

# Forrest Scott Schoessow

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Byrd Polar and Climate Research Center  
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## Education

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- PhD. Geography – Ohio State University, expected 2021  
Advisor: Bryan G. Mark, PhD  
Committee: Ian Howat, PhD; Stanislav Kutuzov, PhD; Desheng Liu, PhD; Ellen Mosley-Thompson, PhD;  
Lonnie Thompson, PhD
- M.S. Geography – Utah State University, College of Natural Resources, 2017
- B.A. History – Ohio State University, 2011

## Research Interests

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Climate-glacier interactions // Patterns & processes of glacier environmental change  
Cryo-geomorphology // Satellite & UAS remote sensing // Alpine glacier hazard processes  
Engineering of electromechanical systems & sensor instrumentation

## Awards & Honors

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- 2019 – **OSU Next Generation Innovator of the Year**  
Office of Research, Ohio State University
- 2018 – Named as an **OSU Innovation Ambassador**  
College of Nursing's Office of Innovation and Strategic Partnerships, Ohio State University
- 2017 – Biel Research Award  
Department of Geography, Ohio State University
- 2016-2017 – **Graduate Instructor of the Year Award**  
Quinney College of Natural Resources, Utah State University
- Spring 2017 – Office of Research & Graduate Studies Travel Award  
School of Graduate Studies, Utah State University  
2017 Annual Meeting of the American Association of Geographers
- Fall 2016 – Office of Research & Graduate Studies Travel Award  
School of Graduate Studies, Utah State University  
2016 Fall Meeting of the American Geophysical Union
- 2016- 2017 – Academic scholarship  
Department of Environment and Society, Utah State University
- Spring 2016 – Office of Research & Graduate Studies Travel Award  
School of Graduate Studies, Utah State University  
2016 Annual Meeting of the American Association of Geographers

Spring 2016 – Black Student Union - Student Spotlight

Utah State University Diversity Council

Recognized for work to promote atmosphere of diversity & inclusion in College of Natural Resources

Fall 2015 – **City Proclamation of Recognition by Mayor of Piqua, Ohio**

Recognized by the City of Piqua, Ohio Commission and Office of the Mayor for leadership & the Mississippi River Survey Expedition's efforts to increase public awareness of conservation issues

Fall 2015 – Academic scholarship

Department of Environment and Society, Utah State University

### **Funded Grant Proposals**

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Apr. 2019 – Tinker Foundation Field Research Grant

Apr. 2019 – CGS Global Gateway Grant

Mar. 2019 – Office of Research award in support of Research

Feb. 2019 – Innovation Studio Grant: Autonomous aerial solutions for risk mitigation and critical decision-making. **Schoessow, F.S.**; Soni, N.; Vega, E.

Dec. 2018 – The Sharpe Innovation Commons Seed Grant: 3D-Mapping of high-mountain tropical glacier retreat using unmanned aerial systems (UAS) and Lidar remote sensing. **Schoessow, F.S.**; Soni, N.; Vega, E.

Dec. 2018 – Tech Hub Student Project Grant: 3D Mountain Hazard Mapping. **Schoessow, F.S.**

Dec. 2018 – Department of Geography Travel Grant, American Geophysical Union annual meeting

Nov. 2018 – Geological Society of America Student Travel Grant

Nov. 2018 – Innovation Studio Challenge-Track Grant: Autonomous aerial solutions for risk mitigation and critical decision-making. **Schoessow, F.S.**

Oct. 2018 – Innovation Studio Grant: Autonomous aerial solutions for risk mitigation and critical decision-making. **Schoessow, F.S.**

May 2018 – Sharpe Innovation Commons Seed Grant: 3D-Mapping of high-mountain tropical glacier retreat using unmanned aerial systems (UAS) and Lidar remote sensing. **Schoessow, F.S.**; Soni, N.; Vega, E.

May 2018 – Sharpe Innovation Commons Seed Grant. Macroscale-Charcoal in Meadow Cores as a Proxy for Wildfire Activity in Great Basin National Park. White, J.; Soni, N.; **Schoessow, F.S.**; Sambuco, E.

