

# *Curriculum Vitae - Phillip H. Larson*

## CONTACT INFORMATION:

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(Bursera valley, South Mountains, Sonoran Desert of Arizona - with the dog, Zion. See: **Larson, P.H.**, Dorn, R.I., Faulkner, D.J, Friend, D.A. (2015). Toe-Cut Terraces: A Review and Criteria to Differentiate from Traditional Fluvial Terraces. *Progress in Physical Geography*. DOI: 10.1177/0309133315582045)

## **BRIEF BIO:**

I was born in Red Wing, Minnesota, and was raised playing along the upper Mississippi, Vermillion, Kinnickinnic, and St. Croix Rivers. My home was a short walk from the edge of the bluffs of the Mississippi, a wide-deep valley carved by proglacial meltwater floods between 18-9 thousand years ago. That view has been etched in my mind since I was a small child. The geography of my upbringing resulted in a life-long interest in rivers and the landscapes they create and continuously transform through time. This interest was also energized as a child during family vacations to the canyons and incredible structural and erosional landscapes of the western United States. In particular, a sincere love and appreciation developed for the landscapes of the southwestern United States. Through these early experiences, an urge to understand our natural world and the landscapes we observe began to develop. When I entered my undergraduate pursuits, first at the University of Wisconsin-Stevens Point (majoring in both Geography and Geology) and finishing at the University of Wisconsin-Eau Claire (major in Geography, minor in Geology), I began to grow an interdisciplinary (Geography/Geology) approach to what would become a life-long academic career in the earth sciences. I continued this into graduate work at Arizona State (both masters and Ph.D.) where I focused on developing a fundamental expertise in geomorphology and earth surface processes that would later serve as the foundation for my research and teaching pursuits. Today, I consider myself an earth scientist, but more specifically, a geomorphologist. I now serve as Director of Earth Science Programs, Graduate Program Coordinator (Geography), and EARTH Systems Laboratory Co-Director in my duties as Associate Professor at Minnesota State, Mankato. In addition, I serve as Graduate Faculty, where I can co-advise and mentor both masters and PhD students, and I am a member of the Earth Surface Processes Research Group led by Dr. Andrew Wickert at the University of Minnesota.

## **RESEARCH AND TEACHING SYNOPSIS:**

My research and teaching interests are intertwined. At the most fundamental level, I am guided by the philosophy of being a “Teaching Scholar.” In the simplest sense, this philosophy drives an approach of integrated teaching, research, and student mentorship. Integration begins through learner-centered, applied, and experiential learning in teaching and mentorship, both in direct and virtual classrooms and mentoring experiences. I achieve the learner-centered, applied, and experiential approach by integrating my research, both theoretical and applied, to the classroom and direct mentoring experiences with the students. In other words, my research is my teaching and vice versa. Students I work with, at any level in their education, are engaged in real problems, real questions, and real science that I am actively pursuing. They learn not only what we know, as is traditionally pursued in the classroom via lecture and/or a textbook, but they also learn how the scientific process unfolds and obtain methodological expertise through conducting the science themselves under my tutelage. In this way, I stay current in my field, while addressing important questions in my field or in order to help communities impacted by natural processes. And, my students obtain a unique and highly impactful experience that allows them to stay at a competitive advantage in the work force or in academia when they leave Minnesota State.

With that said, my expertise and interests lie in understanding geologically recent (largely Quaternary) landscape evolution and paleoenvironmental change through investigating geomorphic processes that transform the surface of our planet. I constrain my research expertise in the sub disciplines of desert-arid geomorphology, fluvial geomorphology, aeolian geomorphology, and natural hazards that result from geomorphic processes (e.g. landslides, erosional processes, floods, etc.). Much of this work has been broadly focused on drainage basin reorganization and geomorphic system response following perturbations to the fluvial system (i.e. *allogenic perturbations* - climatic change, base-level fall/rise, anthropogenic activities, tectonic forcing, and *autogenic perturbations* – substrate variability, complex response, coupled-geomorphic system interactions).

Understanding the cascading sequence of events that propagate through a drainage basin following abrupt base-level lowering has been the overriding theme thus far. For example, in studies in the southwest United States, my research has been part of a larger collaborative effort to understand how rivers are “born” following an extensional tectonic regime (Basin and Range Orogeny) that reversed regional drainage network paths. This work requires understanding how transverse drainage networks develop following reversal to integrate hydrologically and structurally closed, or endorheic basins. Upon establishment of transverse river systems, episodes of base level lowering within these endorheic basins occurs. This is a result of the ongoing adjustment of the drainage network to a new base level condition. Consequently, an enormous shift of erosional foci and sediment deposition occurs as these systems evolve towards a new equilibrium condition. Ongoing adjustment leaves the present landscape

containing diagnostic landforms (stream terraces, incised pediments and alluvial fans, dissected basin fill) of this dynamic change. These are the landforms I study through morphological and sedimentological analysis, geochronological dating, relict landscape reconstruction, and other techniques.

Another example of my current research focuses on the landscape evolution of the upper Mississippi River basin (UMRB). The two foci of this research lie in post-glacial fluvial system response to base level fluctuations and aeolian deposition at and post last glacial maximum (LGM). Recent work focused on the Chippewa River, Wisconsin, just received the GK Gilbert Award from the American Association of Geographers in 2019. This award is given to “a single significant contribution to the published research literature in geomorphology during the past three years.” It is the highest honor bestowed to geomorphologists by the Association of American Geographers. In addition to this work, ongoing research is focused on understanding the timing and evolution of the Minnesota River valley (formerly glacial River Warren - Lake Agassiz outlet) and investigating tributary systems (e.g. Cannon, Zumbro, Whitewater, etc.) to the Mississippi in an attempt to build a holistic model of fluvial system response to base level fluctuations that result post-deglaciation. This has significant importance to rapidly melting glacial landscapes around the world as our climate continues to warm. The second research foci in the UMRB, the significance and nature of aeolian deposition post LGM, ranges from sandy deposits (e.g. parabolic dunes, sand ramps, climbing dunes, sand stringers, sand sheets) to variable thicknesses of loess. In this work, we are attempting to understand the mechanisms behind aeolian deposition and the paleoenvironmental significance of these deposits – likely primarily tied to “melt-out” of permafrost in the region in the early Holocene. This, too, has significant implications to understanding landscapes, like the arctic and Antarctic today, where permafrost is rapidly melting due to climate change.

