

July 6, 2021

Dear Spatial Sciences Institute Community:

The faculty and staff of the Institute join me in hoping that each of you has remained healthy and safe during the pandemic. We acknowledge the toll that the stresses have wrought, and send our encouragement to persevere as we resume more social lifestyles. As I write, we are preparing to return to campus next month and look forward to welcoming students to an in-person fall semester.

Despite the challenges, this past year has been full of SSI virtual academic and experiential activities, including our [2021 Geospatial Summit](#) and a [Welcome/Welcome Back Trivia Bowl](#). Through it all, our students, faculty and staff have continued to excel, and we are proud to share some highlights.

Awards and Accolades

We heartily congratulate **all SSI graduates** from the Fall 2020, Spring 2021 and Summer 2021 semesters:

- 10 with a B.S. in GeoDesign;
- 8 with a Graduate Certificate in Geographic Information Science and Technology (GIST);
- 4 with a Graduate Certificate in Geospatial Intelligence;
- 37 with an M.S. in GIST;
- 5 with an M.S. in Human Security and Geospatial Intelligence;
- 11 with an M.S. in Spatial Data Science;
- 7 with an M.S. in Spatial Economics and Data Analysis;
- 1 with a doctoral Graduate Certificate in Spatial Analytics; and
- 2 with a Ph.D. in Population, Health and Place, our first graduates in this doctoral program.

Congratulations to the following students who received [2021 SCymposium Awards](#), the University's awards recognizing outstanding undergraduate research.

- In the Social Sciences I (Applied, Analytical) category, Second Prize to **Jackson FitzGerald**, Geodesign Fellow, for his poster *Submerged Cultural Heritage Analysis*.
- Also in the Social Sciences I (Applied, Analytical) category, the Interdisciplinary Prize to **Alicia Adiwidjaja**, **Naman Casas**, and **Felix Goldwasser** for their poster *USC GeoHealth Hub*. Faculty and team advisors **Dr. John Wilson** and **Beau MacDonald**.



- In the Digital Media category, Honorable Mention to **Kristin Wong** for her poster *The La Brea Tar Pits: An Ice Age Storymap*. Faculty advisor **Dr. Jennifer Swift**.
- From the USC Schwarzenegger Institute, Second Prize to **Cameron Audras** for his poster *Reconciling Industrial-Scale Solar Siting and Community Concerns in the Mojave Using Mixed Methodologies*. Faculty advisor **Dr. Jennifer Bernstein**.
- Also from the USC Schwarzenegger Institute, First Prize to **Rachel Ablondi, Jackson FitzGerald, Seher Randhawa, and Erik Huisman** for their poster *USC Urban Trees Initiative*. Faculty and team advisors **Dr. John Wilson** and **Beau MacDonald**.

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

- **Johanna Avelar**, graduating this year from our Ph.D. in Population, Health and Place program, for receiving the **Order of Arete**, the highest honor accorded graduate students upon completion of their academic programs, recognizing notable contributions to the university, academic discipline, community or world at large, while demonstrating significant depth and scope of responsibility;
- **Jasmine Wu**, recipient of the **USC Emma Josephine Bradley Bovard Award**, recognizing graduating senior women who have attained the highest grade point average and contributed the most extracurricular service to the university, and a **USC Academic Achievement Award**;
- **Cameron Audras** and **Jasmine Wu** for receiving the University distinction as a **Discovery Scholar**, recognizing graduating seniors who have excelled academically while making a meaningful contribution to their field of study through exceptional new scholarship or artistic work;
- **Seher Randhawa** for receiving the University distinction as a **Renaissance Scholar**, recognizing undergraduates who have excelled academically while pursuing at least two widely separate fields of study;
- the four SSI undergraduates who received the USC **Order of Troy**, recognizing academic excellence while making significant contributions outside the classroom: **Cameron Audras, Young-Kyung Kim, Cameron Levine, and Seher Randhawa**; and
- **Cameron Levine** and **Jasmine Wu**, this year's B.S. in GeoDesign majors who graduated with **departmental honors**.
- the **2021 M. S. in GIST thesis prize winners**:
 - First prize to **Bryna Mills** for her thesis "An Exploration of the Spatiotemporal Distribution of Snow Crab (*Chionoecetes opilio*) in the Eastern Bering Sea: 1982–2018" (faculty advisor **Dr. Jennifer Bernstein**; committee members **Dr. Laura Loyola** and **Dr. Elisabeth Sedano**); and

- Second prize to **Katrina Gressett** for her thesis “Classifying Ash Cloud Attributes of Eyjafjallajkull Volcano, Iceland, using Satellite Remote Sensing” (faculty advisor **Dr. Steven D. Fleming**; committee members **Dr. Andrew Marx** and **Dr. Darren Ruddell**).
- **Megan White**, the [2021 USC Esri Innovation Program Student of the Year](#).