September 2016 – Mobile, solar-powered earth science outreach in a retro-fit box truck. **Schoessow, F.S.**, Christian, L., Webb, Z.

September 2016 – Quinney Natural Resource Library renovation & sustainability energy project. Winters, L., **Schoessow, F.S.**, Bingham, D., Christian, L., Webb, Z.

### **Proposals Pending**

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2019 NASA High Mountain Asia (ROSES-19)

2020 Himalaya UAS-Remote Sensing Knowledge Exchange with Indian Technical Institute

## **Proposals in Preparation**

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2020 NASA FINESST  
2020 NSF DDRI  
2020 Nat-Geo Early Career Grant. National Geographic Society.

## **Field Experience**

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### **Jul.-Aug. 2019 — Nevado Huascarán, Cordillera Blanca – Peru**

*Ice core expedition science team member, driller* — 3 weeks at 6000m, 7 days at 6768m, alpine support.

### **Jun. 2019 — Llaca Glacier, Cordillera Blanca – Peru**

*Expedition Leader* — 6 day hitch, debris covered glacier survey at 4500m, limited support.

### **Aug. 2018 — Great Basin National Park, Nevada – United States of America**

*Rock glacier aerial survey leader* — 9 day hitch, full support.

### **May-Aug. 2015 — Mississippi River Survey Expedition – United States of America**

*Expedition Leader, Navigator* — 3958 km, 83 days, limited support.

### **Aug.-Sept. 2014 – Vatnajökull and Snæfellsjökull, Iceland**

5 days on slopes, limited support.

### **Aug.-Nov. 2012 – Zongo, Huayna Potosi, Chacaltaya, Bolivia**

11 days on slopes, full support.

*Montana Conservation Corps (embedded with USFS, BLM, USNPS):*

### **Jul.-Aug. 2012 – Bighorn National Forest, Wyoming**

*Expedition Leader* — 12 day hitch, pack support. Historical landform protection.

### **Jul. 2012 – Beaverhead National Forest, Montana**

*Expedition Leader* — 14 day hitch, pack support. Forest thinning for fire fuel reduction.

### **Jun. 2012 – Lee Metcalf Wilderness Area, Montana**

*Expedition co-Leader* — 21 day hitch, no support. Trail repair & construction.

### **May 2012 – Absaroka-Beartooth Wilderness Area, Montana**

*Expedition co-Leader* — 21 day hitch, no support. Trail repair: wind storm & avalanche clean up.

### **Apr. 2012 – Frank Church-River of No Return Wilderness Area, Idaho**

14 day training hitch, no support. Trail construction, floodwater diversion, leadership clinic.

## **Mountaineering Experience**

### *Trainings*

Avalanche Response & Rescue, MSU-Bridger Bowl, Montana. Jan 2020.

Advanced alpine glacier rescue and self-rescue, Cordillera Blanca, Peru. July 2020.

Advanced GPS techniques for field research & navigation. USU QCNR workshop. Sept. 2016.

Wilderness First Responder, last recert. March 2013

Avalanche I, Big Sky, Montana. Dec. 2013

Rock & Snow clinic, led by D. Krueger. Dec. 2013

USFS Field Risk Assessment & Mitigation clinic, Mar. 2012

USFS Navigation & Map Reading, Mar. 2012

OSU Army ROTC Mountaineering I, Spring semester 2010  
WPAFB Navigation & Map Reading, Jun. 2008