New expansions in this work are underway with another new interest in geoarcheology, particularly in the upper Mississippi River basin, USA. This work is trying to understand native people's interactions with and responses to the changing environmental and geomorphic systems through the Holocene. As the environment evolves, so do people, and this has occurred throughout time. I believe this work is the natural progression of all that I have pursued thus far and has broader implications related to Native America cultural heritage preservation, understanding the history of Native cultures in this region, and better understanding our connection to our environment. This research interest is the underpinning for the AGES Laboratory (now EARTH Systems Laboratory) I co-founded with Dr. Ronald Schirmer in 2016.

## **PROFESSIONAL POSITIONS:**

### **Professor of Geography:**

Minnesota State University, Mankato, MN. 2021-Present

### **Graduate Faculty:**

University of Minnesota, Earth and Environmental Sciences. 2019-Present

Website: <https://www.esci.umn.edu/people/adjunct-faculty/> and <https://umn-earth-surface.github.io/people/>

### **Graduate Program Coordinator - Geography:**

Minnesota State University, Mankato, MN. 2019-2021

### **Associate Professor of Geography:**

Minnesota State University, Mankato, MN. 2018-2021

### **Assistant Professor of Geography:**

Minnesota State University, Mankato, MN. 2013-2018.

### **Director of Earth Science Programs:**

Minnesota State University, Mankato, MN. 2014-Present.

### **Co-Director, Founder, AGES Laboratory (now EARTH Systems Laboratory)**

Minnesota State University, Mankato, MN. 2016-2021.

### **Full Course Instructor:**

School of Geographical Science and Urban Planning – Arizona State University, Tempe, AZ. 2010-2013

Taught Geography 101 (Intro Physical Geography), Geography 211 (Landform Processes)

### **Lead Graduate Teaching Assistant:**

School of Geographical Sciences and Urban Planning - Arizona State University, Tempe, AZ. 2009-2013.

## **EDUCATION:**

**Doctor of Philosophy (Ph.D.) in Geography**, August 2013.

Arizona State University, School of Geographical Sciences and Urban Planning, Tempe, AZ

*Research interests:* arid/desert geomorphology, fluvial geomorphology, landscape evolution and paleoenvironmental/paleogeographic change, granitic and volcanic landscapes.

*Dissertation:* "Desert fluvial terraces and their relationship with basin development in the Sonoran Desert, Basin and Range: Case studies from south-central Arizona."

**Master of Arts (M.A.) in Geography**, May 2011

Arizona State University, School of Geographical Sciences and Urban Planning, Tempe, AZ

Research Exam (Anthony J. Brazel Award Winner 2010-2011)

Bailey Research Scholarship (2010)

*Master's Research:* "Landform development in the South Mountains Metamorphic Core Complex."

**Bachelor of Science (B.S.) in Geography-Resource Management**, May 2008

**Physical Geology** - Minor

University of Wisconsin-Eau Claire, Department of Geography and Anthropology, Department of Geology, Eau Claire, WI

## **JOURNAL PUBLICATIONS:**

\* denotes graduate student authors, authors in *italics* indicate undergraduate authors. TBS = to be submitted

Swanson, M.\* , **Larson, P.H.**, Wickert, A.W., Jennings, C., Gran, K., DeLong, S. (in prep, TBS 2/22). Hillslope processes, characteristics, and hazards in proglacial flood derived landscapes: Minnesota River Valley, USA. Earth Surface Processes and Landforms.

**Larson, P.H.**, Millett, J.\* , Running, G.L., Faulkner, D.J., Rittenour, T., Burds, L.\* , Schirmer, R., Schaetzl, R. (in prep, TBS 1/22). The origin and geomorphology of cliff-top dunes: A review and case study from the Chippewa River valley, Wisconsin, USA. Quaternary Science Reviews.

**Larson, P.H.**, Dorn, R.I., Skotnicki, S., Seong, Y.B. Gootee, B. (in prep, TBS 10/21). Drainage integration in extensional tectonic settings and the revival of the great rivers of Arizona. Geomorphology.

Schaetzl, R., Running, G., **Larson, P.H.**, Rittenour, T., Yansa, C., Faulkner, D. (2021). Luminescence dating of sand wedges constrains the late Wisconsin permafrost interval in the upper midwest, USA. *Boreas*. <https://doi.org/10.1111/bor.12550>

**Larson, P.H.**, Dorn, R.I., Skotnicki, S., Seong, Y.B., DePonty, J. (2020). Impact of drainage integration on basin geomorphology and landform evolution: Case study along the Salt and Verde Rivers of the Sonoran Desert, USA. *Geomorphology*. <https://doi.org/10.1016/j.geomorph.2020.107439>

Skotnicki, S., Seong, Y.B., Dorn, R.I., **Larson, P.H.**, Deponty, J. (2020). Drainage integration of the Salt and Verde Rivers in a Basin and Range extensional landscape, central Arizona, USA. *Geomorphology*. <https://doi.org/10.1016/j.geomorph.2020.107512>

\*Hilgendorf, Z., \*Wells, G., **Larson, P.H.**, \*Millett, J., \*Swanson, M. (2020). From basins to rivers: Understanding the revitalization and significance of top-down drainage integration mechanisms in drainage basin evolution. *Geomorphology*. <https://doi.org/10.1016/j.geomorph.2019.107020>

Dorn, R., **Larson, P.H.** (2019). Forward: Episodic forward prolongation of trunk channels in the Western United States. *Geomorphology*, 343. <https://doi.org/10.1016/j.geomorph.2019.06.010>

Oh, J.S., Seong, Y.B., **Larson, P.H.**, Hong, S.C., Yu, B.Y. (2019). Asymmetric hillslope retreat on Rock Peak, San Tan Mountains, Arizona, USA: Assessing caprock lithology control on landscape evolution. *Annals of the American Association of Geographers*. <https://doi.org/10.1080/24694452.2019.1624421>