The following students and alumni received awards from external organizations. We sincerely congratulate:

- **Alexa Weintraub** as one of 10 finalists in the student category of the **2020 ArcGIS StoryMaps Competition for Sustainable Development Goals** (SDGs), sponsored by GIS technology company Esri and the United Nations Sustainable Development Solutions Network, for her StoryMap [“Eating on the Streets: A New Pandemic Lifestyle”](#), which analyzed restaurant and transportation data to display other potential locations for Open Streets restaurants throughout New York’s five boroughs (faculty advisor **Dr. Leilei Duan**);
- the **44 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;
- **Andrew Binder**, **Andrew Leung**, **Madeline Rouse**, and **Jasmine Wu**, for their induction this year into **Phi Beta Kappa**, the nation’s most prestigious academic honors society;
- **Sara Evanoff**, **Bryna Mills**, and **Katrina Gressett**, each from the M.S. in GIST Program, for their induction this year into **Phi Kappa Phi**;
- **Bryna Mills** as the winner of the **2021 Los Angeles Geospatial Summit Esri Poster Prize winner**;
- **Cameron Levine** as the winner of the **2021 Los Angeles Geospatial Summit Hexagon Poster Prize winner**; and
- **Mia Poynor**, winner of the **2020 Most Promising Female GEOINTer Award** from the U.S. Geospatial Intelligence Foundation.

In addition to these student accomplishments, we would like to take this opportunity to congratulate our **faculty who have received promotions** this year:

- **Dr. Robert Vos** to associate professor (teaching),
- **Dr. Laura Loyola** to assistant professor (teaching), and
- **Dr. An-Min Wu** to assistant professor (teaching).

We also congratulate [Steven D. Fleming](#), Professor of the Practice with SSI and the USC Institute for Creative Technologies on receiving the [2020 U.S. Geospatial Intelligence Foundation Distinguished Academic Service Award](#).

GeoHealth and Human Well-Being

Our initiatives at the intersection of population, health and place continue to grow in significance, especially in collaboration with faculty in the USC Keck School of Medicine (KSOM).

A [study](#) co-authored by researchers from SSI and KSOM Department of Preventive Medicine found that California neighborhoods where cannabis retailers are located tend to have higher proportions of Hispanic and Black residents, and lower proportions of whites, while also being poorer than those areas without such retailers. The SSI researchers were [Dr. Robert O. Vos](#) and GeoDesign major [Jasmine Siyu Wu](#).

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. SC-CTSI's work with the Southern California Environmental Health Sciences Center (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.

This past year an SSI team has contributed data analytics to evaluate the state of food insecurity in Los Angeles County to help civic leaders chart a path to improve food justice, especially as it has been impacted by the COVID-19 pandemic. By integrating innovative data sources, our team identified dynamics in population food behaviors, food access, food security, and "last mile" food distributions in the county to better understand the state of resiliency and failures of the local food system. Joining me on the SSI team are SSI faculty affiliate [Kayla de la Haye](#), project lead; SSI research scientist [Kenan Li](#); and Population, Health and Place doctoral students [Michelle Livings](#) and [Mengya Xu](#).

Read the results of their work:

- [Diet Changes in L.A. County During the COVID-19 Pandemic](#);
- [A Year of Food Insecurity in Los Angeles County During the COVID-19 Pandemic: Racial and Ethnic Minorities Have Been Hardest Hit](#);
- [The Impact of COVID-19 on Food Insecurity in Los Angeles County: April to May 2020](#); and
- [The Impact of COVID-19 on Food Insecurity in Los Angeles County: April to July 2020](#).

In August, we will welcome an outstanding sixth cohort into our interdisciplinary Population, Health and Place Ph.D. program. We also recognize the many accomplishments of our Ph.D. candidates and students, including the following:

