

17th May, 2017

Dear Spatial Sciences Institute Community:

On Commencement Day this past Friday, we had much to celebrate in the Spatial Sciences Institute at the end of this Spring 2017 semester. I'm proud to share with you these highlights.

We are excited that SSI is featured in the just-released "Visionaries" issue of the [USC Dornsife Magazine](#) as [one of the leading institutes in Dornsife College](#), along with highlights of [Professor Travis Longcore's work in light pollution](#), [Professor Steven D. Fleming's program on Human Security and Geospatial Intelligence with GEN \[R\] David Petraeus](#), and [our LA GeoHub research group with Los Angeles Mayor Eric Garcetti's data team on crime trend analysis](#).

Also on the all-Institute front, we had a very large [SSI presence at the 2017 Annual Meeting of the American Association of Geographers \(AAG\)](#) in Boston, Massachusetts in April. Serving as session organizers, moderators, authors, and presenters were SSI Professors **Karen Kemp**, **Travis Longcore**, **Katsuhiko Oda**, **Darren Ruddell**, **Elisabeth Sedano**, **Jennifer N. Swift**, **Robert Vos**, **John P. Wilson**, **An-Min Wu**, and **Wei Yang**, along with Post-doctoral Research Associate **Noli Brazil**, Managing Director **Susan Kamei**, and Academic Programs Director **Ken Watson**. In addition, two M.S. GIST recent graduates presented papers based upon their master's thesis research: **Lara Hughes-Allen** on "Monitoring Mountain Glacier Changes in Relation to Climate Change" and **Katherine A. Wright** on "From research to results: Web GIS as a platform for research collaboration to affect real-world change." M.S. GIST alumna **Trang VoPham, Ph.D.**, currently a research fellow at the Harvard T.H. Chan School of Public Health/Brigham and Women's Hospital, presented on "Disparities of colorectal and breast cancer survival." For the first time, SSI had undergraduate students giving papers at AAG, with B.S. in GeoDesign seniors **Diana Kim** and **Nida Soe** authoring and presenting their research on "Sun Exposure Reduction Recommendations for Elementary School Playgrounds in Los Angeles: A Service Learning Project for Undergraduates." **David Roachford**, a Spatial Studies minor, authored "Gentrification and Displacement in Los Angeles' Rail Transit Neighborhoods."

Two SSI teams captured the top prizes at the March 25-26, 2017 hackathon presented by the National Geospatial-Intelligence Agency (NGA) here in Los Angeles. The hackathon challenge was to use geospatial information to better understand, model, visualize, and monitor the nexus between food security and regional stability in Morocco, which is important in predicting and understanding humanitarian/military crises. Team "Optimizing Fishery Distribution to Drought Regions," which included GeoDesign major **Joanna Wang**, won \$4,000 for the grand prize and crowd-selected awards. The first runner-up prize went to Team "Happy Farmer," which included M.S. in Spatial Informatics student **Siyu Deng**. [Read more about the hackathon results](#) and [watch](#) the reaction of Team "Optimizing Fishery" as they win. SSI is a [Center for Academic Excellence in Geospatial Sciences designated by the NGA and the U.S. Geological Survey](#).

SSI Academic Programs

Our undergraduate program population is rapidly approaching triple digits. Our new [minor in Human Security and Geospatial Intelligence](#) is off to a fast start in its first year, appealing to students with interests in international relations, political science, humanitarian relief, and other related disciplines. Our [Spatial](#)



[Studies minors](#) have joined our [B.S. in GeoDesign majors](#) as Dornsife “Frontline Scholars” in academics and research.

We congratulate:

- **Izzy Mitchell** (B.S. GeoDesign '17) on receiving the Order of Troy graduation award;
- **Braulio Hoyos** (Spatial Studies minor '17) on being named a USC Global Scholars prize winner, receiving a \$10,000 award towards graduate study, and on being inducted into the Phi Kappa Phi National Honor Society;
- **Griffin Kantz** (Spatial Studies minor '17) on being named a USC Steven and Kathryn Sample Renaissance Scholar and for being the valedictorian of the USC Price School of Public Policy;
- **James Luttrull** (Spatial Studies minor '17) on also being named a USC Steven and Kathryn Sample Renaissance Scholar and for receiving the David L. Boren Scholarship for International Study;
- **Kyra Schoonover** (Spatial Studies minor '17) on being inducted into Phi Beta Kappa;
- **Yu Chuan Shan** (Spatial Studies minor '17) on winning the ASPRS 2017 Behrens Memorial Scholarship for her remote sensing research. After graduating this May, Shan will be working at the University of Georgia in NASA's Summer DEVELOP Program to integrate NASA Earth Observation data using remote sensing and GIS to help local and international partner organizations make informed decisions about current environmental issues;
- **Alex Chen** (GeoDesign major) on being selected as a USC Global Fellow to work this summer as a research fellow in applied statistical methods with the Taipei Medical University Gerontology Health Management and Rehabilitation departments;
- **Coby Cohen** (GeoDesign major) on being selected by the U.S. Geospatial Intelligence Foundation (USGIF) as a student assistant for the USGIF 2017 GEOINT Symposium and presenting an SSI poster of GEOINT student research at this year's symposium in San Antonio, Texas; and to
- the SSI student researchers who presented their year's results in the university's 19th Annual Undergraduate Symposium for Scholarly and Creative Work on April 12, 2017: **Elizabeth Berson, Grace Corsi, Courtney Fassett, Julia Fruithandler, Eliza Gutierrez-Dewar, Sarah Ladhani, Diana Kim, Nida Soe, Izzy Mitchell, Leonard Ngo, Richard Windisch, Kevin Mercy, Benjamin Banet, Yu Chuan Shan, Caroline Buth and Monica Finnstrom.** [Read about their projects and their faculty advisors.](#)