Donovan, M., Belmont, P., Notebaert, B., Coombs, T., **Larson, P.H.**, Souffront, M. (2019). Accounting for uncertainty in measurements of river channel migration. *Earth Science Reviews*. <https://doi.org/10.1016/j.earscirev.2019.04.009>

Schaetzl, R., **Larson, P.H.**, Faulkner, D.J., Running, G.L., Jol, H.M., and Rittenour T. (2018). Eolian sand and loess deposits indicate west-northwest paleowinds during the Late Pleistocene in western Wisconsin, USA. *Quaternary Research*. 89: 769-785. DOI: 10.1017/qua.2017.88

Yuan, F., **Larson, P.H.**, Mulvihill, R., \*Libby, D., Nelson, J., Grupa, T., Moore, R. (2017). Mapping and Analyzing Stream Network Changes in Watonwan River Watershed, Minnesota, USA. *International Journal of Geo-Information*. DOI: 10.3390/ijgi6110369

**Larson, P.H.**, Meek, N., Dorn, R.I., Douglass, J., Seong, Y.B., (2016). How Rivers

Cross Mountains. Annals of the American Association of Geographers. DOI: 10.1080/24694452.2016.1203283

**Larson, P.H.**, Kelley, S., Dorn, R.I., Seong Y.B. (2016). Pace of Landscape Change in the northeastern Sonoran Desert, United States. Annals of the American Association of Geographers. DOI: 10.1080/24694452.2016.1201420

**GK GILBERT AWARD RECIPIENT – American Association of Geographers:**

Faulkner, D., **Larson, P.H.**, Jol, H.M., Running, G.L., Loope, H.M., and Goble, R.J. (2016). Episodic Incision and Terrace Formation Resulting from Abrupt Late-Glacial Base-Level Fall, Lower Chippewa River, Wisconsin, USA. Geomorphology. 266: 75-95. DOI:10.1016/j.geomorph.2016.04.016

Seong, Y.B., **Larson, P.H.**, Dorn, R.I. and Yu, B.Y. (2016). Evaluating process domains in small arid granitic watersheds: Case study of Pima Wash, South Mountains, Sonoran Desert, USA. Geomorphology. 255: 108-124. DOI: 10.1016/j.geomorph.2015.12.014

**Larson, P.H.**, Dorn, R.I., Faulkner, D.J, Friend, D.A. (2015). Toe-Cut Terraces: A Review and Criteria to Differentiate from Traditional Fluvial Terraces. Progress in Physical Geography. DOI: 10.1177/0309133315582045

**Larson, P.H.** and Dorn, R.I. (2014). Strath Development in Small Arid Watersheds: Case Study of South Mountain, Sonoran Desert, Arizona. American Journal of Science. 314: 1202-1223.

**Larson, P.H.**, Dorn, R.I., \*Palmer, R.E., \*Bowles, Z., \*Harrison. E., \*Kelley S., Schmeekle, M. W., Douglass, J. (2014). Pediment Response to Drainage Basin Evolution in South-Central Arizona. Physical Geography. DOI: 10.1080/02723646.2014.931089

Dorn, R.I., Dorn, J., \*Harrison, E., \*Gutbrod, E., *Gibson, S.*, **Larson, P.H.**, Cervený, N., Lopat., N., Groom, K.M., Allen, C.D. (2012). Case Hardening Vignettes from the Western USA: Convergence of Form from a Divergence of Hardening Processes. Association of Pacific Coast Geographers Yearbook. 74: 112.

**Larson, P.H.** and Dorn, R.I. (2012). Painting Yosemite Valley: A Case Study From the Rock Coatings Encountered at Half Dome. Physical Geography 33: 165-182

**Larson, P.H.**, Dorn, R.I, Douglass, J., Gootee, B.F., Arrowsmith, R. (2010). Stewart Mountain Terrace: A New Salt River Terrace with Implications for Landscape Evolution of the Lower Salt River Valley, Arizona. Journal of the Arizona-Nevada Academy of Science 42 :26-35

## **BOOKS, BOOK CHAPTERS, EDITOR/SPECIAL ISSUES:**

\* denotes graduate student authors, authors in *italics* indicate undergraduate authors

**Larson, P.H.**, Ritter, M. "The Physical Environment." 4th edition. Online digital textbook for introduction to Physical Geography. Utilized by students at Minnesota State and Arizona State.

Dorn, R.I., **Larson, P.H.**, Jeong, A. (*in process, 2020*). "Landforms on Faulted Rocks" in Essentials of Geomorphology. Cambridge University Press. Schaetzl, R., Marston, D., Eds.

**Larson, P.H.**, Dorn, R.I., Seong, Y.B., Gootee, B. (*in process*). Special Issue: Drainage Integration in Extensional Tectonic Terrains. Geomorphology.

Hargitai, H. and **Larson, P.H.** (2015). "Valley Terrace" in The Encyclopedia of Planetary Landforms. Springer.

**Larson, P.H.** and Dorn, R.I. (2015). "Radiometric dating/techniques" in The International Encyclopedia of Geography: People, the Earth, Environment and Technology. Wiley Blackwell.

**Larson, P.H.**, \*Harrison, E.J., and \*Palmer, E. (2013). Introductory Physical Geography Laboratory Manual, 10th edition, Hayden McNeil: Michigan.

**Larson, P.H.** (2012). Introductory Physical Geography Laboratory Manual, 9th edition, Hayden McNeil: Michigan.

## **NON-REFEREED PUBLICATIONS, REPORTS, and/or PUBLISHED ABSTRACTS:**

\* denotes graduate student authors, authors in non-bold *italics* indicate undergraduate authors

Wickert, A.D., \*Jones, J., \*Isken, N., \*Libby, D., **Larson, P.H.**, Barnhart, K.R., \*Van Wyk de Vries, M.S., Dunn, C.N. (2021). Transient width adjustments of straight river channels with cohesive banks. Abstracts with Programs: American Geophysical Union fall meeting.

\*Penprase, S.B., Wickert, A.D., **Larson, P.H.**, Dunn, C.N., Bezada, M., Running, G.L., Faulkner, D.J., \*Jones, J., Schewe, J. (2021). Characterizing River Profile, Concavity, and Sediment Discharge Response to Changes in Base Level across Timescales: Whitewater River, Southeastern Minnesota, USA. Abstracts with Programs: American Geophysical Union fall meeting.

