and Protestant mission in Colonial Africa, I examine the long-term impact of Protestant and Catholic missionary activity during the colonial period on religious conversion, education, civic participation and attitudes towards democracy today. Examining variation across ethnicities and villages within 17 sub-Saharan African countries, I provide evidence that Protestant missions had strong effects on conversion, and increased educational attainment. Catholic missions, on the other hand, had no effect on conversion, and no effect on education. The results are in line with the arguments of Woodberry and Shah (2004), and confirm the cross-country analysis of Woodberry (2004, 2009). I also find that consistent with the cross-country analysis of Glaeser, Ponzetto, and Shleifer (2007), more educated individuals favor democracy, are more likely to vote, and are less likely to view violence as a justifiable political action. However, less consistent with their arguments, I find that more educated individuals are less likely to believe that voting rights should be extended to all. Although my results suggest that through increased education, Protestant missions increase the prevalence of attitudes favorable towards democracy and civic participation, I find no evidence that missionary activity, either Protestant or Catholic, affects these outcomes through any channels other than education."*

Nathan Nunn is an Assistant Professor of Economics at Harvard University. Professor Nunn was born in Canada, where he received his PhD from the University of Toronto in 2005. Professor Nunn's primary research interests are in international trade, economic development, and economic history. He is an NBER Faculty Research Fellow, an Affiliate of BREAD, and a Faculty Associate at Harvard's Weatherhead Center for International Affairs (WCFIA). He is also currently an associate editor for the *Journal of International Economics*. One stream of Nunn's research focuses on the long-term impact that historic events can have on current economic development. In "Historical Legacies: A Model Linking Africa's Past to its Current Underdevelopment", published in the *Journal of Development*

Economics in 2007, Nunn develops a game-theoretic model showing how the slave trade and colonial rule could have had permanent long-term effects on economic performance. In "The Long-Term Effects of Africa's Slave Trades" (*Quarterly Journal of Economics*, 2008), Nunn documents the long-term adverse economic effects of Africa's slave trades. His current research continues to examine the channels through which the slave trade affects current development within Africa.

Religion and Economic Change over a Century: Linking Diverse Historical Data to Understand the Roots of Long-term Change

Robert D. Woodberry and Juan Carlos Esparza Ochoa

Abstract: *Increasingly social scientists are realizing that the roots of current national and regional differences in economic development, education, health, and political institutions go back decades, even centuries. Some scholars also argue that religious factors catalyzing some of these differences. However, lack of data has limited scholars' ability to test alternate theories empirically. To mitigate these problems, we have developed methods for linking information from dozens of sources: across languages, across varying geographic units, and across time. These procedures required reconstructing the changes in national, provincial, municipality/ county, and ecclesiastical boundaries back through time, determining the exact overlap between these geographic unites, and attaching all data to its appropriate geographic and temporal unit. It also required developing unique methods for data processing and missing data imputation. However, these procedures allow us to accurately link data from surveys, censuses, Catholic Church records, and Protestant mission data and to analyze changes in consistent geographic units over the past 150 years. These linked data allow us to conduct unprecedented analyses of long-term economic, political, and religious change.*

Robert D. Woodberry is director of the Project on Religion and Economic Change and an Assistant Professor of sociology at the University of Texas at Austin. His research analyzes the long-term roots of education, economic development and democracy in former colonies. Other interests include religious influences on political institutions and the economy and the international diffusion of social movements and printing. Along with coauthors he received the 2001 "Outstanding Published Article Award" from the *Sociology of Religion Section, American Sociological Association*. Recent publications appear in *Social Forces*; *Annual Review of Sociology*; and *the American Sociological Review*.

Juan Carlos Esparza Ochoa is a Professor in the So-

ciocultural Studies Department in the Instituto Tecnológico y de Estudios Superiores de Occidente (Mexico) and is currently a member of the Population Research Center, in the University of Texas at Austin, and Assistant Director of the PREC. He has worked on religious research focusing on Latin America and marginalized populations. His research interests include religion, poverty and development in indigenous populations, Catholic influence in Latin America, religious practices, and religious representations.

