APPENDIX A:

The following pages are the CVs for our Environmental Dynamics Program core courses. The faculty are:

Stephen K. Boss

Song Feng

Amelia Villaseñor

Benjamin R. Vining

CURRICULUM VITA – STEPHEN K. BOSS, PHD, PG, ISSP-SA

POSITIONS:

2002-2015: Director, Environmental Dynamics Program, U. of Arkansas, Fayetteville, AR 72701

2010-2015: Director, Sustainability Academic Programs, U. of Arkansas, Fayetteville, AR 72701

2010-present: Professor, Dept. of Geosciences, University of Arkansas, Fayetteville, AR 72701

2002-2010: Assoc. Professor, Dept. of Geosciences, University of Arkansas, Fayetteville, AR 72701

1996-2002: Asst. Professor, Dept. of Geosciences, University of Arkansas, Fayetteville, AR 72701

EDUCATION:

University of North Carolina, Chapel Hill, NC, Ph. D., Marine Sciences	1994
Utah State University, Logan, UT, M.S., Geology	1985
Bemidji State University, Bemidji, MN, B.S., *Magna Cum Laude*, Geology	1981

GENERAL RESEARCH INTERESTS:

I have strong moral and research interests in the broad area of natural resource conservation, natural resource dynamics (abundance, availability, access to, and allocation of natural resources) and sustainability. In these areas, I am particularly interested in application of systems dynamics principles to sustainability and explanation of sustainability as an emergent property of the human-environment system, reorganization of global society toward more sustainable orientations, and development of meaningful sustainability metrics. These ideals led me to leadership positions as Director of the Environmental Dynamics doctoral program (2002-2015) and Director of Sustainability Academic Programs (2010-2015) at the University of Arkansas.

I am currently engaged in scholarship on gun violence at U.S. colleges and universities and published "Guns and College Homicide: The Case to Prohibit Firearms on Campus" in 2019. My planned future endeavors include books examining sustainability from global perspectives: a book documenting human use of natural resources to be titled "The Mass Balance of Humanity", and a book on the energy output of world agriculture to be titled "Counting Calories: A Systems Perspective of Global Agriculture".

I also am strongly committed to long-term cultural change in geosciences toward eliminating barriers to inclusion for people underrepresented in the discipline. Toward this end, I was a member of the Geological Society of America Diversity Committee and have been an active advocate for broadening participation in geosciences for nearly 20 years.

ONGOING RESEARCH PROJECTS:

1. Analysis and synthesis of gun violence and other homicides on college campuses nationwide;
2. Documentation of natural resource abundance, historic consumption, and projections of future use to determine the mass balance of materials used by global civilization;

3. Development of the Human Natural Resource Endowment (HNRE), a metric showing the per capita allocation of natural resources for humanity.
4. Development of the Index of Natural Resource Inequality (INRI), an index documenting the inequitable allocation of natural resources among nations;
5. A 30-year analysis of the Demotechnic Index of Nations;
6. Determining the energy budget of global agriculture;
7. Improving diversity and broadening participation in science, technology, engineering, and mathematics (STEM) disciplines and the 21st Century workforce.

Research effort 1 is a personal passion to prevent proliferation of lethal weapons on college campuses nationally and advocate for evidence-based policies prohibiting proliferation of lethal weapons across society. Research efforts 2 - 6 are research directions related to my interest in development of tangible sustainability metrics and greater understanding of the abundance, availability, access to, and allocation of natural resources for humanity. Research effort 7 is a personal commitment that has received funding support from federal agencies (NASA, NSF) during my tenure at the University of Arkansas.

POST-DOCTORAL RESEARCH:

Sand resource evaluation of the insular continental shelf, Outer Banks, North Carolina: Research sponsored by North Carolina Department of Transportation/North Carolina State University, Raleigh, NC

DOCTORAL DISSERTATION:

Boss, S.K., 1994, Early sequence evolution on carbonate platforms: An actualistic model from northern Great Bahama Bank: University of North Carolina, Chapel Hill, NC, 714pp.

MASTER'S THESIS:

Boss, S.K., 1985, Parameters controlling sediment composition of modern and Pleistocene Jamaican Reefs: Utah State University, 101 p.

GRANTS IN SUPPORT OF RESEARCH:

2019: National Science Foundation: "Supplement to IUSE-Geopaths IMPACT: Professional Development Pathways to Diversifying Geosciences"
$69,739 (pending)

2019: University of Arkansas Chancellor's Innovation and Collaboration Fund: "Reducing Food Waste and Food Insecurity through Increased Global Access to Broken Rice"
$110,931 (Co-PI)

2019: University of Arkansas Chancellor's Innovation and Collaboration Fund: "How to Make Sense of Climate Change: Understanding Climate Change Risk Perceptions and Crafting Climate Changes Stories in Arkansas" (Co-PI)
$104,660

2019: National Science Foundation: "NSF CoPe Conference: Symposium on Far-Field Effects of Sea-Level Rise"
$99,973

2019: National Science Foundation: "Engaging All Geoscience Disciplines at the National Association of Black Geoscientists Annual Conference"
$49,347

2018; National Science Foundation: Broadening Geosciences Disciplines at the National Association of Black Geoscientists Annual Technical Conference.
$38,000

2018: National Science Foundation: "IUSE-Geopaths IMPACT: Professional Development Pathways to Diversifying Geosciences"
$349,801
(Principal Investigator)

2017: National Science Foundation: "Expanding HBCU Participation at the National Association of Black Geoscientists Annual Technical Conference".
$49,800
(Principal Investigator)

2016: National Science Foundation: "Unity of Purpose for Equitable Representation in Geosciences".
$32,037
(Co-Principal Investigator)

2016: National Science Foundation: "4th AASHE Workshop on Research For Sustainability: Symposium on Research Opportunities in the Food, Energy, Water Systems Nexus"
$15,000
(Principal Investigator)

2016: National Science Foundation: "Broadening Employment Skills to Enhance Diversity of the Geoscience Workforce During the National Association of Black Geoscientists Annual Conference"
$35,000
(Principal Investigator)

2015: National Science Foundation: "IUSE-Geopaths IMPACT: Professional Development Pathways to Diversifying Geosciences" (Principal Investigator)
$414,352 (declined)
(Principal Investigator)

2014: National Science Foundation: "Broadening Participation in the National Geoscience Workforce: The National Association of Black Geoscientists Technical Conference 2014" (Principal Investigator)
$50,000

2012: National Science Foundation: "Expanding the Geoscience Workforce through the Annual Technical Conference of the National Association of Black Geologists and Geophysicists (Principal Investigator)
$40,000

2011: Fulbright College of Arts & Sciences: "Salvaging a newly discovered dinosaur trackway from southwest Arkansas, USA" (Principal Investigator)
$10,000 (Matching funds to NSF award below)

2011: University of Arkansas Office of Research & Economic Development: "Salvaging a newly discovered dinosaur trackway from southwest Arkansas, USA" (Principal Investigator)
$10,000 (Matching funds to NSF award below)

2011: National Science Foundation: “Salvaging a newly discovered dinosaur trackway from southwest Arkansas, USA” (Principal Investigator)
$10,000

2010: National Science Foundation: “Supplemental Participant Support for the Annual Technical Conference of the National Association of Black Geologists and Geophysicists, 8-11 September 2010” (Principal Investigator)
$5,000

2009: National Science Foundation: “Participant Support for the Annual Technical Conference of the National Association of Black Geologists and Geophysicists, 9-12 September 2009” (Principal Investigator)
$36,345

2008: National Science Foundation: “SGER – Sampling the recent 100-year flood layer in SE Arkansas” (co-Principal Investigator with S. Hausmann and R. Bhattacharya)
$37,694

2008: U. of Arkansas Facilities Management: “The Institutional Demotechnic Index:: A Comparison of Technological Energy Consumption at U.S. Colleges and Universities” (Principal Investigator)
$73,522

2007: United States Geological Survey: "Spatial and historical distribution of Geosmin and MIB producers in Beaver Reservoir, northwest Arkansas " (co-Principal Investigator with S. Hausmann)
$25,423

2007: United States Geological Survey: "Identifying the source and mechanisms of taste and odor compounds at the Beaver Lake, Northwest Arkansas." (co-Principal Investigator with S. Hausmann)
$24,000

2006: Baum Teaching Grant, University of Arkansas: “Using a Subscription Plagiarism Detection Service to Improve Student Writing Across the Geosciences Curriculum” (Principal Investigator)
$600.

2006: University of Arkansas Honors College, “Honors-ENDY Research Mentoring Experiences for Students (HERMES)” (Principal Investigator)
$150,000

2006: University of Arkansas Honors College, “Environmental Quality of Watershed Ecosystems – An Honors Colloquium” (Co-Principal Investigator with A. Brown, M. Savin, B. Haggard)
$20,686

2006: United States Geological Survey: “Sediment Characterization in Three Coves - Beaver Reservoir, Arkansas” (Principal Investigator)
$16,900

2005: Fulbright College of Arts & Sciences, U. of Arkansas: “An Historic and Bathymetric Study of Lake Sequoyah, Washington County, Arkansas” (Principal Investigator)
$10,662

2005: Environmental Protection Agency Greater Research Opportunities Program: "GRO: Comparative Assessment of Environmental Impacts of Sedimentation in Three Coves, Beaver Reservoir, Benton County, Arkansas" (Principal Investigator with Mr. Jason Patton, ENDY program)
$111,000

2004: National Parks Science Scholar Program, Canon Foundation: "Processes of Shoreline Change at Yellowstone Lake: Interplay of Tectonics, Sediment Supply, and Lake Level" Fellowship application for graduate student pursuing doctoral degree (Advisor for Ms. B.E. Pickup)
$78,000

2004: National Aeronautics and Space Administration NOVA Program: "NOVA Chautauqua 2005: Continuing Dissemination of a Successful NOVA Program" (Principal Investigator with Dr. Caroline Beller, Oklahoma State U., and Ms. Lynne Hehr, Director, Center for Math and Science Education) $26,935

2004: National Park Service Research Permit Application: "Shoreline Processes at Yellowstone Lake: Interplay of Tectonics, Lake Level, and Sediment Supply" (Principal Investigator) National Park Service Research Permit Application: "Shoreline Processes at Yellowstone Lake: Interplay of Tectonics, Lake Level, and Sediment Supply" (Principal Investigator; NOTE: This proposal did not include research funding, it was strictly a proposal to acquire a research permit. The initial permitting process at Yellowstone National Park is quite rigorous; this proposal was approximately 70 pages)

2004: Beaver Water District: "Comparative Investigation of Sedimentation Patterns in Three Coves, Beaver Lake, Northwest Arkansas" (Principal Investigator)
$25,536

2004: Lake Fayetteville Watershed Partnership: "Bathymetry, Sedimentation History, Sediment & Water Chemistry of Lake Fayetteville, Fayetteville, Arkansas" (Principal Investigator with Dr. M.A. Nelson, Arkansas Water Resources Center)
$8,421

2003: Beaver Water District: "Upper Beaver Reservoir Bathymetry and Sedimentation Survey" (Principal Investigator)
$75,994

2002: National Aeronautics and Space Administration NOVA Program: "NOVA Chautauqua: Disseminating a Successful NOVA Program" (Principal Investigator with Dr. Caroline Beller, Dept. of Curriculum & Instruction, and Ms. Lynne Hehr, Director, Center for Math and Science Education)
$29,985

2002: Fulbright College of Arts & Sciences, "Side-scan sonar reconnaissance of sunken cultural resources in the Arkansas River, Fort Smith and Van Buren, Arkansas"
$1,272

2002: SILO Undergraduate Research Fund, "Oxygen cycling in Lake Shepherd Springs, Crawford County, Arkansas"
$1,947

2000: Fort Smith Utilities Department, Fort Smith, Arkansas: "Comparative Limnology of Lake Shepherd Springs and Lee Creek Reservoir, Northwest Arkansas" (Principal Investigator)
$72,361

2000: National Aeronautics and Space Administration NOVA Program: "Earth Systems Science for Middle-Level Education Majors" (Principal Investigator with Dr. Caroline Beller, Dept. of Curiculum & Instruction, and Ms. Lynne Hehr, Director, Center for Math and Science Education)
$17,000

2000: United States Geological Survey EDMAP Program: "Geology of Fayetteville and West Fork Quadrangles, Washington County, Northwestern Arkansas" (Principal Investigator with W.L. Manger) $11,000.

2000. U.S. Minerals Management Service/North Carolina Geological Survey: "Geologic Framework Derived from High-Resolution Seismic Data Offshore Oregon Inlet to Kill Devil Hills, NC" (Principal Investigator)
$8,377

1999: City of Alma, Arkansas: "Bathymetry and Sediment Thickness of Alma Reservoir" (Principal Investigator, cooperative research with McClelland Engineering, Inc., Fayetteville, AR)
$4,074

1999: Fort Smith Utilities Department, Fort Smith Arkansas: "Bathymetry and Sediment Thickness of Lake Fort Smith, Arkansas" (Principal Investigator)
$5,564

1998: North Carolina Geological Survey/North Carolina Department of Transportation: "Determination of Sand Resources, Northern Outer Banks (Oregon Inlet to Hatteras Inlet)" (Principal Investigator) $87,028

1998: United States Minerals Management Service: "Seafloor Characterization offshore North Carolina Outer Banks - Oregon Inlet to Kitty Hawk" (Principal Investigator with Mr. Bill Hoffman, North Carolina Geological Survey)
$10,000

1998: American Society of Engineering Education - Office of Naval Research Summer Faculty Research Fellowship: "Geology of the Seafloor of Onslow Bay, North Carolina" (Principal Investigator with Dr. K. Zaiger, Naval Facilities Engineering Service Center, Port Hueneme, California)
$12,500

1998: United States Geological Survey EDMAP Program: "Geology of War Eagle Quadrangle, NW Arkansas" and "Imo & Witt Springs Formations: Middle Carboniferous Lithostratigraphy of Northern Arkansas" (Principal Investigator with W.L. Manger)
$15,000

1998: Fulbright College of Arts & Sciences Research Incentive Grant, University of Arkansas: "Geologic Record of Flood Dynamics on the Red River of the North, USA-Canada" (Principal Investigator) $2,000.

1998: Charles & Nadine Baum Teaching Grant Program, University of Arkansas: “Ozark Hall ‘Eyes on Science’ Initiative” (Principal Investigator)
$1000

1997: United States Geological Survey Water Resources Division: “Development of Methodologies to Document Controlling Influences Affecting Surface-Water and Ground-Water Interaction in Mantled Karst Terranes” (Principal Investigator with J.V. Brahana)
$23,650

1997: United States Minerals Management Service & North Carolina Geological Survey: “Digital Image Archive of High-Resolution Seismic Profile Data Offshore of the North Carolina Outer Banks” (Principal Investigator)
$18,700

1997: Charles & Nadine Baum Teaching Grant Program, University of Arkansas: “Developing a ‘Virtual Geology’ Curriculum for ‘Everyman’ at the University of Arkansas” (Principal Investigator with Dr. Walter Manger)
$3,755

1992: National Science Foundation: "Sedimentologic, ecologic and geologic impacts of Hurricane 'Andrew' on northern Great Bahama Bank" (Supplement to OCE-90-18220; Co-Principal Investigator with Dr. A.C. Neumann)
$16,963

1992: NOAA National Underwater Research Program: "Factors controlling the origin of submarine topography on Great Bahama Bank: Investigating the transition from carbonate ramp to rimmed platform" (Co-Principal Investigator with Dr. A.C. Neumann)
$45,880

1991: National Science Foundation: "Carbonate Ramp Deposition in the Northern Bahamas: An Actualistic Approach" (Co-Principal Investigator with Dr. A.C. Neumann and Dr. K.A. Rasmussen)
$141,000

ADMINISTRATIVE EXPERIENCE:

2002-2015: Director, Environmental Dynamics Program, University of Arkansas.

2010-2015: Director, Sustainability Academic Programs, University of Arkansas.

2009-2015: University of Arkansas Representative to the National Council for Science and the Environment.

2009-2015: University of Arkansas Representative to the Council of Environmental Deans and Directors.

2002-present: University of Arkansas Patent & Copyright Committee.

2019: National Science Foundation Coastlines and People (CoPe) Synthesis Group

2019: Executive Committee Member-at-Large, Arkansas AFL-CIO

2019: Convener, 7th Symposium on Research in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Spokane, WA.

2018-present: Secretary-Treasurer, American Federation of State, County, and Municipal Employees (AFSCME) Local 965, public employees union of Arkansas.

2018-2020: Panelist, American Chemical Society Board Standing Committee on the Petroleum Research Fund.
2018: Convener, 6th Symposium on Research in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Pittsburgh, PA
2017: Co-Convener and Co-Session Chair, Building an Inclusive Geoscience Community Today for Tomorrow, Geological Society of America Annual Meeting, Seattle, WA.
2017: Co-Convener, Unity of Purpose for Equitable Representation, National Science Foundation workshop on broadening participation across geosciences, Arlington, VA.
2017: Convener, 5th Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), San Antonio, TX
2017: Convener and Session Chair, Fostering Communities of Deliberate Inclusion in Geosciences, Geological Society of America South-Central Section Meeting, San Antonio, TX
2016: Convener, 4th Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Baltimore, MD.
2015-present: Member, Geological Society of America Diversity Committee.
2015: Faculty Advisor, Registered Student Organization "Recyclebacks", University of Arkansas.
2015: International Society of Sustainability Professionals Scheme Committee.
2015: International Society of Sustainability Professionals Certified Sustainability Professional (ISSP-CSP) Applicant Review Committee.
2015-present: Development Committee, National Association of Black Geoscientists.
2015-present: Advisory Board, National Association of Black Geoscientists.
2015: International Education Advisory Committee, University of Arkansas, Fayetteville.
2015-2018 Fulbright College of Arts & Sciences Personnel Committee.
2015: Search Committee, Director of Office for Sustainability, University of Arkansas.
2015: Convener, 3rd Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Minneapolis, MN.
2015: Convener, Symposium on Research in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Minneapolis, MN.
2015: Convener, Symposium on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Minneapolis, MN.
2015: Co-Convener, Workshop on Energy, Economy, and Environment, National Council for Society and the Environment Annual Conference, Washington, DC.
2014-present: University of Arkansas Sturgis Graduate Fellowship Review Committee.
2014: Convener, 2nd Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Portland, OR.
2014: Co-Leader, Energy & Environment Working Group, appointed by Vice Provost for Research & Economic Development, University of Arkansas.
2014: Chair, Natural Systems Working Group, University of Arkansas Sustainability Council.
2013: Search Committee, Tenure-track faculty position in Sedimentology-Stratigraphy, Department of Geosciences, University of Arkansas.

2013: Convener, 1st Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), Nashville, TN.
2013: Meeting Chair, South-Central Section of the Geological Society of America.
2012: Chair, Search Committee for tenure-track faculty position in Physical Geography-Dendrochronology-Climatology, Department of Geosciences, University of Arkansas.
2012-present: Founding Member and Administrator, Arkansans Against Guns on Campus, state-wide grassroots organization opposed to permitting lethal weapons on college campuses in Arkansas and nationally.
2012: Chair, Committee to develop BS degree in Sustainability, appointed by Provost and Vice Chancellor for Academic Affairs.
2011-2015: Chair, Academic Programs Working Group, University of Arkansas Sustainability Council.
2011: Sciences Representative, Committee to develop BS degree in Interdisciplinary Studies, appointed by Dean of Fulbright College of Arts & Sciences.
2010-2014: Member, Applied Sustainability Center Advisory Board, Walton College of Business, University of Arkansas.
2010: Chair, Arkansas State Board of Registration for Professional Geologists, state licensing board.
2010: Committee Member, Review and Rewrite Academic Honesty Policy, University of Arkansas; appointed by Provost and Vice Chancellor for Academic Affairs.
2010: Chair, Search Committee, tenure track faculty position Quantitative Hydrology, Department of Geosciences, University of Arkansas.
2010: Chair, Search Committee tenure-track faculty position in Geochemistry/Biogeochemistry, Department of Geosciences, University of Arkansas.
2010: Appointed by Dean of Fulbright College of Arts & Sciences to draft white-paper outlining Departmental Diversity Plans for the Fulbright College of Arts & Sciences.
2010-2015: Chair, Sustainability Curriculum Steering Committee, University of Arkansas.
2009-present: Faculty Advisor, University of Arkansas Student Chapter of National Association of Black Geoscientists.
2009-2010: Chair, Curriculum and Research Sub-Committee of University of Arkansas Sustainability Council.
2009: Vice-Chair, Arkansas State Board of Registration for Professional Geologists, state licensing board.
2009: Chair, Search Committee, tenure track faculty position in Sedimentology/Stratigraphy, Department of Geosciences, University of Arkansas.
2009: Natural Sciences Representative, Search Committee for Associate Dean of the Honors College, University of Arkansas.
2009-2010: Developed 3+2 Dual Degree programs in Geology-Chemistry and Geology-Mathematics in partnership with Fort Valley State University.
2008-2010: Vice-Chair of College Cabinet, Fulbright College of Arts & Sciences, University of Arkansas.
2008: Chair, Fulbright College of Arts & Sciences Fiscal Planning Committee, University of Arkansas.