Our graduating seniors go forth with our good wishes as they embark on their graduate school and professional plans. The summer plans of our continuing students include participating in our signature [“Problems Without Passports” International GeoDesign course](#) in Amsterdam with Professor **Darren Ruddell**, in other study abroad programs, and in internships at the Jet Propulsion Laboratory, Esri, and other employers.

In our master's programs, 34 students in our online **Graduate Certificate of GIST** and **Graduate Certificate Geospatial Intelligence programs**, 38 students in our online **M.S. in Geographic Information Science and Technology (GIST) program**, and our first two graduates in our **M.S. in Spatial Informatics**

Program have had their degrees conferred this academic year. Well done to all graduates!

Congratulations go to the winners of this year's M.S. in GIST Thesis Prizes, along with their advisors and committee members:

- **First prize: Lara Hughes-Allen**, *Quantifying Changes in Glacier Thickness and Area Using Remote Sensing and GIS: Taku Glacier System, AK* (Advisor: **Steven Fleming**; Committee Members: **Robert Vos, Su Jin Lee**);
- **Second prize: Richard Holzer**, *Evaluating the Minneapolis Neighborhood Revitalization Program's Effect on Neighborhoods* (Advisor: **Darren Ruddell**; Committee Members: **Laura Loyola, Robert Vos**); and
- **Third prize: Charles Becker**, *A Spatial Analysis of Veteran Healthcare* (Advisor: **Robert Vos**; Committee Members: **Elisabeth Sedano, Steven Fleming**).

We also congratulate:

- **Cora Chong, Charles Hall, Steffanie Kolbus, Neil Stone, Holly Torpey, and Samantha Tucker**, all M.S. GIST graduates, on their induction into the Phi Kappa Phi National Honor Society;
- **Bailey Baumann** (M.S. GIST '17) on her poster presentation "Finding Environmental Opportunities for Early Sea Crossings: An Agent-Based Model of Middle to Late Pleistocene Mediterranean Coastal Migration" at the Agent-Based Modeling (ABM) 17: A Symposium That Advances the Science of ABM, National Science Foundation, in San Diego, California on April 20-22, 2017;
- **Richard Holzer** (M.S. GIST '17) on his presentation "Evaluating the Minneapolis Neighborhood Revitalization Program" at the 2017 National Planning Conference (NPC17) in New York, New York, on May 8, 2017; and
- the M.S. in GIST students who presented at the Esri Development Summit, on Palm Springs, California on March 6-9, 2017: **Phil Conner** on "Exploring Commercial Catch: Creating a Fisheries Data Web Application"; **Katherine A. (Kelly) Wright** on "Tungiasis eLibrary: a Web GIS App for Public Health"; **Allen Branch** on "Spatio-Temporal Mapping of Distributed Work Using GIS and Blockchain"; and **Charles Hall** on "Accessing REST APIs in Python."

We had another successful recruitment year for the second cohort of our [Ph.D. program in Population, Health and Place](#), a joint collaboration between the Spatial Sciences Institute and Department of Sociology in the USC Dornsife College of Letters, Arts and Sciences with the Department of Preventive Medicine in the USC Keck School of Medicine. Five new scholars turned down multiple competitive offers to join us this August. See the profiles of the incoming cohort along with our inaugural cohort [here](#).

SSI Research

Dr. Yao-Yi Chiang received a **National Endowment for the Humanities** (NEH) grant to further develop his map processing software to produce more techniques for automatically generating metadata from scanned maps. The USC Digital Library then will deploy his techniques as part of their cloud infrastructure to test the feasibility for processing a large number of maps automatically.