Panel IV

Re-imagining American Religion: Space as a Framework for New Scholarship

David J. Bodenhamer

Abstract: *Although its geographical patterns are understood broadly, few scholars have taken seriously the potential of a spatially informed scholarship to examine questions about American religion. Geographic Information Systems has enabled the development of new tools such as the North American Religion Atlas, a Web-based, interactive mapping system for religious adherence data, but too often technical challenges prove too daunting for widespread use. Now, we have new tools that will help to provide a framework for new spatially informed scholarship that does not depend upon expert knowledge. This presentation will explore both the strengths and weaknesses of existing spatial-analytical tools such as GIS and the potential for advanced spatial visualization, neo-geography, and Web 2.0 to offer new perspectives on American religion.*

David J. Bodenhamer is Professor of History and Executive Director of the Polis Center at Indiana University Purdue University Indianapolis. With John Corrigan (Florida State University) and Trevor Harris (West Virginia University), he is co-director of the Virtual Center for Spatial Humanities, a collaboration among the three universities, and with them, he is co-editor of *The Spatial Humanities: GIS and the Future of Humanities Scholarship* (Indiana University Press, forthcoming 2010) and co-editor of the new Indiana University Press Series on the Spatial Humanities, with four titles already under contract.

The Art and Science of Data Dissemination: An Overview of the Association of Religion Data Archives

Roger Finke

Abstract: *The Association of Religion Data Archives (theARDA.com) currently archives well over 500 local, national, and international data files, and offers a wide range of research tools to build surveys, preview data on-line, develop customized maps and reports of U.S. church membership,*

and examine religion differences across nations and regions of the world. The cross-national data collections have resulted from the ARDA staff coding new measures on religion, as well as assembling disparate sources of religions. Future development will greatly expand the number of international sources of data on religion, will provide GIS mapping for over 350,000 congregations in the United States, and will more fully implement an online question lab where quasi-experimental methods can be used for designing survey questions. After giving a brief introduction to the data and tools available from the ARDA, I will demonstrate how I have used the new data to explore the consequences of religious freedoms on religious persecution and violence.

Roger Finke is Professor of Sociology and Religious Studies at the Pennsylvania State University and is Director of the Association of Religion Data Archives (www.theARDA.com). He has published in numerous social science journals and has co-authored two award-winning books with Rodney Stark: *Acts of Faith: Explaining the Human Side of Religion* (University of California Press, 2000) and *The Churching of America, 1776-1990: Winners and Losers in our Religious Economy* (Rutgers University Press, 1992; 2005). Finke's recent cross-national research on the relationship between government restrictions on religion and religious persecution has appeared in *The American Sociological Review* and he has recently completed a book with Brian Grim for Cambridge University Press entitled: *The Price of Freedom Denied: Religious Persecution and Violence*, forthcoming 2010.

Impacting the World with Data: From a Million Data Points to Maps that Tell the Story

Brian Grim

Abstract: *Technologies make possible so many different ways of collecting and displaying data that often the real challenge is knowing which data to collect and the best way to present them. This presentation will briefly show how the Pew Forum on Religion & Public Life (Washington, DC) and the International Religious Demography Project at Boston University's Institute on Culture, Religion and World Affairs (CURA) have organized millions of data points on world religion into relational databases that allow interactive online comparisons. The presentation will then describes ways that these data have been reported and mapped, showing how they contribute to scholarly understanding as well as how they impact public discourse in the media and among policy makers. Examples include how a single published number became part of the public discourse DNA (i.e., the Forum's finding that 1.57 billion people, or nearly one-in-four in the world today, are Muslim) as well as how data on religious demography and religion-related violence can be turned into maps that consolidate knowledge. The presentation will conclude*

with an illustration of how data on religion are combined with other global geo-spatial datasets in ways that provide critical cultural information to aid workers and others before they arrive in a new location; this developing database also is designed to incorporate real-time input from data contributors worldwide using a web-based application.

Brian J. Grim is Senior Researcher in religion and world affairs at the Pew Research Center's Forum on Religion & Public Life in Washington, D.C. Dr. Grim is a leading researcher on international religious demography as well as on government restrictions on religion and religious hostilities in societies around the world. He also co-directs the international religious demography project at Boston University's Institute on Culture, Religion and World Affairs, where he and Todd Johnson co-edit the *World Religion Database* published by Brill. Dr. Grim has extensive overseas experience. From 1982-2002, he lived and worked as an educator, researcher and development coordinator in China, the former USSR, Central Asia, Europe, Malta and the Middle East.