2008: Academic Representative, Arkansas State Board of Registration for Professional Geologists, appointed by Governor Mike Beebe.
2008-2009: Geosciences Representative, Fulbright College of Arts & Sciences Dean Search Committee
2008-present: Personnel Committee, Department of Geosciences, University of Arkansas.
2007-2014: Management Board of the South-Central Section, Geological Society of America.
2007: Fulbright College of Arts & Sciences Fiscal Planning Committee, University of Arkansas.
2007: Search Committee, Executive Director of Sustainability, University of Arkansas.
2005: Search Committee Chair, Tenure-Track Faculty position in Paleoclimatology, Department of Geosciences, University of Arkansas.
2005-2009: Chair, Department of Geosciences Curriculum Committee; updated and revised Geology BS degree curriculum in 2006.
2004-present: University of Arkansas Patent & Copyright Committee.
2004: ENDY and GEOS representative on UA Louis Stokes-Louisiana Alliance for Minority Participation planning committee, University of Arkansas.
2003-2005: Doctoral Degree Committee, Department of Geosciences, University of Arkansas. Committee to develop proposal for Geosciences PhD program.
2002-2003: National Academies of Science, Committee on Environmental Information for Naval Use, study on applications of environmental information relevant to naval warfare.
2002-present: Interdisciplinary Program Directors Committee, University of Arkansas.
2002-2007: Lake Wedington Steering Committee, University of Arkansas. Five-year cooperative program with United States Forest Service to manage and operate Lake Wedington Recreation Area in the Wedington Unit of the Ozark National Forest.

ACADEMIC RECOGNITION:

2019: Appointed to NSF Coastlines and People (CoPe) Synthesis Group
2018: Cooperative Developmental Energy Service Award, Fort Valley State University.
2017: Appointed to American Chemical Society Board Standing Committee for the Petroleum Research Fund.
2015: Appointed to the Geological Society of America Diversity Committee to serve with others in directing diversity initiatives for the organization.
2015: Recognized by University of Arkansas Graduate School & International Education for 13 years of service as Director of interdisciplinary doctoral program in Environmental Dynamics.
2015: Appointed to Advisory Board of the National Association of Black Geoscientists.
2015: Recognized by National Association of Black Geoscientists for contributions to NABGG and promoting diversity in geosciences at 2015 Technical Conference, Houston, TX.
2014: Recognized by National Association of Black Geoscientists for contributions to NABGG and promoting diversity in geosciences at 2014 Technical Conference, Richland, WA.
2014: Recipient of Faculty Gold Award from the University of Arkansas for excellence in student mentoring.

2013: Recognized by National Association of Black Geoscientists for contributions to NABGG and promoting diversity in geosciences at 2013 Technical Conference, Houston, TX.
2013: Geophysics laboratory exercise 'Finding the MOHO' accepted into the On the Cutting Edge Exemplary Teaching Activity collection.
2012: Recognized by National Association of Black Geoscientists for contributions to NABGG and promoting diversity in geosciences at 2012 Technical Conference, Washington, DC.
2011: Selected Member of Fulbright College of Arts & Sciences contingent to visit Universidad Santa Maria La Antigua, Panama City, Panama, March 2011.
2010: Recognized by National Association of Black Geologists and Geophysicists for contributions to NABGG and promoting diversity in geosciences at 2010 Technical Conference, San Antonio, TX.
2009: Invited Speaker, University of Arkansas World Food Day Observance, 16 October 2009.
2009: Appointed to NSF Review Panel for HBCU-UP program Reverse Site Visits; Listen to presentations of HBCU-UP participant institutions, review performance of institutions, provide recommendations to NSF.
2009: Recognized by National Association of Black Geologists and Geophysicists as member 2009 Technical Conference Committee Team.
2008: Finalist for John and Lois Imhoff Award for Outstanding Teaching and Mentoring, Arkansas Teaching Academy, University of Arkansas, Fayetteville, AR
2007: Nominated for John and Lois Imhoff Award for Outstanding Teaching and Mentoring, Arkansas Teaching Academy, University of Arkansas, Fayetteville, AR
2007: Appointed to UA Sustainability Milestones Working Group, campus committee convened by Chancellor to oversee progress toward sustainability mandates of the University President's Climate Commitment (signed by UA February 2007).
2005: Selected by Vice-Provost for Research and Dean of Graduate School to attend NSF-sponsored workshop on Research Ethics at Indiana University, 12-14 May 2005.
2004: Named "Integrated Scholar" by Provost Robert Smith, University of Arkansas, Fayetteville, AR.
2004: NASA Opportunities for Visionary Academics Program designates Earth System Science Course "Exemplary".
2003-07: Appointed to Technical Review Panel, Lindbergh Foundation, Anoka, MN
2003: Museum of Science, Boston, MA featured research on Red River of the North in an exhibit describing innovative applications of the Global Positioning System (GPS).
2002: Promoted to Associate Professor, Department of Geosciences, University of Arkansas, Fayetteville.
2001-09: Appointed Associate Editor, Journal of Geoscience Education, official journal of the National Association of Geoscience Teachers.
2000: Preliminary nomination for the Webby Award ("The Oscars of the Internet") for Best Education Web Site from the International Academy of Digital Arts & Sciences.
1999: Nominated, Biggs Award for Excellence in Earth Science Teaching from the Geological Society of America.

1998: Summer Faculty Research Fellow, Office of Naval Research/American Society for Engineering Education
1996: Selected as member of Scientific Review Board, Bahamian Field Station, San Salvador, Bahamas.
1994-96: Post-Doctoral Research Assistant, Department of Marine, Earth, & Atmospheric Sciences, North Carolina State University, Raleigh, NC.
1993: Elected to Frank Porter Graham Society (in recognition of exceptional service to the university and community), University of North Carolina, Chapel Hill, NC.
1989-92: Graduate Traineeship, University of North Carolina, Chapel Hill, NC.
1989-90: Smith Graduate Research Award, University of North Carolina, Chapel Hill, NC.
1987-89: Graduate Assistantship, Dept. of Geological Sciences, University of Michigan, Ann Arbor, MI.
1982-83: Graduate Fellowship, College of Science, Utah State University, Logan, UT.
1981-82: Graduate Teaching Assistantship, Department of Geology, Utah State University, Logan, UT.
1980-81:Graduated Magna Cum Laude, Geology, Bemidji State University, Bemidji, MN.
1980-81: Alternate Student of the Year, Biology, Bemidji State University, Bemidji, MN.
1979-80: Alternate Student of the Year, Biology, Bemidji State University, Bemidji, MN.
1978-79: Lakehead Scholarship, Bemidji State University, Bemidji, MN.
1977-78: Faculty Scholarship, Bemidji State University, Bemidji, MN.

FIELD RESEARCH RELATED EXPERIENCE:

1. Principal Investigator, LIDAR acquisition and analysis of dinosaur trackways in southwestern Arkansas. (2011-2013)
2. Co-Principal Investigator, geophysical profiling and coring of oxbow lakes on the lower White River, Arkansas (summer 2008)
3. Chief Scientist, shore profile surveys of Yellowstone Lake, Yellowstone National Park, Wyoming (summer 2005-2007)
4. Chief Scientist, R/V *Ozark Explorer*, echo sounding and side-scan sonar survey of portions of Yellowstone Lake, Yellowstone National Park, Wyoming (summer 2004-2005)
5. Principal Investigator, Echo sounding surveys of cooling water reservoirs for nuclear power facilities in Texas (2007)
6. Principal Investigator, Echo sounding surveys of cooling water reservoirs for nuclear power facilities in South Carolina, Alabama, Mississippi (2007)
7. Chief Scientist, R/V *Ozark Traveler*, echo sounding surveys of Lake Sequoyah, northwest Arkansas.
8. Chief Scientist, R/V *Ozark Traveler* and R/V *Ozark Explorer*, echo sounding surveys of Beaver Reservoir, northwest Arkansas.
9. Chief Scientist, R/V *Ozark Explorer*, echo sounding and side-scan sonar survey of portions of Yellowstone Lake, Yellowstone National Park, Wyoming (summer 2004)
10. Chief Scientist, R/V *Ozark Traveler*, echo sounding survey of Lake Fayetteville, Fayetteville, Arkansas.
11. Chief Scientist, R/V *Petit Jean*, echo sounding survey of Carol Ann Cross Lake, Carol Ann Cross Park, Fort Smith, Arkansas.

12. Chief Scientist, R/V *Ozark Traveler*, echo sounding and side-scan sonar survey of upper Beaver Reservoir, northwest Arkansas.
13. Chief Scientist, R/V *Ozark Traveler*, side-scan sonar investigation of submerged cultural resources in Beaver Lake, northwest Arkansas.
14. Chief Scientist, R/V *Ozark Traveler*, side-scan sonar reconnaissance of water intake site in Beaver Lake for Beaver Water District, Lowell, AR.
15. Consultant, Santa Barbara Applied Research, Inc., development of a meteorological, climatological, and oceanographic summary for Ascension Island, South Atlantic Ocean, July-August 2001
16. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Lake Wedington, Arkansas.
17. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Lake Shepherd Springs, Arkansas.
18. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Lee Creek Reservoir, Arkansas.
19. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Lake Alma, Arkansas.
20. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Lake Fort Smith, Arkansas.
21. Chief Scientist, R/V *Ozark Traveler*, dual frequency echo sounder survey of bathymetry and sediment thickness, Prairie Creek sub-basin, Beaver Reservoir, Arkansas.
22. Co-Chief Scientist, R/V *New Horizon* cruise February 2000; Multibeam bathymetry, 3.5 kHz seismic reflection, and Deep Tow (side-scan sonar & 4 kHz sub-bottom profiling) survey of seafloor from San Clemente Island to mainland, Southern California Continental Borderland.
23. Co-Chief Scientist, R/V *New Horizon* cruise #OAOA-01-NH, Multibeam bathymetry, 3.5 kHz seismic reflection, and Deep Tow (side-scan sonar & 4 kHz sub-bottom profiling) survey of seafloor in the vicinity of San Clemente Island, Southern California Continental Borderland, 15 March – 7 April 1999.
24. Co-Chief Scientist, R/V *Cape Fear*, Chirp sonar, coring and other bottom sampling, dive operations to investigate Cenozoic stratigraphy, Onslow Bay, North Carolina, 31 July – 21 August 1998.
25. Co-Chief Scientist, R/V *New Horizon* cruise # NAVO9806, 3.5kHz survey and bottom sampling, Tanner and Cortes Banks, Southern California Continental Borderland, 15 – 20 June 1998.
26. Consultant, United States Navy, Geology & Stratigraphy of Onslow Bay, North Carolina, summer 1998 to present.
27. Consultant, Science Applications International Corporation (SAIC), Geology & Stratigraphy of Onslow Bay, North Carolina, 1997 - present.
28. Consultant, offshore sand resources of North Carolina, Minerals Management Service & North Carolina Geological Survey, February 1997 to present.
29. Shipboard Scientist, R/V *Sea Diver*, submersible vehicle operations on the platform-marginal escarpment, Lee Stocking Island, Bahamas, 1 September - 10 September 1996.

30. Chief Scientist, U.S. Army Vessel *Snell*, Vibracore survey of the insular continental shelf, North Carolina Outer Banks, 1 July - 30 August 1995.
31. Co-Chief Scientist, M/V *Seaward Explorer*, high-resolution seismic/side scan sonar survey, Leg 2, North Carolina Outer Banks (Cape Hatteras), 21 August - 31 August 1994
32. Co-Chief Scientist, M/V *Seaward Explorer*, high-resolution seismic/side scan sonar survey, Leg 1, North Carolina Outer Banks (Cape Hatteras), 17 July - 7 August 1994
33. Chief Scientist, R/V *Calanus* cruise # CA-9209, investigating sedimentologic and ecologic impacts of Hurricane "Andrew" (23 Aug 1992) on northern Great Bahama Bank, 17 October to 30 October 1992.
34. Chief Scientist, R/V *Bellows* cruise # BE-9207, rock drilling and submarine excavation studies on northern Great Bahama Bank, 12 July to 25 July 1992.
35. Chief Scientist, R/V *Calanus* cruise # CA-9122, high-resolution seismic profiling on northern Great Bahama Bank, 28 September to 4 October 1991.
36. Chief Scientist, R/V *Calanus* cruise # CA-9115, coring operations on northern Great Bahama Bank, 14 July to 28 July 1991.
37. Chief Scientist, R/V *Calanus* cruise # CA-9108, high-resolution seismic profiling and coring operations on northern Great Bahama Bank, 27 March to 9 April 1991.
38. Field Assistant to Dr. K.A. Rasmussen, Smithsonian Post-doctoral Fellow: Experimental study of bioerosion on carbonate substrates, Bimini, Bahamas, 1989.
39. Summer Employee, Shell Western Exploration and Production, Inc., Houston, TX: Field study of Permian-age carbonate reservoir, west Texas, 1989.
40. Reconnaissance survey of Cambrian limestones and dolostones in northern and western Utah, summer 1988
41. Research Assistant to Dr. W.D. Liddell, Utah State University, study of deep-reef ecology using a research submersible (Pisces II), Discovery Bay, Jamaica, summer 1987.
42. Temporary Consultant, Southland Royalty Company: Qualitative and quantitative X-ray diffraction analysis of mineralogy in well-cuttings of the Dakota Sandstone, 1983.
43. Research Assistant to Dr. W.D. Liddell and Dr. S.L. Ohlhorst, Utah State University: Study of fringing reef community ecology, Discovery Bay, Jamaica, 1982.
44. Research Assistant to Dr. S.L. Ohlhorst and Dr. W.D. Liddell, Utah State University: Study of zooplankton ecology, NOAA Hydrolab, St. Croix, U.S.V.I., 1982.
45. Field Assistant to Dr. David S. Chapman, University of Utah: Study of regional heat flow in southwest Yellowstone National Park, 1981.

TEACHING EXPERIENCE:

University of Arkansas - 1996 – present	Foundations of Sustainability	Professor
Professor	Applications of Sustainability	
	Capstone Project in Sustainability	
	General Geology	
	Geophysics	
	Earth System Science	
	Marine Geology	
	Oceanography	
	Environmental Dynamics	
	Tectonics	

East Carolina University - Spring, 1994 (Sabbatical Replacement)	Physical Geology Oceanography	Instructor
University of North Carolina - 1989-1993 Part Time	Oceanography The Marine Environment Geological Oceanography Modern Carbonate Deposition	Instructor Instructor Lab Instructor Lab Instructor
University of Michigan - 1987-1989 Part Time	Introduction to Physical Geology Geology of the National Parks Sedimentary Geology	Lab Instructor Lab Instructor Lab Instructor
Weber State College - 1985-1987 Part Time	Physical Geology Rocks, Minerals, Earth Materials Planet Earth: A Telecourse	Instructor Instructor Instructor
Utah State University - 1981-1987 Part Time	Introduction to Geology Introduction to Geology Earth History Invertebrate Paleontology	Instructor Lab Instructor Lab Instructor Lab Instructor

BOOK:

1. Boss, S.K., 2019, Guns and College Homicide: The Case to Prohibit Firearms on Campus: McFarland Publishers, Inc., Jefferson, NC, 260p.

REFEREED PUBLICATIONS:

2. Boss, S.K., 2008, Global warming, sea-level change, and coastal calamities: The future is here: Basins & Coasts News, v.2, p.2-5.
3. Boss, S.K. and Beller, C., 2006, Tune in, turn on, link up: Earth system science at the University of Arkansas: *Journal of Geoscience Education Special Issue: Music of the Spheres – Recent Advances in Earth System Science Education,* v.54, p.346-356.
4. Boss, S.K., 2000, Adventures in data analysis: The TAO array and the 1997-98 El Niño*: Mathematical Geology*, v.32, no.2, p.159-185.
5. Boss, S.K., 1996, Digital shaded relief image of a carbonate platform (northern Great Bahama Bank): Scenery seen and unseen: *Geology*, p.985-988.
6. Boss, S.K., 1991, Bahamian "whitings" as turbulent-flow phenomena: *Proceedings of the 5th Symposium on the Geology of the Bahamas*, San Salvador, p.23-35.
7. Boss, S.K., Hoffman, C.W., and Cooper, B., 2002, Influence of fluvial processes on the Quaternary geologic framework of the continental shelf, North Carolina, USA: *Marine Geology*, v.183, p.45-65.
8. Boss, S.K., Montana, Q. and Barnett, B, 2018, Global agriculture as an energy transfer system and the energy yield of world agriculture 1961- 2013: Journal of Environmental Progress and Sustainable Energy Special Section on the Food, Energy, Water Nexus, v.37, no.1, p.108-121. DOI: 10.1002/ep.12799. http://dx.doi.org/10.1002/ep.12799

9. Boss, S.K. and Neumann, A.C., 1995, Hurricane Andrew on northern Great Bahama Bank: Insights into storm behavior on shallow seas: *Journal of Coastal Research*, Special Issue # 18, p.24-48.
10. Boss, S.K. and Rasmussen, K.A., 1995a, Misuse of Fischer plots as sea-level curves: *Geology*, v.23, p.221-224.
11. Boss, S.K. and Rasmussen, K.A., 1995b, Misuse of Fischer plots as sea-level curves - Reply: *Geology*, v.23, p.1049-1050.
12. Boss, S.K. and Neumann, A.C., 1993, Impacts of Hurricane "Andrew" on carbonate platform environments, northern Great Bahama Bank: *Geology*, v.21, p.897-900.
13. Boss, S.K. and Neumann, A.C., 1993, Physical versus chemical processes of formation of Bahamian whitings: *Carbonates & Evaporites*, v.8, p.135-148.
14. Boss, S.K. and Wilkinson, B.H., 1991, Planktogenic/eustatic control on cratonic/oceanic carbonate accumulation: *Journal of Geology*, v.99, p.497-514.
15. Boss, S.K., and Liddell, W.D., 1987, Back reef and fore reef analogs in the Pleistocene of north Jamaica: Implications for facies recognition and sediment flux in fossil reefs: *Palaios*, v.2, p.219-228.
16. Boss, S.K. and Liddell, W.D., 1987, Patterns of sediment composition of Jamaican fringing reef facies: *Sedimentology*, v.34, p.77-87.
17. Dowell, J.C., Hutchinson, C., and Boss, S.K., 2005, Bedrock geology of Rogers quadrangle, Benton County, Arkansas: *Journal of the Arkansas Academy of Sciences*, v.59, p.56-64.
18. Hutchinson, C., Dowell, J.C., and Boss, S.K., 2005, Geologic map of Sonora quadrangle, Benton and Washington Counties, Arkansas: *Journal of the Arkansas Academy of Sciences*, v.59, p.101-109.
19. King, J.T., King, M.E., and Boss, S.K., 2002, Bedrock Geology of West Fork Quadrangle, Washington County, Arkansas: *Journal of the Arkansas Academy of Science*, v.56, p.75-90.
20. King, M.E., King, J.T., and Boss, S.K., 2001, Bedrock Geology of Fayetteville Quadrangle, Washington County, Arkansas: *Journal of the Arkansas Academy of Science*, v.55, p.86-96.
21. King, M.E., King, J.T., and Boss, S.K., 2001, Geologic hazards associated with shale strata and swelling clays within Fayetteville Quadrangle, Washington County, Arkansas: *Journal of the Arkansas Academy of Science*, v.55, p.97-103.
22. Liddell, W.D., Boss, S.K., Nelson, C.V. and Martin, R.E., 1988, Sedimentological and foraminiferal characterization of shelf and slope environments (1-300m), North Jamaica: *Proceedings of the 3rd Symposium on the Geology of the Bahamas*, San Salvador, Bahamas, p.91-98.
23. Liddell, W.D., Ohlhorst, S.L., and Boss, S.K., 1988, The significance of *Halimeda* as a space-occupier and sediment-producer, 1-750m, North Jamaica: *Proceedings of the 6th International Coral Reef Symposium*, Townsville, Australia.
24. Liddell, W.D., Ohlhorst, S.L. and Boss, S.K., 1984, Community patterns on the Jamaican fore reef (15-56m): *Paleontographica Americana*, No. 54, p.385-389.

