

12th Biennial Conference on University Education in Natural Resources
Stephen F. Austin State University, Nacogdoches, Texas
March 8-10, 2018

Friday, March 9, 2018, AM

Individual paper

3D Printing Of Land Surface Model For Undergraduate Teaching And Research

Yanli Zhang, Daniel Unger, I-Kuai Hung, and David L. Kulhavy

Stephen F. Austin State University

Use of 3D printing technology for digital surface modeling.

Closing The Loop On Assessment - Modifying Courses To Ensure Proper Scaffolding Of Core Competencies

Edward F. Loewenstein

Auburn University; School of Forestry and Wildlife Sciences

Curriculum assessment may not be sufficiently fine grain to identify all of the academic holes in a program. Faculty discussions to identify common problems and solutions are necessary. We must scaffold complex skills and abstract concepts that students need if they are to build professional competency.

Connecting Environmental Worldviews, Justice, And The Humanities To Diversity Efforts

Sativa Cruz, Michael Paul Nelson, Ana Spalding, and Ivan Arismendi

Oregon State University

We will discuss the importance of environmental worldviews as they relate to nondominant narratives about broadening participation of underrepresented groups in environmental and natural resource related fields. Our research will also highlight the potential role of the arts and humanities in efforts to increase diversity.

Efforts To Increase Achievement Of Student Learning Goals In Communication In Natural Resources Degree Programs

Andrew J. Storer and Terry L. Sharik

Michigan Technological University

Discussion with students enrolled in natural resource programs at Michigan Tech identified gaps not being filled adequately by existing classes. A new class taught by a team of nine faculty members was incorporated into the curriculum with for elevating student communications skills as they prepare to enter the workforce.

Engaging Students Online: Development Of A Non-traditional Online Course In Maple Syrup Management And Culture Increases Interdisciplinary Undergraduate Enrollment In A Natural Resource Academic Program

Tara L. Bal

Michigan Technological University

A one-credit, online, blended learning course with a hand-on field day was developed in maple syrup management and culture in 2015. The course has significantly increased interdisciplinary enrollment from students outside of the natural resource unit, highlighting a demand for engaging and flexible course offerings that can be used as recruiting tools.

Experiences Of Teaching A Hybrid Silviculture Course

Thomas J. Dean

Louisiana State University, School of Renewable Natural Resources

A silviculture course was taught as a flipped course where students study the course material between meetings and work on problem sets during classes. Challenges include creating contents that students can learn on their own, developing in-class problems, and creating incentive to learn the material.

Forest Education Competency Analysis Of Recent Graduates: Interview Results From The U.S. Participation In The Global Outlook On Forest Education Project

Tara L. Bal, Dalia Abbas, Terry L. Sharik, Andrew J. Storer, Mika Rekola
Michigan Technological University

A collaboration with the joint IUFRO-IFSA task force on education, this project collected data and stories about recent forestry and natural resource graduate's professional careers, examining skills and competencies that differentiated successes from non-successes.

Global Outlook On Forest Education (GOFE) - Preliminary Results

M. Rekola, D. Abbas, T. Bal, J. Burns, M. Lackner, S. Rodriguez, and T. Sharik
Department of Forest Sciences, University of Helsinki

The Global Outlook on Forest Education (GOFE) study examined using the Behavioral Event Interview (BEI) method for identifying recent forest science graduates' competencies in working life. Leadership and management, human interactions, and communication were emphasized by respondents as important threshold and differentiating competencies, whereas forest subject-specific competencies were not.

Green Mountain State Park: A Simulation For Teaching Park Management Techniques

Michael G. Huffman
University of Memphis

The use of a simulation to teach park management strategies to undergraduate students is presented along with a description of the development of the simulation based on a real park management plan. In addition, student learning outcomes and student evaluations of their learning experiences are discussed.

Inter-institutional Variation In Forestry And Related Natural Resources Programs In The US In Relation To Diversity Perception On Program Websites

Tara L. Bal and Terry L. Sharik
Michigan Technological University

Web sites of colleges with N.R. programs were examined to determine if differences observed in enrollments in race/ethnicity and gender could be explained by the images and text of these websites. Website content likely plays a minor role in enrollment, though there is significant under-representation of minorities and women.