Panel V

Historical GIS and Chinese Religion: An Example *Peter K. Bol*

Abstract: *The China Historical GIS has been developed to enable users to join information in historical sources to places in time. Although the points and polygons represent administrative units, much of the information on religious sites in China comes in the form of distance and direction from an administrative point. This allows us to map the data in a rough but revealing way. In this example a local record of 700 religious sites, including their date of founding, that existed in 1480 in one Chinese prefecture have been mapped. This reveals a particular relationship between religion and authority that can be compared to other parts of Eurasia.*

Peter K. Bol is a Harvard College Professor and the Charles H. Carswell Professor of East Asian Languages and Civilizations. He led Harvard's university-wide effort to establish support for geospatial analysis in teaching and research; in 2005 he was named the first director of the Center for Geographic Analysis. He also directs the China Historical Geographic Information Systems project, a collaboration between Harvard and Fudan University in Shanghai to create a GIS for 2000 years of Chinese history, and is involved in other projects aimed at enhancing digital information linkages between East Asian and Western scholars.

Network Analysis of Tibetan Buddhist Monasteries and Leaders

Gray Tuttle

Abstract: *Although the Tibetan cultural area covers territory the size of Western Europe, most studies of Tibetan history have been focused on central Tibet (near Lhasa) as the seat of a centralized polity. Up to now, historians of Tibet have largely been focused on questions of whether and/or to what extent the various China-based states have or have not controlled Tibetan territory. But this focus on central Tibet and the political reach of Beijing has largely obscured the history of the majority of the Tibetan population and the middle ground of the Tibetan cultural area between Lhasa and Beijing. On the basis of data collected about nearly one thousand monasteries in Amdo (Qinghai/Gansu/Sichuan), I will examine the networks of monastic "feeder"/preparatory schools that funneled the majority of monks to the massive monasteries in central Tibet, where these monks played an important role in the decisions made by the Tibetan government. I will also detail the role of important lamas from these middle ground monasteries in taking leadership roles in the central Tibetan government, as well as in Beijing Buddhist institutions. Finally, I will discuss the challenges of working with such large datasets as well as my own dependence thus far on working with a geographer and cartographer to help visualize these relations. While producing visual representations of social networks is crucial to explaining my findings to others, I find the technical challenges of using GIS and mapping this data requires collaboration with others.*

Gray Tuttle is Leila Hadley Luce Assistant Professor of Modern Tibetan Studies, department of East Asian Languages and Cultures. Gray received his Ph.D. in Inner Asian History at Harvard University in 2002. He studies the history of twentieth century Sino-Tibetan relations as well as Tibet's relations with the China-based Manchu Qing Empire. The role of Tibetan Buddhism in these historical relations is central to all his research. In his *Tibetan Buddhists in the Making of Modern China* (Columbia UP, 2005), he examines the failure of nationalism and race-based ideology to maintain the Tibetan territory of the former Qing empire as integral to the Chinese nation-state. Instead, he argues, a new sense of pan-Asian Buddhism was critical to Chinese efforts to hold onto Tibetan regions (one quarter of China's current territory). His current research project, "Amdo Tibet, Middle Ground between Lhasa and Beijing (1578-1865)," is a historical analysis of the economic and cultural relations between China and Tibet in the early modern periods (16th-19th centuries) when the intellectual and economic centers of Tibet shifted to the east, to Amdo—a Tibetan cultural region the size of France in northwestern China. Deploying Richard White's concept of the "Middle Ground" in the context of two mature civilizations—Tibetan and Chinese—encountering one another, this book will examine how this contact led to three dramatic areas of growth that defined early modern Tibet: 1) the advent of mass monastic education, 2) the bureaucratization of reincar-

nate lamas' charisma and 3) the development of modern conceptions of geography that reshaped the way Tibet was imagined. Other long term writing projects include editing *The Rise of the Modern in Tibet* and co-editing *Sources of Tibetan Tradition* for the series *Introduction to Asian Civilizations*, *The Tibetan History Reader*, and *Wutaishan and Qing Culture*.