Wickert, A.D., Clubb, F.J., **Larson, P.H.**, Glade, I. (2021). Glacial isostatic deformation of the Last Glacial Maximum Mississippi River terrace. Abstracts with Programs: Joint Paleo



Constraints on Sea Level Rise and Solid Earth Response and Influence on Cryospheric Evolution fall meeting.

\*Shandonay, K., Bowen, M.W., **Larson, P.H.**, Running, G.L., Rittenour, T.M. (2021 - submitted) Stratigraphic Investigations of Aeolian Sand Stringers in Southeast Minnesota and Western Wisconsin. Abstracts with Programs: Geological Society of America fall meeting.

Wickert, A.D., Clubb, F.J., **Larson, P.H.**, \*Glade, I. (2021). Glacial isostatic deformation of the Last Glacial Maximum Mississippi River terrace. Abstracts with Programs: Joint Paleo Constraints on Sea Level Rise and Solid Earth Response and Influence on Cryospheric Evolution fall meeting.

Wickert, A.D., Schildgen, T.F., Tofelde, S., Savi, S., Rojo, Y., Fleagle, S., \*Callaghan, K.L., Barnes, R., \*Penprase, S.B., **Larson, P.**, Roth, D.L. (2020). Self-consistently matching sediment supply, water discharge, and channel slope: Lane's balance at the catchment scale. Abstracts with Programs: American Geophysical Union fall meeting.

\*Burds, L., Schirmer, R.C., **Larson, P.H.**, Running, G.L., Wickert, A.D., Brown, A., \*Anton, A.T., \*Wiitanen-Eggan, A.K. (2020). Evaluation and application of geophysical methods in identifying potential Native American earthen mounds in the upper Mississippi basin, USA. Abstracts with Programs: Geological Society of America annual meeting. Connects Online.

\*Shandonay, K.L., Bowen, M.W., **Larson, P.H.**, Running, G.L. (2020). Stratigraphy and geomorphic evolution of sand stringers in the upper Mississippi River Basin. Abstracts with Programs: Geological Society of America annual meeting. Connects Online.

Engle, Z.T., DeLong, S.B., Bartley, J.K., Blumentritt, D., Breckenridge, A.J., Day, S.S., Gran, K.B., Jennings, C.E., **Larson, P.H.**, McDermott, J.A., Triplett, L.D., Wickert, A.D. (2020). Towards design of a landslide inventory geodatabase for Minnesota. Abstracts with Programs: Geological Society of America North-Central annual meeting, Duluth, Minnesota.

Jennings, C.E., Gran, K.B., DeLong, S.B., Bartley, J.K., Blumentritt, D., Breckenridge, A.J., Dahly, D.T., Day, S.S., Engle, Z., Hammer, M., \*Kurak, E., **Larson, P.H.**, McDermott, J.A., Richard, E.M., \*Swanson, M., Triplett, L.D. (2020). A landslide inventory for Minnesota. Abstracts with Programs: Geological Society of America North-Central annual meeting, Duluth, Minnesota.

Schaetzl, R.J., Running, G.L., **Larson, P.H.**, Rittenour, T.M. (2020). Sand wedges point to permafrost and aeolian activity in the Chippewa Valley ca. 18-13 ka. Abstracts with Programs: Geological Society of American North-Central annual meeting, Duluth, Minnesota.

\*Shandonay, K.L., \*Mataitis, R.J., \*Burds, L., **Larson, P.H.**, Bowen, M.W., Running, G.L., Schaetzl, R.J., Rittenour, T. (2020). Geomorphology of aeolian sand stringers in western Wisconsin and southeastern Minnesota. Abstracts with Programs: Geological Society of American North-Central annual meeting, Duluth, Minnesota.

\*Burds, L., **Larson, P.H.**, Schirmer, R.C., Running, G.L., Faulkner, D.J., Rittenour, T., \*Mataitis, R.J. (2020). Aeolian geomorphology and geoarcheology of the Kiwanis site, Chippewa River valley, Wisconsin. Abstracts with Programs: Geological Society of American North-Central annual meeting, Duluth, Minnesota.

\*Gardner, D., \*Penprase, S., **Larson, P.H.**, Wickert, A.D., Faulkner, D.J., Blumentritt, D., Schirmer, R.C. (2020). Landscape evolution and stream terraces of the Whitewater River valley, Minnesota: Preliminary Results. Abstracts with Programs: Geological Society of American North-Central annual meeting, Duluth, Minnesota.

\*Penprase, S.B., Wickert, A.D., **Larson, P.**, Clubb, F.J., \*Kurak, E. (2019). Isolating climatic and glacial impacts on river morphology: a paired-catchment study in the upper Mississippi River watershed. Abstracts with Programs: American Geophysical Union annual meeting, San Francisco, California.

Faulkner, D.J., **Larson, P.H.**, Running, G.L., Jol, H.M. (2019). The paraglacial lower Chippewa River, west-central Wisconsin, USA. Abstracts with Programs: Geological Society of America annual meeting, Phoenix, Arizona.

**Larson, P.H.**, \*Millett, J., \*Burds, L., \*Mataitis, R.J., Running, G.L., Rittenour, T.M., Nelson, M.S., Schaetzel, R.J., Faulkner, D.J., Schirmer, R.C. (2019). Defining the geomorphology of cliff-top dunes: Case study of the Chippewa River valley, WI, USA. Abstracts with Programs: Geological Society of America annual meeting, Phoenix, Arizona.

\*Mataitis, R.J., **Larson, P.H.**, Running, G.L., Schaetzel, R.J., Bowen, M.W., Faulkner, D.J., Rittenour, T.M., Nelson, M.S., \*Burds, L., Schirmer, R.C. (2019). Revisiting the distribution and geomorphology of sand stringers beyond the ice margin. Abstracts with Programs: Geological Society of America annual meeting, Phoenix, Arizona.

Schaetzel, R.J., **Larson, P.H.**, and Running, G.L. (2019). Dominance of strong northwest winds across the midwest in the postglacial period. Abstracts with Programs: Geological Society of America annual meeting, Phoenix, Arizona.