Student Perceptions And Achievement In A First Year Natural Resources Class

Dean F. Stauffer, Jennifer H. Culhane, Kyrille Goldbeck-DeBose, and Donald J. Orth
Dept of Fish and Wildlife Conservation, Virginia Tech

We report on the results of evaluating students across 5 cohorts in a First Year Experience course in Natural Resources. Students made gains in information literacy, and their overall perceptions of the class were positive, with most agreeing that the class helped prepare them for subsequent courses and activities.

Student And Instructor Generated Open Educational Resources Compare Favorably To A Traditional Textbook

Jeremy Stovall, Shelby Laird, Lana Welford, and Allie Williams
Stephen F. Austin State University

A chapter from a well-respected traditional textbook was compared with student and instructor generated open educational resources (OER) using a knowledge assessment and preference survey in two forestry courses. Both resources led to similar knowledge gains and student preference ratings, indicating that this OER resource is an effective learning tool.

Teaching Communications In Forestry: How Are We Doing?

Pat Stephens Williams

Stephen F. Austin State University

How accredited programs are meeting the SAF Communications requirement? Where we were, where we are now, and how some programs are utilizing innovative practices.

The Development And Implementation Of A Professional Master's Degree For Natural Resource Agency Employees

Chris Luecke and Melanie Conrad

Utah State University

We will describe the development and implementation of an on-line masters degree designed for professionals working in natural resource agencies. The degree became successful when a consortium of universities collaborated on degree offerings. Lessons and pitfalls will be discussed.

The Role Of Accreditation In Natural Resource Programs

Andrew J. Storer, Terry L. Sharik, and Tara L. Bal

Michigan Technological University

This presentation will discuss the value of SAF accreditation of programs in forestry and in Natural Resources and Ecosystem Management by considering the range of knowledge, skills and abilities expected of students graduating from these programs.

Friday, March 9, 2018, PM

Individual paper

An Engagement Tool In Community Planning And Design

Frans Padt

Pennsylvania State University

An Engagement Tool was developed to test student understanding, attitude, and learning regarding engaged scholarship in community planning and design. The results indicate insufficient understanding of engagement and a one-sided expert attitude, but a potential for learning. A dissemination strategy was developed to enhance Penn State's Engaged Scholarship Initiatives.

Celebrating 20 Years Of Outdoor Environmental Education For Pre-service Teachers At SFASU

John Boyette, Cheryl Boyette, Alan Sowards, and Elyce Rodewald

Texas A&M Forest Service

This talk will describe the long running, successful program, Bugs, Bees, Butterflies, and Blossoms that has been enriching SFA pre-service teachers' training in unique and effective ways. We will present personal stories of some of the participants and how this program has benefited them.

Connecting Center Directors To Undergraduate Courses To Engage Students In Local, Real World Natural Resource Management

Laurie Gharis

UWSP Wisconsin Center for Environmental Education

This presentation demonstrates specific opportunities and activities to connect undergraduate students to on-going strategic planning, human resource management, conflict resolution, and budget development conducted by local center directors. Linking students to on-site center directors enhances students' confidence and effectiveness by providing opportunities to assess real world programs and challenges.

Engaging Animal Science Students Through Alternative Learning Methods

E.G. Brown, C. B. Biles, W. E. Lang, E. C. Payne, and S. Laird

Stephen F. Austin State University

Service and experiential learning projects, Breakfast on the Farm, artificial insemination clinic, and Purple Premium Cattle Sale, were incorporated into animal science courses at Stephen F. Austin State University. They have caused students to rate their course experiences higher, retains more course material, and encouraged students to become more active within the community.

Factors That Influence Minority And Urban Student Interest In Natural Resource Careers

Bianca Moreno, Martha Monroe, and Chelsey Crandall

University of Florida

Results from a survey conducted at the University of Florida revealed key considerations for recruiting and retaining females, urban and non-white students. This session explores the factors that led to students' interest in the environment, why they chose to enroll, and how they feel about the program.

Impacts OF A Two Day Intensive 'Root Camp' On Sense Of Belonging And Student Retention

Shelby Gull Laird, John Kidd, Brandy Bishop, and Matthew McBroom

Stephen F. Austin State University

This presentation will discuss ongoing research on retention interventions over the past two years at SFA, focused on retaining freshmen and incoming transfer students.

