



## The American Association of Geographers Spatial Analysis and Modeling Specialty Group Newsletter 2019

<http://sam-aag.org/>

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### FROM THE CHAIR

Dear SAM Members,

Hope everyone is having a great summer.

First of all, I would like to use this opportunity to update you about recent changes on the SAM board. Carson Farmer stepped down from the SAM board in March after he served one year as chair and two years as vice chair. According to our bylaws<sup>1</sup>, I became the chair and will serve for the next three years: one year of Carson's term and two years of my elected terms. Then, the SAM board, with a majority vote as the bylaws says, has appointed Eric Delmelle as vice chair for the current term that I left. In addition, Daoqin Tong (Arizona State University)'s term ended this year. SAM thanks Carson and Daoqin for their service for the last three years. SAM welcomes new two board members and one student member. Wei Kang (University of California, Riverside) and Hyun Kim (University of Tennessee, Knoxville) were elected for a three-year term in May. Jimmy Feng (University of Tennessee, Knoxville) was elected as student member and will serve for the next two years.

I also want to update you about activities that SAM held at the 2019 AAG meeting in Washington D.C. SAM sponsored 43 sessions including hosted two sessions for John Odland Award. This year's winners for John Odland Awards are Meifang Li (1<sup>st</sup> place, Sun Yat-sen University & Dartmouth College), James Gaboardi (2<sup>nd</sup> place, Florida State University), and Nastaran Pourebrahim (3<sup>rd</sup> place, University of North Carolina at Greensboro). Also, three PhD students and two master students received student travel grants. In addition, SAM presented the Emerging Scholar Award to Wenwen Li (Arizona State University).

Alan Murray (University of California, Santa Barbara) delivered the SAM Plenary Lecture this year. His lecture, titled "Spatial Analysis and Modeling: Analytics and Spatial Data Science," drew a great attention and had a large audience. Alan went over the history of SAM including the name change of SAM from MMQM in 1999-2000 in his lecture. He also briefly commented that it might be time to consider changing its name again, as the discipline is going through rapid changes in related technologies and data sources including Big Data (as it was raised also in the SAM business meeting, we may need to have opportunities to collect opinions of SAM members).

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<sup>1</sup> Our bylaws say that "the Vice Chair shall assume duties of the Chair and serve the remainder of the current term plus the term of his/her elected term as Chair."

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SAM board always welcomes any ideas to serve the SAM community better. If you have any suggestions and comments, feel free to contact any SAM board members.

Best wishes,

Yongwan Chun  
Associate Professor  
The University of Texas at Dallas

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## AWARDS

### Emerging Scholar Award

**Dr. Wenwen Li** from Arizona State University was selected as this year's SAM Emerging Scholar Award recipients. The award honors early- to mid-career scholars who have made significant contributions to education and research initiatives that are congruent with the mission of AAG-SAM Specialty Group.

#### Biosketch of Wenwen Li:

Dr. Wenwen Li is an Associate Professor in the School of Geographical Sciences and Urban Planning at the Arizona State University. She received her Ph.D. from the George Mason University back to 2010.



Wenwen Li's research interest is geographic information science with a focus on cyberinfrastructure, big data, semantic interoperability, spatial information retrieval, and distributed geospatial information processing. She heads the [CyberInfrastructure and](#)

[Computation Intelligence Lab](#) in the Spatial Analysis Research Center at the Arizona State University.

Wenwen Li's work has been applied in several scientific disciplines, including polar science, climatology, public health, hydrology and urban studies. Her research has been supported by various funding agencies, including the National Science Foundation (NSF), United States Geological Survey (USGS), and Open Geospatial Consortium. Wenwen Li was the chair of the American Association of Geographers' cyber-infrastructure specialty group from 2013-2014; a member of the Spatial Decision Support Consortium at the University of the Redlands (2015-); and a graduate faculty member in the Computer Science program at ASU (2016-). Wenwen Li is also the 2015 NSF CAREER award winner -- NSF's most prestigious award for junior faculty.

More information about Wenwen and her research work can be found [here](#).