### Alpine

Huascarán Sud, (6768m) – 1 week at summit, led by B. Valencio, July-August 2019  
Huascarán Col, (6000m) – 4 weeks at Col, led by B. Valencio, July-August 2019  
Wheeler Peak (3982m, 2305 prominence) – forest fire smoke, August 2018  
Bidean Nam Bian, Scotland (1150m) – June 2018  
Kristinartindar, Iceland (1126m from sea level) – July 2017  
Mount Timpanogos, Utah (3582m, 1609m prominence) – April 2017  
Kings Peak, Utah (4125m, 1938m prominence) – Led by R. Lyra, October 2016  
Snæfellsjökull, Iceland (1446m, 1267m prominence) – September 2014  
Seoraksan, South Korea (1708m) – March 2014  
Jirisan, South Korea (1915m, 1696 prominence) – September 2013  
Castle Rock, Montana (3781m) – Winter ascent, Led by D. Krueger, December 2012  
Huayna Potosi, Bolivia (6088m) – Led by R. José, August 2012  
Chacaltaya, Bolivia (5421m) – August 2012  
Granite Peak, Montana (3904m, 1451m prominence) – Led by D. Krueger, July 2012  
Castle Mountain, Montana (3846m) – July 2012  
Beartooth Mountain, Montana (3766m) – July 2012  
Sphinx Mountain, Montana (3300m) – June 2012  
McDonald Peak, Montana (2994m, 1720m prominence) – Led by D. Krueger, May 2012  
White Mountain Peak, California (4344m) – August 2011  
Telescope Peak, California (3366m) – 3454 elevation gain from Death Valley, August 2011  
Cloud Peak, Wyoming (4015m, 2154m prominence) – July 2011  
Jabal Umm ad Dami, Jordan (1854m, 1354 prominence) – July 2010  
Mount Harvard, Colorado (4396m) – August 2008  
Mount Lincoln, Colorado (4357m) – August 2008  
Uncompahgre Peak, Colorado (4365m) – August 2008

### Ice

Nevado Huascarán, Peru – June-August 2019  
Llaca Glacier, Peru – June 2019  
Mýrdalsjökull, Iceland – August 2014  
Svínafellsjökull, Iceland – August 2014  
Skaftafellsjökull, Iceland – August 2014, July 2017  
Castle Glacier, Montana – December 2012  
Zongo, Bolivia – August 2012  
Tempest, Granite, Wolf Glaciers, Montana – July 2012

## **Patents & Technology Innovations**

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### Lead author (8):

T2019-094 – The RANGER: an autonomous aerial remote sensing platform for 3D-mapping of high-mountain environments using active sensor array  
T2019-246 – Integrated laser-guided terrain following system: a modular payload for real-time laser altimetry and obstacle avoidance  
T2019-250 – Airborne laser surface elevation mapping system  
T2019-251 – Mobile, solar-powered enterprise  
T2019-252 – Lightweight terrestrial non-repetitive laser scanning system  
T2019-253 – Airborne infrared surface temperature monitoring system  
T2019-254 – Airborne turbulent flux measurement system  
T2019-255 – Airborne radiative flux measurement system

Co-authored (8):

- T2019-242 – Reinforced carbon fiber multirotor main frame dorsal plate for vibration dampening
- T2019-243 – Robust vibration-dampening balsa-cored fiberglass multicopter main frame dorsal plate
- T2019-245 – Ultrasonic collision avoidance system and protocols for UAS
- T2019-249 – Sensor data integration board
- T2019-256 – Autonomous quadcopter system prototype
- T2019-257 – Aluminum multirotor main frame for heavy vibration-dampening
- T2019-258 – Ventral main frame plate for multicopter using vibration-dampening balsa core fiberglass
- T2019-259 – Vibration-dampening, carbon fiber multirotor main frame ventral plate

**Additional Experience**

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**2019 – Present — Byrd Polar & Climate Research Center, Ohio State University**

*Graduate Research Assistant*

- Multi-decadal observations of glacier-wide surface mass balance changes and ice dynamic response to evolving climate and geometry variables in the Cordillera Blanca, Peru

**2017 – Present — Mountain Drone Team – Byrd Polar & Climate Research Center, Ohio State University**

*Director of MDT, Glacier Environmental Change Laboratory*

- Designed, secured funding for, and developed the first custom-built, unmanned aerial systems (UAS) capable of 3D laser-mapping in high-mountain environments.