- **Johanna Avelar**: Recipient, University of California Global Health Institute (UCGHI) GloCal Health Postdoctoral Fellowship and first runner up recipient of the 13th Annual USC Graduate Research Symposium, Social Impact Paper Competition.
- **Avery Everhart**: Director of Finance, [Center for Applied Transgender Studies](#);
- **Shea Ellen Gilliam**: Rosenberg, R., & **Gilliam, S.E.** (2021). Trans Geographies. In A. Goldberg, & G. Beemyn (Eds.), *The SAGE Encyclopedia of Trans Studies* (Vol. 1, pp. 342-346). SAGE Publications, Inc. <https://www.doi.org/10.4135/9781544393858.n121>;
- **Yingyi Lin**: Recipient, Dornsife Ph.D. Academy Scholarship and Research Fund Award and USC Small Grants for Trainee/Student, USC Center for the Changing Family; and the publications:
 - Brussoni M., Han C.S., **Lin Y.**, Jacob J., Pike I., Bundy A., Faulkner G., Gardy J., Fisher B., Mâsse L. Go Play Outside! A web-based and in-person risk reframing intervention to influence mothers' tolerance for, and parenting practices associated with, children's outdoor risky play: Results of a randomized controlled trial. *Journal of Medical Internet Research*. 2021;23(4):e24861 doi: 10.2196/24861;
 - Mâsse, L.C., O'Connor, T.M., **Lin, Y.** et al. Calibration of the food parenting practice (FPP) item bank: tools for improving the measurement of food parenting practices of parents of 5–12-year-old children. *International Journal of Behavior Nutrition and Physical Activity* 17, 140 (2020). <https://doi.org/10.1186/s12966-020-01049-9>; and
 - Mâsse, L.C., O'Connor, T.M., **Lin, Y.** et al. The physical activity parenting practices (PAPP) item Bank: a psychometrically validated tool for improving the measurement of physical activity parenting practices of parents of 5–12-year-old children. *International Journal of Behavior Nutrition and Physical Activity* 17, 134 (2020). <https://doi.org/10.1186/s12966-020-01036-0>;
- **Michelle Livings**: Student Editor, [American Journal of Public Health](#) of the American Public Health Association;
- **Bita Minaravesh**: Hackman, D. A., Cserbik, D., Chen, J.-C., Berhane, K., **Minaravesh, B.**, McConnell, R., & Herting, M. M. (2021). Association of Local Variation in Neighborhood Disadvantage in Metropolitan Areas with Youth Neurocognition and Brain Structure. *JAMA Pediatrics*, e210426e210426. <https://doi.org/10.1001/jamapediatrics.2021.0426>;
- **Sarah Van Norden**: Recipient, [USC Graduate School Research Enhancement Fellowship](#);
- **Li Yi**: Recipient, the Theodore Hui-Wen Chen Endowed Fellowship for FY 2021 and the [USC Gold Family Graduate Fellowship](#) for Summer 2021; and the publications:
 - 2021 **Yi, L.**, Mason, T.B., Yang, C.H., Chu, D., and Dunton, G.F. "[Longitudinal associations between neighborhood park and open space access and children's](#)

[accelerometer-assessed measured physical activity: the evidence from the MATCH study.](#) *Journal of Physical Activity and Health*;

- 2021 Do, B., Mason, T.B., Yi, L., Yang, C.H., and Dunton, G.F. “[Momentary associations between stress and physical activity among children using ecological momentary assessment.](#)” *Psychology of Sport & Exercise*, 55; and
- 2021 Wang, S., Nicole, M., Yi, L., Dunton, G.F., and Mason, T.B. “Interactions among reward sensitivity and fast-food access on healthy eating index scores in adolescents: A cross-sectional study.” *International Journal of Environmental Research and Public Health*, in publication.

Designing Resilient Communities

This year I was privileged to lead the [USC Urban Trees Initiative](#), a partnership with the City of Los Angeles to guide the growth of an urban forest of shade trees that benefit the health and quality of life for local communities. Using advanced mapping technology, air quality measurements and landscape architecture expertise, the project explores where, how many, and what type of new trees could be added to the five-square mile area near USC’s Health Sciences campus. The SSI research team includes undergraduates [Rachel Ablondi](#), [Jackson FitzGerald](#), [Erik Huisman](#), and [Seher Randhawa](#), SSI GIS project specialist [Beau MacDonald](#), and SSI faculty affiliates [Esther Margulies](#) of the USC School of Architecture and [Will Berelson](#) of the USC Dornsife Department of Earth Sciences. [Watch the video](#). We will start work on phase two of this project this August.

A three-student SSI team launched the successful USC GeoHealth Hub application <https://usc-geohealth-hub-uscssi.hub.arcgis.com>. Their effort leveraged an open-data platform to create an interactive website to host a variety of spatial and non-spatial data to allow a broad audience to participate in health research, access diverse health-related data, encourage healthy lifestyles and connect population, health, and place. The student team made multiple highly focused presentations that were critical in securing research funding and support from five GeoHealth Hub partners, including the Southern California Environmental Health Sciences Center, and four other Centers and Institutes associated with USC’s Keck School of Medicine. Their academic recognition included an interdisciplinary first prize at the USCymposium. In 2021–2022, our student team will expand the GeoHealth Hub and build a new “USC Sustainability Hub”—a data platform that connects University Operations with academics to support overall USC Sustainability.