25. Odhiambo, B.K., and Boss, S.K., 2006, Watershed Physiography, Land Use, and Sediment Yield: A Case Study from Northwest Arkansas: *Journal of Spatial Hydrology*, v.6, p.29-51
26. Odhiambo, B.K., and Boss, S.K., 2004, Integrated echo sounder, GIS and GPS for sedimentation studies in reservoirs: Examples from two Arkansas lakes: *Journal of the American Water Resources Association*, v.40, p.971-997
27. Olariu, C., Bhattacharya, J.P., Stern, R.J., Leybourne, M.I, Boss, S.K., 2011, Interplay between river discharge and topography of the basin floor in a hyperpycnal lacustrine delta: Sedimentology, v.59,p.704-728
28. Platt BF, Suarez CA, Boss SK, Williamson M, Cothren J, Kvamme JAC, 2018, LIDAR-based characterization and conservation of the first theropod dinosaur trackways from Arkansas, USA. PLoS ONE 13(1): e0190527. https://doi.org/10.1371/journal.pone.0190527
29. Polly, A.M. and Boss, S.K., 2003, Acoustic mapping of sediment and aquatic vegetation in lakes: An example from northwest Arkansas: *Journal of Arkansas Academy of Sciences* , v.57, p..
30. Shell, R. and Boss, S.K., 2013: Morphometric Analysis of Dinosaur Tracks from Southwest Arkansas; Journal of the Arkansas Academy of Sciences, v.67, p.121-130.
31. Sullivan, R.A. and Boss, S.K., 2002, Revised geology of War Eagle Quadrangle, Benton County, Arkansas: submitted to *Journal of the Arkansas Academy of Science*, v.56, p.176-189.
32. Vance, L. and Boss, S.K., 2012, The Campus Demotechnic Index - A comparison of technological energy consumption at U.S. colleges and universities: Environment, Development and Sustainability, v.14, p.111-134.

TECHNICAL REPORTS AND DATA PRODUCTS:

1. Boss, S.K., 2008, Report on the First Decade of the Environmental Dynamics Program: prepared for University of Arkansas Office of Assessment and Evaluation, 471pp.
2. Boss, S.K., 2007, Bathymetry and Volume Storage of lower Squaw Creek Reservoir, Hood and Somerville Counties, Texas: Final report prepared for Enercon Services, Inc., Oklahoma City, Oklahoma, USA, July 2007.
3. Boss, S.K., 2007, Bathymetry and Volume Storage of lower Lake Granbury, Hood County, Texas: Final report prepared for Enercon Services, Inc., Oklahoma City, Oklahoma, USA, July 2007.
4. Boss, S.K., 2007, Bathymetry of surface waters in proximity to three proposed nuclear power facilities: William States Lee III Nuclear Station (South Carolina), Bellefonte Nuclear Station (Alabama), Grand Gulf Nuclear Station (Mississippi): Final report prepared for Enercon Services, Inc., Oklahoma City, Oklahoma, USA, July 2007.
5. Boss, S.K. and Heil-Chapdelaine, V.M., 2005, Bathymetry, sediment thickness, and volume of Lake Sequoyah, Washington County, Arkansas: CD-ROM with GIS database.
6. Boss, S.K., and Garcia, T.M., 2004, Bathymetry, sediment thickness, and volume of Lake Fayetteville, Fayetteville, Arkansas: CD-ROM with GIS database to Lake Fayetteville Watershed Partnership and Arkansas Department of Environmental Quality.

7. Boss, S.K., Garcia, T.M., 2004, Bathymetry, sediment thickness, and volume of Lake Fayetteville, Fayetteville, Arkansas: Report to Lake Fayetteville Watershed Partnership and Arkansas Department of Environmental Quality.
8. Boss, S.K., 2004, Bathymetry and sediment thickness of Beaver Lake, northwest Arkansas: Final Report of Phase I to Beaver Water District, May 2004.
9. Boss, S.K., and Neely, D.G., 2003, Preliminary results of a dual frequency echo sounder survey of Beaver Lake, northwest Arkansas: Bathymetry, sediment thickness, sediment volume, and long-term storage: Interim report to Beaver Water District, December 2003.
10. Boss, S.K. and Neely, D.G., 2003, Bathymetric survey data for Beaver Lake, northwest Arkansas: 8 CD-ROM set containing 4.9GB of dual frequency echo sounder data acquired for the Beaver Water District, Summer 2003.
11. Boss, S.K., Neely, D.G., and Hoelscher, J.E., 2003, Side-scan sonar reconnaissance of Beaver Water District intake site, Beaver Lake, Benton County, Arkansas, January 2003.
12. Boss, S.K., 2001, Meteorological, climatological, and oceanographic summary for Ascension Island, South Atlantic Ocean: Technical report and data base compilation for Santa Barbara Applied Research, Inc. and the Naval Facilities Engineering Service Center, Pt. Hueneme, CA, August 2001.
13. Boss, S.K., 2001, Bathymetry and seafloor mapping of the ECSWTR and WCSWTR: Technical report and digital mapping (GIS) products prepared for Santa Barbara Applied Research, Inc. under contract to the Naval Facilities Engineering Service Center, Pt. Hueneme, CA, June 2001.
14. Boss, S.K., and Hoffman, C.W., 2001, Geologic framework derived from high-resolution seismic reflection, side-scan sonar, and vibracore data offshore Oregon Inlet to Duck, Dare County, North Carolina: Technical Report prepared for United States Minerals Management Service, February 2001, 46p.
15. Boss, S.K., and Odhiambo, B.K., 2000, Bathymetric survey data for Lee Creek Reservoir, Arkansas: CD-ROM prepared for City of Fort Smith Utilities Department, August 2000.
16. Boss, S.K., and Odhiambo, B.K., 2000, Bathymetric survey data for Lake Shepherd Springs, Arkansas: CD-ROM prepared for City of Fort Smith Utilities Department, August 2000.
17. Boss, S.K., Polly, A.M., and Odhiambo, B.K., 2000, Bathymetric survey data for Lake Wedington, Arkansas: CD-ROM prepared for U.S. Forest Service, Ozark National Forest, August 2000.
18. Boss, S.K., 1999, The geologic story of Miner's Rock: pamphlet prepared for the City of Eureka Springs, Arkansas Department of Parks.
19. Boss, S.K. and Brown, B.J., 1999, Bathymetric survey data for Lake Fort Smith, Arkansas: CD-ROM prepared for City of Fort Smith Utilities Department, August 1999.
20. Boss, S.K. and Brown, B.J., 1999, Bathymetric survey data for Lake Alma, Crawford County, Arkansas: Technical report prepared for McClelland Engineering, Inc. and City of Alma Water Department, July 1999, 10p.
21. Boss, S.K. and Brown, B.J., 1999, Bathymetry and sediment thickness of Lake Alma, Arkansas: CD-ROM prepared for McClelland Engineering, Inc. and City of Alma Water Department, July 1999.

22. Boss, S.K. and Hoffman, C.W., 2000, Sand resources of the North Carolina Outer Banks Final Report: prepared for Outer Banks Task Force and North Carolina Department of Transportation, February 2000.
23. Boss, S.K. and Hoffman, C.W., 1999, Sand resources of the North Carolina Outer Banks Interim Report IV: Assessment of Pea Island Study Area: prepared for Outer Banks Task Force and North Carolina Department of Transportation, November 1999
24. Boss, S.K. and Hoffman, C.W., 1999, Sand resources of the North Carolina Outer Banks Interim Report III: Assessment of Frisco-Ocracoke Study Area: prepared for Outer Banks Task Force and North Carolina Department of Transportation, August 1999.
25. Boss, S.K. and Hoffman, C.W., 1999, Sand resources of the North Carolina Outer Banks Interim Report II: Assessment of Buxton Study Area: prepared for Outer Banks Task Force and North Carolina Department of Transportation, May 1999.
26. Boss, S.K. and Hoffman, C.W., 1999, Sand resources of the North Carolina Outer Banks Interim Report I: Assessment of Diamond Shoals Study Area: prepared for Outer Banks Task Force and North Carolina Department of Transportation, February 1999.
27. Boss, S.K., 1998, Shallow Water Training Ranges: ECSWTR (Onslow Bay, July-August 1998), WCSWTR (Tanner Bank, June 1998) cruise images: CD-ROM with digital images of samples etc. prepared for Naval Facilities Engineering Service Center, October 1998.
28. Boss, S.K., 1998, West Coast Shallow Water Training Range (WCSWTR) 3.5kHz Data with navigation files and sampling station data: CD-ROM prepared for Naval Facilities Engineering Service Center, September 1998.
29. Boss, S.K., Hoffman, C.W., and Riggs, S.R., 1998, Interpretation of side-scan sonar records of a portion of the inner North Carolina continental shelf between Oregon Inlet and Kitty Hawk: Report to U.S. Minerals Management Service under Cooperative agreement 14-12-0001-30348, July 1998.
30. Boss, S.K., 1997, Report on vibracores and geologic conditions for the East Coast Shallow Water Training Range (ECSWTR) cable corridors, Onslow bay, North Carolina: report for Science Applications International Corporation (SAIC), December 1997.
31. Boss, S.K. and Hoffman, C.W., 1997, Digital image archive of high-resolution seismic profile data offshore the North Carolina Outer Banks: CD-ROM for North Carolina Geological Survey and U.S. Minerals Management Service, July 1997.
32. Boss, S.K., 1997, NC-12 sand resources study: Data inventory as of 28 June 1997: report to North Carolina State University, June 1997.
33. Boss, S.K., and Hoffman, C.W., 1997, Areas of potential sand resources in federal waters off the Outer Banks of North Carolina: Preliminary findings: Report to the U.S. Minerals Management Service, March 1997.
34. Sullivan, R.A., and Boss, S.K., 1999, Bedrock Geology of War Eagle Quadrangle, Benton County, Arkansas: 1:24,000-scale map produced for the U.S. Geological Survey and Arkansas Geological Commission.

PRESENTATIONS AND ABSTRACTS:

2019

1. Boss, S.K., Bear, T., Ellins, K., 2019, Effective networking at professional conferences: Professional Development Workshop for GSA On to The Future Program, Geological Society of America Joint Section Meeting, March 23-25, 2019, Manhattan, KS.
2. Boss, S.K., Bear, T., Ellins, K., 2019, Building social capital: Professional Development Workshop for GSA On to The Future Program, Geological Society of America Joint Section Meeting, March 23-25, 2019, Manhattan, KS.
3. Boss, S.K., 2019, History and future of the Human Natural Resource Endowment (HNRE) of Metals: Geological Society of America Annual Meeting, September 22-25, 20189, Phoenix, AZ, GSA Abstracts with Programs, v.51.
4. Hall, J. and Boss, S.K., 2019, The Human Natural Resource Endowment (HNRE) of non-metallic industrial minerals: Geological Society of America Annual Meeting, September 22-25, 20189, Phoenix, AZ, GSA Abstracts with Programs, v.51.
5. Boss, S.K. and Kvamme, J., 2019, NABG-UARK-NSF partnership: a decade in retrospect, a future in focus: Annual Technical Conference of the National Association of Black Geoscientists, 4-7 September 2019, Fayetteville, Arkansas, USA.

2018

1. Boss, S.K., 2018, Collegiate Homicides in the United States, 2011-2016: Rhetoric versus Data. International Association of College Law Enforcement Administrators Annual Conference, Rogers, AR, April 9-10, 2018.
2. Boss, S.K., 2018, Demography and the geoscience professions: Diffusion is not progress: Geological Society of America South-Central Section Meeting, March 13-14, 2018, Little Rock, AR, GSA Abstracts with Programs, v.50.
3. Boss, S.K., 2018, Occupational diversity and workforce diversity in the geosciences - who represents geoscience labor? Geological Society of America Annual Meeting, November 4-7, 2018, Indianapolis, IN, GSA Abstracts with Programs, v.50.
4. Boss, S.K., Bear, T., Ellins, K., 2018, OTF Workshop Personal Professional Pathway Mapping Project: Professional Development Workshop for GSA On to The Future Program, Geological Society of America Annual Meeting, November 3, 2018, Indianapolis, IN.
5. Boss, S.K., 2018, Impacts of global poverty on sustainable urban systems: 6th Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), 2-4 October 2018, Pittsburgh, PA.

2017

1. Boss, S.K., 2017, The energy yield of global fisheries and aquaculture 1950-2014, University of Arkansas, Department of Geosciences, March 10, 2017.
2. Boss, S.K., 2017, Micro-aggressions as barriers to inclusion, South-Central Section of the Geological Society of America Meeting, March 13-14, 2017, San Antonio, TX, GSA Abstracts with Programs, v.49.
3. Boss, S.K., 2017, Fostering Communities of Deliberate Inclusion in Geosciences, South-Central Section of the Geological Society of America Meeting, March 13-14, 2017, San Antonio, TX, GSA Abstracts with Programs, v.49.
4. Boss, S.K., 2017, Recognizing the culture of geology as a primary barrier to inclusion: Geological Society of America Annual Meeting, 22-25 October 2017, Seattle, WA, GSA Abstracts with Programs, v. 49.

5. Boss, S.K., The energy yield of global fisheries and aquaculture 1950-2014, 5th Annual Workshop on Research Methods in Sustainability, Association for the Advancement of Sustainability in Higher Education (AASHE), 15-18 October 2017, San Antonio, TX.

2016

1. Boss, S.K., 2016, The Human Natural Resource Endowment: A new measure of a fundamental human right: XXIst International Conference of the Society for Human Ecology (SHE), 12-15 April 2016, Santa Ana, CA.
2. Boss, S.K., 2016, The Human Natural Resource Endowment: Measuring a fundamental human right: Association for the Advancement of Sustainability in Higher Education Annual Conference and Expo, 9-12 October 2016, Baltimore, MD.
3. Solomon, E.D. and Boss, S.K., 2016, The mass flux of non-renewable energy resources through humanity: South-Central Section of the Geological Society of America Meeting, 21-22 March 2016, Baton Rouge, Louisiana, GSA Abstracts with Programs, v. 48.
4. Boss, S.K., 2016, Effective Networking: National Association of Black Geoscientists Annual Technical Conference, 8-10 September 2016, New Orleans, LA
5. Boss, S.K., 2016, The Human Natural Resource Endowment: Measuring a Fundamental Human Right, Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Baltimore, MD, 9-12 October 2016.
6. Boss, S.K., 2016, The energy output of global agriculture, 1961-2013, Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Baltimore, MD, 9-12 October 2016.
7. Barnett, B. and Boss, S.K., 2016, The energy output of global fisheries and aquaculture 1950-2014, Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Baltimore, MD, 9-12 October 2016.
8. Boss, 2016, Life Cycle Assessment (LCA): A critique, Western Connecticut State University, November 9, 2016, Danbury, CT.

2015

1. Boss, S.K., 2015, Tracking progress of underrepresented persons from education to employment: A case study: National Association of Black Geoscientists Annual Technical Conference, Houston, TX, 9-12 September 2015.
2. Montana, Q. and Boss, S.K., 2015, Caloric Output of Global Agriculture 1961-2012: Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Minneapolis, MN, 26-28 October 2015.
3. Moon, Z.K. and Boss, S.K., 2015, Student Perceptions of the Temporal Domain of Sustainability: Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Minneapolis, MN, 26-28 October 2015.
4. Shew, A. and Boss, S.K., 2015, A Multi-Decadal Appraisal of the Demotechnic Index: 1980-2012: Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Minneapolis, MN, 26-28 October 2015.
5. Boss, S.K., 2015, The Mass Balance of Humanity: Attempting A Global Inventory: Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo, Minneapolis, MN, 26-28 October 2015.
6. Boss, S.K. and Messadi, T., 2014, 3rd Annual Workshop on Research Methods for Sustainability: Focus on Assessment: 1-day workshop prepared and presented at the

Annual Conference and Expo of the Association for the Advancement of Sustainability in Higher Education, Minneapolis, MN, October 25, 2015.

7. Boss, S.K., 2015, Toward a mass balance for humanity: Geological Society of America Abstracts with Programs, Vol. 47.
8. Boss, S.K., 2015, The case for gun-safe colleges: Hendrix College, 5 February 2015, Conway, AR,
9. Boss, S.K., 2015, The case for gun-safe colleges: presentation to Moms Demand Action for Gun Sense in America, January 2015, Little Rock, AR.

2014

1. Boss, S.K., 2014, Effects of climate change in our region: Arkansas, Oklahoma and Missouri: Citizens Climate Lobby, Eureka Springs, AR, March 7, 2014.
2. Boss, S.K., 2014, Climate Change in Arkansas: Sustainable Communities Summit sponsored by the UA Applied Sustainability Center, University of Arkansas, Fayetteville, AR June 2014.
3. Boss, S.K. and Kvamme, J., 2014, Tracking progress of underrepresented persons from education to employment: A case study: Geological Society of America Abstracts with Programs, Vol. 46, , p.803.
4. Boss, S.K. and Messadi, T., 2014, 2nd Annual Workshop on Research Methods for Sustainability: 1-day workshop prepared and presented at the Annual Conference and Expo of the Association for the Advancement of Sustainability in Higher Education, Portland, October 26, 2014.

2013

1. Boss, S.K. and Kvamme, J., 2013, An innovative university-professional organization partnership broadening participation in geosciences: Geological Society of America Abstracts with Programs. Vol. 45, No. 7, p.282
2. Knobbe, T., Boss, S.K., and Messadi, T., 2013, Comparative Analysis of Fuel Source Consumption and Economic Costs of Razorback Transit Among Alternative Fuel Sources: Annual Conference and Expo of the Association for the Advancement of Sustainability in Education, Nashville, TN, 6-9 November 2013.
3. Shell, R. and Boss, S.K., 2013: Morphometric Analysis of Dinosaur Tracks from Southwest Arkansas, Little Rock, AR, April 4, 2013.
4. Suarez, C.A., Boss, S., Platt, B.F., Shell, R., Williamson, M. (2013) Preservation of large theropod and sauropod trackways from the Lower Cretaceous DeQueen Formation, Arkansas using LIDAR: Creating a virtual trackway lab for use in teaching introductory and upper division laboratories, Society of Vertebrate Paleontology Annual Meeting, Las Angeles, CA.
5. Boss, S.K., The Case For Gun Free Colleges: A Review of Homicide on College Campuses 2001-2012: Presentation to University of Arkansas chapter of Sigma Xi, The Scientific Research Society, December 13, 2013.
6. Boss, S.K. and Messadi, T., Research Methods for Sustainability: 1-day workshop prepared and presented at the Annual Conference and Expo of the Association for the Advancement of Sustainability in Higher Education, Nashville, TN, October 9, 2013.
7. Boss, S.K., Dinosaur Trackways in Arkansas: Osher Lifelong Learning Institute, June 2013

8. Boss, S.K., Dinosaur Trackways in Arkansas: University of Arkansas Alumni Association, Butterfield Trail Living Center
9. Boss, S.K., Dinosaur Trackways in Arkansas: Missouri State University Department of Geosciences Seminar, November 2013
10. Boss, S.K., Climate Change in Arkansas: Sustainable Communities Summit sponsored by the UA Applied Sustainability Center, University of Arkansas, Fayetteville, AR June 18, 2013
11. Boss, S.K., Climate Change in Arkansas: Sustainable Communities Summit sponsored by the UA Applied Sustainability Center, North Little Rock, AR October16, 2013

2012

1. Boss, S.K., Herds of Dinosaurs in Southern Arkansas, University of Arkansas Chapter of Sigma Xi, Fayetteville, AR, 16 November 2012
2. Boss, S.K., Salvage Survey of a dinosaur trackway site in southwest Arkansas, Fort Smith Geological Society, Fort Smith, AR, 13 November 2012.
3. Boss, S.K. Sustainability Curricula at the University of Arkansas-Fayetteville, Sustainable Communities Leadership Summit, Fayetteville, AR, 8 November 2012
4. Boss, S.K., In the Tracks of Arkansas Dinsoaurs, Osher Lifelong Learning Institute (OLLI), 31 October 2012.
5. Boss, S.K. A New Dinosaur Trackway in Southwest Arkansas, Oklahoma City Geological Society Discussion Group, Oklahoma City, 9 October 2012
6. Boss, S.K., Climate Change and the Oceans, Foreign Policy Association of Fayetteville Great Decisions Discussion Group, 5 March 2012.
7. Newhouse, M. A.; Walker, C. E.; Boss, S. K.; and Hennig, A.J., Mobilizing the GLOBE at Night Citizen-Scientist: Communicating Science: American Geophysical Union Fall Meeting, 3-7 December 2012, San Francisco, CA.
8. Newhouse, M. A.; Walker, C. E.; Boss, S. K.; and Hennig, A.J., Mobilizing the GLOBE at Night Citizen-Scientist: Communicating Science: A National Conference on Science Education and Public Outreach, Astronomical Society of the Pacific, 4-8 August 2012, Tucson, AZ.
9. Boss, S.K., Cothren, J., Suarez, C., Williamson, M. Platt, B.F., Kvamme J., Wide-field LIDAR imaging and online interactive measurement of a dinosaur trackway site from southwest Arkansas, USA: Geological Society of America Annual Meeting, 4-7 November 2012, Charlotte, NC, Geological Society of America Abstracts with Programs, v.44, p.404.
10. Boss, S.K. and Messadi, T., A multidisciplinary model for a new graduate certificate in sustainability at a land-grant university: Association for the Advancement of Sustainability in Higher Education (AASHE) Conference and Expo 2012, 10-14 October 2012, Los Angeles, CA.

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2. Boss, S.K., Messadi, T., Fitzpatrick, K., Popp, J.H., Benton, G.M., Gattis, C.S., Johnson, J., Matlock, M., Needy, K.L., and Pittman, H.M., An interdisciplinary undergraduate

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3. Boss, S.K., Kvamme, J., Suarez, C., Platt, B.F., Ludvigson, G.A., and Suarez, M., Salvage survey of an early Cretaceous dinosaur trackway site in Arkansas: Geological Society of America Abstracts with Programs, v.43, p. 264.
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5. Needy, K. L., Benton, G. M., Boss, S. K., Fitzpatrick, K. M., Gattis, C. S., Matlock, M. D., Messadi, T., Pittman, H., & Popp, J. S., On the development of a university-wide minor in sustainability at the University of Arkansas, Engineering Sustainability 2011, Pittsburgh, PA.