**2015–2017 — Utah State University, Yale Project on Climate Change Communication**

*Graduate Research Assistant, Human-Environment Spatial Analysis Laboratory*

- Analysis of extreme heat event spatial and temporal patterns for a risk perception study

**2016–2017 — Mobile STEM+Art Outreach Truck — Utah State University**

*Project Lead*

- Designed, secured funding for, and engineered a novel, solar-powered mobile art-science outreach platform capable of bringing high-tech, interactive education resources to Utah’s traditionally underserved, remote communities.
- Led student team of engineers to retrofit and modify an industrial box truck with solar array to create a highly mobile and energy independent “school in a box” which seeks to break down barriers to STEM concepts physically and conceptually.
- The project gives university students an opportunity to gain experience practicing innovative science communication techniques and translate their research into educational outreach operations aimed at doing real, meaningful good for local communities

**2009–2015 — GO2 Technologies — Dayton, Ohio**

*Systems Engineering Assistant*

- Creative engineering solutions for assembly, test, fixturing, and laboratory applications
- Evaluation of deformation profiles & thermal characteristics of proprietary materials
- Custom machine building, retrofitting, automation; Robotics system integration
- Partners: Kuka Robotics, CBT, Mitsubishi, Siemens, SMC, Stein, Triad Technologies, Keyence, C&E, Robeck co., Rockwell Automation, UDRI

**Fall 2012 — Sustainable Farming Project — Cordillera Province, Bolivia**

*Volunteer*

- Addressed drought issues on the farm by establishing ground-water well
- Assisted in development of cistern and solar-powered drip irrigation system

## **Summer 2010 — University of Jordan — Amman, Jordan**

*Student, Volunteer*

- Cultural ambassador exchange
- Volunteer at the Roman Citadel historical site & Jordan Archaeological Museum
- Classical & Colloquial Arabic immersion program graduate

## **2008 — Wright Patterson Air Force Base — Dayton, Ohio**

*Intern, Environmental Management Branch GIS Technician*

- Coordinated with local officials to protect rain water and develop pollution prevention plan
- Inspected hazardous materials & waste facilities; inventoried hazardous materials on base
- Resource Conservation and Recovery Act (RCRA) certification; Hazardous Waste Management (HWM) training

## **Qualifications**

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- Part 107 Unmanned Pilot License
- NASA Global Disaster Alert & Coordination System applied remote sensing training - 2017
- Remote sensing for geomorphology workshop, QCNR, Utah State, November 2016
- Wilderness First Responder (WFR) certification, Mar. 2012, 2013
- Backcountry leadership clinic, Montana Conservation Corps, Apr. 2012
- U.S. Forest Service sawyer training – Mar. 2012
- AmeriCorps service educators workshop: Learning Styles & Adaptive Education – Feb. 2012
- AmeriCorps: Active Listening, Feedback Cycle, Conflict Resolution, and Facilitation training – Feb. 2012
- R, Python, MATLAB, Analyseries, QGIS, ArcGIS, ERDAS Imagine
- 1350+ volunteer hours via AmeriCorps national service

## **Professional Associations**

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American Association of Geographers (AAG)

*Cryosphere; Geomorphology; Hazards, Risks, & Disasters; Mountain Geography; Polar Geography; Remote Sensing*

American Geophysical Union (AGU)

*Physics, Dynamics, & Climate; Natural Hazards; Global Environmental Change; Geodesy*

American Association for the Advancement of Science (AAAS)

International Association of Cryospheric Sciences (IACS)

Geological Society of America (GSA)

American Academy of Environmental Engineers & Scientists (AAEES)

Mississippi River Conservation Network (MRCN)

## **Public Engagement**

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### Invited talks:

Apr. 2019 – OSU Innovation & Research Showcase. The Ohio State University. Columbus, Ohio.