### SAM Student Paper Competition-John Odland Award

The award committee received a total of 8 extended abstracts. After a careful evaluation of the abstracts and eligibility consideration, the committee invited 6 students to submit the full paper. All the 6 students presented their research at the AAG annual conference in the Washington

D.C.. The committee made the award selection based on: (1) potential contribution to the use of mathematical models, statistical techniques and other technological and computational approaches for analyzing spatial phenomena in any subfield of geography; (2) appropriate and sound use of methodology; (3) originality; (4) organization and written composition of the paper; and (5) quality of oral presentation. Three students were selected as the 2019 **John Odland Award** recipients.

**The first place**  
Meifang Li  
from Sun Yat-sen  
University and  
Dartmouth College

**Presentation title**  
Agent-based modeling of  
communicable disease  
transmissions with real  
human mobility and  
disease data



**The second place**  
James Gaboardi from  
Florida State  
University

**Presentation title**  
A Polygon-Based Approach  
to Spatial Network  
Allocation: Optimal Facility  
Location Modeling and  
Network Analysis



**The third place**  
Nastaran pourebrahim  
from University of  
North Carolina at  
Greensboro

**Presentation title**  
Modeling Trip Distribution  
using Twitter Data and  
Machine Learning



**2019 Plenary Speaker**

**Dr. Alan Murray**  
**Plenary Presentation Title:**  
Spatial Analysis and Modeling: Analytics and  
Spatial Data Science



Dr. Alan Murray has been selected by the SAM Specialty Group and the Editor of Geographical Analysis as the 2019 Plenary Speaker. Dr. Murray (BS, MA, PhD UC Santa Barbara) is a Professor in the Department of Geography at University of California at Santa Barbara. His previous academic appointments include Drexel University, Arizona State University and Ohio State University. He is editor of International Regional Science Review, associate editor and/or editorial board member for

a range of international journals, including Geographical Analysis, International Journal of Geographical Information Science, Transactions in GIS, Papers in Regional Science, Computers, Environment and Urban Systems, Socio-Economic Planning Sciences and Annals of the American Association of Geographers. His research and teaching interests include: geographic information science; spatial optimization; health informatics; urban growth and development; land use planning; urban, regional, and natural resource planning and development; and, infrastructure and transportation systems. He is the author of three books and more than 230 research articles, book chapters and proceedings papers. He has received a number of awards from the American Association of Geographers, is the recipient of the Isard Award for Scholarly Achievement as well as the Hewings Award for Outstanding Young Scholar from the North American Regional Science Council, and Fellow of the Regional Science Association International, among others.

### **SAM Student Travel Award**

The award committee received 5 MA/MS category travel award applications and 24 PhD category travel award applications. After a careful evaluation of each of the category, the committee awarded 2 student travel awards to the MA/MS category and 3 student travel awards to the PhD category to support their travel to AAG annual meeting. The committee made the award selection based on: (1) the relevance of research to spatial analysis and modeling; (2) presenting research in the SAM sponsored sessions; (3) emerging need to be supported to attend AAG annual meeting; and (4) clear budget justification and professional and academic development goal.

### **PhD category**

Paul Jung  
Department of  
Geography & Earth  
Sciences, University  
of North Carolina,  
Charlotte



James Gaboardi  
Department of  
Geography, Florida  
State University



Nastaran  
pouebrahim  
Department of  
Geography,  
environment, and  
Sustainability,  
University of North  
Carolina at  
Greensboro



### **MA/MS category**

Yunlei Liang  
Department of  
Geography,  
University of  
Wisconsin-Madison



Anna Shadrova,  
Department of  
Geography,  
University of  
Toronto,  
Mississauga



## NEW BOARD MEMBERS AND STUDENT REPRESENTATIVE

This year we had vacancies of two board members and one student representative. After the general election from all the SAM members, **Dr. Wei Kang** from University of California, Riverside and **Dr. Hyun Kim** from the University of Tennessee, Knoxville will serve as our new SAM board members from 2019 to 2022. **Mr. Jimmy Feng** from the University of Tennessee, Knoxville will serve as our new SAM student representative from 2019 to 2021. Welcome Wei, Hyun and Jimmy! We also want to express our acknowledgement to **Dr. Carson Farmer** and **Dr. Daoqin Tong** for their continuous contributions to the SAM community!