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5. Boss, S.K., Messadi, T., Fitzpatrick, K., and Gattis, C.S., A Multidisciplinary Model for an Undergraduate Minor in Sustainability: AASHE Conference and Expo, Denver, CO, October 10-12, 2010.
6. Winston, B.*, T.J Scott, S. Hausmann, R. Morgan, S. Boss, R. Davis, R. Green (2010) Influence of precipitation on algal taste and odor production at Beaver Reservoir, NWA, National Association of Black Geologists & Geophysicists (NABGG) Annual technology conference “Unearthing Future Geoscientists”, San Antonio September 8-11th 2010..
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the National Association of Black Geologists and Geophysicists, 9-12 Sep 2009, Fayetteville, AR.

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3. Boss, S.K., 2008b, A. Conrad Neumann and results of the Po' Boy Drilling Project, 1990-1994: Geological Society of America Annual Meeting Abstracts with Programs, v.40.
4. Boss, S.K., 2008c, Using Windows Movie Maker to illustrate Earth system processes in an introductory Earth System Science course: Geological Society of America Annual Meeting Abstracts with Programs, v.40.
5. Boss, S.K. and Blackstock, J., 2008, Enigmatic trace fossils and depositional setting of the Clifty formation (Devonian), northwest Arkansas: Geological Society of America Annual Meeting Abstracts with Programs, v.40.
6. Clary, Renee M., Boss, S.K., and Wandersee, J.W., 2008, Teacher Perceptions of an introduction to virtual field exercises in an online geology classroom: Geological Society of America Annual Meeting Abstracts with Programs, v.40.
7. Patton, J.A. and Boss, S.K., 2008, Geochemical characterization of Beaver Reservoir sediments containing Drinking Water Treatment Residuals: Geological Society of America Annual Meeting Abstracts with Programs, v.40.
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2. Boss, S.K., 2007, Arkansas Water in 2050: Wonderland or Wasteland?: Arkansas Water Resources Center Annual Conference, 24-25 April 2007, Fayetteville, AR.
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5. Patton, J.A. and Boss, S.K., 2007, Selected Trace and Major Element Concentrations of Beaver Lake Sediment Cores: Arkansas Water Resources Center Annual Conference, 24-25 April 2007, Fayetteville, AR.
6. Patton, J.A. and Boss, S.K., 2007, Differentiating Watershed-derived Sediments from a Drinking Water Treatment Residuals (DWTRs) Deposit: Geological Society of America Annual Meeting Abstracts with Programs, v.39.
7. Pickup, B.E. and Boss, S.K., 2007, An empirical model of shoreline Change at Yellowstone Lake, 1954-2002: Geological Society of America Annual Meeting Abstracts with Programs, v.39.

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2. Boss, S.K. and Patton, J.C., 2006, Sedimentation in Beaver Lake: An Ozark Mystery?: Arkansas Water Resources Center Annual Conference, 18 – 19 April 2006, University of Arkansas, Fayetteville, AR.
3. Dennis, J.C. and Boss, S.K., 2006, Geomorphic comparison of non-engineered and engineered shore segments, Yellowstone Lake, Yellowstone National Park, Wyoming: American Quaternary Association 19th Biennial Meeting., Bozeman, MT, 17-19 Aug 2006, p.86.
4. Dennis, J.C. and Boss, S.K., 2006, Geomorphology of non-engineered versus engineered shores of Yellowstone Lake, Yellowstone National Park: Geological Society of America Annual Meeting Abstracts with Programs, v.38.
5. Kurz, M.J., Patton, J.A., and Boss, S.K., 2006, Comparative geomorphic analysis of three sub-watersheds of Beaver Reservoir, northwest Arkansas: Geological Society of America Annual Meeting Abstracts with Programs, v.38.
6. Patton, J.C. and Boss, S.K., 2006, Fuision of disparate data sets in quantifying reservoir sedimentation: Geological Society of America Annual Meeting Abstracts with Programs, v.38.
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2. Boss, S.K., 2005b, Inquiry-based learning using Microsoft Movie Maker: NASA NOVA Annual Workshop, Marshall Spaceflight Center, Huntsville, AL, January 2005.
3. Boss, S.K., and Beller, C., 2005, A catalog of alternative conceptions of the tsunami of 26 December 2004: Arkansas Academy of Sciences 89th Annual Meeting, Hendrix College, Conway, AR, 8-9 April 2005.
4. Boss, S.K. and Dennis, J.C., 2005, Impacts of roadway engineering on the shore zone of Yellowstone Lake: 8th Biennial Scientific Conference on the Greater Yellowstone Ecosystem, Mammoth Hot Springs, Yellowstone National Park, Wyoming, 17-19 October 2005.
5. Boss, S.K. and Garcia, T.M., 2005, Historical bathymetry, sediment thickness, and sediment accumulation in Lake Fayetteville, Fayetteville, Arkansas: Arkansas Water Resources Center Annual Conference, Fayetteville, AR, April 2005.
6. Dennis, J.C. and Boss, S.K., 2005, Impacts of roadway engineering on the shore of Yellowstone Lake, Yellowstone National Park: *Geological Society of America Annual Meeting Abstracts with Programs,* v.37.
7. Heil-Chapdelaine, V.M. and Boss, S.K., 2005, Mapping landscape Change: An Historic and Bathymetric Study of Lake Sequoyah, Washington County, Arkansas: *Geological Society of America Annual Meeting Abstracts with Programs,* v.37.
8. Odell, M.I. and Boss, S.K., 2005, Integrated Curriculum: NASA NOVA Annual Workshop, Marshall Spaceflight Center, Huntsville, AL, January 2005.
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11. Pickup, B.E. and Boss, S.K., 2005b, Modeling shoreline change at West Thumb, Yellowstone Lake, Yellowstone National Park, USA, as a function of caldera dynamics and lake level variations: *Geological Society of America Annual Meeting Abstracts with Programs,* v.37.
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2. Boss, S.K., 2004, Geomorphic significance of lakeshore landforms of Yellowstone Lake, Yellowstone National Park, USA: *Geological Society of America Annual Meeting Abstracts with Programs,* v.36.
3. Boss, S.K., 2004, The voyage of the Ozark Explorer and the importance of expedition logistics: *Geological Society of America Annual Meeting Abstracts with Programs,* v.36.
4. Boss, S.K. and Garcia, T.M., 2004, Historical vs. geophysical sediment mapping in an urban reservoir: Lake Fayetteville, Fayetteville, Arkansas: 31st Annual Great Plains Limnology Conference, October 8-9 2004, Springfield MO.
5. Boss, S.K., Pickup, B.E., and Salem, M., 2004, Three-dimensional optical scanning to assess erosion of archaeological sites, Yellowstone National Park, U.S.A.: Plains Anthropological Society Annual Conference, Billings, MT, October 2004.
6. Dowell, J.C., Hutchinson, C.M., and Boss, S.K., 2004, Bedrock geology of Rogers quadrangle, Benton County, Arkansas: 88th Annual Mtg. of the Arkansas Academy of Sciences, Jonesboro, AR.
7. Hutchinson, C.M., Dowell, J.C., and Boss, S.K., 2004, Bedrock geology of Sonora quadrangle, Benton and Washington counties, Arkansas: 88th Annual Mtg. of the Arkansas Academy of Sciences, Jonesboro, AR.
8. Pickup, B.E. and Boss, S.K., 2004, Shoreline Dynamics of Yellowstone Lake: American Quaternary Association Annual Meeting, Lawrence, Kansas, June 2004.
9. Pickup, B.E., and Boss, S.K., 2004, A 50-year record of shoreline change at Yellowstone Lake, Yellowstone National Park, USA: *Geological Society of America Annual Meeting Abstracts with Programs,* v.36.
10. Garcia, T. and Boss, S.K., 2004, Combined historical mapping, acoustic surveying, GPS, and GIS to investigate sedimentation in an urban reservoir: *Geological Society of America Annual Meeting Abstracts with Programs,* v.36.

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2. Boss, S.K., 2003, Environmental Dynamics: A multi-disciplinary doctoral program to study human interactions in the Earth System: Annual Conference of the Western Association of Resource Recreation Professionals (WARRP), Sun Valley, ID, October 9-12, 2003.
3. Boss, S.K., Beller, C., Hehr, L., and Hehr, J.G., 2003, NOVA Chautauqua: Exciting college faculty with digital inquiry: *Geological Society of America Annual Meeting Abstracts with Programs,* v.35.
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5. Boss, S.K., Beller, C., Hehr, L., and Hehr, J.G., 2003, Earth System Science for Middle-Level Science Teachers 2003 Update: NASA NOVA Leadership Development Conference (Poster), Clear Lake, TX, February 2003.
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7. Neely, D.G. and Boss, S.K., 2003, Acoustic imaging of submerged topography and mass wasting features in Beaver Lake, northwest Arkansas: Arkansas Academy of Sciences 87th Annual Meeting, 4-5 April 2003, Fayetteville, AR.
8. Polly, A.M. and Boss, S.K., 2003, Acoustic mapping of sediment and aquatic vegetation in lakes: An example from northwest Arkansas: Arkansas Academy of Sciences 87th Annual Meeting, 4-5 April 2003, Fayetteville, AR.
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5. King, J.T, King, M.E., and Boss, S.K., 2002, Bedrock Geology of Westfork Quadrangle, Washington County, Arkansas: Annual Meeting of the Arkansas Academy of Science, April 2002.
6. Odhiambo, B.K., and Boss, S.K., 2002, Comparative limnologic evolution of Lee Creek Reservoir and Lake Shepherd Springs, Crawford County, Arkansas: *Geological Society of America Annual Meeting Abstracts with Programs*, v.34.
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8. Sullivan, R.A., and Boss, S.K., 2002, Revised Geology of War Eagle Quadrangle, Benton County, Arkansas: Annual Meeting of the Arkansas Academy of Science, April 2002.

DOCTORAL AND MASTER'S STUDENTS DIRECTED:

1. Barnes, Adam, 2006, Repeat bathymetric and sedimentation survey of Lake Wedington, Ozark National Forest, northwest Arkansas: M.A. Thesis, Department of Geosciences, University of Arkansas, 52p..

2. Brown, B.J., 2000, Bathymetry and sedimentation patterns of Lake Fort Smith, Arkansas utilizing dual frequency sonar: M.S. thesis, Department of Geosciences, University of Arkansas, 68p.
3. Dennis, J.C, 2012, Impact of hard stabilization on the shore of Yellowstone Lake, Yellowstone National Park, Wyoming, USA: PhD. Dissertation, Environmental Dynamics Program, University of Arkansas, Fayetteville, AR, 284p.
4. Dowell, C., 2004, Bedrock geology of Rogers quadrangle, Washington County, Arkansas: M.S. thesis, Department of Geosciences, University of Arkansas, 41p.
5. Fishel, D., Impacts of human recreation on water quality in Lake Wedington Recreation Area, Ozark National Forest, Arkansas: Ph.D. dissertation in Environmental Dynamics, Department of Geosciences, University of Arkansas (withdrew from program May 2004).
6. Floyd, B., 2009, Impact of Human Recreational Activity on Nitrogen in surface waters of Lake Wedington: M.S. Thesis, Department of Geosciences, University of Arkansas (defended, did not complete revisions).
7. Hansen, J., 1999, Bathymetry and empirical modeling of sedimentation in the Prairie Creek sub-basin of Beaver lake, northwest Arkansas: M.S. thesis, Department of Geosciences, University of Arkansas, 60p.
8. Hutchinson, C., 2004, Bedrock geology of Sonora quadrangle, Benton County, Arkansas: M.S. thesis, Department of Geosciences, University of Arkansas, 66p.
9. King, Jack, 2001, Bedrock Geology of West Fork Quadrangle, Washington County, Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, 137p.
10. King, Maria Elena, 2001, Bedrock Geology of Fayetteville Quadrangle, Washington County, Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, 135p.
11. Kisila, B.O, 2002, Watershed physiography, bathymetry, sedimentation, and historical water quality of two Arkansas lakes: Lee Creek Reservoir and Lake Shepherd Springs: Ph.D. dissertation in Environmental Dynamics, Department of Geosciences, University of Arkansas, 178p.
12. McDonald, Mantez, 2000, Empirical modeling of flood dynamics on the Red River of the North, North Dakota: M.S. thesis, Department of Geosciences, University of Arkansas, 91p.
13. May, Jack D., 2000, Bathymetry and seafloor types in the vicinity of Tanner Bank, southern California Continental Borderland: M.S. thesis, Department of Geosciences, University of Arkansas, 58p.
14. Merrifield, W., Seismic stratigraphy of the insular continental shelf between Rodanthe and Avon, North Carolina: M.S. thesis in progress, Department of Geosciences, University of Arkansas (withdrew fro program May 2005 but was reinstated September 2009; did not complete).
15. Montana, Q, in progress, The caloric output of global agriculture 1961-2010: M.S. thesis, Department of Geosciences, University of Arkansas (expected completion May 2016).
16. Montana, Q, in progress, The caloric budget (inputs and outputs) of global agriculture 1961-2012: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, (expected completion May 2019).

17. Neely, D.G., Bathymetry, Sedimentation, and Mass Wasting processes in upper Beaver Reservoir, northwest Arkansas: Ph.D. dissertation in Environmental Dynamics, Department of Geosciences, University of Arkansas (withdrew from program December 2003).
18. Patton, J., 2008, Influence of water treatment on reservoir sedimentation in Beaver Reservoir, Northwest Arkansas: A Comparative Study: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 278pp.
19. Pickup, B.E., Processes of shoreline change at Yellowstone Lake: Interplay of tectonics, sediment supply, and lake level: Ph.D. dissertation in Environmental Dynamics, University of Arkansas (withdrew from program 2009).
20. Polly, A., 2001, Bathymetry, sedimentation, and chemistry of Lake Wedington, Washington County, Arkansas: M.S. thesis, Department of Geosciences, University of Arkansas, 75p.
21. Reed, D.R., 2007, Patterns of urban encroachment on the Wedington Unit of the Ozark National Forest: 1941-2005: M.A. thesis, Department of Geosciences, University of Arkansas, 78p.
22. Solomon, E.D. in progress, Estimating the total global mass of fossil fuel resources: M.S. thesis, Department of Geosciences, University of Arkansas (expected completion May 2016).
23. Sullivan, B., 1999, Revised geologic map of War Eagle Quadrangle, Benton County, Arkansas: M.S. thesis, Department of Geosciences, University of Arkansas, 70p.
24. Vance, L., 2010, The Campus Demotechnic Index: A Comparison of Technological Energy Consumption at U.S. Colleges and Universities: PhD. Dissertation in Environmental Dynamics, University of Arkansas, 420p.
25. Wiley, B, in progress, Estimating the total global mass of metal resources: M.S. thesis, Department of Geosciences, University of Arkansas (expected completion May 2016).

Ph.D. and M.S. THESIS COMMITTEE MEMBERSHIP:

1. Booth, T., Mapping Tornillo loam soil and associated vegetation communities in Big Bend National Park, Brewster County, Texas: Ph.D. Dissertation, Environmental Dynamics Program, University of Arkansas (did not complete).
2. Burnette, D, 2009, Reconstruction of the Eastern Kansas temperature and precipitation records into the mid-19th century using historical sources: Ph.D. Dissertation, Environmental Dynamics Program, University of Arkansas.
3. Campbell, S., 2002, Geochemical weathering controls on soil nitrogen and phosphorus: Possible implications of global change: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 125p.
4. Carlson, S., 2000, Bathymetry and lacustrine history of Reelfoot Lake, New Madrid Seismic Zone: M.S. thesis, Department of Geosciences, University of Arkansas, 101p.
5. Ernenwein, E., 2008, Recent advances in archaeological geophysics: Interpreting the archaeological landscape, ground-penetrating radar data processing, and multi-sensor fusion: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 131p.

6. DeFauw, S., 2006, Hydrodynamics of a hillslope soil assemblage in the Ozark Highlands, USA: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 234p.
7. Dixon, B., 2001, Application of neuro-fuzzy techniques to predict ground water vulnerability in northwest Arkansas: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 153p.
8. Fye, Falko, 2002, Analysis of decadal moisture anomalies over North America (1700-1979), Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 103p.
9. Garner, M., 2001, Modeling the effects of changing land-use upon wildland fuels: Ph.D. dissertation in Environmental Dynamics, University of Arkansas (served on comprehensive exam committee).
10. Hacker, M., 2002, Reconstruction of depositional environments of the Lower Carpenter and Glassy intervals of the Middle Atoka Formation (Pennsylvanian), in the Arkoma Basin, Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, 62p.
11. Harris, R., Time and space in southern Florida: Environmental Dynamics of the Lake Okeechobee Basin: Ph.D. dissertation in Environmental Dynamics, University of Arkansas (withdrew from program May 2003).
12. Hemphill, J.P., 2009, Hydrologic Modeling of a Borehole Failure for a Ground Loop Heat Exchange System and the Potential Environmental Effects: M.S. Thesis, Department of Geosciences, University of Arkansas 176p.
13. Holt, D.H., 2002, The droughts of the 3rd and 4th centuries AD in Germania: The relationship between the migrations of Germanic tribes and climate change, Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 263p.
14. Jameson, E., 1998, Geology and stratigraphy of the Hale Formation with emphasis on gas potential: M.S. Thesis, Department of Geosciences, University of Arkansas, 66p.
15. Kim, Burmshik, 2007, Hydrogeochemical evolution of ground water in an intensively pumped alluvial aquifer: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 179p.
16. Laincz, L., 2014, Investigation of the flow and fate of nitrate in epikarst at the Savoy Experimental Watershed, northwest Arkansas: dissertation in Environmental Dynamics, University of Arkansas, 149p.
17. Lewis, S.E., 2010, Perception vs. reality : stakeholder perception of and willingness to pay for watershed ecosystem integrity: dissertation in Environmental Dynamics, University of Arkansas, 234p.
18. Lockhart, J.J., 2004, Caddoan place: Discovery and examination of a prehistoric/protohistoric landscape: dissertation in Environmental Dynamics, University of Arkansas, 146p.
19. Matson, S., GPS geodesy in the northern Lesser Antilles: Implications for arc kinematics and subduction zone dynamics: M.S. Thesis, Department of Geosciences, University of Arkansas, 74p.
20. Peterson, E., 1998, Movement of nitrates in a regolith covered karst environment in northwest Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, 103p.

21. Price, A., 2004, Late Mississippi tectonism on the cratonc margin of northwest Arkansas : a stratigraphic response to syndepositional faulting: M.S. Thesis, Department of Geosciences, University of Arkansas, 58p.
22. Rains, D., 2009, Origin of Quaternary deposits west of Marianna Gap, Mississippi Alluvial Valley, eastern Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, expected completion December 2009.
23. Rollins, A., 2008, Biogeography, microhabitat associations and structure of the myxomycete and dictyostelid communities associated with North American grasslands: Ph.D. dissertation in Biological Sciences, University of Arkansas, 305p.
24. Rojas, C., 2010, Biogeography, microhabitat associations and structure of the myxomycete and dictyostelid communities associated with Central American highlands: Ph.D. dissertation in Biological Sciences, University of Arkansas, 410p.
25. Schmidt, T., 1998, Hydrocarbon potential of the subsalt section of the Paradox Basin, southeastern Utah: M.S. Thesis, Department of Geosciences, University of Arkansas, 34p.
26. Scheffer, A., 2004, Geomorphic, elemental, and isotopic characteristics of a shared floodplain near the confluence of the Mississippi and Missouri rivers. M.S. Thesis, Department of Geosciences, University of Arkansas, 67p.
27. Shirley, T., in progress, Basin–scale characterization of the Hydrogeology within part of the Savoy Experimental Watershed in the mantled karst of northwest Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas.
28. Turner, H., 2003, Strain/slip partitioning along the Middle America trench in Nicaragua constrained by GPS geodesy: M.S. Thesis, Department of Geosciences, University of Arkansas, 154p.
29. Wenger, R., 2002, Sequence Stratigraphy and Depositional Systems of the Tackett Sandstone, Middle Atoka Formation, Arkoma Basin, Arkansas: M.S. Thesis, Department of Geosciences, University of Arkansas, University of Arkansas, 59p.
30. Turner, H., 2010, GPS Geodesy kinematics of the Nicaraguan subduction zone and continental margin: Space and Planetary Sciences Program, University of Arkansas, 206p.
31. Wild, AllyCatherine, 2000, MFA graduate, studio paintings, no dissertation: Dept. of Fine Arts, University of Arkansas.
32. Wintory, B., 2004, Environmental and social change in Lee County, Arkansas: Ph.D. dissertation in Environmental Dynamics, University of Arkansas, 220p.