- Feb. 2019 – TEDx OSU. Source to sea: My journey down the Mississippi River. Wexner Center for the Arts. Columbus, Ohio.
- Feb. 2019 – “UAS remote sensing platforms for change monitoring in high-altitude alpine environments.” Seminar Speaker Series. Byrd Polar and Climate Research Center, Columbus, Ohio.
- Dec. 2018 – “3D Alpine Change Mapping” Tech Hub, Columbus, Ohio.
- Nov. 2018 – “Mapping surface elevation changes using autonomous systems and SfM photogrammetry” GIS day, 18th Ave. Research Library, Columbus, Ohio.
- Oct. 2018 – “3D-Mapping of high-mountain tropical glacier retreat using unmanned aerial systems (UAS) and Lidar remote sensing.” Gary and Connie Sharpe Innovation Commons, The Ohio State University.
- Oct. 2018 – “Byrd Bites: Mapping rock glacier surface elevation changes in Great Basin National Park, NV.” Byrd Polar and Climate Research Center, Columbus, Ohio.
- Aug. 2018 – “The Lehman Rock Glacier: using aerial imagery to monitor ice volume changes.” Great Basin National Park Visitor Center, Baker, Nevada.

#### Web & TV:

- OSU Office of Diversity & Inclusion spotlight: OSU Mountain Drone Team.  
<http://u.osu.edu/odigpnews/2019/03/07/student-highlights-spring-2019/> 7 Mar. 2019.
- “Mountain Drone Team goes above and beyond to analyze glaciers.” OSU College of Engineering feature.  
<https://engineering.osu.edu/news/2019/02/mountain-drone-team-goes-above-and-beyond-analyze-glaciers> 21 Feb. 2019
- OSU Office of Energy & Environment spotlight: OSU Mountain Drone Team.  
<https://tinyurl.com/y3jn55py>. 12 Nov. 2018.
- “The Mountain Drone Team: Connecting People with Science.” Byrd Polar & Climate Research Center feature.  
<https://byrd.osu.edu/news/mountain-drone-team-connecting-people-science>. 31 Oct. 2018.
- Science experiment on Japanese TV show “Denjirou Sensei.”  
[geography.osu.edu/news/forrest-schoessow-featured-japans-bill-nye-science-guy.-show](http://geography.osu.edu/news/forrest-schoessow-featured-japans-bill-nye-science-guy.-show). 2 Feb. 2018.
- USU Office of Research Graduate Student Teacher of the Year spotlight.  
<http://rgs.usu.edu/awards/portfolio-items/forrest-schoessow/> May 2017.
- “Forrest Schoessow: Geography’s foot soldier.” USU School of Graduate Studies spotlight.  
<https://rgs.usu.edu/graduateschool/graduate-blog/highlights/forrest-schoessow/> March 2016.

#### News:

- “Scientists sample Earth’s highest tropical glacier“, 12 September 2019, *Nature*.
- **Cover story:** “See the world to know the world“, ASCENT Fall 2019, College of Arts & Science.
- “River travelers arrive in New Orleans”. 5 August 2015. Melanie Speicher. Sidney Daily News; Piqua Daily Call.
- “Trio has grueling week on Mississippi River”. 19 July 2015. M. Speicher. Sidney Daily News; Piqua Daily Call.
- “Touch of home powers travelers”. 12 July 2015. Alexandra Newman. Piqua Daily Call, Sidney Daily News.
- “Wild and crazy week for river adventurers”. 5 July 2015. M. Speicher. Sidney Daily News; Piqua Daily Call.
- “Paddlers reach 1,000-mile mark”. 28 June 2015. Melanie Speicher. Sidney Daily News; Piqua Daily Call.
- “Travelers paddle waters in Wisconsin, Iowa”. 21 June 2015. M. Speicher. Sidney Daily News; Piqua Daily Call.

- “Adventurers enter Wisconsin”. 14 June 2015. Melanie Speicher. Sidney Daily News; Piqua Daily Call.
- “Mother Nature watches adventurers”. 7 June 2015. Melanie Speicher. Sidney Daily News; Piqua Daily Call.
- “A wild beginning to Mississippi adventure”. May 31 2015. A. Newman. Sidney Daily News; Piqua Daily Call.

## **Publications**

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**Schoessow, F.S.,** Sambuco, E., Mark, B., DeGrand, J., Manos, J.M., Soni, N., Porinchu, D., Baker, G. Mapping rock glacier surface elevation changes in Great Basin National Park, Nevada. In preparation. Target journal: *Journal of Antarctic, Arctic, and Alpine Research*.