## ANNOUNCEMENTS

**International Symposium on Locational Decisions (ISOLDE) XV will be held in Hamburg and Timmendorfer Strand (at the Baltic Sea) in Germany on June 14 - 19, 2020.**

## IMPORTANT DATES

Abstract submission: Dec. 1, 2019 to Jan. 31, 2020  
 Notification of acceptance: Feb. 20, 2020  
 Early registration: Feb. 15 to March 15, 2020

## AIMS AND SCOPE

The meeting intends to gather the operations research community from different parts of the world to share experiences in the field of locational analysis. We invite participation from all areas related to location theory including, but not limited to:

- Continuous Location
- Network Location
- Discrete Location
- Hub Location
- Location and Logistics
- Location Decisions in Traffic Planning
- Network Design
- Location under Uncertainty

- Location-Routing
- Applications of Location Problems
- Territory Design

## CONTACT

Prof. Dr. Anita Schöbel  
 Technical University Kaiserslautern  
 Fraunhofer Institute for Industrial Mathematics  
 ITWM

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More information can be found at:

[www.isolde2020.de](http://www.isolde2020.de)

## RESEARCH ACTIVITIES

**100-year flood exposure in the Conterminous United States using national building footprints**

Contributed by Xiao Huang ([xh1@email.sc.edu](mailto:xh1@email.sc.edu)) and Cuizhen Wang ([cwang@mailbox.sc.edu](mailto:cwang@mailbox.sc.edu)) from University of South Carolina

Floods are among the most common natural hazards on earth. Worldwide, one-third of economic losses and more than half of victims are flood-induced. Giving the rising threat of floods in the U.S, it is of great importance to obtain baseline information by quantifying the general exposure of floods and assessing its impact on those who are likely to bear the eventual cost of flooding. Previous works in estimating flood exposure in the U.S, however, failed to capture the great heterogeneity of population distribution and did not compare multiple floodplain products. The objective of this study is to conduct a comprehensive assessment of exposed population within the 100-year floodplains issued by three different agencies: Federal Emergency Management Agency (FEMA), European Commission Joint Research Center (EC-JRC), and United Nations (UN). To better capture the heterogeneity of population distribution at micro-level, U.S national building footprint dataset, a newly open-sourced dataset that contains more

than 125 million buildings (released by Microsoft in June 2018), is utilized to disaggregate population statistics in block groups from the latest ACS 5-year estimates (2013-2017). The disaggregated building-level statistics are further spatially joined with multiple existing floodplain boundaries. The general workflow is presented in Figure 1. The findings from this national assessment provide valuable benchmark information regarding current flood exposure in the Conterminous U.S by answering the following questions: 1) how many people are exposed? 2) who are they? 3) how are they distributed? 4) how do the estimations from different agencies differ spatially? This work is being conducted by Xiao Huang, a Ph.D candidate in Department of Geography, University of South Carolina.

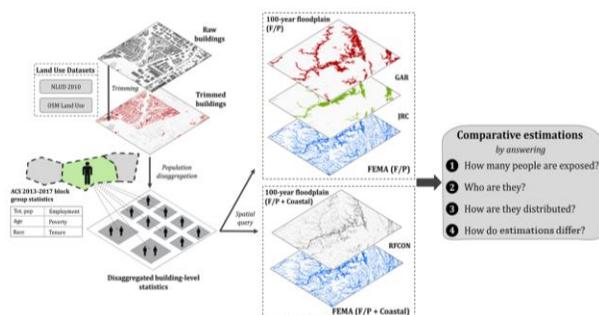


Figure 1. General workflow of estimating population exposed to 100-year floods in the CONUS using national building footprints

## NEWS

After both presenting at the International Workshop on Urban Operations Research (IWUOR) 2019 conference in Nagoya, Japan, UCSB Professor Emeritus Rick Church and Texas A&M – Corpus Christi Assistant Professor F. Antonio Medrano climbed to the top of Mountain Fuji!



