

May 2020

Dear Spatial Sciences Institute Community:

To say that these are unusual and unsettling times would be quite an understatement. What cannot be overstated, however, is that the Spatial Sciences Institute has had a simply spectacular year. Despite the challenges that the pandemic brought about mid-spring semester, our students, faculty, and staff finished out the academic year with resiliency, compassion, and with trademark excellence. Allow me to share a few highlights.

Awards and Accolades

We heartily congratulate with this [video](#) all SSI students who have graduated as of the Fall 2019 and Spring 2020 semesters and who are anticipated to graduate as of the Summer 2020 semester:

12 with a B.S. in GeoDesign; 13 with a Graduate Certificate in Geographic Information Science and Technology (GIST); 3 with a Graduate Certificate in Geospatial Intelligence; 40 with an M.S. in GIST; 8 with an M.S. in Human Security and Geospatial Intelligence; 4 with an M.S. in Spatial Data Science; and 3 with an M.S. in Spatial Economics and Data Analysis, our first graduates of this new academic program.

As soon as the university determines an in-person traditional Commencement is possible, we will relish celebrating with you and your families then.

We also warmly congratulate the following individuals on receiving awards announced at graduation:

- the 43 graduates from all of our academic programs who were this year's inductees into our [Nu Theta Chapter of Gamma Theta Upsilon](#) (GTU), the international geographical honor society recognizing geography's next generation of leaders;
- **Kurtis Weatherford** (B.A. International Relations; B.A. Political Economy; Minor, Human Security and Geospatial Intelligence) for receiving a **Fulbright Fellowship** (English Teaching Assistant Award, Greece);
- **Eunbyul Koh** (B.A. International Relations; B.A. East Asian languages and Cultures; Minor, Human Security and Geospatial Intelligence) for receiving a **Boren award** to study Mandarin in China;



- **Jong Su Kim** (B.A. International Relations; M.S. Human Security and Geospatial Intelligence) for being awarded the USC **Order of Arete**, the highest honor awarded to graduate students;
- the five SSI undergraduates who received the USC **Order of Troy**, recognizing academic excellence while making significant contributions outside the classroom:
 - [Courtney Fassett](#) (B.S. GeoDesign; Minor, Spanish; Minor, Applied Analytics);
 - [Harrison Knapp](#) (B.S. GeoDesign; B.A. Earth Sciences);
 - [Samantha Levi](#) (B.S. GeoDesign)
 - **Jose Rico** (B.S. GeoDesign; M.S. Human Security and Geospatial Intelligence); and
 - **Cameron Whiteside** (B.S. GeoDesign; Minor, Human Security and Geospatial Intelligence);
- the three GeoDesign majors graduating with **departmental honors**:
 - **Harrison Knapp**;
 - **Samantha Levi**;
 - **Jose Rico**;
- the [2020 M. S. in GIST thesis prize winners](#):
 - [Lindsay Hennes](#), first place, for her thesis “Increase in Surface Temperature and Deep Layer Nitrate in the California Current: A Spatiotemporal Analysis of Four-Dimensional Hydrographic Data”;
 - **Sarah Halpern**, second place, for her thesis “Wetland Mapping and Restoration Decision Making using Remote Sensing and Spatial Analysis: A Case Study at the Kawaiinui Marsh”; and
 - [Kevin Mercy](#), third place, for his thesis “Comparative 3D Geographic Web Server Development: Visualizing Point Clouds in the Web”; and
- **Cass Kalinski** (M.S. GIST '19) for being named the [2020 USC Esri Development Center Student of the Year](#).

We salute:

- **Jong Su Kim** (B.A. International Relations; M.S. Human Security and Geospatial Intelligence '20) on [his commission in the United States Air Force](#);
- **Isai Oqueli** (B.A. International Relations; Minor, Human Security and Geospatial Intelligence '20) on **his commission in the United States Marine Corps**; and
- **Anthony Pedreira** (B.A. International Relations—Global Business; Minor, Human Security and Geospatial Intelligence '20) on **his commission in the United States Navy**.

The following students and alumni received awards from external organizations; we sincerely congratulate:

- **Christine Brunsvold** (M.S. GIST '19) for receiving the [2019 California Geographic Information Association \(CGIA\) Best Student Paper Award](#);
- [Cass Kalinski](#) (M.S. GIST '19) for receiving the **2019 UNIGIS International Association Academic Excellence Prize**;
- **Jong Su Kim** (B.A. International Relations '20; M.S. Human Security and Geospatial Intelligence '20) for receiving the [2019-2020 United States Geospatial Intelligence Foundation \\$5,000 Graduate Scholarship](#); and
- [Kevin Mercy](#) (B.A. Interdisciplinary Archaeology; Minor in Human Security and Geospatial Intelligence '20; M.S. GIST '20) for receiving the [2019-2020 United States Geospatial Intelligence Foundation Reinventing Geospatial Inc. \(RGI\) \\$10,000 Scholarship for Geospatial and Engineering](#).