UNDERGRADUATE HONORS THESIS COMMITTEES

1. Bradford, H., 1998, The search for artillery artifacts in Prairie Grove Battlefield State Park (Arkansas): Honors Thesis in Anthropology, University of Arkansas, 48p.
2. Brooks, C., 2010, Evaluating the importance of magma degassing and subsequent P-V relationships at Soufrierre Hills volcano, Montserrat, expected completion May 2010.
3. Gates, J.B., 2002, A STELLA model of oxygen cycling in Lake Shepherd Springs, Crawford County, Arkansas: Honors Thesis in Mathematics and Geography, University of Arkansas, 44p.

4. Grinter, A.J., 2006, An assessment and critique of archaeological surveys in the lower Orontes River valley of northwestern Syria: Honors thesis in Anthropology, University of Arkansas, 98p.
5. Kooser, A., 1998, Blood, Dust, & Stones: An exploration of popular/folk music as poetry: Honors thesis in English, University of Arkansas, 58p.
6. Pennington, E., 2003, Analytical devices with integrated microchannels and microelectrodes constructed in poly(dimethylsiloxane) and glass materials: Honors thesis in Chemistry, University of Arkansas, 76p.
7. Pummill, K., 2005, Augmenting of the immune T cell memory responses of the aged: Honors thesis in Biochemistry, University of Arkansas, 39p.
8. Smiley, C, 2005, The Westwood subdivision: Harrison, Arkansas: Honors thesis in American Studies, University of Arkansas, 32p.

Turner, J, 2008, The Logical Framework Approach (LFA) in a Residential Youth Challenge Program, Honors thesis in Anthropology, 35p.

Song Feng, **Ph.D.**
Assistant Professor
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1. Education

1996-1999	Ph. D., Atmospheric Physics, Lanzhou Institute of Plateau Atmospheric Physics, Chinese Academy of Sciences, China. [*Dissertation: Comprehensive analysis of Qinghai-Xizang (Tibet) Plateau climatic fluctuations on decadal to millennial timescales*]
1993-1996	M.S., Meteorology, Lanzhou Institute of Plateau Atmospheric Physics, Chinese Academy of Sciences, China.
1989-1993	B.S., Meteorology, Department of Geosciences, Yunnan University, Kunming, China.
1989-1993	B.S., Economics (minor), School of Economics, Yunnan University, Kunming, China

2. Employment history

Aug., 2017 - current	Associate Director, Environmental Dynamics Program, University of Arkansas.
Aug.,2018	Associate Professor, Department of Geosciences, University of Arkansas.
2013-Aug., 2018	Assistant Professor, Department of Geosciences, University of Arkansas.
2007-Aug., 2013	**Research Assistant Professor to Research Associate Professor**, School of Natural Resources, University of Nebraska-Lincoln.
2001-2007	Research Specialist, School of Natural Resources, University of Nebraska-Lincoln.
1999-2001	Visiting Scholar (postdoc), School of Natural Resource, University of Nebraska-Lincoln.
1993-1999	Graduate Research Assistant, Lanzhou Institute of Plateau Atmospheric Physics, Chinese Academy of Sciences, China.

3. Research funding

7/2018-6/2021	P.I., "Assimilations of cool and warm season moisture reconstructions and atmospheric conditions over North America". *National Science Foundation*, $299,088.
8/2017-7/2020	P.I., "STEM-Based Applied Organizational Sustainability Curriculum Development: Integrating Business, Climate Science, and the Natural Environment", *National Science Foundation*, $74,724.
7/2015-6/2018	Co-P.I., "Amazonian Tree-ring Chronologies for Climate and Streamflow Reconstruction", *National Science Foundation*, $418,731
3/2016-7/2017	Co-PI., "The effect of weather events on truck traffic using fixed and mobile traffic sensors", *DOT/Southern Plains Transportation Center*, $30,267.

2/2014-12/2016	P.I., "Variations of Antarctic Oscillation during the past millennium and the twenty first century", *Korean Polar Research Institute*, $138,000
5/2011-4/2015	P.I., "Megadrought: Local vs Remote Causal Factors for Medieval North America", *National Science Foundation*, $469,398
10/2012-9/2014	Key personnel, "Quantifying the relative roles of local versus remote effects on North American summer drought", *NASA* (P.I., Dr. R. J. Oglesby). $246,169.
8/2010-7/2013	Co-PI, "Development of a Northern Hemisphere gridded precipitation dataset spanning the past half millennium for analyzing interannual and longer-term variability in the monsoon", NOAA (P.I., Dr. Qi Hu), $529,502.
8/2009-7/2012	Co-PI, "Understanding and predicting tropical and North Atlantic SST forcing on variations in warm season precipitation over North America", NOAA (P.I., Dr. Qi Hu), $292,000.
2/2012-7/2012	A. P.I., "**Changes in Snowfall/Precipitation Ratio in the Contiguous United States", *US Environmental Protection Agency*/***Eastern Research Group*, $24,922**
6/2009-5/2010	P.I., "Understanding the Role of Atlantic Sea Surface Temperatures on Persistent Drought in U. S. Great Plains", Office of Research at UNL, $10,000

4. Honors and awards

2018	Omni Center for Peace, Justice and Ecology Climate Science Award, Fulbright College, University of Arkansas.
2015	Connor Fellowship for research excellence, Fulbright College, University of Arkansas.
2015	New Faculty Commendation for Teaching Commitment. University of Arkansas
2014	New Faculty Commendation for Teaching Commitment. University of Arkansas
2009	Layman Award, University of Nebraska-Lincoln.
1999	The first prize of Sixth Annual Conference on Meteorological Science and Technology, Gansu Meteorological Society.
1997	Scholarship of Mr. Fang Shuquan, awarded by Chinese Academy of Sciences
1990-92	Distinguished student, Yunnan University, China.

5. Professional memberships and activities

Adjunct Faculty, University of Nebraska-Lincoln, 2013-current
Member, American Geophysical Union, 2004-current
Member, International Association of Hydrological Sciences, 2005-current

Proposal Reviewer for agencies:

2013-2017 NSF
2011-2015 NOAA
2010 U.S. Civilian Research & Development Foundation (CRDF)

Journal Editorial Board:

Journal of Climatology (Hindawi), 2012-2016.

Reviewer for journals:

Nature Climate Change
Nature Communication
Journal of Climate
Climate Dynamics
Climatic Change
Atmospheric Chemistry and Physics
Scientific Reports
Quaternary Science Review
Journal of Geophysical Research-Atmospheres
Geophysical Research Letter
Environmental Research Letter
Journal of Applied Meteorology and Climatology
Journal of Atmospheric and Oceanic Technology
Climate research
Atmospheric Research
Theoretical and Applied Climatology
International Journal of Climatology
Meteorology and Atmospheric Physics
Advances in Atmospheric Sciences
Journal of Hydrology
Hydrological Science Journal
Journal of Arid Environment
Earth and Planet Science Letter
Quaternary international
Stochastic Environmental Research and Risk Assessment
Natural Hazards
Meteorological Applications
Progress in Physical Geography

6. Major professional trainings

2012	Attended the workshop on "effective teaching and learning in a large classroom setting" organized by National Association of Geoscience Teachers (NAGT) during the 2012 AGU fall meeting.
2011	Attended the workshop on "Teaching Earth's Climate History" during the 2011 AGU fall meeting
2008-2011	Taken 7 statistical courses (total 23 credits) at graduate levels in the Department of Statistics at University of Nebraska-Lincoln. The statistical courses taken are:

Statistical methods in research (STAT 801, 4 credits)
Experimental design (STAT 802, 4 credits)
Applied multivariate statistical analysis (STAT 873, 3 credits)
Mathematical statistics I Distribution theory (STAT 882, 3 credits)
Mathematical statistics II Statistical Inference (STAT 883, 3 credits)
Linear Models (STAT 970, 3 credits)
Bootstrap methods and their applications (STAT 950, 3 credits)

2009	Attended the Workshop for Graduate Teaching Assistants, and the workshop for "Preparing for Future Faculty" sponsored by office of Graduate Studies, UNL, during July to August 2009.
2008-2010	Attended the workshop on "Write Winning Grants" targeting NSF (2008), USDA (2009) and NIH (2010).

7. Teaching experiences

Courses taught:

Climate modeling (Co-taught) (Spring of 2009, 2011 and 2013)
Severe weather (Spring of 2014, 2015, 2016)
Applied Climatology (Fall of 2015, 2017)
Quaternary Environmental (Fall of 2014, 2015, 2016, 2017)
Global Change (Spring of 2016, 2017)
Climate Data Analysis (Spring of 2015)

Advisory

1) Wei Huang, visiting Ph.D student at University of Nebraska-Lincoln (UNL), (co-advisor, graduated in 2014). Currently assistant professor at Lanzhou University, China
2) Christopher Craig, Ph.D student (advisor, graduated in 2016). Currently assistant professor at University of Montana-Billings.
3) John Westley Magugu, Ph.D student (co-advisor, graduated in 2016)
4) Yongjun Zhang, Ph.D student (advisor, current)
5) Richie Donahou, Ph.D student (advisor, current)
6) Stephanie K., Turner, Ph.D student (advisor, current)
7) Christian Garcia, MS student (advisor, current)
8) Jovon James, MS student (advisor, current)
9) Chang Liu, Ph.D student (advisor, current)
10) Hong Guo, Ph.D student (advisor, current)

Theses Committee

1) Kristen Fox, MS student at UNL (graduated on May, 2010)
2) Rachindra Mawalagedara, Ph.D, UNL (graduated in 2013)
3) Michael Veres, Ph.D, UNL, (graduated in 2014)
4) Angela Bliss, Ph.D, UNL, (graduated in 2015)
5) Qianru Wu, Ph.D, UNL, (graduated in 2015)
6) Benjamin Tracy, MS Student (graduated in 2017)
7) Max Torbenson, Ph.D student (current)

8) Ian Howard. Ph.D student (current)
9) Samuel Matin, Ph.D student (current)
10) Kaitlyn Fitzegerald Ph.D student (current)

8. Peer-reviewed Publications

*** Indicates graduate students and ** indicates postdocs or visiting scholars**

Articles in review

1) Craig, C.A.*, **S. Feng**, M. W. Allen, and M. L. Spialek. Drought, wildfire, climate change, and land management in the Rocky Mountains. *Forest Policy and Economics* (in review).
2) Craig, C. A.*, and **S. Feng**. The interface between water resources, society, organizations, and climate change: Rethinking stakeholder relationships. *Global Environmental Change* (in review).
3) Craig, C. A.*, E. Petrun Sayers, **S. Feng**, S. Gilbertz, and R. Karam. An innovative framework for interdisciplinary STEM-based business sustainability curriculum. *Management Teaching Review* (in review).
4) Craig C.A*, **S. Feng** and Petrun-Sayers, E. A quantitative sustainable development teaching case study. *The Case Journal* (in review).
5) Gim H-J., C-H. Ho, S-J. Jeong, **S. Feng**, J. Kim and M. J. Hayes. The risk of autumn frost damage to corn in the Midwestern United States according to sowing dates and growing season temperatures. *Agriculture and Forest Meteorology* (in review).
6) Gim H-J., C-H. Ho, S-J Jeong, J. Kim, **S. Feng** and M.J. Hayes. Long-term variations in crop green-up dates at a sub-county level using AVHRR NDVI over the Midwestern United States. *Remote Sensing of Environment* (in review).

Published articles

1) **Trnka M., S. Feng, M. A. Semenov, J.E. Olesen, K. C. Kersebaum, R. P. Rotter, D. Semeradova, k. Klem, W. Huang, M. Ruiz-Ramos, P. Hlavinka, J. Meitner, J. Balek, P. Havlik, U. Buntgen (2019). Mitigation efforts will not fully alleviate the increase in water scarcity occurrence probability in wheat-producing areas. Science Advance (in press)**
2) Craig, C.A.*, **S. Feng** and S. Gilbertz (2019). Water Crisis, drought, and climate change in the southeast United States. *Land Use Policy*, https://doi.org/10.1016/j.landusepol.2019.104110
3) Petrun-Sayers, E. L., C. A. Craig, S. Gilbertz, **S. Feng**, R. T. Karam, and A. Bohman (2019). Advancing STEM-Based Business Sustainability: Mending the Curricular Gap. *Management Teaching Review*, https://doi.org/10.1177/2379298119852313
4) Chen F.H., J.H. Chen, W. Huang, S.Q. Chen, X.Z. Huang, L.Y. Jin, J. Jia, X.J. Zhang, C.B. An, J.W. Zhang, Y. Zhao, Z.C. Yu, R.H. Zhang, J.B. Liu, A. F. Zhou and **S. Feng** (2019). Westerlies Asia and monsoonal Asia: Spatiotemporal differences in climate change and possible mechanisms on decadal to sub-orbital timescales. *Earth-Science Reviews* 192: 337-354.

5) Craig, C. A.*, E. Petrun Sayers, **S. Feng** and B. Kinghorn (2019). The impact of climate and weather on small tourism businesses: A wSWOT case study. *Entrepreneurship Pedagogy and Education*, DOI: 10.1177/2515127419829399.
6) Howard I. M.*, D. W. Stahle and **S. Feng** (2018). Separate tree ring reconstructions of spring and summer moisture in the northern and southern Great Plains. *Climate Dynamics*, https://doi.org/10.1007/s00382-018-4485-8.
7) Liu C*., W. Huang*, **S. Feng**, J. Chen and A. Zhou (2018). Spatiotemporal variations of aridity in China during 1961-2015: decomposion and attribution. *Science Bulletin,* 63, 1187-1199, https://doi.org/10.1016/j.scib.2018.07.007
8) Nam W.-H., G. A. Baigorria, E.-M. Hong, T. Kim, Y.-S., Choi and **S. Feng** (2018). The fingerprint of climate change and urbanization in South Korea. *Atmosphere*, 9, doi:10.3390/atmos9070273.
9) Granato-Souza D., D. W. Stahle, A. C. Barbosa, **S. Feng**, M. C. Torbenson, G. de Assis Pereira, J. Schongart, J. P. Barbosa, and D. Griffin (2018). Tree rings and rainfall in the equatorial Amazon. *Climate Dynamics,* https://doi.org/10.1007/s00382-018-4227-y.
10) Magugu J.W.*, **S. Feng**, Q. Huang and G. Ototo (2018). Socio-economic factors affecting agro-forestry (AFR) technology adoption in Nyando, Kenya. *Journal of Water and Land Development*, 39, 83-91, DOI: 10.2478/jwld-2018-0062
11) Craig, C. A*, and **S. Feng** (2018). A temporal and spatial analysis of climate change, weather events, and tourism businesses. *Tourism Management*, 67, 351-361.
12) Craig, C. A*, Petrun-Sayers, E., and **S. Feng** (2018). A case study of climate change and extreme weather events in a coastal community: Enhancing risk communication. In Kar, B., & Cochran, D. (Eds.), *Role of Risk Communication in Community Resilience Building.* Rutledge, (https://www.crcpress.com/Risk-Communication-and-Community-Resilience/Kar-Cochran/p/book/9781138088214).
13) Trnka M., M. Hayes, F. Jurecka, L. Bartosova, M. Anderson, R. Brazdil, J. Brown, J. J. Camrero, P. Cudlin, P. Dobrovolny, J. Eitzinger, **S. Feng**, T. Finnessey, G. Gregoric, P. Havlik, C. Hain, I. Holman, D. Johnson, K. C. Kersebaum, F. C. Ljungqvist, J. Luterbacher, F. Micale, C. Hart-Meier, M. Mozny, P. Nejedlik, J. E. Olesen, M. Ruiz-Ramos, R. P. Rotter, G. Senay, S. M. Vicente-Serrano, M. Svoboda, A. Susnik, T. Tadesse, A. Vizina, B. Wardlow, Z. Zalud, U. Buntgen (2018). Priority questions in multidisciplinary drought research. *Climate Research*, 75, 241-260. DOI: https://doi.org/10.3354/cr01509
14) Magugu J.W.*, **S. Feng**, Q. Huang and Y. Zhang (2018), Analysis of future climate scenarios and their impact on agriculture in Eastern Arkansas, United States. *Journal of Water and Land Development*, 37, 97-112, DOI: 10.2478/jwld-2018-0029.
15) Park C.-E., S.J. Jeong, M. Joshi, T. J. Osborn, C.-H., Ho, S. Piao, D. Chen, J. Liu, H. Yang, H. Park, B.M. Kim and **S. Feng** (2018). Keeping global warming within 1.5°C constrains emergence of aridification. *Nature Climate Change* 8, 70-74, doi:10.1038/s41558-017-0034-4.
16) Huang W*., **S. Feng**, C. Liu*, Jie Chen*, Jianhui Chen****** and Fahu Chen (2018). Changes of climate regimes during the last millennium and the twenty-first century

simulated by the Community Earth System Model. *Quaternary Science Reviews*, 180, 42-56.

17) **Feng S**., M. Trnka, M. Hayes and Y. Zhang (2017). Why do different drought indices show distinct future drought risk outcomes in the U.S. Great Plains? *J. Climate*, 30, 265-278.

18) Lopez L., D. Stahle, R. Villalba, M. Torbenson, **S. Feng** and E. Cook (2017). Tree-ring reconstructed rainfall over the southern Amazon Basin. *Geophysical Research Letter* 44, doi:10.1002/2017GL073363.

19) Park C.-E., S.J. Jeong, C.H. Ho, H. Park, S. Piao, J. Kim and **S. Feng** (2017). Dominance of climate warming effects on recent drying trends over wet monsoon regions. *Atmos., Chem., Phys.*, doi:10.5194/acp-2017-40.

20) Craig C. A.* and **S. Feng** (2017). Exploring utility organization electricity generation, residential electricity consumption, and energy efficiency: A climatic approach. *Applied Energy*, 185, 779-790. http://dx.doi.org/10.1016/j.apenergy.2016.10.101

21) Craig C. A.* and **S. Feng** (2016). An examination of electricity generation by utility organization in the Southeast United States. *Energy*, 116, 601-608.

22) Magugu J.W.*, **S. Feng**, Q. Huang and K. Luthra (2016). Impact of climate variations on soybean yield in eastern Arkansas: 1960-2014. *J. Arkansas Academy of Science*, 70, 130-140.

23) Okalebo J. A., R. J. Oglesby, **S. Feng**, K. Hubbard, A. Kilic, M. Hayes and C. Hays (2016). An evaluation of the Community Land Model (version 3.5) and Noah Land Surface models for temperature and precipitation over Nebraska (Central Great Plains): Implications for agriculture in simulations of future climate change and adaption. W. L. Filho et al. (eds), Climate Change Adaptation, Resilience and Hazards, Climate Change Management, 21-34, DOI 10.1007/978-3-319-39880-8_2.

24) Chen J H, Rao Z G, Liu J B, Huang W, **Feng S**, Dong G H, Hu Y, Xu Q H, Chen F H. (2016). On the timing of the East Asian summer monsoon maximum during the Holocene—Does the speleothem oxygen isotope record reflect monsoon rainfall variability? *Science China Earth Sciences*, 59, 2328-2338. doi: 10.1007/s11430-015-5500-5

25) Choi W., C-H. Ho, C-S. Jin, J. Kim, **S. Feng**, D-S. R. Park and J-K E. Schemm (2016). Seasonal forecasting of intense tropical cyclones over the North Atlantic and the western North Pacific Basins. *Clim Dyn*. 47, 3063-3075. Doi 10.1007/s00382-016-3013-y.

26) Choi W., C-H. Ho, J. Kim, H-S Kim, **S. Feng** and K. Kang (2016). A track pattern-based seasonal precipitation of tropical cyclone activity over the North Atlantic. *J Climate*, **29**, 481-494.

27) Fu Q., L. Lin, J. Huang, **S. Feng** and A. Gettelman (2016). Changes in terrestrial aridity for the period of 850-2080 from the Community Earth System Model. *J. Geophys. Res. Atmos*, 121, 2857-2873, doi:10,1002/2015JD024075

28) Lin L, A. Gettelman, **S. Feng** and Q. Fu (2015). Simulated climatology and evolution of aridity in the 21st century. *J. Geophys. Res. Atmos*., **120**, 5795–5815. doi: 10.1002/2014JD022912.

29) Huang W.*, **S Feng**, J Chen and F. Chen (2015). Physical Mechanisms of Summer Precipitation Variations in the Tarim Basin in Northwestern China. *J. Climate*, **28**, 3579–3591. doi: http://dx.doi.org/10.1175/JCLI-D-14-00395.1

30) Huang W.*, J. Chen, X. Zhang, **S. Feng** and F. Chen (2015). Definition of the core zone of the "westerlies-dominated climatic regime", and its controlling factors during the instrumental period. *Science China Earth Sciences*, **58**, 676-684

31) McCabe G.J., J. L. Betancourt and **S. Feng** (2015). Variability in the start, end, and length of frost-free periods across the conterminous United States during the past century. *Int. J. Climatol*., 35, 4673-4680.