Schaetzel, R.J., Running, G.L., **Larson, P.H.**, Rittenour, T., Faulkner, D., Knauff, J., Baisch, C., and Kaplan, S. (2019). Loess deposition and remobilization in an ice-marginal landscape. Abstracts with Programs: International Union of Quaternary Research annual meeting, Dublin, Ireland.

Marcou, N., Slade, A., \*Mataitis, R., \*Millett, J., **Larson, P.H.**, Faulkner, D., Schaetzel, R., Running, G., Bowen, M. (2019). Sand stringers of southeastern Minnesota and west-central Wisconsin: A progress report. Abstracts with Programs: American Association of Geographers annual meeting, Washington D.C.

\*Swanson, M., \*Kuehl, K., Bergstrom-Conley, R., \*Millett, J., Wickert, A., Jennings, C., Bowen, M., **Larson, P.H.** (2019). Revisiting the post-glacial landscape evolution of the

Minnesota River valley: Preliminary Results. Abstracts with Programs: American Association of Geographers annual meeting, Washington D.C.

Faulkner, D., **Larson, P.**, Adams, H., \*Kuehl, K., \*Hilgendorf, Z., Jol, H., Running, G. (2019). The Chippewa River: Paragon of a Paraglacial Fluvial System. Abstracts with Programs: American Association of Geographers annual meeting, Washington D.C.

**Larson, P.H.**, Belmont, P., Water Resources Center. (2018). Final Report - Minnesota River Invasive Carp Prevention Workplan: Minnesota DNR. Lessard-Sams Outdoor Heritage Council through Minnesota DNR - Minnesota River Invasive Carp Workplan.

\*Oubre, M., Escobar, L., **Larson, P.** (2018). Habitat Suitability for Four Species of Invasive Carp in the Minnesota River, South-Central Minnesota, USA. Abstracts with Programs: American Fisheries Society annual meeting, Atlantic City, Spring 2018.

\*Millett, J., \*Anzalone, C., *Coonen, K., Jansen, E., Gardner, D., Larson, P.H.*, Running, G., Faulkner, D., Schirmer, R. (2018). Sandy Aeolian Deposition in Southeastern Minnesota and Western Wisconsin: A Forgotten and Poorly Understood Sandy Aeolian Landscape. Preliminary Results. Abstracts with Programs: American Association of Geographers annual conference, New Orleans, Spring 2018.

\*Oubre, M., Escobar, L., **Larson, P.**, Water Resources Center. (2017). A Framework for Measuring the Risk of Biological Invasions. Abstracts with Programs: American Fisheries Society annual conference, Tampa Bay, Fall 2017.

\*Oubre, M., Escobar, L., **Larson, P.**, Water Resources Center. (2017). Predicting Invasion Risk for Invasive Carp in the Minnesota River. Abstracts with Programs: American Fisheries Society annual conference, Tampa Bay, Fall 2017.

Yuan, F., **Larson, P.H.**, *Mulvihill, R.*, Nelson, J., Grupa, T., Moore, R. (2017). Stream Network Changes and Environmental Impacts in Watonwan River Watershed. Abstracts with Programs: American Association of Geographers annual conference, Boston, Spring 2017.

*Arnold, S.*, Brown, A., **Larson, P.H.**, Schirmer, R.C. (2017). A machine-learning geospatial methodology for identifying Native American burial mounds and earthworks from high resolution LiDAR datasets, Minnesota, USA: Implications for research in Geoarcheology and Geomorphology. Abstracts with Programs: American Association of Geographers annual conference, Boston, Spring 2017.

\*Hilgendorf, Z.T., Moore, R., \*Swanson, M., \*Salfer, J.T., \*Libby, D., **Larson, P.H.**, *Richards, M., Batzlaff, B.* (2017). Refining and evaluating a method of hydro-modification of LIDAR derived DEMs in agricultural land-use dominated watersheds. County Ditch 57 watershed, Minnesota, USA. Abstracts with Programs: American Association of Geographers annual conference, Boston, Spring 2017.

Yuan, F., \*Mulvihill, R., **Larson, P.H.**, \*Libby, D., and \*Hilgendorf, Z. (2016). Mapping and

Analyzing Stream Network Changes in Watonwan River Watershed. Minnesota GIS/LIS Consortium Annual Meeting, Duluth, Fall 2016.

\*Libby, D.J. and **Larson, P.H.** (2016). Assessing Historical Planform Channel Change Within an Altered Watershed: Minnesota River, Minnesota, USA. Abstracts with Programs: Geological Society of America annual conference, Denver, Fall 2016.

\*Libby, D.J., **Larson, P.H.**, \*Hilgendorf, Z., \*Williams, V.A., \*Chadwick-Camp, M., *Howell, D.W., Aeikens, A.L., Scheeler, D.J., Millett, J.J., and Rothmeier, K.P.* (2016). Assessing Error and Uncertainty in Remote Analysis of Channel Change Dynamics and Morphology. Case Study: Minnesota River, Minnesota, USA. Abstracts with Programs: Association of American Geographers annual conference, San Francisco, Spring 2016.

\*Hilgendorf, Z., **Larson, P.**, and Hoppie, B. (2016). Analysis of nonpoint source pollution mitigation strategies within an agricultural watershed: Cobb River watershed, Minnesota River Basin, south-central Minnesota - Preliminary Results. Abstracts with Programs: Association of American Geographers annual conference, San Francisco, Spring 2016.

\*Libby, D.J., **Larson, P.H.**, Belmont, P., Faulkner, D.J. (2016). Quantifying Historic Channel Change Dynamics of the Minnesota River, south-central Minnesota, USA. Abstracts with Programs: Association of American Geographers annual conference, San Francisco, Spring 2016.

\*Hilgendorf, Z., **Larson, P.** and Hoppie, B. (2015). County Ditch 57: Understanding the Implications of Intensive Agricultural Practices within First-Order Drainages and their Effects on the Larger System. Abstracts with Programs: Association of American Geographers: West Lakes Regional Conference, Fall 2015

\*Brown, A., \*Smith, C., Schirmer, R., and **Larson, P.** (2015). Archeology and Landscape Geomorphology in Three Dimensions: Integrating Photogrammetrically and LiDAR Derived Point Clouds for Multi-Scale 3D Analysis. Abstracts with Programs: Association of American Geographers annual conference, Chicago, IL. Spring 2015.