GeoHealth and Human Well-Being

On other fronts, our initiatives at the intersection of population, health and place are growing in significance, and include our growing collaborations with faculty in the USC Keck School of Medicine.

My research team's work with the **Southern California Clinical and Translational Science Institute (SC-CTSI)** seeks to connect environmental exposures and social determinants of health with electronic health records. In addition, our work with the **Southern California Environmental Health Sciences Institute (SCEHSC)** focuses on supporting the spatiotemporal modeling of various kinds of exposures across a variety of geographic scales.

We also are part of a large NIH-funded project that uses a natural experiment to examine the contextual effects on cardiometabolic health. Another project is working to predict the health benefits that would follow a series of proposed urban design interventions to reduce vehicle emissions in the City of Los Angeles.

And finally, three new multi-disciplinary projects are exploring various facets of the COVID-19 pandemic. One project with colleagues from the Keck School of Medicine of USC and the USC Price School of Public Policy examines the perturbations to the food ecosystem in Los Angeles County. The second project with Esri and the Marshall School of Business will build a spatial model of the medical supply chains for the U.S. The third project just getting underway will explore the relationships between air pollution and a variety of COVID-19 outcomes in California.

This August, we will welcome an outstanding fifth cohort into our interdisciplinary Population, Health and Place Ph.D. program. The following Ph.D. candidates and students received awards in recognition of their research excellence:

- **Johanna Avelar Portillo:** the 2020 USC [Gold Family Fellowship](#);
- **Douglas Fleming:** a 2020 USC Graduate School Summer Research and Writing Grant;
- **Emily Serman:** a [USC Graduate School Research Enhancement Fellowship](#);
- **Sarah Van Norden:** a USC Provost Enhancement Fellowship; and
- **Li Yi:** American Association of Geographers-University Consortium on Geographic Information Science Summer School, July 12, 2019 Award for Advancing Geospatial Reproductive Research and a 2020 USC Graduate School Summer Research and Writing Grant.

Fostering Safe and Stable Communities

Another research and academic area in which the Spatial Sciences Institute excels is the interdisciplinary domain of [human security and geospatial intelligence](#). In January, [COL \[R\] Steven D. Fleming, Ph.D.](#), professor of the practice of the Spatial Sciences Institute and the USC Institute for Creative Technologies, was a speaker at the [2020 Defense Geospatial Intelligence \(DGI\) Conference](#) in London, the largest annual gathering of the international geospatial intelligence community.

Dr. Fleming with SSI Adjunct Assistant Professor [Ryan McAlinden](#), senior advisor to the STE Cross Functional Team, Army Futures Command, and SSI Adjunct Associate Professor [Jason T. Knowles](#), CEO and founder of GeoAcuity, are contributing to the development of the Army's "One World Terrain" (OWT), a global, 3D synthetic training environment that provides troops with a high-resolution virtual world realistic enough to help them prepare for battle across the globe. OWT is part of the US Department of Defense Geospatial Repository and Data Management System (GRiD) program, recognized by the United State Geospatial Intelligence Foundation (USGIF) with its [2020 Achievement Award, Military Category](#). We congratulate the USC OWT team, which includes USC colleagues with the USC Institute for Creative Technologies, on this award-winning work. Professors Fleming, McAlinden, and Knowles also were contributing authors on this topic included in the [2020 USGIF "State and Future of GEOINT" report](#).

We are pleased that this year [the USGIF has accredited the USC Graduate Certificate in Geospatial Intelligence and the M.S. in Human Security and Geospatial Intelligence](#) and selected [Elin Henningsson](#) (M.S. Human Security and Geospatial Intelligence '19) to participate in its [2020 Young Professionals Golden Ticket program](#). Elin is the third SSI representative to be selected for the prestigious Golden Ticket program.

SSI also welcomed the inaugural students majoring in our [B.S. in Human Security and Geospatial Intelligence](#) program, the first undergraduate program of its kind at a university that is not a service academy.