## JOB OPENINGS

### Up to three Assistant Research Professor job openings from Arizona State University

[The Knowledge Exchange for Resilience \(KER\)](#) within [the School of Geographical Sciences and Urban Planning \(SGSUP\)](#) at Arizona State University (ASU) seeks applications for up to **three** Assistant Research Professors with an anticipated start date as early as October 21, 2019 and preferably should be filled by November 1, 2019. The full-time, non-tenure-track, benefits-eligible, fiscal year (July 1 – June 30) positions are for one year. Extensions may be possible contingent upon satisfactory performance, availability of resources and the needs of the university.

The positions will contribute to spatial-temporal analysis, social data analytics, modeling, citizen science, and specific community resilience topics in service to ASU’s Knowledge Exchange for Resilience (KER). KER is a university-wide effort to produce insights and solutions for community resilience themes in collaboration with residents, foundations, governments, private enterprise, nonprofits, and other groups. The co-creation of this knowledge is accelerated through the exchange of experiences and expertise between the university and the community on how individuals, groups, and institutions tend to respond to social, economic, and environmental

disruption to known vulnerabilities, specific past threats, and challenges emerging from profound and rapid change. For full job description, click [here](#).

To apply, please submit the following as a single PDF document: to [sgsup.jobs@asu.edu](mailto:sgsup.jobs@asu.edu) with "KER ARP 13997" as the subject line text. A Statement of Research Interests (not to exceed 2 double-spaced pages); A complete Curriculum Vitae including a list of publications and the names/email address/phone numbers of three references. The file name for your PDF should be of the form <lastname>\_<firstname>\_13997.pdf.

Further inquiries should be made to Professor Elizabeth Wentz [wentz@asu.edu](mailto:wentz@asu.edu) (Dean of Social Sciences). Applications will be reviewed beginning September 14th, 2019; if not filled, applications will be reviewed every week thereafter until the search is closed. A background check is required for employment.

## INFORMATION

### Spatial Analysis and Modeling (SAM) Specialty Group

Our mission is to foster and maintain interaction, cooperation and community among individuals interested in the analysis of geo-referenced data, modeling of spatio-temporal processes and the use of analytical and computational techniques in solving geographic problems. The specialty group promotes the scientific study of physical, environmental and socioeconomic geography and the development, use and teaching of analytical cartography, GIS, remote sensing, spatial statistical, mathematical and computational techniques for spatial analysis. For more information, see the SAM-SG homepage (<http://sam-aag.org/>).

### Membership Dues

Regular: \$6  
Student: \$1

## Submissions

This newsletter reaches a large number of readers and is therefore an excellent venue for getting the word out on community news, departmental happenings, research findings, media appearances, and the like. It is also a good place to post calls for proposals, awards, grants, fellowships, and jobs. We also invite you to submit commentaries or features of broad interest to specialty group members.

The newsletter relies on volunteers to submit articles, so please take a moment to send along relevant items when they are solicited.

## Officers

### Chair

**Yongwan Chun**

School of Economic, Political and Policy Sciences  
University of Texas at Dallas  
Email: [ywchun@utdallas.edu](mailto:ywchun@utdallas.edu)  
Term expires: 2022

### Vice Chair/Treasurer

**Eric Delmelle**

Department of Geography and Earth Sciences  
University of North Carolina at Charlotte  
Email: [eric.delmelle@uncc.edu](mailto:eric.delmelle@uncc.edu)  
Term expires: 2020

### Board Members

**Qunshan Zhao**

School of Social and Political Sciences  
University of Glasgow  
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Term expires: 2021

**Hyun Kim**

Department of Geography  
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Term expires: 2022

**Wei Kang**

Center for Geospatial Sciences  
University of California, Riverside  
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Term expires: 2022

Student Representative**Jimmy Feng**

Department of Geography  
University of Tennessee, Knoxville  
Email: [jfeng12@utk.edu](mailto:jfeng12@utk.edu)  
Term expires: 2021