\*Smith, C., \*Brown, A., **Larson, P.H.**, and Wittkop, C. (2015). The Significance of Alluvial Fans in the Landscape Evolution of the lower Minnesota River Valley: Preliminary Results. Abstracts with Programs: Association of American Geographers annual conference, Chicago, IL. Spring 2015.

*Williams, V.* and **Larson, P.H.** (2014). Geostatistical and Geospatial Analysis of I/I into Wastewater Treatment Infrastructure. Presented at the Association of American Geographers annual conference, Tampa Bay, FL. Spring 2014.

**Larson, P.H.**, Dorn, R.I., \*Kelley, S. (2013). Reconstructing Paleotopography, Geomorphic Processes and Landscape Evolution in Response to Drainage Basin Integration - Salt and Verde Rivers, Basin and Range, Arizona: Preliminary Results. Abstracts with Programs. Presented at the Geological Society of America annual conference, Denver, CO. Fall 2013.

**Larson, P.H.** (2011). Landform and Drainage Development in a Metamorphic Core Complex, Basin and Range, South-Central Arizona. Abstracts with Programs. Presented at the Association of American Geographers annual conference, New York, NY. Spring 2011.

**Larson, P.H.**, Dorn, R., \*Gutbrod, E., Gibson, S., Harrison, E., Schmeckle, M. (2009). Introduction to Geomorphology: An Online SQ Experience. Presented at the Association of American Geographers annual conference, Las Vegas, NV. Spring 2009.

**Olson, L.M., Larson, P.H.**, Hupy, J., Jol, H.M., Faulkner, D.J., Running, G.L. (2007). Late Quaternary Eolian Dunes and Fluvial Terraces of the Lower Chippewa River Valley. Presented at the Association of American Geographers annual conference, Boston, MA, Spring of 2008.

**Larson, P.H., Dryer, W.P., Mc Donald, J., Baker, A.**, Running, G.L., Faulkner, D.J., Jol, H.M. (2007). Geomorphology of Cliff-Top Parabolic Dunes within the Lower Chippewa River Valley, Upper Putnam Park, Eau Claire, Wisconsin. Presented at the Association of American Geographers annual conference, Boston, MA, Spring of 2008.

**Larson, P.H., Mc Donald, J.M., Dryer, W.P., Pascal, E.G.**, Jol, H.M., Craig, M., Warnke, D.A., Teitler, L., (2007). High Resolution GPR Investigation of a Lake Manly Shoreline Deposit, Death Valley, California. Presented at the Geological Society of America annual conference, Denver, CO, fall 2007.

**Speer, D.M., Larson, P.H.**, Faulkner, D.J., Running, G.L., Jol, H.M., (2007). Post-Glacial History of the Lower Chippewa River, Western Wisconsin: A Progress Report. Presented at the Association of American Geographers annual conference, San Francisco, CA, spring 2007.

## **HIGHER EDUCATION TEACHING EXPERIENCE AND SERVICE:**

### **Minnesota State University – Courses**

Geog101 - Introduction to Physical Geography (GE3, GE10, Lab Science) (online and in-person)

Geog313 - Natural Disasters (GE2)

Geog315 - Geomorphology

Geog409/509 - Water Resources

Geog440/540 - Field Methods

Geog415/515 - Earth Surface Processes

Geog416W/516 - Fluvial Geomorphology and Hydrology (W - Writing Intensive)

Geog417/517 - Quaternary Environments and Climate Change

Geog440/540 – National Parks, Environmental Issues, and Geoscience in the Southwest (

Geog 440/540 – Hawaii (In Preparation)

Geog499 – Applied Geomorphology

Geog610 – Advanced Geomorphology/Arid Geomorphology/Arid Environments

Geog677 – Advanced Fluvial Geomorphology/Sediment Transport

## **Arizona State University - Courses**

GPH 211-Landform Processes (online)

GPH 111-Introduction to Physical Geography

## **K-12 Outreach/Service**

AVID tutor (Math and Science)- Connolly Middle School, Tempe, AZ

Arizona Geographic Alliance Summer Workshop Co-Instructor

National Geographic Geography Bee Judge (Minnesota State Championship 2017)

Director of Earth Science Programs/Earth Science Ed Major, Minnesota State University (2014-present)

Earth-Space Science Teaching Reaccreditation (EPPAS), Minnesota State University (2016, 2018, 2020)

## **University, Community, and Discipline-Focused Service**

Director of Earth Science Programs, Minnesota State University (2014-present)

Co-Director and Founder of AGES (now EARTH Systems) Laboratory (2016-present)

Created Geomorphology & Earth Surface Processes Certificate in Earth Science Prog. (2018)

Collaboratively Created Geoarcheology Certificate in Anthropology Prog. (2018)

Graduate Program Coordinator, Geography (2019-2021)

Graduate Faculty, University of Minnesota (2019-present)

Serving as co-advisor/committee member for PhD students at premiere research institution in the state of Minnesota

Southern Minnesota Landslide Hazards Research and Outreach (2017-present)

Minnesota River Basin Invasive Carp Research and Outreach (2015-2019)

Curriculum Restructuring for Earth Science and Geography B.S. (2019-2020)

Led the redesign of the entire Geography B.S. and Earth Science B.S. to make degrees more inclusive, flexible, and contemporary to the science of today

Applied for and Offered Study Away Courses for Students:

Geog 416W/516: Fluvial Geomorphology and Hydrology

Geog 440/540: Southwest USA: National Parks, Natural Resources, and Environmental Issues

Geog 610: Advanced Geomorphology/Desert Geomorphology/Arid Environments

Served on and co-led Hiring Committee for Soils Geomorphologist position in Geography

Hosting, updating, and maintaining “The Physical Environment” digital intro-physical geography textbook. This is offered to students free of charge at several universities. See book publications above.