Dr. Chiang also delivered a keynote address at the [Second International Workshop on Exploring Old Maps \(EOM 2017\)](#) at the University of Wuerzburg, Germany, on April 6, 2017 on “Querying Historical Maps as a Unified, Structured, and Linked Spatiotemporal Source.”

SSI faculty were successful in securing approximately \$34K in funding from our Provost to support next year’s undergraduate research program. Next year’s undergraduate student research teams will be led by Drs. **Yao-Yi Chiang, Su Jin Lee, Travis Longcore, Laura Loyola, Jennifer Swift, John P. Wilson, and An-Min Wu.**

[Dr. Katsuhiko Oda](#) recently published the article “[Concept Maps as a Tool to Analyse College Students’ Knowledge of Geospatial Concept](#)” in the *Review of International Geographical Education Online* (6: 177-199).

[Dr. Su Jin Lee, Dr. Travis Longcore,](#) and I, with Catherine Rich, have a forthcoming article in *Urban Forestry & Urban Greening* on “[Increased home size and hardscape decreases urban forest cover in Los Angeles County’s single-family residential neighborhoods.](#)”

I also recently published the following articles:

- “[Mapping fires and Red Cross aid with demographic indicators of vulnerability](#)” in *Disasters* (41, 409-426) with Dr. Evan Lue;
- “Modelling of XCO2 surface based on flight test of TanSat instruments” in *Sensors* (16, no. 1818), “Space- and ground-based CO2 measurements: A review” in *Science China – Earth Sciences* (56, no. 2089);
- “CMIP5 downscaling and its uncertainty in China” in *Global & Planetary Change* (146, 130-137); and
- “Analyzing the uncertainty of estimating forest carbon stocks in China” in *Biogeosciences* (13, 3991-4004) with Professor Tian-Xiang Yue and colleagues in the Chinese Academy of Sciences.

My latest book entitled *Digital Terrain Modeling* is now in production with John Wiley & Sons.

Upcoming Events

Look for [COL \[R\] Steven D. Fleming, Ph.D., Professor of the Practice of Spatial Sciences](#) on the main stage at the **GEOINT Symposium** on Monday, June 5th in San Antonio, Texas. Those attending the GEOINT Symposium can meet up with **Dr. Fleming, Susan Kamei, and Ken Watson** at this annual conference presented by the USGIF, which certifies our Graduate Certificate in Geospatial Intelligence.

To those of you attending the **Esri User Conference** in San Diego, please plan on joining us at our [annual reception](#) on Tuesday, July 11, 2017, 6 p.m., at Roy’s.

And before we know it, the new academic year will be starting in August. Look for your invitation to the SSI **Welcome Back party** on Saturday, August 26, 5:00 pm, annual festivities which my wife Ha and I look forward to hosting in our home.

Last but not least, please save the date now for next year’s **Geospatial Summit**, returning to the USC Radisson on Friday, February 23, 2018. [Read about the highlights from the 2017 Summit.](#)

Accolades and Appreciation

We congratulate **Dr. Katsuhiko Oda** on his promotion to Assistant Professor (Teaching) of Spatial Sciences, **Dr. Darren Ruddell** on his promotion to Associate Professor (Teaching) of Spatial Sciences, and **Dr. Yao-Yi Chiang** on his promotion to Associate Professor (Research) of Spatial Sciences.

We also extend congratulations to:

- SSI Post-doctoral Research Associate **Dr. Loraine Escobedo**, who as of January 2017 became Senior Service Fellow at the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS) in Hyattsville, Maryland to lead a project to compute life expectancy estimates as a measure of population health at the census tract-level in the United States;
- SSI Post-doctoral Research Associate **Dr. Noli Brazil** on his appointment as a tenure-track assistant professor with the University of California, Davis Department of Human Ecology, beginning in August 2017; and to
- SSI Lecturer **Dr. Wei Yang** on her appointment as a tenure-track assistant professor at East Carolina University in Greenville, North Carolina, starting this next academic year.

We thank them for their many contributions to the Spatial Sciences Institute and wish them well in their exciting new endeavors.

As you can probably appreciate, it takes the proverbial village to make all these good things happen. My continuing thanks go to our SSI leadership – Managing Director **Susan Kamei**, Director of Graduate Studies **Dr. Robert Vos**, Director of Undergraduate Studies **Dr. Darren Ruddell** – and our SSI administrative team – Events and Office Manager **Melissa Salido**, Academic Programs Director **Ken Watson**, GIS Project Specialist **Beau MacDonald**, Systems Administrator **Richard Tsung**, **Andrea Macko** in her new SSI role as our fiscal administrator, and **Stephanie Tran** as our new administrative assistant.

Wishing you and your family an enjoyable summer.

With kind regards,



John P. Wilson
Professor and Founding Director, Spatial Sciences Institute