Integrating Drones Within A Natural Resource Curriculum At Stephen F. Austin State University

Daniel Unger, David Kulhavy, I-Kuai Hung, and Yanli Zhang

Stephen F. Austin State University

At Stephen F. Austin State University researchers are integrating UASs into undergraduate education in senior level spatial science courses via multiple hands-on research projects to assess the ability of a UAS to quantify forest resources in a more accurate and timely manner than in situ assessments.

Integrating Experiential Learning And Student Research Across An Environmental Science Curriculum Using A Comprehensive, Campus-based Forest Management Plan

Emma Witt, Catherine Tredick, George Zimmermann, and Tait Chirenje

Stockton University

This presentation highlights the experiences of faculty using an active forest management area in environmental science courses. Examples of experiential learning activities, assessment methods, and student portfolios will be included in the presentation.

Promoting Sustainable Living Among College Students: Key Programming Components

Brooklynn J. Wynveen, Andrew R. Meyer, and Christopher J. Wynveen

Sam Houston State University

In this presentation, we describe a formative experiment conducted to promote sustainable living within a large community in Texas' specifically interventions conducted among local college students. We detail methods used for data collection and analysis, outcomes obtained, and key programming components identified for interventions promoting sustainable living among college students.

Strengthening Science Communication And Data Visualization Education In Graduate Students: NAU's Science Communication Certificate

Andrew Sánchez Meador and Peter Friederici

School of Forestry, Northern Arizona University

This presentation provides a broad overview of Northern Arizona University's new 15-credit graduate certificate in Science Communication, which includes a Data Metaphors and Visualization course developed and taught in NAU's Forest Science program. We present motivations, lessons learned, and future direction.

Undergraduate Enrollment Trends In Natural Resources And Environmental Degree Programs In The U.S. With An Emphasis On Diversity: An Update

T. L. Sharik and T. L. Bal

Michigan Technological University

Undergraduate enrollment trends in natural resource (NR) programs of U.S. show Forestry decreased from 50% in 1980 to now 16%. Those fastest growing since 2005 are Fisheries and Wildlife, NR Conservation and Management, and Environmental Science and Studies. Female increases steadily now constitutes 45%. Minority increases more rapidly than Non-Hispanic Caucasian, while remains among the lowest of all higher education study areas.

Using Freewriting As A Learning Tool

Stephen C. Grado

Department of Forestry, Mississippi State University

Since 1995, I teach forest recreation management course for two majors with a term paper requirement. In Fall 2017, I dropped the term paper assignment and replaced it with five Freewriting assignments for the same amount of credit. Writing exercises were introduced as an instructional tool to enhance student learning.

Workshop

PollinatorLIVE! PollinatorLIVE! Bee, Bats Moths, Birds, Flies And Beetles! PollinatorLIVE

David Kulhavy, Miki Lynn Fryar, and Charles Jones

Stephen F. Austin State University

This proposal is for the Friday evening presentation as an interactive presentation of PollinatorLIVE!, a song by David Kulhavy, Miki Lynn Fryar and Charles Jones. The song was presented as a national video with the PollinatorLIVE! program and is used each semester in teaching an interactive insect-disease class as part of the communication presentation. This will be an audience participation workshop with music, dance and interactive learning.

Remember, It's A Conversation: Creating Meaningful Connections In An Instagram World

Tosha Jupiter and Rob Novak

Warner College of Natural Resources, Colorado State University

Over the last year, Warner College of Natural Resources more than doubled its Instagram following and significantly increased audience engagement. We'll share our ideas about why this happened and offer tips to help natural resources educators create conversations in an Instagram world.

Revitalizing Natural Resources Core Curriculum: Rubric-based Assessment And Collaborative Design

Margaret Burke, Allan Strong, Walter Poleman, and Alexander Yin

Rubenstein School of Environment and Natural Resources

This workshop will provide an overview of a curriculum revitalization process, curriculum mapping efforts, assessment (design, implementation, & findings), collaborative approaches, challenges, and recommendations revealed through RSENR's intensive, multi-year revitalization and assessment efforts. An overview of resources and processes utilized will be dedicated to facilitated discussion and Q&A.

The Growth & Success Of A Perennial Cost-shared Internship Program

Anna Smiles-Becker

Rubenstein School of Environment & Natural Resources, University of Vermont

Eager, professional and skilled students working with organizations, companies and agencies finding solutions for critical environmental issues could there be a better match? Learn about the Rubenstein Perennial Internship Program, a successful cost-shared summer internship program.