**Schoessow, F.S.,** Workman, G., Vega, M.E., Harlow, C., Affourtit, J., Zhan, M. Autonomous aerial remote sensing platforms for monitoring of snow and ice at high altitudes. In preparation. Target journal: *Journal of the Institute of Electrical and Electronics Engineers (IEEE)*

**Schoessow, F.S.,** Howe, P.D., Marlon, J., Leiserowitz, A. Factors influencing extreme heat risk perception across the contiguous United States. In review at: *Journal of Risk Analysis*

Schoessow, F.S. Humans as sensors: the influence of extreme heat vulnerability factors on risk perceptions across the contiguous United States" (2018). Graduate Theses and Dissertations. 7094.

<https://digitalcommons.usu.edu/etd/7094>

## **Scientific Presentations**

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### **Invited Talks:**

**Schoessow, F.S.** Differential GPS techniques & their applications in field research. Oral presentation & workshop at College of Engineering, OSU; Columbus, Ohio.

**Schoessow, F.S.,** Li, Y., Howe, P.D. (2017, March 20) A spatiotemporal analysis of extreme heat exposure & NWS alert patterns across the CONUS using geospatial techniques. Oral presentation at Yale Project on Climate Change Communication, Yale University; New Haven, Connecticut.

**Schoessow, F.S.,** Li, Y., Howe, P.D. (2016, December 13) A spatiotemporal analysis of extreme heat vulnerability across the United States using geospatial techniques. Oral presentation at American Geophysical Union fall meeting; San Francisco, California.

**Schoessow, F.S.** (2016, May 10) Interdisciplinary curricula and coupled human-environment systems. Destinations: Planetary Thinking in the Curriculum; Utah State University; Logan, Utah.

**Schoessow, F.S.,** Ross, A.T., Selsor, S. (2015, October 20) The role of citizen science in watershed conservation and restoration. Address to the City of Piqua; City Commission & Office of the Mayor; Piqua, Ohio

### **Contributed:**

**Schoessow, F.S.,** Soni, N., Vega, M.E., Mark, B.G. (2018, December 12) UAV-borne remote sensing platforms for glacier-related hazard monitoring in high-mountain environments. Poster presentation at the American Geophysical Union annual meeting; Washington, D.C.

**Schoessow, F.S.,** Manos, J.M., Mark, B.G., DeGrand, J., Soni, N., Reinemann, S., Porinchu, D. (2018, November 4) Mapping rock glacier surface elevation changes in Great Basin National Park, Nevada. Paper presentation at the Geological Society of America annual meeting; Indianapolis, Indiana.



- Esplin, E., Howe, P.D., **Schoessow, F.S.**, Li, Y. (2017, July 9) Heatwave experience, risk perception, and protective action in the United States. Poster presentation at 2017 Natural Hazards Workshop at University of Colorado; Boulder, Colorado.
- Christian, L., **Schoessow, F.S.** (2017, April 8) Climate change impacts in the subtropical Andes Mountains. Paper presentation at American Association of Geographers annual meeting; Boston, Massachusetts.
- Schoessow, F.S.**, Li, Y., Esplin, E., Howe, P.D. (2017, April 7) Spatial-Temporal Variability of Extreme Heat Exposure Across the United States. Paper presentation at American Association of Geographers annual meeting; Boston, Massachusetts.
- Esplin, E., Howe, P.D., **Schoessow, F.S.**, Li, Y. (2017, April 7) Can you take the heat? The relationship between heat wave experience, risk perception, and protective action in the United States. Poster presentation at American Association of Geographers annual meeting; Boston, Massachusetts.
- Schoessow, F.S.**, Christian, L. (2016, December 12) Utah's mobile earth science outreach vehicle. Paper presented at American Geophysical Union fall meeting; San Francisco, California. [Selected for paper presentation.]
- Schoessow, F.S.**, Li, Y., Howe, P.D. (2016, December 12) A spatiotemporal analysis of extreme heat vulnerability across the United States using geospatial techniques. Poster presentation at American Geophysical Union fall meeting; San Francisco, California.
- Schoessow, F.S.** (2016, April 22) Spatial analysis of heat wave risk perceptions in the United States. Oral presentation at Department of Environment and Society Graduate Symposium; Logan, Utah.
- Christian, L., **Schoessow, F.S.** (2016, April 9) Impacts of climate change & glacial retreat on indigenous cultures of the Andes Mountains. Poster presentation at the Global Crises and Global Change Conference; Salt Lake City, Utah.
- Bingham, D., **Schoessow, F.S.** (2016, April 6) The global water crisis. Poster presentation at Utah State University Spring Runoff Conference; Logan, Utah.
- Christian, L., **Schoessow, F.S.** (2016, April 5) Climate change impacts & geographies: comparing water scarcities in Utah and the Andean Highlands. Paper presentation at Utah State University Spring Runoff Conference; Logan, Utah.
- Schoessow F.S.**, Li, Y., Howe P.D. (2016, March 31) Defining vulnerable populations and exploring socio-environmental predictors of heat wave risk perceptions. Paper presentation at the Annual Meeting of the American Association of Geographers; San Francisco, California.
- Li, Y., **Schoessow, F.S.**, Howe, P.D. (2016, March 31) The influence of land cover and local climate on public perceptions of heat wave risk. Paper presentation at Annual Meeting of the American Association of Geographers; San Francisco, California.
- Howe, P.D., Li, Y., **Schoessow, F.S.**, Marlon, J., Leiserowitz, A. (2016, March 31) Geographic variation in risk perceptions and vulnerability to extreme heat hazards in the U.S. Paper presentation at Annual Meeting of the American Association of Geographers; San Francisco, California.