GIS Network Analysis of Historical Socioeconomic Relations between Muslims and Buddhists in Northwest China

Karl E. Ryavec

Abstract: *This study examines the historical trade and marketing areas of Chinese, Muslim, and Tibetan communities in the Amdo region of northeastern Tibet and along the Gansu province frontier of Northwest China during the 19th and 20th centuries. Employing a GIS network, a cartographic model is constructed of average travel distances and times between the towns, mosques, and Buddhist monasteries in this region. Though there were few towns in this largely pastoral highland region, the Tibetan monasteries held numerous religious and trade fairs, while Muslims were frequently active in economic exchanges as long distance traders and shopkeepers. Based on this GIS network analysis of travel routes, and the numbers and times of monastic trade fairs, tentative findings on how regional economic systems functioned and supported the socioeconomic activities of Islamic and Buddhist communities will be presented.*

Karl Ernest Ryavec was born in New York in 1963, but moved to Massachusetts the following year where he was raised. He received his B.A. in geography from Clark University in 1986, and an A.M. in East Asian Regional Studies from Harvard University in 1989. He then worked as a geographer for the US Defense Mapping Agency and the US Census Bureau's International Programs Center. Later, he returned to graduate school to focus on GIS in historical and cultural research, finishing a Ph.D in geography at the University of Minnesota in 2002. That same year, Dr. Ryavec was appointed Assistant Professor at the University of Wisconsin at Stevens Point. In 2008 he was promoted to Associate Professor. Dr. Ryavec teaches courses in GIS, human geography, historical geography, political geography, and the geography of China. He is making an historical atlas of Tibet for the University of Chicago Press. He is also co-director of the Tibetan and Himalayan historical GIS project funded by the Henry Luce Foundation, and principal investigator of a grant studying changing Muslim settlement patterns in China funded by the Geography and Spatial Sciences program of the US National Science Foundation.

Technical Issues in the Study of Local Chinese Religion and the Necessity of Breaching Disciplinary

Walls

James Robson

Abstract: *In this talk I will introduce the general structure of a collaborative international project on the study of local religious history in Hunan, China. In the process of discussing the various facets of this work, I will highlight the necessity of interdisciplinary collaboration in order to adequately respond to the challenges presented by the nature of this research and the problems we have encountered thus far. A significant part of that collaboration has involved assessing how new technologies might be applied to this project and how they might allow us to approach specific research problems in new and innovative ways.*

James Robson is an Associate Professor in the Department of East Asian Languages and Civilizations at Harvard University. He received his Ph.D in Religious Studies from Stanford University in 2002. He specializes in the history of Medieval Chinese Buddhism and Daoism and is particularly interested in issues of sacred geography, local religious history, talismans, religious art, and the historical development of Chan/Zen Buddhism. His *Power of Place: The Religious Landscape of the Southern Sacred Peak [Nanyue 南嶽] in Medieval China* was recently published by Harvard University Press, East Asia Monograph Series. He is the co-editor of *Buddhist Monasticism in East Asia: Places of Practice* (Routledge). He has also been engaged in a long-term collaborative research project with the École Française d'Extrême-Orient studying a large collection of local religious statuary from Hunan province and their place in the local religious culture of the region.

Panel VI

Irrigation, cultural individuation, and global networks: GIS approaches to the history of religion in the alluvial Putian plain of Southeast China

Kenneth Dean

Abstract: *This paper illustrates the applicability of GIS analysis to the uncovering and analysis of distinct zones of local religious differentiation within the 464 sq km Putian alluvial plain reclaimed from the Xinghua Bay by Han Chinese settlers through a reclamation process lasting over 1000 years. The paper presents the basic findings of a survey of ritual activities in each temple in 724 villages on this plain. By combining historical records with satellite imagery and vectorized maps, we have developed a series of historical maps which show the evolution of villages in the area over time, as well as the development of a set of 153 regional ritual alliances linking these villages into larger ritual processionary units. We also map the reclamation of the plain over time, the spread of literati and powerful lineages, the distribution of the most prominent local cults to gods located in village temples, higher order ritual alliances, and the spaces of spe-*

cific sub-cultural or alternative cultural formations (localized ritual traditions) featuring unique forms of collectively trained spirit mediums and other forms of spirit medium activity. These latter ritual traditions have spread to Southeast Asia, and this paper also examines ways of mapping transnational networks of temple systems spreading from Putian to Southeast Asia. The paper also explores ways of quantifying the t upsurge in back and forth flows within these networks since the Cultural Revolution.