32) Chen J., F. Chen, **S. Feng**, W. Huang, J. Liu and A. Zhou (2015). Hydroclimatic changes in China and surroundings during the Medieval Climate Anomaly and Little Ice Age: spatial patterns and possible mechanisms. *Quaternary Science Reviews*, **107**, 98-111

33) Zhao S. H. Zhang, **S. Feng** and Q. Fu (2015). Simulating direct effects of dust aerosol on arid and semi-arid regions using an aerosol-climate coupled system. *Int. J. Climatol*., **35**, 1858-1866, doi:10.1002/joc.4093.

34) Steinman, B. A., M. B. Abbott, M. E. Mann, J. D. Ortiz, **S. Feng**, D. P. Pompeani, N. D. Stansell, L. Anderson, B. P. Finney, and B.W. Bird (2014), Ocean-atmosphere forcing of centennial hydroclimate variability in the Pacific Northwest, *Geophys. Res. Lett*., **41**, 2553–2560, doi:10.1002/2014GL059499.

35) Fu Q. and **S. Feng** (2014). Responses of terrestrial aridity to global warming. *J. Geophys. Res*., **119**, 7863-7875, doi:10.1002/2014JD021608.

36) **Feng S**., Q. Hu, W. Huang, C.-H. Ho, R. Li and Z. Tang (2014). Projected climate shift under future global warming from multi-model, multi-scenario, CMIP5 simulations. *Global and Planetary Change*, **112**, 41-52.

37) **Feng S**. and Q. Fu (2013). Expansion of global drylands under a warming climate. *Atmos. Chem. Phys.* **13**, 10084-10094.

38) Van Liew M.W., **S. Feng** and T.B. Pathak (2013). Assessing climate change impact on runoff and water quality at the field scale for four locations in the Heartland. *Transaction of ASABE*, **56**, 883-900.

39) Li R, N. di Virgilio, Q. Guan, **S. Feng** and G.M. Richter (2013). Modeling land availabilities and dynamics for biofuel crops in the United States and European Union: Past, present and future. *Biofuels, Bioproducts and Biorefining* 7, 666-684.

40) Huang W.*, F. H. Chen, **S. Feng**, J. H. Chen and X. J. Zhang (2013). Interannual precipitation variations in the mid-latitude Asia and their association with large scale atmospheric circulation. *Chinese Science Bulletin*, 58, 3962-3968.

41) **Feng S.,** Q. Hu, Q. Wu and M.E. Mann (2013). A gridded reconstruction of warm season precipitation in Asia spanning the past half millennium. *J. Climate*, 25, 2192-2204, doi:10.1175/JCLI-D-12-00099.1

42) Xia Y., M. Ek, J. Sheffield, B. Livneh, H. Wei, **S. Feng**, L. Luo, J. Meng, and E. Wood (2013). Validation of model-simulated soil temperature in the North American Land Data Assimilation System Phase 2. *J. Applied Meteorology and Climatology*, 52, 455-471, DOI: 10.1175/JAMC-D-12-033.1.

43) Jeong S.J., C.-H. Ho, B.-M. Kim, **S. Feng** and D. Medvigy (2013). Non-linear response of vegetation to coherent warming over northern high latitudes. *Remote Sensing Letters*, 4, 123-130, DOI:10.1080/2150704X.2012.703790.

44) Mao R., C-H. Ho, ***S. Feng***, D. Gong and Y. Shao (2013). Influence of vegetation variation on northeast Asian dust activities for 1982-2006 using the Integrated Wind Erosion Modeling System. *Asia-Pacific journal of atmospheric sciences*, 49, 87-94.

45) Hu Q., and **S. Feng** (2012). AMO- and ENSO-Driven Summertime Circulation and Precipitation Variations in North America. *J. Climate*, 25, 6477-6495.

46) **Feng S.,** C-H. Ho, Q. Hu, R. J. Oglesby and S-J. Jeong (2012). Evaluating observed and projected future climate changes for the Arctic using the Koppen-Trewartha climate classification. *Climate Dynamics*, 38, 1359-1373, DOI 10.1007/s00382-011-1020-6.

47) Park C-E., C-H. Ho, S-J. Jeong, J. Kim and **S. Feng** (2012). The impact of vegetation feedback on alleviating the climatic aridity over the United States associated with a $2xCO_2$ climate condition. *Climate Dynamics*, 38, 1489-1500, DOI 10.1007/s00382-011-1150-x.

48) Oglesby R.J, **S. Feng**, Q. Hu and C. Rowe (2012). The role of the Atlantic Multidecadal Oscillation on Medieval drought in North America: synthesizing results from proxy data and climate models. *Global and Planetary Change*, 84, 56-65.

49) Van Liew M.W., **S. Feng** and T.B. Pathak (2012). Climate Change Impacts on Streamflow, Water Quality, and Best Management Practices for the Shell and Logan Creek Watersheds in Nebraska. *International Journal of Agricultural and Biological Engineering*, 5,13-34.

50) Guo H., Q. Hu, Q. Zhang and **S. Feng** (2012). Effects of the Three-Gorge Dam on Yangtze River flow and its interaction with the Poyang Lake in China. *J. Hydrology*, 416, 19-27.

51) Hu Q., **S. Feng** and R.J. Oglesby (2011). Variations in North American summer precipitation driven by the Atlantic multidecadal oscillation. *J. Climate*, 24, 5555-5570.

52) **Feng S.,** Q. Hu, and R.J. Oglesby (2011). Influence of Atlantic sea surface temperature on persistent drought in the North America. *Climate Dynamics*, 37, 569-586, DOI 10.1007/s00382-010-0835-x.

53) Lin G. and **S. Feng** (2011). Understanding weather, climate, and birthweight: Findings from the U.S. Natility Data Files 1969–78. *Water Resource and Environmental Protection (ISWREP)*, vol.4, 2639-2642, doi: 10.1109/ISWREP.2011.5893420.

54) Oglesby R.J, **S. Feng**, Q. Hu and C. Rowe (2011). Medieval drought in North America: The role of the Atlantic Multidecadal Oscillation. *PAGES Newsletter*, 19(1): 18-20.

55) **Feng S**., F. Salvagiotti, M.R. Schmer, A.B. Wingeyer and A. Weiss (2010). Evaluating a hybrid soil temperature model in a corn-soybean agroecosystem and a tallgrass prairie in the Great Plains. *Great Plains Research*, 20, 249-260.

56) Hu Q. and, **S. Feng** (2010). Influence of Arctic Oscillation on central United States summer rainfall. *J. Geophys. Res*. 115, D01102, doi:10.1029/2009JD011805.

57) **Feng S.**, Q. Hu, and R. J. Oglesby (2009). AMO-like variations of Holocene sea surface temperature in the North Atlantic Ocean. *Climate of the Past Discussion*, 5: 2465-2496.

58) **Feng S.** and Q. Hu (2008). How the North Atlantic Multidecadal Oscillation may have influenced the Indian summer monsoon during the past two millennia? *Geophys. Res. Lett*. 35, L01707, doi:10.1029/2007GL032484.

59) **Feng S.,** R.J. Oglesby, C. Rowe, D. Loope and Q. Hu (2008). Atlantic and Pacific SST influences on Medieval drought in North America simulated by the Community Atmospheric Model. *J. Geophys. Res*. 113, D11101, doi:10.1029/2007JD009347.

60) Hu Q. and **S. Feng** (2008). Variation of North American summer monsoon regimes and the Atlantic multidecadal oscillation. *J. Climate* **21**: 2371-2383.

61) Hu Q., **S. Feng,** H. Guo, G. Chen and T. Jiang (2007). Interactions of the Yangtze River flow and hydrologic processes of the Poyang Lake, China. *J. Hydrology* **347**: 90-100.

62) **Feng S.**, S. Nadarajah and Q. Hu (2007). Modeling annual extreme precipitation in China using generalized extreme value distribution. *J. Meteorol. Soc. Japan*, **85**: 599-613.

63) Hu Q., and **S. Feng** (2007). Decadal variations of the Southwest U.S. summer monsoon circulation and rainfall in a regional model. *Journal of Climate*, **20**: 4702-4716.

64) **Feng S.,** and Q. Hu (2007). Changes in winter snowfall/precipitation ratio in the contiguous United States. *J. Geophys. Res*. **112**, D15109, doi:10.19/2007JD008397

65) Shiau J-T, **S. Feng**, and S. Nadarajah (2007). Assessment of Hydrological droughts for the Yellow River, China, using Copulas. *Hydrological Processes*, 21: 2157-2163.

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9. Conference presentations

1) **Feng S** (2018). Spatiotemporal temperature variations in the Tibetan Plateau during the past millennium: comparisons of paleo-data assimilations, statistical reconstructions and climate model simulation. AGU Fall Meeting, Washington DC.
2) Nam W.H., **S. Feng**, M. J. Hayes, M. D. Svoboda, B. A. Fuchs, E.M. Hong, T. Kim and C.H. Ho (2018). Flash drought risk assessment over China and Korea using evaporative demand drought index. AGU Fall Meeting, Washington DC.
3) Liu C., **S. Feng** and H. Guo (2018). Comparison of methods for calculating freezing/thawing index using monthly and annual climate data. AGU Fall Meeting, Washington DC.
4) Guo H., **S. Feng**, T. Zhang and X. Peng (2018). Spatiotemporal variations of active layer thickness across the Northern Hemisphere from 1901-2016. AGU Fall Meeting, Washington DC.
5) Craig, C. A., **Feng, S**., & Gilbertz, S. (2018, August). Improving lives through enhanced water security and climate change understanding. Academy of Management Conference, Chicago, IL.
6) Craig, C. A., Petrun Sayers, E., **Feng, S**., Gilbertz, S., & Karam, R. (2018, November). An innovative framework for interdisciplinary STEM-based business sustainability curriculum. Southern Management Association Conference, Louisville, KY.
7) **Feng S** (2017). Winter losing its cool. AGU Fall Meeting, New Orleans.
8) Craig, C. A., **S. Feng** and Gilbertz, S. (2017). The interface between water resources, society, organizations, and climate change: Rethinking stakeholder relationships. 103rd Annual National Communication Association Conference, Dallas, TX.
9) **Feng S** (2016). Changes in winter severity in the contiguous United States. AGU Fall Meeting, San Francisco, CA.
10) Liu C., **S. Feng (presenter)** and W. Huang (2016). Causes of multi-decadal aridity variability in China during 1961-2015. AGU Fall Meeting, San Francisco, CA
11) Howard I., D. Stahle and **S. Feng** (2016). A proxy, instrumental, and model analysis of spring and summer moisture over the Great Plains. AGU Fall Meeting, San Francisco, CA.
12) Craig, C. A. and **S. Feng** (2016). The interaction between efficiency programs and

climate: A state-by-state analysis. General session presentation at the 10th Annual Rocky Mountain Utility Efficiency Exchange, Aspen, CO.

13) **(Invited Talk) Feng S**., Drought variability in Arkansas, past and future. Arkansas Drought Planning Workshop, June 8, 2016, Little Rock.
14) Craig, C A and **S. Feng** (2016). Utility organization management of residential energy efficiency programs in the United States: the impact of climatic variability. Fifth Annual Renewable Energy Conference, October 14, 2016, Arkansas State University, Jonesboro, AR.
15) **Feng S** (2015). Responses of Antarctic Oscillation to global warming. AGU Fall Meeting, San Francisco, CA.
16) Hayes M., **S. Feng (presentor)** and M. Trnka (2015). Why different drought indexes show distinct future drought risk outcomes in the U.S. Great Plains. AGU Fall Meeting, San Francisco, CA
17) Huang W, **S. Feng (presentor)** and C. Liu (2015). Changes in climate regimes during the last millennium and the twenty first century as simulated by the Community Earth System Model. AGU Fall Meeting, San Francisco, CA.
18) **(Invited Talk) Feng S**. Climate models and projections of future drought. Mikulov, Czech Republic, July 2nd, 2014.
19) **(Invited Talk) Feng S.** Climate projections in Southeast United States. Resilience Planning in the Southeast, July 10th, 2014.
20) **Feng S.,** Z. Long, S-J. Kim and Y. Zhang. Variations of Antarctic Oscillation during the past millennium and the twenty first century. AGU Fall Meeting, 2014.
21) Long Z., **S. Feng**, Y. Zhang and Y. Qi, Summer moisture variations in northwestern China during the past 700 years. AGU Fall Meeting, 2014.
22) **Feng S**., M. Trnka and M.J. Hayes: Evaluating projected future drought in the Great Plains using multiple drought indices. AGU Fall Meeting, 2013.
23) Hubbard T.J., Y. Zhang, R.J. Oglesby, **S. Feng**, Q. H, A. Kilic and D. Ozturk: Quantifying the Relative Roles of Local Versus Remote Effects on North American Summertime Drought. AGU Fall Meeting, 2013.
24) Huang W., **S. Feng**,, J. Chen and F. Chen: Physical mechanisms of the summer precipitation variations in the Taklimakan and Gobi Desert. AGU Fall Meeting, 2013.
25) Simon S.M., M.E. Mann, B.A. Steinman, **S. Feng**, Y. Zhang and S.K. Miller: Simulations of Western North American Hydroclimate during the Little Ice Age and Medieval Climate. AGU Fall Meeting, 2013.
26) Zhang Y., **S. Feng** and R.J. Oglesby: Impact of Sea Surface Temperature Anomalies on Medieval Drought in North America. AGU Fall Meeting, 2013
27) Hu Q. and **S. Feng** (2012). Projected Drought Severity and Food Security in the Central United States. 10th Annual Climate Prediction Applications Science Workshop, March 13–15, 2012, Miami, Florida.
28) **Feng S**. (2012). Drought variability in the Great Plains in the middle and end of the 21st Century. Climate change forums in Nebraska ("Climate Crisis in Nebraska: What does our future hold?"), Lincoln and Omaha, NE.
29) **Feng S**., Q. Fu and Q. Hu (2012). Expansion of world drylands under global warming. 2012 AGU fall meeting, San Francisco, CA.

30) Van Liew, M.W., **S. Feng** and T.B. Pathak (2011). Climate Change Impacts on Streamflow, Water Quality, and Best Management Practices for the Shell and Logan Creek Watersheds in Nebraska. Water Law Conference and symposium on Climate, Water and Ecosystems-Shaping the Great Plains. Lincoln, NE

31) **Feng, S.,** (2011). Observed and projected future drought variability in the Great Plains. Water Law Conference and symposium on Climate, Water and Ecosystems-Shaping the Great Plains. Lincoln, NE.

32) Chen J, F. Chen and **S. Feng** (2011). Hydroclimatic changes in Asia during the Medieval Climate Anomalies and Little Ice Age: Basic facts and possible mechanisms. 2011 AGU fall meeting, San Francisco, CA.

33) **Feng S**., Q. Hu and Q. Wu (2011). Multiproxy summer precipitation reconstructions for Asia during the past 530 years. 2011 AGU fall meeting, San Francisco, CA

34) Hu Q., and **S. Feng** (2011). Observed and Projected drought variability over global land area. 2011 AGU fall meeting, San Francisco, CA.

35) Hu Q. and **S. Feng** (2011). Interrelationship between the Atlantic Multidecadal Oscillation and ENSO and associated summer time precipitation in North America. Climate Change Beijing, 18-20 October, 2011. Beijing International Convention Center, China.

36) **Feng, S**., Q. Hu and R.J Oglesby (2010). Role of Atlantic sea surface temperatures on persistent drought in North America---A synthesis. 2010AGU fall meeting, San Francisco, CA.

37) Hu Q., **S. Feng** and R.J. Oglesby (2010). Variations in North American summer precipitation driven by the Atlantic Multidecadal Oscillation. 2010 AGU fall meeting, San Francisco, CA.

38) Ho C-H, **S. Feng (presenter)**, Q. Hu, R.J. Oglesby and S-J Jeong (2010). Evaluating observed and projected future climate changes in the Arctic region: An approach using the Koppen-Trewartha climate classification. 2010 AGU fall meeting, San Francisco, CA.

39) Oglesby, R.J., **S. Feng**, Q. Hu and C. Rowe (2010). New Perspectives on the Role of the AMO in MWP Drought: Results from Proxy Data and Climate Model Analysis. Symposium on The Medieval Warm Period Redux--Where And When Was It Warm? Lisbon, Portugal, 22-24 September 2010.

40) **Feng S.**, Q.Hu and R.J. Oglesby (2009). AMO-like variations of Holocene sea surface temperature in the North Atlantic Ocean. 2009 AGU Fall meeting, San Francisco, CA.

41) Hu Q. and **S. Feng** (2009). How Has the Atlantic Multidecadal Oscillation Influenced Circulation and Precipitation in North America. 34th Climate Diagnostics and Prediction Workshop, Monterey, California, 26-30 October 2009.

42) **Feng S.,** Q.Hu and R.J. Oglesby (2009). Atlantic SST influences on persistent drought in the North America. 14th Annual CCSM Workshop. The Village at Breckenridge, Breckenridge, CO.

43) **Feng S.** (2008). Atlantic SST influences on mega-droughts in North America: A case study on the medieval warm period. 13th Annual CCSM Workshop, 17-19 June 2008, The Village at Breckenridge, Breckenridge, CO.

44) **Feng S**. (2008). Atlantic Sea Surface Temperature Influences on Drought in North America: Data Analysis and Model Simulation. Department of Geosciences, UNL.

45) Oglesby R., Q. Hu, M., Ackerman, and **S. Feng** (2008). Snowcover and North American Monsoon Precipitation: An Occasional Partnership. 2008 AGU Fall meeting, San Francisco, CA.

46) Ruhge, R., **S. Feng**, and M. Lawson (2008). Changes in Arctic Snowfall/Total Precipitation Ratios. Seventh Annual AMS Student Conference, New Orleans, January 20, 2008.

47) **Feng S.,** R. Oglesby, C. Rowe, D. Loope and Q. Hu (2007). Pacific and Atlantic SST influences on Medieval drought in North America simulated by Community Atmospheric Model. AGU 2007 fall annual meeting, San Francisco, CA.

48) **Feng S.**, F. Salvagiotti, M. Schmer, A. Wingeyer and A. Weiss (2006). Evaluating a hybrid soil temperature model in an agricultural systems. ASA - CSSA – SSSA 2006 International Annual Meetings, November 12-16, 2006.

49) Hu, Q., **S. Feng**, and R. Oglesby (2006). Defining and understanding the North American summer monsoon. AGU 2006 fall annual meeting, San Francisco, CA., December, 2006.

50) Hu, Q., and **S. Feng** (2006). On the North American Summer monsoons, European Geosciences Union Annual Assembly, April 1-7, 2006, Vienna, Austria.

51) **Feng S**., Q. Hu and F. Jiang (2005). Dry/wet fluctuations in Northwest China recorded by Tibetan ice cores. International symposium on high-elevation glaciers and climate records. Lanzhou, China, 5-9, September, 2005.

52) Hu, Q., **S. Feng**, and W. Qian (2003). Warm season regional hydrological cycle and climate in mainland China. In Proceedings of International Symposium on Climate Change, 31 March – 3 April, 2003, Beijing China, 197-198p.

53) Hu, Q. and **S. Feng** (2003). Variations in Teleconnection of ENSO and summer rainfall in northern China: A role of Indian summer monsoon. In Proceedings of International Symposium on Climate Change, 31 March – 3 April, 2003, Beijing China, 233-234p.

54) Hu Q. and **S. Feng** (2003). Regional hydrological cycle and weather and climate in the contiguous United States. In Proceedings of AMS 14th Symposium on Global Change and Climate Variations. Long Beach, CA 9-13 February 2003, 268p.

55) Hu, Q. and **S. Feng** (2002). Multidecadal variation of ENSO teleconnection in the NCAR CCM3. In Proceedings of 13th Symposium on Global Change and Climate Variations. American Meteorological Society, American Meteorological Society (AMS), 13-17 Jan. 2002, Orlando, FL, 13-14.

56) **Feng S**. and Q. Hu (2001). Role of Moisture flux from the Gulf of Mexico in hydrological cycle in the central United States. In 2001 AGU Fall Meeting. 10-14 December, 2001, San Francisco, CA

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Education

1990 Arizona State University, Physical Geography, Ph.D.
1978 University of Arkansas, Archaeology, M.A.
1973 University of Arizona, Anthropology, B.A.