## **Teaching**

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**2019 — Graduate Teaching Assistant — Ohio State University**  
*Spatial Data Analysis (GEOG 5210)*

**2017-2018 — Laboratory Instructor — Ohio State University**  
*Geographic Information Systems (GEOG 5210)*

**2016 — Laboratory Instructor — Utah State University**  
*Geographic Information Systems & Science (GEOG 1800)*

**2015 — Graduate Teaching Assistant — Utah State University**  
*Geographic Information Systems & Science (GEOG 1800)*

**2013-2014 — Korea Poly School — Seoul, Republic of Korea**  
*Teacher - English, Science, Math*

**2012 — Americorps: Montana Conservation Corps — Bozeman, Montana**  
*Expedition Crew Leader, Educator*

## **Service**

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Innovation Mentor for Undergraduates — **Ohio State University (TechHub/College of Nursing) – 2018, 2019**

Founding Project Lead — **Mobile STEM+Art Outreach, N.E. Harrison Museum of Fine Art – 2016, 2017**

Seminar Committee Member — **USU Ecology Center – 2016, 2017**

Planning Committee Member — **Restoring the West Conference – 2016, 2017**

Grad. Student Director — **USU Students for Academic & Institutional Integrity – 2016, 2017**

Student Project Coordinator — **Quinney Research Library Renovation Project – 2016**

Graduate Advisor — **USU Library Advisory Board – 2016, 2017**

Graduate Advisor — **Student Organization for Society & Natural Resources – 2016,2017**

Editor pro bono publico — **Wikimedia Foundation – 2012 - present**

## **Mentoring**

Nischay Soni, 2019 B.S. EEDS, College of Food, Agriculture, and Environmental Sciences, Ohio State University

Evan Vega, 2022 B.S. Civil, Environmental, and Geodetic Engineering, The Ohio State University

Aswathnarayan Radhakrishnan, 2021 M.S. Computer Science & Engineering, The Ohio State University

Josef Affourtit, 2019 B.S. Physics, The Ohio State University

Cole Harlow, 2019 B.S. Engineering Physics, The Ohio State University

Gus Workman, 2020 B.S. Electrical & Computer Engineering, The Ohio State University

Jacob Langermeier, 2020 B.S. Aerospace & Mechanical Engineering, The Ohio State University

Michael Zhan, 2021 B.S. Computer Science & Engineering, The Ohio State University

Logan Christian, 2017 B.S. Environment & Society, Utah State University

Darren Bingham, 2017 B.S. Environment & Society, Utah State University