Kenneth Dean is James McGill Professor and Drs. Richard Charles and Esther Yewpick Lee Chair of Chinese Cultural Studies in the Department of East Asian Studies of McGill University. He is the author of *Ritual Alliances of the Putian Plains*, 2 vols. (with Zheng Zhenman), Leiden, Brill, 2010, *Lord of the Three in One: the spread of a cult in Southeast China*, Princeton, 1998, *Taoist Ritual and Popular Cults of Southeast China*, Princeton, 1995, *Epigraphical Materials on the History of Religion in Fujian: The Xinghua Region*; 1 vol., *The Quanzhou Region*, 3 Vols, 1995, 2004, (with Zheng Zhenman), *Fuzhou: Fujian renmin chubanshe*, and *First and Last Emperors: The Absolute State and the Body of the Despot* (with Brian Massumi), Autonomedia, New York, 1992.

Sacred Lakes and Sacred Mountains: Phoenician Sacred Spaces in the Mediterranean

Joseph A. Greene

Abstract: *Lacking as we do any sort of Phoenician "Bible," we are forced to rely on the interpretation of physical remains to trace the history ancient Phoenician religion from the late 2nd through 1st millennium B.C. around the Mediterranean. Among those remains are cultic installation that represent "sacred lakes" and "sacred mountains." Like the Phoenicians themselves, these sacred sites are scattered widely across the Mediterranean, as far apart as Syria and Spain. Using some simple geographical techniques, it is possible to draw these locations together virtually, to examine them comparatively, and gain some revealing impressions of the spaces and places sacred to the ancient Phoenicians.*

Joseph A. Greene, Assistant Director of the Semitic Museum of Harvard University, is an Near Eastern archaeologist trained at the Oriental Institute of the University of Chicago (Ph.D. 1986). He has conducted archaeological surveys and excavations in Tunisia, Cyprus and Jordan. His research focuses on the long term effects of human settlement and land use on ancient Mediterranean landscapes and on contemporary efforts to preserve natural and cultural environments around Mediterranean.

Cultures, Clashes and Peace

Murat Iyigun and Erin Fletcher

Abstract: *Ethnic and religious fractionalization have important effects on economic growth and development, but their role in internal violent conflicts has been found to be negligible and statistically insignificant. And mostly on this basis, differences of ethnic, religious and cultural identities as the ultimate determinants of violent conflict have often been refuted. Using data on 953 conflicts that took place in 52 countries in Europe, Africa and the Middle East between 1400 CE and 1900 CE, we investigate the impact of violent conflicts on ethno-religious fractionalization. Besides a variety of violent confrontations ranging from riots, revolts and power wars between secular sovereigns, the data cover religiously-motivated confrontations. We document that countries in which Muslim on Christian wars unfolded more frequently are significantly more religiously homogenous today. In contrast, those places where Protestant versus Catholic confrontations occurred or Jewish pogroms took place are more fractionalized, both ethnically and religiously. And the longer were the duration of all such conflicts and violence, the less fractionalized countries are now. These results reveal that the demographic structure of countries in Europe, the Middle East and North Africa still bear the traces of a multitude of ecclesiastical and cultural clashes that occurred throughout the course of history. They also suggest that endogeneity could render the relationship between fractionalization and the propensity of internal conflict statistically insignificant.*

Murat Iyigun is an Associate Professor of Economics at the University of Colorado, Boulder, a Research Affiliate of the Center for International Development (CID) at Harvard University, and a Research Fellow of the Institute for the Study of Labor (IZA) in Bonn, Germany. His main research interests lie in the areas of the economics of the family, development economics, political economy and cliometrics. Murat Iyigun received his Ph.D. in economics from Brown University in 1995. Prior to joining the University of Colorado in August 2000, he was a staff economist at the Federal Reserve Board in Washington, DC, USA. His research has been published in a variety of outlets including *Quarterly Journal of Economics*, *American Economic Review*, *Review of Economic Studies*, *International Economic Review* and others. Since April 2008, he has also been an editorial board member of the *European Journal of Political Economy*.