Saturday, March 10, 2018, AM

Individual paper

College Professors' Perceptions On Entrepreneurship Competence

Sandra Rodriguez-Piñeros, José Carlos Martínez, Liz Villarrag-Flórez

Universidad Autonoma de Chihuahua

Forestry education is facing challenges due to rapid social and environmental changes. Traditional forestry education has been criticized for being timber harvesting oriented while there are other sectors in which foresters could perform well. We are using Q methodology to investigate subjective opinions about entrepreneurship competence, 35 forestry professors around Mexico participate in the study.

Curriculum Modification For Student Success And Retention

Michelle Maller

Oregon State University Department of Wood Science and Engineering

The presentation would outline the steps the Wood Science and Engineering Department took to overhaul the curriculum and the learning and departmental objectives that were established to accompany the new curriculum. Also highlighted would be the use of departmental mentors and recruitment strategies that are different than the norm.

Education As A Driver of Change in U.S. Forests and the Forest Sector

T. L. Sharik, A. J. Storer, T. L. Bal and D. Abbas

Michigan Technological University and American University

Education as a driver of change in U.S. forests over the next two decades was examined in relation to a knowledge-creation society powered by information and communication technologies enabling life-long learning with more attention on the environment and better integration of the ecological, social, and economic dimensions of sustainability.

Examining Representation Of Race, Gender, And Environmental Worldviews On Advisory Boards For University Natural Resources Programs

Lucia Hadella, Michael P. Nelson, and Ivan Arismendi

Oregon State University

We observe an overall lack of diversity in race, gender, and representation of environmental worldviews on advisory boards for prominent natural resource programs at universities in the U.S. in our preliminary investigation, which serves as a point of self-reflection for programs looking to increase minority enrollment and address environmental challenges.

Improving Information Literacy In Natural Resource Policy Students' Position Statement Projects

James P. Shepard and Patricia Hartman

Auburn University

We describe a multi-year collaboration between a faculty member and a librarian to improve information literacy performance by natural resource policy student teams assigned to research and create a position statement about a controversial issue. We designed information literacy exercises and sessions and evaluated performance over multiple semesters.

Natural Resources Without Borders

Shelby Laird, Becky Weems, and Sarah Fuller

Stephen F. Austin State University

The need of a mission group for technical assistance in gardening, farming, and forestry led to a unique partnership between a university and a NGO mission organization working in Haiti. This led to multiple lessons in service learning, cultural competency, and community engagement for university students and their professor.

Population Estimation And Typology Of Undergraduate Research Experience Programs In Natural Resources

John B. Kidd, John R. Seiler, and John F. Munsell

Virginia Tech; Stephen F. Austin State University

This presentation includes dissertation research on the size and structures of undergraduate research experience programs in natural resources disciplines. We present an estimated population size derived from respondent-driven sampling and capture-recapture methods and a typology of programs based on cluster analysis of survey data collected from program coordinators.

Recruitment And Retention Efforts At University And College Levels In Times Of Declining Enrollment With Support From Private Gifted Funds To Facilitate Sustainability

Thomas DeLuca, Elizabeth Dodson, and John Goodburn

University of Montana, Franke College of Forestry & Conservation

The W.A. Franke College of Forestry & Conservation has sharpened its focus on Recruitment and Retention efforts, particularly given enrollment declines in recent years. Associated reductions in state support challenge new investments in recruitment and retention, with some support for recruitment scholarships and retention fellowships available at the College level.

Summer Undergraduate Research Internships On Dendroclimatology: Successes And Lessons Learned

Carolyn A. Copenheaver and Ketia L. Shumaker

Virginia Tech

Undergraduate summer research internships provide opportunity for students to participate in dendroclimatology research project and decide upon an appropriate career pathway.

Urban Forestry 2020: Insights Into Professionalism, Higher Education, And Career Advancement

P. Eric Wiseman, Keith O'Herrin, Greg Dahle, Susan Day, Joe Sullivan, and Joel Koci

Virginia Tech, Dept. of Forest Resources and Environmental Conservation

Urban Forestry 2020 is a multi-institution project funded by the U.S. Forest Service aimed at understanding the urban forestry profession and uncovering strategies to advance the profession. In this presentation, we will summarize the findings of our national research and discuss its implications for urban forestry higher education.