Professional Experience

2005–present Distinguished Professor of Geosciences, University of Arkansas
1980–present Director, Tree–Ring Laboratory, University of Arkansas
1998–2005 Professor, Department of Geosciences, University of Arkansas
1992–1998 Associate Professor, Department of Geography, University of Arkansas
1989–1992 Assistant Professor, Department of Geography, University of Arkansas
1986–1988 Teaching Associate, Department of Geography, Arizona State University
1980–1988 Research Associate, Department of Geography, University of Arkansas
1977–1980 Research Assistant, Arkansas Archaeological Survey, Univ. of Arkansas

Awards

2008 Outstanding Climate Science Paper, California Dept. of Water Resources
2011 Editors Citation for Excellence in Refereeing, Geophysical Research Letters
2015 Elected Fellow, American Association for the Advancement of Science 2018 Ellen Mosley-Thompson Best Publication Award in Paleoenvironmental Change, Association of American Geographers

Professional Societies

American Association for the Advancement of Science
American Geophysical Union
American Meteorological Society
Tree–Ring Society

Doctoral Dissertation

1990 The Tree–Ring Record of False Spring in the Southcentral USA. Arizona State University

Masters Thesis

1978 Tree–Ring Dating of Selected Arkansas Log Buildings. University of Arkansas

Publications by Year

2018

- Amoroso. M.M., J.H. Speer, L.D. Daniels, R. Villalba, E.Cook, D. Stahle, A. Sur, et al., 2018. South American Dendroecological Fieldweek 2016: Exploring dendrochronological research in northern Patagonia. *Tree-Ring Research* 74:120-131. [pdf]

- Granato-Souza, D., D.W. Stahle, A.C. Barbosa, S. Feng, M.C.A. Torbenson, G. Pereira, J. Schongart, J.P. Barbosa, and R.D. Griffin, 2018. Tree rings and rainfall in the equatorial Amazon. *Climate Dynamics* https://doi.org/10.1007/s00382-018-4227-y. [pdf]

2017

- Lopez, L., D.W. Stahle, R. Villalba, M. Torbenson, S. Feng, and E.R. Cook, 2017. Tree-ring reconstructed rainfall over the southern Amazon Basin. *Geophysical Research Letters* 44, doi:10.1002/2017GL073363. [pdf]

- Stahle, D.W., D.J. Burnette, D. Griffin, E.R. Cook, and L.V. Benson, 2016. Implications of Seasonal and Annual Moisture Reconstructions for Mesa Verde, Colorado. In: *Megadrought and Collapse: From Early Agriculture to Angkor*, edited by H. Weiss. Oxford University Press. [pdf]

2016

- Stahle, D.W., E.R. Cook, D.J. Burnette, J. Villanueva, J. Cerano, J.N. Burns, R.D. Griffin, B.I. Cook, R. Acuna, MCA Torbenson, and P. Szejner, 2016. The Mexican Drought Atlas: Tree-ring reconstructions of the soil moisture balance during the late Pre-Hispanic, Colonial, and Modern Eras. *Quaternary Science Reviews* 149:34-60. [pdf]

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- Cerny, K.C., D.W. Stahle, and D.C. Bragg, 2016. A frontier shortleaf pine stand in the old-growth Cross Timbers of Oklahoma. *Journal of the Torrey Botanical Society* 143:224-238. [pdf]

- Cook, B.I., E.R. Cook, J.E. Smerdon, R. Seager, A.P. Williams, S. Coats, D.W. Stahle, and J.Villanueva, 2016. North American megadroughts in the common era: reconstructions and simulations. *WIREs Climate Change* 7(3):411-432. [pdf]

2015

- Stahle, D.W., J.R. Edmondson, J.N. Burns, D.K. Stahle, D.J. Burnette, E. Kvamme, C. LeQuesne, and M.D. Therrell, 2015. Bridging the gap with sub fossil Douglas-fir at Mesa Verde, Colorado. *Tree-Ring Research* 71:53-66. [pdf]

- Belmecheri, S., F Babst, E.R. Wahl, D.W. Stahle, and V. Trouet, 2015. Multi-century evaluation of Sierra Nevada snowpack. *Nature Climate Change* (published online Sept.14, 2015). [pdf]

- LeBlanc, D.C., and D.W. Stahle, 2015. Radial growth response of four oak species to the climate in eastern and central North America. *Canadian Journal of Forest Research* 45:1-12. [pdf]

- Villanueva Díaz, J., J. Cerano Paredes, N.C. Olivares Bañuelos, M. Valle Pérez, D.W. Stahle, R. Cervantes Martínez, 2015. La respuesta climática del ciprés (*Hesperocyparis guadalupensis* Var. Guadalupensis) en Isla Guadalupe, Baja California, México. *Ciencias Forestales*. [pdf]

2014

- Black, B.A., Sydeman, W.J., Frank, D., Griffin, R.D., Stahle, D.W., Garcia-Reyes, M., Rykaczewski, R., S. Bograd, and W.T. Peterson, 2014. Six centuries of variability and extremes in a coupled marine-terrestrial ecosystem. *Science* 345:1498-1502. [pdf]

- Burns, J.N., R. Acuna-Soto, and D.W. Stahle, 2014. Drought and epidemic typhus, central Mexico, 1655-1918. *Emerging Infectious Diseases* 20:442-447. [pdf]

2013

- Kanner, L., N. Buenning, L. Stott, D.W. Stahle, 2013. Climatologic and hydrologic influences on the oxygen isotope ratio of tree cellulose in coastal southern California during the late 20th century. *Geochemistry, Geophysics, Geosystems* 14:4488-4503. [pdf]

- Griffin, R.D. C.A. Woodhouse, D.M. Meko, D.W. Stahle, H.L. Faulstich, C. Carrillo, R. Touchan, C.L. Castro, and S.W. Leavitt, 2013. North American monsoon precipitation

reconstructed from tree rings. *Geophysical Research Letters* 40, doi:10.1002/grl.50184. [pdf]

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- Benson, L.V., D.K. Ramsey, D.W. Stahle, K.L. Petersen, 2013. Some thoughts on the factors that controlled pre historic maize production in the American Southwest with application to southwestern Colorado. *Journal of Archaeological Science* 40:2869-2880. [pdf]

- Burnette, D.J., and D.W. Stahle, 2013. Computer assisted screening, correction, and analysis OF historical weather measurements. *Computers & Geosciences* 54:309-317. [pdf]

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2012

- Woodhouse, C.A., D.W. Stahle, J. Villanueva Diaz, 2012. The Rio Grande and Rio Conchos water supply variability over the past 500 years. *Climate Research* 51:125-136. [pdf]

- Stahle, D. W., D.J. Burnette, J. Villanueva Diaz, F.K. Fye, R.D. Griffin, M.K. Cleaveland, D.K. Stahle, J.R. Edmondson, K. Wolff, 2012. Tree-ring analysis of ancient bald cypress trees and subfossil wood. *Quaternary Science Reviews* 34:1-15. [pdf]

- Therrell, M.D., and D.W. Stahle, 2012. Tree-ring dating of an Arkansas antebellum plantation house. *Tree-Ring Research* 68:59-68. [pdf]

- Bragg, D.C., D.W. Stahle, and K.C. Cerny, 2012. Structural attributes of two old-growth Cross Timbers stands in western Arkansas. *American Midland Naturalist* 167:40-55. [pdf]

- Villanueva, J., J. Cerano, D.W. Stahle, B.H. Luckman, M.D. Therrell, M.K. Cleaveland, P.Z. Fule, 2012. La dendrocronologia y reconstrucciones paleoclimaticas en el norte-centro de Mexico. Ciencias Forestales. [pdf]

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2011

- DeSantis, R.D., S.W. Hallgren, and D.W. Stahle, 2011. Drought and fire suppression leads to rapid forest composition change in a forest-prairie ecotone. *Forest Ecology and Management* 261:1833-1840. [pdf]

- Villanueva Díaz, J., J. Cerano P., D.W. Stahle, B.H. Luckman, M.D. Therrell, M.K. Cleaveland, P.Z. Fulé. 2011. La dendrocronología y reconstrucciones paleoclimáticas en elnortecentro de México. In: M. Caballero, B. Ortega G. (Compiladoras), *Escenarios de cambio climático: Registros del Cuaternario en América Latina I.* UNAM, Instituto de Geofísica, Dirección General de Publicaciones y Fomento Editorial. México DF, 47-72. [pdf]

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- Stahle, D.W., E.R. Cook and J.W.C. White, 1985. Tree–ring dating of bald cypress and the potential for millennia– long chronologies in the Southeast. American Antiquity 50:796–802. [pdf]

- Stahle, D.W. and D. Wolfman, 1985. The potential for archaeological tree–ring dating in eastern North America. Advances in Archaeological Method and Theory, Vol. 8. Academic Press, New York. pp. 279–302. [pdf]

1984

- Stahle, D.W. and J.G. Hehr, 1984. Dendroclimatic characteristics of post oak across a precipitation gradient in the south-central United States. Annals of the Association of American Geographers 74(4): 561– 573. [pdf]

- Stahle, D.W., 1984. Tree–ring analysis: southeastern United States. A contribution to Chapter 3, "Climate and Tree Rings," by C.W. Stockton, W.R. Boggess, and D.M. Meko. In: Paleoclimate Analysis and Modeling, edited by A.D. Hecht. John Wiley and Sons, New York. pp. 88–94. [pdf]

1982

- Stahle, D.W., and J.E. Dunn, 1982. An analysis and application of the size distribution of waste flakes from the manufacture of bifacial stone tools. World Archaeology 14(1):84–97. [pdf]

1979

- Stahle, D.W., 1979. Tree–ring dating of historic buildings in Arkansas. Tree–Ring Bulletin 39:1–29. [pdf]

Amelia Villaseñor, PhD
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University of Arkansas avillase@uark.edu
330 Old Main Fayetteville, AR, 72701

Research Program

My research explores the macro and micro-ecological processes that shape patterns of terrestrial mammal community structure in the fossil record. Using multiple paleontological proxies and integrative methods, I link these ecological processes to human evolution from the Pliocene to Anthropocene.

Education

2017 PhD, Hominid Paleobiology, The George Washington University
2014 MPhil, Hominid Paleobiology, The George Washington University
2008 BA Anthropology, Summa Cum Laude, School of Human Evolution and Social Change, Barrett Honors College, Arizona State University

Appointments

2019- Present The University of Arkansas, Department of Anthropology, Assistant Professor
2017-2018 The University of New Mexico, Department of Biology, Postdoctoral Researcher
2011-2017 Smithsonian Institution National Museum of Natural History, Research Associate
2016 Smithsonian Institution National Museum of Natural History, Predoctoral Fellow

Grants, Awards, and Honors

2019 National Science Foundation, Biological Anthropology: "Natodomeri: New Diversity in the Middle Pleistocene" (PIs: J. Michael Plavcan, Kyalo Manthi, Carol Ward; Senior Personnel: Nicholas Blegen, Patrick Gathogo, and Amelia Villaseñor). (PENDING)
2016 Bouchet Honors Society
Ford Foundation Dissertation Award, National Research Council of the National Academies ($25,000 plus tuition)
Increasing Diversity in Evolutionary Anthropological Sciences (IDEAS) Scholarship ($1,500)
Smithsonian Predoctoral Fellowship, Smithsonian Museum of Natural History ($4,100)
National Science Foundation, Archaeology: "Technological Origins: Environmental and Behavioral Context of the Earliest Tool Users" (PI: David R. Braun; Senior Personnel: Anna K. Behrensmeyer, René Bobe, Susana Carvalho; David Patterson, and Amelia Villaseñor). Period: 08/01/2016 – 08/31/2019. Award Amount: $294,797.
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2015 Warren Research Award, The George Washington University ($600)
Innovations in Diversity and Inclusion Grant, The George Washington University ($2,150)
National Science Foundation: "The biogeography and behavioral ecology of early hominins in Pliocene: A macroecological perspective" (PI: Bernard Wood, Co-PI: Amelia Villaseñor), Period of Support: 2015-2017. Award: $9,150
Leakey Foundation Dissertation Research Grant: "The biogeography and behavioral ecology of early hominins in Pliocene eastern Africa" (PI: Amelia Villaseñor, Supervisor:

Kay Behrensmeyer). Period of Support: June 1, 2015--May 31, 2016. Award Amount: $14,965.
2013 Max and Vera Britton Environmental Science Award, Cosmos Club Research Scholarship ($3,000)
2011-2015 Ford Foundation Predoctoral Fellowship, National Research Council of the National Academies ($20,000 per year, $2,500 in lieu of tuition and fees)
Graduate Research Fellowship, National Science Foundation ($30,000 per year for 3 years, $10,500 per year tuition waiver)
2009 Smithsonian Minority Awards Internship, Smithsonian Museum of Natural History ($5350)

Peer-Reviewed Publications
Villaseñor, A., Behrensmeyer, AK., Bobe, R. Measuring the relative abundance of Pliocene hominins in East Africa: implications for species distributions. (IN REVIEW) *Journal of Human Evolution*.
Fraser, D., **Villaseñor, A.,** Tóth, A., Lyons, S. K., Miller, J. H., Amatangelo, K. L., Behrensmeyer, A. K., Bercovici, A., Eronen, J.T., Faith, J.T., Graves, G.R., Jud, N., Labandeira, C., Looy, C., McGill, B., Miller, J.H., Patterson, D., Pineda-Muñoz, S., Potts, R., Riddle, B., Terry, R., A., Wing. Homogenization of plants and mammalian communities during the Anthropocene. (IN PREPARATION).
2019 Anikó B. Tóth, S. Kathleen Lyons, W. Andrew Barr, Anna K. Behrensmeyer, Jessica L. Blois, René Bobe, Matt Davis, Andrew Du, Jussi T. Eronen, J. Tyler Faith, Danielle Fraser, Nicholas J. Gotelli, Gary R. Graves, Advait Jukar, Joshua H. Miller, Silvia Pineda-Munoz, Laura C. Soul, Amelia **Villaseñor**, John Alroy. 2019. End-Pleistocene megafaunal extinction caused a fundamental shift in species interactions. *Science*. 365. 1305-1308.
Smith, F.A., Elliot Smith, R., Lyons, S.K., Payne, J., **Villaseñor, A.** 2019. The accelerating
3
influence of humans on mammalian macroecological patterns over the late Quaternary. *Quaternary Science Reviews*. 211, 1-16.
2018 Turner, T. R., Bernstein, R. M., Taylor, A. B., Asangba, A., Bekelman, T., Cramer, J. D., Elton, S., Harvati, K., Williams-Hatala, E.M., Kauffman, Middleton, E., L., Richtsmeier J., Szathmáry, E., Torres-Rouff, C., Thayer, Z., **Villaseñor**, A., Vogel, E. 2018. Participation, representation, and shared experiences of women scholars in biological anthropology. *American journal of physical anthropology*, *165*, 126-157.
2016 Lyons, S. K., Miller, J. H., Tóth, A., Amatangelo, K. L., Behrensmeyer, A. K., Bercovici, A.,
Eronen, J.T., Faith, J.T., Graves, G.R., Jud, N., Labandeira, C., Looy, C., McGill, B., Miller, J.H., Patterson, D., Pineda-Muñoz, S., Potts, R., Riddle, B., Terry, R., **Villaseñor**, A., Wing, S. Anderson, H., Anderson, J., Waller, Donald, Gotelli, N.J. 2016. Lyons et al. reply to 'Questioning Holocene Shifts'. *Nature*, *537*: E5-E6.
Lyons, S. K., Miller, J. H., Tóth, A., Amatangelo, K. L., Behrensmeyer, A. K., Bercovici, A., Eronen, J.T., Faith, J.T., Graves, G.R., Jud, N., Labandeira, C., Looy, C., McGill, B., Miller, J.H., Patterson, D., Pineda-Muñoz, S., Potts, R., Riddle, B., Terry, R., Tóth, A., **Villaseñor**, **A.,** Wing, S. Anderson, H., Anderson, J., Waller, Donald, Gotelli, N.J. 2016. Lyons et al. reply to 'How foreign is the past'. *Nature*, *538*(7626), E3-E4.
Lyons, S.K., Amatangelo, K.L, Behrensmeyer, A.K., Bercovici, Blois, J.L., Davis, M.,

DiMichele, W.A., Du, A., Eronen, J.T., Faith, J.T., Graves, G.R., Jud, N., Labandeira, C., Looy, C., McGill, B., Miller, J.H., Patterson, D., Pineda-Muñoz, S., Potts, R., Riddle, B., Terry, R., Tóth, A., **Villaseñor**, **A.**, Wing, S. Anderson, H., Anderson, J., Waller, Donald, Gotelli, N.J. (2015) Holocene shifts in the assembly of plant and animal communities implicate human impacts. *Nature.* 529: 80—83 (doi: 10.1038/nature16447)
2014 Blois, J.L., Gotelli, N.J., Behrensmeyer, A.K., Faith, J.T., Lyons, S.K., Williams, J.W., Amatangelo, K.L, Bercovici, A., Du, A., Eronon, J.T., Graves, G.R., Jud, N., Labandeira, C., Looy, C., McGill, B., Patterson, D., Potts, R., Riddle, B., Terry, R., Tóth, **A., Villaseñor**, **A.**, Wing, S. (2014) A framework for evaluating the influence of climate, dispersal limitation, and biotic interactions using fossil pollen species associations across the late Quaternary. *Ecography*. 37: 1095-1108.
Miller, J.H., Behrensmeyer, A.K., Du, A., Lyons, S.K., Patterson, D., Tóth, **A., Villaseñor**, **A.**, Kanga, E., Reed, D. (2014) Ecological fidelity of functional traits based in species presence-absence in a modern mammalian bone assemblage (Amboseli, Kenya). *Paleobiology*. 40: 560-583.

Posters and Presentations
2018 Villaseñor, A. Elliott Smith, E. A., Tomé, C. P., Lyons, S.K, Newsome, S. D., Smith, F. A. Who's eating whom? The consequences of terminal megafaunal extinction on the isotopic niche space of large mammals, The Society for Vertebrate Paleontology 4
Fraser , D. L., **Villaseñor, A.,** Balk, M. A., Eronen, J. T. , Tóth, A. B. , Behrensmeyer, A. K., Lyons, S.K. Profound Late Quaternary Biotic Homogenization of North American Mammal faunas, The Society for Vertebrate Paleontology
Villaseñor, A. (2018) The Pliocene Savanna: integrating global climate models and regional stable isotope data from soils with implications for hominin ecology, American Journal of Physical Anthropology S165: 288-289.
2017 Villaseñor, A., Bobe, R., Behrensmeyer, A.K., (2017) Integrating climate, vegetation, and mammal community diversity in Pliocene East Africa: Implications for early hominin evolution. Romer Prize Session, The Society for Vertebrate Paleontology
Villaseñor, A., Behrensmeyer, A.K., Bobe, R., (2017) Reconsidering mid-Pliocene hominin ecology in the Turkana Basin: Integrating vegetation, sedimentary, and mammalian community reconstructions to explore hominin sympatry, American Journal of Physical Anthropology S64: 396.
Villaseñor, A., Bobe, R., Behrensmeyer, A.K., (2017) Spatial variation in Pliocene Paleohabitats: Implications for large-mammal community assembly. International Biogeography Society Meetings
2016 Peterson, A. **Villaseñor, A.**, and Braun, D. (2016) Paleoarchaeology of East Turkana: Comparison of faunal and isotope data to understand ancient ecosystems**.** American Association of Physical Anthropology Student Research Symposium
Villaseñor, A. (2016) Variation in habitat heterogeneity within Pliocene East Turkana, Kenya: Defining the mosaic. The Paleoanthropology Society Meetings
Villaseñor, A. (2016) Spatial variation in paleovegetation in the Turkana Basin: implications for hominin niche shifts in the mid-Pliocene. American Journal of Physical Anthropology S62: 324
2015 Villaseñor, A., Bobe, R. (2015) Estimating the relative abundance of Pliocene hominins:

implications for species distributions. American Journal of Physical Anthropology S60: 313
2014 Villaseñor, A., Bobe, R., Behrensmeyer, A.K. (2014) Ecological change at Koobi Fora in northern Kenya circa 3.4 million years ago: implications for hominin biogeography in East Africa. The PaleoAnthropology Society Meetings
2013 Villaseñor, A. (2013) Does ecology or taphonomic bias describe the differences in mammalian communities in the Pliocene Hadar and Turkana Basins, Ethiopia and Kenya? A quantitative approach. Journal of Vertebrate Paleontology: 71A
Bobe R, **Villaseñor A**, Patterson D, Du A (2013) Geographic and temporal variation in East African Plio-Pleistocene mammals. Abstracts of the Society for American Archaeology: 70. 5
Villaseñor, A., Behrensmeyer, AK., Bobe, R. (2013) Community dynamics through space and time in the Hadar and Turkana Basins, Ethiopia and Kenya. American Journal of Physical Anthropology Suppl. 56: 279
2012 Villaseñor, A., Behrensmeyer, AK., Bobe, R., Reed, K.E. (2012) A Tale of Two Basins: Community structure through space and time in the Hadar and Turkana Basins., Journal of Vertebrate Paleontology 32: 42A
Du A, Faith JT, Behrensmeyer AK, Patterson DB, **Villaseñor A.** (2012) The effects of craniodental sampling on ecological variables in modern and fossil mammal landscape assemblages. Annual Meeting of the Society of Vertebrate Paleontology Abstracts and Program: 89.
2011 Bobe, R., Behrensmeyer, AK., Campisano, C., Levin, N., Hakala, Sarah, Patterson, D., **Villaseñor, A.**, The Turkana Basin 3.4 million years ago, American Journal of Physical Anthropology 144 S52:86
2010 Villaseñor, A., Behrensmeyer, AK., Geographic variation in horn size and shape in the species *Aepyceros melampus*, with applications to the fossil record, Journal of Vertebrate Paleontology 30:182A

Invited Talks
2019 The Missing Piece: the effect of Pleistocene megafaunal extinction on mammalian cooccurrence
and diet, Department of Biology, The University of Nebraska-Lincoln, April 25, 2019
2017 *Early Hominin Paleoecology*, Department of Anthropology, The University of New Mexico,
September 13, 2017
Integrating Stable Isotope Ecology and Mammal Community Diversity in Pliocene East Africa: Implications for Early Hominin Evolution, Department of Geosciences Colloquium, March, 3, 2017

Teaching Experience
2018 University of New Mexico, Ecology of the Past, Co-instructor
2017 University of New Mexico, Biology, Extinction: Bad Genes or Bad luck? Guest lecturer and
co-developer of course teaching materials
2011-2015 GWU and National Museums of Kenya: Koobi Fora field school teaching assistant

2014-2015 GWU and National Museums of Kenya: Koobi Fora field school online course developer
and co-instructor
2012-2013 GWU Medical School: Human anatomy laboratory instructor (ANAT 181)
6
2012 GWU Anthropology Department School: Biological Anthropology laboratory instructor and TA (ANTH 1002)

Field Experience

2011-2015 Research Field Season, Teaching Assistant, Koobi Fora Field School, Kenya, Directors:
David R. Braun, Brian Richmond, Anna K. Behrensmeyer and René Bobe.
2014 Laboratory Rotation, An Ecological Study of Red-tailed Monkeys, Blue Moneys and Hybrids at Gombe National Park, Tanzania, Supervisor: Kate Detwiler
2011-2012 Research Field Season, Petrified Forest, Arizona, Directors: Robin Whatley and Anna Kay
Behrensmeyer
2009 Research Field Season, Mossel Bay, South Africa, South African Coast Paleoclimatology, Paleoenvironment, Paleoecology, and Paleoanthropology Project, Director: Curtis Marean

Service

2017 Visiting lecture on the paleoecology of hominins at Manzano High School, Albuquerque, NM
Outreach Panel on Women in STEM: Experiences, Discoveries & Opportunities, The University of New Mexico
Evolution of Terrestrial Ecosystems 30th Anniversary, volunteer for public outreach event, Q?rius, Smithsonian Museum of Natural History
2016 Empowering underrepresented minority undergraduate students through research in STEM, Organizer, The George Washington University
2012-2015 Paleobiology Education Outreach Days, Smithsonian Museum of Natural History
2013-2014 Center for the Advanced Study of Hominin Paleobiology's Evolution in Education Program, Volunteer, The George Washington University
2013 USA Science and Engineering Festival, Volunteer in Human Evolution booth, The George Washington University

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https://sites.uark.edu/vining/

EDUCATION

Ph.D. Boston University. Department of Archaeology, 2011. Dissertation: *Ruralism, Land Use History and Holocene Climate Change in the Suches Highlands, Peru*.
M.A. Boston University. Department of Archaeology, 2005.
B.A. Colgate University. Anthropology and Geology, 1998.