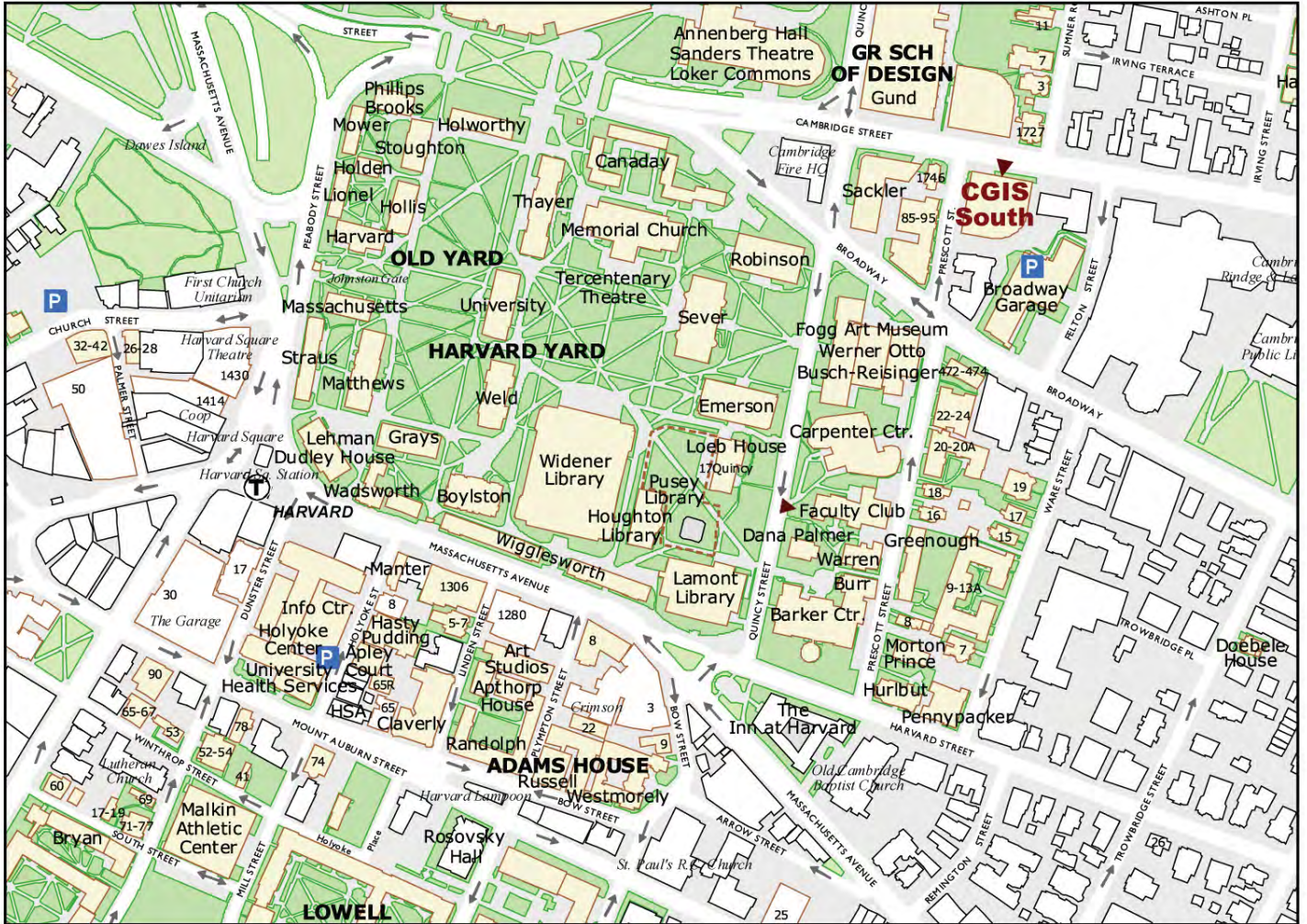
Erin Fletcher is a doctoral student at the University of Colorado at Boulder. In addition to her work with Murat Iyigun on culture and wars, she is writing a paper with Ann Carlos on financial portfolios in 18th century England. Currently, she is focused on domestic violence and violence against women.

PARKING

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To purchase the visitor's pass on line, please visit:
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MAP



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