As the 2020-2021 Geodesign Fellows, [Dan Accordino](#), [Joan Lee](#), and [Yocelyn Piña](#) have been working with RETHINKHOUSING LA, a consortium developing small-scale housing with services for the homeless. We will be announcing the third cohort of this honors research program and their project this fall.

Fostering Safe and Secure Communities

Another research and academic area in which the Spatial Sciences Institute excels is the interdisciplinary domain of [human security and geospatial intelligence](#).

Featured speakers from SSI in the U.S. Geospatial Intelligence Foundation (USGIF) GEOINT Community Forum [“The Geospatial Metaverse – Infrastructure, Tradecraft and Applications”](#) on March 9-10, 2021 were SSI faculty members [Steven D. Fleming](#) and [Ryan McAlinden](#), SSI Managing Director [Susan Kamei](#), and [Michael Naber](#) (M.S. Spatial Economics and Data Analysis '21).

[Dr. Fleming, John Pedersen](#) (M.S. Human Security and Geospatial Intelligence '20), [Kevin Mercy](#) (M.S. GIST '20; minor in Geospatial Intelligence), [Mia Poynor](#) (minor in Geospatial Intelligence '19), and [Young-Kyung Kim](#) (minor in Geospatial Intelligence '21) were speakers at the USGIF 2020 GEOINTegration Summit held virtually on September 28-29, 2020.

SSI's [Jason T. Knowles](#), Ph.D. and his team at his geospatial consulting firm GeoAcuity developed an innovative workflow to enable drones to capture imagery that first-responders need to understand the spread and impact of wildfires. Read more about GeoAcuity's work in [Esri's Winter 2021 issue of ArcNews](#).

Our student organization, [SC Mappers](#), collaborated with the USC Libraries and USC students, faculty and staff, with counterparts at UCLA to host a [72-hour mapathon](#) in support of Humanitarian OpenStreetMap mapping projects. The combined USC and UCLA teams beat their goal of making more than 20,000 HOTOSM entries.

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:

[Hill, Kristiane](#); [Swift, Jennifer](#); Howard, Carrie; Farrell, Ainsley; and Lindsey, Emily L. [3D Visualization of Subsurface Objects from La Brea Tar Pits, Los Angeles, CA](#). *Digital Applications and in Archeology and Cultural Heritage* 20. March 2021;

Gu, Yueqi; [Aydin, Orhun](#); and [Sosa, Jacqueline](#). [Quantifying the Impact of a Tsunami on Data-Driven Earthquake Relief Zone Planning in Los Angeles County via Multivariate Spatial Optimization](#). *Geosciences*. 11(2), 99. February 19, 2021;

[Marx, Andrew](#); [Poynor, Mia](#); [Kim, Young-Kyung](#); and [Oberreiter, Lauren](#). [Detecting Destroyed Communities in Remote Areas with Personal Electronic Device Data: A Case Study of the 2017 Puebla Earthquake](#). *ISPRS International Journal of Geo-Information*. 9(11), 643. October 28, 2020;

Unger, Jennifer B.; [Vos, Robert O.](#); [Wu, Jasmine Siyu](#); Hardaway, Kimberly; Sarain, Ada Y., Soto, Daniel W.; Rogers, Christopher; and Steinberg, Jane. [Locations of Licensed and Unlicensed Cannabis Retailers in California: A Threat to Health Equity?](#) *Preventive Medicine Reports*, Vol. 19, Article 101165. September 1, 2020;

Luttrull, James E. and Fleming, Steven. [Artificial Island Development in the South China Sea: Overcoming Data Scarcity of New Environmental Features through Shadow Analysis](#). *Case Studies in the Environment*. June 19, 2020; and

Castellanos, Rebecca; Corsi, Grace; Friedman, Benjamin; Fruithandler, Julia; Goldwasser, Felix; Ly, Emily; MacDonald, Beau; Swift, Jennifer; Wilson, John P. Northeast Los Angeles climate change adaptation, United States, University of Southern California, United States. Thomas Fisher, Brian Orland, and Carl Steinitz, editors. [The International Geodesign Collaboration: Changing Geography by Design](#) (Redlands: Esri Press, 2020), pp. 108-109.

Looking Ahead

If the pandemic has taught us anything, it's that the ability to analyze geospatial data to make informed decisions is more important than ever. The future for geospatial scientists had never been brighter.

We look forward to welcoming incoming and continuing students back to campus for the fall semester, and to being with our alumni and friends again in person. Please plan now to join us back at the USC Hotel on **Friday, February 25, 2022** for our next **Los Angeles Geospatial Summit**, and please email us your news and updates at spatialsciences@dornsife.usc.edu.

With kind regards,



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