Creating a Better World

Our faculty and students continue to contribute to the scholarship in a wide range of fields. Here is just a sampling of recent publications:

Chen, Y., Tan, H., **Wilson, John P.**, Zhang, J., Cao, J., & Chu, T. "[An eigenvector spatial filtering based spatially varying coefficient model for PM2.5 concentration estimation: A case study in the Yangtze River Delta region of China.](#)" *Atmospheric Environment*, 223, 117205, February 15, 2020.

Chiang, Yao-Yi; **Duan, Weiwei**; Leyk, Stefan; Uhl, Johannes H; **Knoblock, Craig A.** *Using Historical Maps in Scientific Studies: Applications, Challenges, and Best Practices.* Springer, 2020.

Gilliam, Shea Ellen (Ph.D. student, Population, Health and Place). "[A Cautionary tale: Trauma, ethics and mentorship in research in the USA.](#)" *Gender, Place & Culture: A Journal of Feminist Geography*. Published online May 31, 2019; "Feminist Methodologies." *International Encyclopedia of Human Geography*. November 2019.

Henningsson, Elin (M.S. Human Security and Geospatial Intelligence '19); **Ibanga, Elisha** (Graduate Certificate in Geospatial Intelligence '18; M.S. Human Security and Geospatial Intelligence '19); **Anguiano, Victor** (M.S. Human Security and Geospatial Intelligence '19). "[Forward Support—Cloud Based Mosaic Imagery for Emergency Operations.](#)" *Journal of Geographic Information System*, 12, 84-95, April 2020.

Loyola, Laura. "Tana River Red Colobus." [International Union for Conservation of Nature \(IUCN\) Red List](#), 2019.

Loyola, Laura; **Knowles, Jason**; **Marx, Andrew**; **McAlinden, Ryan** and **Fleming, Steven.** [Research and Teaching Applications of Remote Sensing Integrated with GIS: Examples from the Field.](#) *Journal of Geographic Information System (JGIS)* Vol. 11, No. 6.

Ma, T., Zhao, N., Ni, Y., Yi, J., **Wilson, John P.**, Du, Y., Pei, T., Zhou, C., Song, C., & Cheng, W., "[China's improving inland water quality since 2003.](#)" *Science Advances*, 6(1) eaau3798, January 3, 2020.

Marder, Christopher (M.S. GIST '19). "[The Role of Precision in Spatial Narratives: Using a Modified Discourse Quality Index to Measure the Quality of Deliberative Spatial Data.](#)" *International Journal of Humanities and Arts Computing*. Vol. 14, Issue 1-2, Pages 197-217. Available online February 2020.

Marx, Andrew; **McFarlane, Donald.** "[Combining Unmanned Aerial Systems and Satellite Data to Monitor Phenological Changes in Tropical Forests: A Case Study from Costa Rica.](#)" *Case Studies in the Environment*, Vol. 3, Issue 1, Pgs. 1 – 11, December 2019.

Tom-Jack, Quincy (M.S GIST '19). "[The Role of Geoprocessing in Mapping Crime Using Hot Streets.](#)" *International Journal of Geo-Information*. Vol. 8, Issue 12, Pg. 540. Published November 28, 2019.

Wu, An-Min; Johnston, Jill. "[Assessing Spatial Characteristics of Soil Lead Contamination in the Residential Neighborhoods Near the Exide Battery Smelter.](#)" *Case Studies in the Environment*, Vol. 3, Issue 1, Pgs. 1 – 9, January 2019.

Vos, Robert O. "[The Spatially Explicit Water Footprint of Blue Jeans: Spatial Methods in Action for Sustainable Consumer Products and Corporate Management of Water.](#)" *Case Studies in the Environment*, Vol. 3, Issue 1, Pgs. 1 – 14, December 2019.

Yi, Li (Ph.D. candidate, Population, Health and Place), **Wilson, John P.**, Mason, T., **Habre, Rima**, Wang, S., & **Dunton, Genevieve. F.** "[Methodologies for assessing contextual exposure to the built environment in physical activity studies: A systematic review.](#)" *Health & Place*. Vol. 60, November 2019.

Looking Ahead

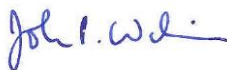
In closing, I would like to share my belief and conviction that while we face many uncertainties in the short term, the future for those of us engaged with the spatial sciences remains bright. Very simply, the world needs us as geospatial scientists more than ever.

In the upcoming 2020-2021 academic year, we will be celebrating the **10th anniversary of the founding of the Spatial Sciences Institute**. Please stay tuned for those announcements.

Please also save **Friday, February 26, 2021** for our next **Los Angeles Geospatial Summit**.

And most importantly, please stay healthy and safe.

With kind regards,



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