Workshop

Multicultural Scholars Program: Interdisciplinary Training In Research And Leadership For A Sustainable Future

Marie Veau-Fagnant and Flore Costume

Rubenstein School of Environment and Natural Resources, University of Vermont

The Multicultural Scholars Program (MSP) at the Rubenstein School of Environment and Natural Resources, University of Vermont has supported over 40 students from groups that have been historically underrepresented in natural resource programs. Presenters will share the history, design, successes, and challenges of this program including completion of the grant, implementation, and outcomes. With a large focus on experiential learning and professional development, we will also share our experiences with internship, research, and study abroad with our Scholars.

Poster

Accuracy Comparison Between Unsupervised Land Cover Classifications Using Landsat 8 and Landsat 7 Imagery

Cheryl Scott, Brandon McBride, Daniel Unger, David Kulhavy, I-Kuai Hung, and Yanli Zhang

Stephen F. Austin State University

Accuracy assessment of land cover map products using the increased radiometric resolution of Landsat 8 data.

Colorado State University's SUPER Program: Transforming Undergraduate Research Training

Stacy J. Lynn

Colorado State University

This poster presents the Skills for Undergraduate Participation in Ecological Research program. This program is offered by Colorado State University, and combines coursework in foundational skills of ecological research success, with research experience with a paired mentor.

Creating Community Awareness Through An Advocacy Service Learning Project

Courtney Biles, Erin Brown, Shelby Laird, Stephanie Jones, and Emily Payne

Stephen F. Austin State University

"Breakfast on the Farm" is an experiential and service learning project aimed at increasing agricultural awareness within the Nacogdoches community and at improving the learning experience of students enrolled in the beef cattle course.

Data Processing To Create Tangible Terrain Models

Jordan L Scarborough, Will G Russell, Yanli Zhang, I-Kuai Hung, Daniel Unger, and David Kulhavy

Stephen F. Austin State University

Details the process of rendering and printing 3D terrain.

Landscape Ecology Change In Surface Area Of Lake Mead From 1985 To Present, Clark County, Nevada

Emily Clontz, David Kulhavy, Daniel Unger, I-Kuai Hung, and Yanli Zhang

Stephen F. Austin State University

Use of Landsat imagery to identify change in surface area of Lake Mead over time.

Linking Extension, Research And Undergraduate/Graduate Education: A Perspective From Wood Products

Chris Knowles and Scott Leavengood

Oregon State University

This poster will present two case examples of linking extension, research and undergraduate/graduate education in the field of wood products.

Pollinators Of The World In Art, Science, Poetry, Language And Exhibition

David Kulhavy and Charles Jones

Stephen F. Austin State University

A fine press book of Pollinators of the World by Charles Jones, master printer with the La Nana Creek Press and David Kulhavy, Forestry, will integrate art, science, poetry, language and an exhibition for creation of a celebration of the pollinators and the plants they pollinate. The influence of art on natural resource education will be presented as a method of communication. Critical essays and poetry will enhance the learning experience with the collection of the art and science.

Transforming Undergraduate Students: International Research Experience In East Africa

Stacy J. Lynn

Colorado State University

This poster describes an international research program which is hosted by Colorado State University, and which takes five student fellows per year to East Africa to perform interdisciplinary student-driven research projects at the intersection of social and ecological sciences.

UM's Bandy Ranch: Utilizing A Neglected Property As An Ideal Classroom For Capstone Course Projects And Student

Dodson, Elizabeth, M and Goodburn, John, M

University of Montana

Students of University of Montana were directly involved in management decisions at a ranch of the university. It includes designing road networks, improving fish passage, building bridges, and conducting inventory and management planning. Further, students were pivotal in the development of a major "Forests in Focus" grant proposal.

Using iNaturalist To Learn More About Vertebrates

Christopher Schalk

Stephen F. Austin State University

iNaturalist (<http://inaturalist.org>), a website that allows users to submit species observations, was used as part of a digital specimen collection assignment in a Vertebrate Natural History course.

Volunteered Geographic Information: Engaging Students Through Crowd Sourcing

I-Kuai Hung, Reid Viegut, Rachel Murray, Dave Kulhavy, Dan Unger, and Yanli Zhang

Stephen F. Austin State University

Students of a geographic information system (GIS) course were instructed to collect field data using their smartphones with an app that was connected to an online database. The product is an interactive web map highlighting the disc golf course of a city park in Nacogdoches, Texas.