## **HONORS/AWARDS:**

- Douglas R. Moore Research Lectureship (2021) - Minnesota State University, Mankato: Most prestigious research award conferred by Minnesota State, Mankato
- GK Gilbert Award for Excellence in Geomorphological Research (2019) – American Association of Geographers, Geomorphology Specialty Group (*Faulkner et al., 2016*)

- Dr. Duane Orr Teacher of the Year Award Nomination (2018) - Minnesota State University Student Association
- Advisor Recognition Award Nomination (2018; *not eligible to win because of prior win*) - Minnesota State University
- Presidential Teaching Scholar Fellowship (2016) - Minnesota State University
- Advisor Recognition Award (2016) - Minnesota State University
- Innovation with Technology Award (2015) – Minnesota State University
- Anthony J. Brazel Research Exam Award (2010-2011) – Arizona State University
- Mathew G. Bailey Scholarship Award (2010) – Arizona State University
- Undergraduate Excellence in Research Award (2008) – University of Wisconsin-Eau Claire
- University of Wisconsin-Eau Claire Outstanding Senior Award (2008) - University of Wisconsin-Eau Claire

### **INVITED TALKS:**

- Earth Seminar Series. University of Wisconsin-Eau Claire. From Bathtub to Base-level: Origin of Through-Flowing Drainages in Extensional Tectonic Landscapes Part 2 (April 9th, 2021)
- Earth Surface Camaraderie. Colorado School of Mines and University of Minnesota Earth Surface Group. Drainage Integration in Extensional Tectonic Terrains (Talk #1) and The Pediment Problem (Talk #2) (2020)
- Department of Earth & Environmental Sciences Seminar. University of Minnesota-Duluth. *From Bathtub to Base-level: Origin of Through-Flowing Drainages in Extensional Tectonic Landscapes* (2020).
- Soft Rock Lecture Series. University of Minnesota, Department of Earth Sciences. *Revival of the Great Rivers of Arizona* (2019).
- Minnesota State University Geography Colloquia Series Talk: *A River Runs Through It: Creating Rivers in the Basin and Range, pt. 2* (2015)
- Midwest Undergraduate Geography Symposium. Gustavus Adolphus. Keynote Address: *A River Runs Through It: Creating Rivers in the Basin and Range.* (2015)
- Minnesota State University Geography Colloquia Series: *Bedrock Strath Development in Small Arid Watersheds* (2013)
- Earth Science Seminar Series - University of Wisconsin Eau Claire: *Implications of Strath Development and Landscape Evolution in Small Arid Watersheds: South Mountain, AZ.* (2013)

### **PROFESSIONAL ASSOCIATIONS:**

- Member, Association of American Geographers
- Member, American Geophysical Union
- Member, Geological Society of America

## EXTERNAL AND INTERNAL RESEARCH FUNDING:

(in preparation) National Science Foundation: CNH2 – ~\$1,150,000 - Tentative Title: Assessing coupled geomorphic-anthropogenic landscape evolution to understand the origin of the Silvernale Phase of the upper Mississippi River valley, Minnesota, USA.

(in preparation) National Science Foundation: EAR - \$299,000 - Tentative Title: Meltwater routing of Lake Agassiz and the implications of its southern outlet, Minnesota River valley, Minnesota, USA.

(in preparation) National Science Foundation: EAR - \$249,000 - Tentative Title: Bedrock incision, knickpoint retreat, and fluvial system response to base level fall: Case study of the north shore of Lake Superior.

(2020, Submitted) Environment and Natural Resources Trust Fund - \$199,000 - Land-use and climate impacts on Minnesota's Whitewater River. PI - Andy Wickert (UMN), **Co-PI - Phillip Larson**, Dylan Blumentritt (Winona St.), Lawrence Svien (Minnesota board of Water and Soil Resources), Sara Holger (Minnesota DNR). **MSU Total: \$68,000**

(2019) Global Education Faculty Curriculum Development Grant (MSU) - \$2000 - Climate change research and training driven pedagogical development for Geography 101, Geog 417/517, and potential new study abroad exploration - Patagonia, Argentina. **(PI - Phillip Larson)**

(2019) Faculty Improvement Grant (MSU) - \$2732 - Training and Research in Solid Earth response of the Patagonian Andes to post-Little Ice Age glacial retreat. **(PI - Phillip Larson)**

~~(rejected 2019) Uncovering links between hydrology, geomorphology, and aquatic ecology on the Chippewa River, Wisconsin. United States Geological Survey. PI - Andy Wickert (UMN), Co-PI - Phillip Larson. Co-PI - Doug Faulkner (UWEC). Co-PI - Jeffrey Ziegeweid (USGS). MSU Total: \$93,231.~~

~~(rejected, 2019) A new template for integrated watershed-, reach-, and point-scale monitoring of catchment function through open-source technology. Department of Energy. PI - Andy Wickert (UMN), Co-PI - Phillip Larson. MSU Total: \$65,831.~~

(2017) Landslide Hazards and Impacts on Minnesota's Natural Environment. Environmental and Natural Resources Trust Fund (Legislative-Citizen Commission on Minnesota Resources) – Proposal Total: \$500,000. PI- Dr. Karen Gran (U of Minnesota – Duluth), Dr. Andrew Wickert (U of Minnesota), Dr. Carrie Jennings (Freshwater Society, U of Minnesota), **Co-PI - Phillip Larson**. MSU Total: \$51,964.



(2016) Presidential Teaching Scholar Fellowship (MSU) - **\$7,300, PI- Phillip Larson**

(2016) Minnesota Archeology Integrated Database (Minnesota Department of Transportation) - **\$140,805, PI – Dr. Ronald Schirmer, Co-PI – Phillip Larson**

(2015) Minnesota Archeology Integrated Database (Minnesota Department of Transportation) - **\$257,068, PI – Dr. Ronald Schirmer, Co-PI – Phillip Larson**

(2015) Faculty Research Grant (MSU) - **\$4,900** - Cosmogenic Nuclide Dating of basin sediment cores, Arizona. (**PI - Phillip Larson**)

(2015) Minnesota DNR - Invasive Carp/Minnesota River Geomorphology Project - **\$424,928** – Geomorphic/Riparian analysis of the Minnesota River and floodplain change history. (**Project Director and PI - Phillip Larson**, Co-PI – Dr. Patrick Belmont (Utah State), Co-PI – MSU Water Resources Center).

