## Earl H. and Sandra Weaver

The Weaver Lecture Series in Forestry is made possible through an endowed gift from Earl H. and Sandra H. Weaver of Brewton, Alabama. Dr. and Mrs. Weaver have long been interested in both Auburn University and in forestry. Their gift brings these two interests together in a program that benefits both faculty and students. The Weavers maintain their interest in Auburn University and in forestry by active participation in the Auburn University Alumni Association, where Dr. Weaver is past president, and through management of family-owned timberlands in Alabama and Mississippi. Dr. Weaver is also the past president of the Auburn University Foundation. Auburn University and the School of Forestry and Wildlife Sciences greatly appreciate the Weavers' generosity and support for the Weaver Lectures.

AUBURN UNIVERSITY

SCHOOL OF FORESTRY AND WILDLIFE SCIENCES

# *Weaver Lecture Series*

## Smart Bots in the Woods, or how small sensors, big data, and AI will change your outdoor career, and life


Paul Bolstad, PhD

*Department of Forest Resources, University of Minnesota*


*Friday, March 2, 2018*

*3:30 p.m.*

SPONSORED BY THE EARL H. AND SANDRA WEAVER ENDOWMENT

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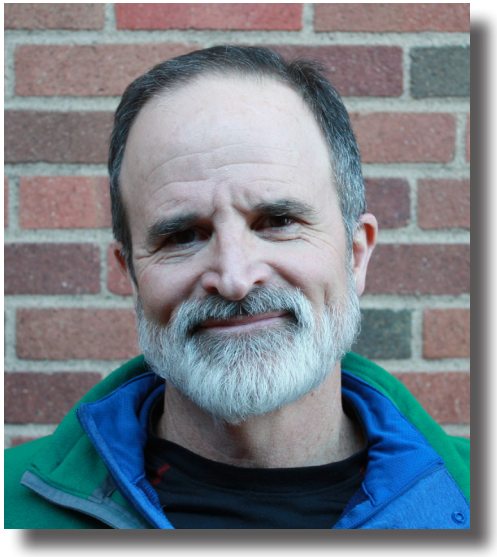
# Paul Bolstad

Dr. Paul V. Bolstad is a Professor of ecosystem ecology and geographic information science in the Department of Forest Resources, University of Minnesota. Dr. Bolstad has had a distinguished career in research, publishing over 100 peer-reviewed articles including two in the Proceedings of the National Academy of Sciences. His work has been cited over 10,000 times according to Google Scholar. He has been a PI or Co-PI on grants totaling more than $24 million from a wide variety of sponsors including NSF, NASA, DOE and USDA to name a few. His textbook, GIS Fundamentals, a First Text on Geographic Information Systems, has sold over 100,000 copies to over 450 universities, on five continents and in over 30 countries. He was a Fulbright Scholar in South Africa and Plenary/Keynote Speaker at the French Academic Association of Geography national meeting in 2010. He has received Best Paper Awards from the Journal of Geophysical Research, Landscape Ecology, and Photogrammetric Engineering and Remote Sensing.

# Abstract

We are accelerating up the S curve of a technological revolution, with a convergence of positioning, communication, robotics, and artificial intelligence technologies bound to change most aspects of daily life over the next 30 years. Machines will follow us, carrying heavy loads over rough terrain, and they'll be self-aware in their environments, reasoning while performing complex, delicate tasks. We'll be able to easily and cheaply scan every tree, shrub, and rock, and have near-instant access to vast sums of knowledge everywhere, including last year's scan, so that we can measure growth, death, or damage to every tree in the woods. We'll be able to build virtual, three-dimensional worlds to recreate reality, or paste virtual reality on to real-world objects. While the greatest impacts will be in urban environments, these changes will reach every corner of the developed world, transforming our lives.

Knowledge in a few key fields will help us navigate this new future. Life will be better for those that can shift from relative to absolute positions, turn two dimensional data into three dimensional information, understand small reach LiDAR, possess a working knowledge of relational data models, and master the basics of programming. Anyone interested in knowing, enjoying, protecting or profiting from the natural world would be well served by learning some or all of these.



# PROGRAM

## Welcome and Introduction
*Dr. Larry Teeter*

## Weaver Lecture
*"Smart Bots in the Woods, or how small sensors, big data, and AI will change your outdoor career, and life"*

## Presentation of Weaver Lecture Award
*Dr. Graeme Lockaby*

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