(2014) Minnesota Archeology Integrated Database (Minnesota Department of Transportation) - **\$256,972. PI – Dr. Ronald Schirmer, Co-PI – Phillip Larson, Co-PI – Chad Wittkop**

(2014) School of Social and Behavior Sciences Special Funding (MSU) - **\$3,000** - Cosmogenic Nuclide Dating in the Salt and Verde River Valley, AZ (**PI - Phillip Larson**)

(2014) Faculty Improvement Grant (MSU)- **\$2,500** - Professional development - Optical Stimulating Luminescence at Utah State University (**PI- Phillip Larson**)

(2014) Faculty Research Grant (MSU)- **\$5,000** - Optical Stimulated Luminescence dating of fluvial terraces and aeolian dunes in the Chippewa River Valley, WI (**PI - Phillip Larson**).

(2011) Mathew G. Bailey Scholarship Award (ASU) - **~\$800** - Field work on the Salt and Verde River Valleys. (**PI - Phillip Larson**)

**GRADUATE STUDENTS SUPERVISED** (committee chair unless otherwise noted)

<b>Student - Thesis research chair/advisor unless otherwise noted</b>	<b>Undergraduate Institution</b>	<b>Thesis Research</b>	<b>Year Graduated</b>	<b>Current Position</b>
Carson A. Smith	Gustavus Adolphus (Geology)	Floodplain Inundation Mapping: An Evaluation of Geospatial Tools on the Minnesota River, MN.	2013 - 2016 (Geography)	<a href="#">Amec Foster Wheeler</a>
Andrew Brown (Chair – Ron	Minnesota State University (Anthropology)	MAID – Minnesota Archeological Integrated Database	2014 – 2016 (Anthropology)	MAID (MNDOT) as

Schirmer, (Anthropology)				content expert/specialist. EARTH Systems Laboratory Technology Director
Devon Libby	Minnesota State University (Geography)	Assessing Historical Planform Channel Change in an Altered Watershed with Quantification of Error and Uncertainty Present in a GIS/Aerial Photograph-based Analysis; Case Study: Minnesota River, Minnesota, USA.	2014 – 2018 (Geography)	<del>Intern, Minnesota DNR</del> Houston Engineering <a href="#">Sentera</a>
Vinson Williams	Minnesota State University (Geography)	A Geospatial Approach to Assessing I/I in Wastewater Infrastructure: Case Study of Minneapolis/St Paul, MN.	2015 – 2017 (Geography)	<a href="#">Barr Engineering</a>
Zach Hilgendorf	University of Wisconsin-Eau Claire (Geography)	The Efficacy of Best Management Practices on Peak Discharge and Contaminant Loads in Agricultural Drainage Systems, Blue Earth River Watershed, South-Central Minnesota, USA.	2015 - 2018 (Geography)	PhD Student - Arizona State (Fall 2018)
Melissa Oubre	Arizona State University (Geography)	Predicting Invasive Carp Habitat Suitability in the Minnesota River Basin, Minnesota.	2015 - 2018 (Biology)	PhD Student - Bowling Green (Fall, 2018)
Jason Millett	Minnesota State University (Geography)	Cliff-Top Dunes in the Lower Chippewa River Valley of West-Central Wisconsin	2017 - 2019 (Geography)	<a href="#">National Geospatial Intelligence Agency</a>

Kira Kuehl	University of Wisconsin-Eau Claire (Geography)	Non-thesis (APP) Single-Grain Optical Stimulated Luminescence Dating at Cambria Pit, Minnesota River Valley, Minnesota, USA	2017 - 2020 (Geography)	<a href="#">Continental Mapping Consultants, LLC</a>
Melissa Kohout/Swanson	Minnesota State University (Earth Science)	Mass Wasting Investigation and Assessment in the Midwest: Case Study of the Minnesota River Valley, New Ulm to St. Peter, Minnesota, USA	2017 - 2019 (Geography)	<a href="#">Sentera</a>
Ricky Mataitis	University of Wisconsin-Eau Claire (Geology)	Distribution, Geomorphology and Significance of Sand Stringers in west-central Wisconsin and southern Minnesota, USA.	2018 - 2020 (Geography)	<a href="#">Magee Geophysical Services</a> (Reno, NV)
Luke Burds (Chair – Ron Schirmer, Anthropology)	University of Wisconsin-Eau Claire (Geography)	The Kiwanis Site: A Multi-Method Geophysical Approach to Investigating Mound Features	2018 – 2021 (Anthropology)	<a href="#">Arcadis</a>
Alec Anton (Chair - Ron Schirmer, Anthropology)	Oops...	A Survey of and Site Treatment Plan for the Belle Creek Mounds Archeological Site, 21GD0072, in Goodhue County, Minnesota	2018-2021 (Anthropology)	Employed
Kenzie Shandonay (Chair – Mark Bowen, Geography)	University of Wisconsin-Oshkosh (Geography)	Aeolian Sand Stringers in the Upper Midwest, USA: Morphology, Stratigraphy, and Paleoenvironmental Significance.	2019-2021 (Geography)	PhD Student - Arizona State (Fall 2021)
Owen Lott (Co-Chair with Bryce Hoppie - Geology)	Minnesota State University (Earth Science)	TBD	2019-Current (Geography)	M.S. Student-MNSU
Shanti Penprase (Chair - Andrew Wickert, University of Minnesota)	Carleton College (Geology)	TBD	Current (Earth and Environmental Sciences)	PhD Student - University of Minnesota

Nilay Iscen (Chair - Andrew Wickert, University of Minnesota)	Middle East Technical University (M.S., B.S.) Virginia Polytechnic Institute and State University (M.S.)	TBD	Current (Earth and Environmental Sciences)	PhD Student - University of Minnesota
Jimmy Wood (Co-advising with Andrew Wickert, University of Minnesota)	University of Nebraska-Omaha	TBD	Current (Earth and Environmental Sciences)	M.S. Student – University of Minnesota
<b><u>2022-2023</u></b> <b><u>Prospectives:</u></b> Hunter Delikowski (UW-Eau Claire) Abi Fischer (UW-Eau Claire) Ashanie Long-Read (Univ of the West Indies, Jamaica) Charlie Steward (Univ of Utah)				