PROFESSIONAL APPOINTMENTS

2016–present Assistant Professor. Department of Anthropology, University of Arkansas-Fayetteville.
2013–2016 Postdoctoral Researcher. NASA ROSES Space Archaeology Program.
2012–2016 Lecturer. Department of Anthropology, Wellesley College.
2011–2012 Lecturer. Tufts Institute for the Environment, Tufts University.
2006 Research Fellow, Joint Laboratory of Remote Sensing Archaeology, Chinese Academy of Sciences. Beijing.

PUBLICATIONS

Books

2005 **Vining, Benjamin**. *Social Pluralism and Lithic Economy at Cerro Baúl, Peru*. BAR International Series 1461. Oxford: Archaeopress.

Peer-reviewed articles and chapters

2018 **Vining, Benjamin**, Byron Steinman, and Mark Abbott. "Palaeoclimatic and archaeological evidence from Lake Suches for highland Andean r*efugia* during the arid middle Holocene," *The Holocene*: 29(2) 328–344. DOI: 10.1177/0959683618810405
2018 **Vining, Benjamin** and Sara Burns. "Understanding the ecological decision-making of Tiwanaku pastoralists through geospatial Agent-based models," in *New Geospatial Approaches in Anthropology*, edited by Robert Anemone and Glenn Conroy. Albuquerque: School for Advanced Research Press, pp. 137 – 170.

2017 **Vining, Benjamin**, "Cultural Niche Construction and remote sensing of ancient anthropogenic environmental change in the north coast of Peru," *Journal of Archaeological Method and Theory*, 25(2): 559-586. DOI: 10.1007/s10816-017-9346-y
2017 Michael E. Moseley, Susan D. deFrance, **Benjamin Vining**. "Droughts, floods, and farming at Quebrada Tacahuay from Late Prehispanic to Colonial times," *Ñawpa Pacha* 37(1): 25-37. DOI: 10.1080/00776297.2017.1324010
2016 **Vining, Benjamin**. "Pastoral intensification, social fissioning, and ties to state economies at the Formative – Middle Horizon transition in the Lake Suches region, southern Peru," in *The Archaeology of Andean Pastoralism*, edited by José M. Capriles and Nicholas Tripcevich. Albuquerque: University of New Mexico Press, pp. 87 – 118.
2015 **Vining, Benjamin**. "Reconstructions of local resource procurement networks at Cerro Baúl, Peru using multispectral ASTER satellite imagery and geospatial modeling," *Journal of Archaeological Science* 2: 492 – 506. DOI: 10.1016/j.jasrep.2015.05.001
2015 **Vining, Benjamin**. "Más Allá Encuentran los Antiguos: Temporality, Distance, and Instrumentality in Aymara Interactions with Archaeological Landscapes," *Cambridge Archaeological Journal*. 25(1): 239 – 259. DOI: 10.1017/S0959774314001073
2010 Stanish, Charles, Edmundo de la Vega, Michael Moseley, Ryan Williams, Cecilia Chávez, **Benjamin Vining**, and Karl La Favre. "Tiwanaku Trade Patterns in Southern Peru," *Journal of Anthropological Archaeology* 29(4): 524–532. DOI: 10.1016/j.jaa.2010.09.002
2009 Creasman, Paul, **Benjamin Vining**, Samuel Koepnick, and Noreen Doyle. "An Exploratory Geophysical Survey at the Pyramid Complex of Senwosret III at Dahshur, Egypt, in Search of Boats". *International Journal of Nautical Archaeology* 38: 386–399. DOI:10.1111/j.1095-9270.2008.00214.x
2006 **Vining, Benjamin** and James Wiseman. "Multispectral and SAR remote sensing-based models for Holocene coastline development in the Ambracian Gulf, Epirus, Greece." *Archaeological Prospection* 13: 258–268. DOI: 10.1002/arp.292
2003 Aveni, Anthony F., Anne S. Dowd and **Benjamin Vining**. "Maya Calender Reform? Evidence from Orientations of Specialized Architectural Assemblages," *Latin American Antiquity* 14(2): 159–178. DOI: 10.2307/3557593

Book and monograph chapters
2018 Christopher P. Dayton, Patrick Ryan Williams, **Benjamin R. Vining**, and Scott C. Smith. "Geophysical Investigations at Khonkho Wankane," in Khonkho Wankane: Archaeological Investigations in Jesus de Machaca, Bolivia, John W. Janusek, ed. Berkeley: Contributions of the Archaeological Research Facility, Number 68. pp. 57 – 64.

2017 **Vining, Benjamin**. "Geophysical Surveys at Tanah Datar," in *Tanah Datar: Early Settlement Archaeology and History in the Highlands of Sumatra, Indonesia*, Mai Lin Tjoa-Bonatz, editor. ISEAS–Yusof Ishak Institute, Singapore, pp.
2007 **Vining, Benjamin.** "Geophysical Survey," in *Harbor of the Pharaohs to the Land of Punt: Archaeological Investigations at Mersa/Wadi Gawasis, Egypt, 2001 – 2005*, Kathryn Bard and Rudolpho Fattocich, editors. Università Degli Studi de Napoli "L'Orientale," Naples, Italy, pp. 77–90.

Conference proceedings
2012 E. Edwards McKinnon, **Benjamin Vining**, Naniek Harkantiningsih Wibisono, Heddy Surachman, Sarjiyanto, Stanov Purnawibowo, and Lim Chen Sian. "The Kota Rentang Excavations." *Crossing States and Empire. Proceedings of the EurASEAA13 Conference. vol. 2.*, Singapore, pp. 67-81.
2008 **Vining, Benjamin**, Patrick Ryan Williams, Deborah Blom, and Nicole Couture. "Hacia una imagen del espacio social en Tiwanaku: Perspectivas por medio de métodos geofísicos en el Altiplano boliviano." *Arqueología de las Tierras Atlas, Valles Interandinos, y Tierras Bajas de Bolivia: Memorias del I Congreso de Arqueología de Bolivia*. Universidad Mayor de San Andrés, La Paz, Bolivia, pp. 63–76.
2004 Williams, P. Ryan., Nicole Couture, Deborah Blom, John Janusek, **Benjamin Vining**, and Chris Dayton. "Ground-Based Remote Sensing and Early State Development in the South-Central Andes." *Proceedings of the International Conference on Remote Sensing Archaeology.* Joint Laboratory of Remote Sensing Archaeology, Chinese Academy of Sciences, Beijing, pp 149–157.

Book Reviews
2004 Vining, Benjamin. Book Review of "Archaeological Research on the Islands of the Sun and Moon, Lake Titicaca, Bolivia: Final Results from the Proyecto Tiksi Kjarka," *Journal of Field Archaeology* 30(4): 362–365.

GRANTS, FELLOWSHIPS and ACADEMIC HONORS (awards to date totaling $440,352)
2019 NSF-Archaeology, BCS-1848699. "Collaborative Research: Coupling and Cohesion as factors affecting vulnerability to abrupt climatic change: A theoretical model and its application to prehispanic agroecology in Peru". Principal Investigator. ($221,821 total award).
2018 National Geographic Society, "Tiwanaku Pastoralism and Economy in Far Southern Peru: Creating a Strontium Baseline and Isoscape to Aid Archaeological Research". NGS-14017 (co-PI, $22,300 total award).
2018 Sandra and Robert C. Connor Endowed Faculty Fellowship. University of Arkansas. ($5000).

2017 Faculty Travel Grant. Fulbright College of the University of Arkansas-Fayetteville. ($1000).
2017 Faculty Travel Grant. Fulbright College of the University of Arkansas-Fayetteville. ($1000).
2013–2016 NASA ROSES Space Archaeology Program. Postdoctoral Researcher. ($41,212 annually).
2012–present Research Associate. Department of Anthropology, The Field Museum of Natural History, Chicago.
2010 Cora Du Bois Dissertation Writing Fellowship. Tozzer Library of Harvard University and the Cora Du Bois Charitable Trust. ($5,000).
2010 Boston University Graduate School of Arts and Sciences Dean's Fellowship.
2009 National Science Foundation-SBE. BCS 0900904, Doctoral Dissertation Improvement Grant ($14,995).
2009 Douglas C. Kellogg Award for Geoarchaeological Research. Society for American Archaeology. ($500).
2007 Graduate Research Abroad Fellowship, Boston University. ($10,000).
2003–2007 Teaching Fellowships, Boston University. (totaling $24,000).
2006 National Science Foundation-EAPSI grant number 0611686. ($3,000 plus expenses).
2006 Research Assistantship, Xibun Archaeological Research Project. Boston University. ($8,000).
2005 Creighton Gabel Memorial Scholarship, Boston University. ($400).
2005 Sackler Scholarship, Raymond and Beverly Sackler Foundation. ($500).
2004, 2011 GSO Conference Travel Grant, Boston University. (totaling $1,000).
2003 CCC Research Fellowship, The Field Museum of Natural History. ($2,500).
2002–2003 Editorial Fellow, Journal of Field Archaeology, Boston University. ($16,000).

INVITED TALKS
2019 Vining, Benjamin. "Archaeological perspectives on adapting to climate change: two examples from ancient Peru," meeting of the Arkansas Archaeological Society , March 13, 2019.

2019 Vining, Benjamin. “Catastrophe and opportunity during el Niño disasters: using archaeology and paleoclimatology to find lessons for the future in abrupt climatic events,” Department of Anthropology, Washington University at St. Louis. March 8, 2019.
2019 Vining, Benjamin. “Integrating archaeology, remote sensing, and paleolimnology to understand the ecological effects of Andean climate change, past and future,” First International Workshop on Paleoclimate, Water Use and Environmental Phenomena in Ancient Peru and Their Contemporary Impacts, Newton Fund and the Universidad Nacional de Trujillo.
2018 Vining, Benjamin. “el Niño’s Destruction: perspectives from integrated archaeology, remote sensing and paleoclimate proxies on ENSO disaster and mitigation in northern Peru,” GEOS Colloquium Series, Department of Geosciences, University of Arkansas.
2016 Vining, Benjamin. “Cultural Niche Construction and remote sensing of ancient anthropogenic environmental change in the north coast of Peru,” presented at the Advanced Seminar “New Geospatial Approaches in Anthropology,” School for Advanced Research. Santa Fe, NM.
2014 “Prehistory by the Numbers: Remote Sensing and Quantitative Models of Socio-Environmental Dynamics in Southern Peru,” Celebrating QR Connections, Wellesley College. November 19, 2014.
2014 “Archaeology, water, and climate in Suches, Peru: socio-ecological histories and environmental mutualism” University of Connecticut, Storrs. October 5, 2014.
2014 “Where the wild things aren’t: human niche-construction, climate, and anthropogenic environmental networks in Peru’s southern highlands,” Harvard University and the Peabody Museum of Archaeology. March 27, 2014.
2012 “Rural Land Use and Holocene Climate Reconstructions in the Southern Peruvian Highlands,” University of Maine-Orono, Anthropology and Climate Change Institute. April 16, 2012.
2010 Lithic Technology and Analysis. Department of Anthropology, University of Massachusetts-Boston. October 15, 2010.
2006 “Geospatial approaches to reconstructing social structure and resource use at the archaeological site of Cerro Baúl, Peru,” Institute of Archaeology, Chinese Academy of Social Sciences, Beijing. July 20, 2006.

CONFERENCE PAPERS (selected)
2019 Vining, Benjamin. “Identifying Refugial Areas during abrupt and protracted climate change using archaeological, paleoclimatic, and geospatial data.” 25th Annual Meeting of the European Archaeological Association, Bern, Switzerland.

2019 Goodin, John, Aubrey Hillman, and Ben Vining. “The Spatial and Temporal Distribution of Metalworking within Northern Peru,” Annual Meeting of the Geological Society of America. Pheonix, AZ.
2019 Vining, Benjamin and Seth Price “Marginality and opportunity in the deserts of Chicama, Peru: perspectives from integrated archaeology, remote sensing, and paleoclimatic analysis.” 84th Annual meeting of the Society for American Archaeology, Albuquerque, NM.
2018 Vining, Benjamin. “Past and future responses to el Niño Southern Oscillation in Peru’s Chicama Valley: mapping disaster and mitigation with archaeology and remote sensing,” 24th Annual Meeting of the European Association of Archaeologists, Barcelona, Spain.
2018 Vining, Benjamin. “Detecting el Niño: remote sensing of recent ENSO events in Northern Peru and implications for prehispanic societies.” 83rd Annual Meeting of the Society for American Archaeology, Washington, D.C.
2018 Vining, Benjamin. “Disaster’s Reach: Remote sensing of environmental change caused by the 2017 el Niño and their implications for prehispanic agriculture in Peru’s Chicama Valley.” 46th Annual Midwest Conference on Andean and Amazonian Archaeology and Ethnohistory, Chicago, IL.
2017 Vining, Benjamin. “Remote Sensing of archaeological environmental change in the Chicama Valley.” 82nd Annual Meeting for the Society for American, Archaeology, Vancouver, BC.
2016 Vining, Benjamin. “Wetlands, Sugar, and Archaeological Remote Sensing: legacy effects of ancient land use on modern vegetation and environmental function.” Anthropology, Weather and Climate Conference, Royal Anthropological Institute and the British Museum. London, UK.
2015 Vining, Benjamin. “Detection of latent archaeological landscapes in the intensively cultivated Chicama Valley (Peru) through high resolution, multispectral remote sensing.” 34th Annual Meeting of the Northeast Conference on Andean Archaeology and Ethnohistory, University of Toronto.
2014 Vining, Benjamin, Tom Sever, Rob Griffen, and Bill Saturno. “A clearer sense of self: landscape-scale remote sensing of human impacts during the Anthropocene.” 5th International Conference on Remote Sensing in Archaeology, Duke University, NC.
2014 Saturno, Bill and Benjamin Vining. “More than meets the eye: Examining the spectral response of sugar cane to subsurface features.” 79th Annual Meeting of the Society for American Archaeology, Austin, TX.

2014 Vining, Benjamin and Bill Saturno. “Multispectral satellite remote sensing of latent archaeological landscapes in the Chicama Valley, Peru.” 54th Annual Meeting of the Institute of Andean Studies, UC Berkeley, CA.
2013 Vining, Benjamin. “Climate Change and Long Term Rural Land use in Southern Peru: Archaeological, Palaeoenvironmental, and Policy Perspectives on the importance of Rural Environmental Services.” 112th Annual Meeting of the American Anthropological Association. Chicago, IL.
2013 Vining, Benjamin. “Condiciones de Refugio Climático y ocupación arqueológica continua en la cuenca del Lago Suches, Moquegua, Perú durante el Holoceno, 13.600 años al presente.” VIII Simposio Internacional de Arqueología PUCP: 15.000 años de clima y hombre en los Andes centrales: enfoques paleoclimatológicos y arqueológicos”. Pontifica Universidad la Católica, Lima, Perú.
2013 Vining, Benjamin. “‘Persistent Places’: Long-term occupations in the southern Peruvian highlands and their role in cultural landscape formation.” Fryxel Symposium in Honor of Anthony Aveni, 78th Annual Meeting of the Society for American Archaeology. Honolulu, HI.
2012 Vining, Benjamin. “Pastoral Intensification, Social Fissioning, and Ties to State Economies at the Formative - Middle Horizon Transition in the Lake Suches Basin, Peru.” 111th Annual Meeting of the American Anthropological Association. San Francisco, CA.
2012 Williams, Patrick Ryan and Benjamin Vining. “Crossing the Western Altiplano: Tiwanaku Routes, Pasture, and Camelid Transport.” 111th Annual Meeting of the American Anthropological Association. San Francisco, CA.
2012 Vining, Benjamin. “Systems-scale, change thresholds, and stability in the settlement and climatic history of the Lake Suches Highlands, Peru.” 77th Annual Meeting of the Society for American Archaeology. Memphis, TN.
2012 Vining, Benjamin. “The Development of Rural Societies in the Lake Suches Highlands of Southern Peru.” 40th Annual Midwest Conference on Andean and Amazonian Archaeology and Ethnohistory. Chicago, IL.
2011 Vining, Benjamin. “Refugia-effects and stability in small-scale systems: implications of new archaeological survey and palaeoclimate data from *el Proyecto Arqueologico Lago Suches*,” 30th Annual Northeast Conference on Andean Archaeology and Ethnohistory. Andover, MA.
2008 Vining, Benjamin and Chris Roosevelt. “Geophysical and Microtopographical Survey at Kaymakçı, a Regional Capital of the Second Millennium BCE,” 73th Annual Meeting of the Society for American Archaeology, Vancouver, British Colombia.

2005 Vining, Benjamin. “Teledetección a base de plataforma alta de recursos geo-arqueológicos en la Zona Arqueológica de Cerro Baúl.” Simposio Internacional Sobre Arqueología del Área Centro Sur Andina. Universidad Católica de Santa María, Arequipa, Perú.
2005 Vining, Benjamin, Carol A. Stein, and James Wiseman. “Tracing landscape evolution in the Ambracian Gulf, Greece: Results from integrated geoarchaeological and satellite remote sensing data.” Remote sensing and environmental modeling in alluvial landscapes, 11th Annual Meeting of the European Association of Archaeologists, Cork, Ireland.
2004 Vining, Benjamin. “Lithic materials and social contexts at the Middle Horizon Huari site of Cerro Baúl, Peru.” Production and Consumption on the Wari-Tiwanaku Frontier, 69th Annual Meeting of the Society for American Archaeology, Montreal, Quebec.
2004 Vining, Benjamin, Ryan Williams, Chris Dayton, Nicole Couture, Deborah Blom, and John Janusek. “Imaginando yacimientos arqueológicos en el Altiplano Boliviano: Prospecciones geofísicos en Mollo Kontu, Tiwanaku y Khonko Wankane.” el Primer Congreso de Arqueología y Etnología Andina. Universidad Pontifica La Católica, La Paz, Bolivia.

TEACHING POSITIONS

University of Arkansas-Fayetteville, Department of Anthropology. Assistant Professor.
Courses: Society and Environment; Ecological Anthropology; Landscape Archaeology; Latin American Archaeology; Introduction to Archaeology, Approaches to Archaeology
Wellesley College, Department of Anthropology. Visiting Lecturer.
Courses: Archaeology of Environmental Change; Introduction to Archaeology; Politics and Ritual of Ancient South America; Mapping Society, Public Health, and the Environment: GIS approaches
Tufts University, Environmental Studies. Lecturer.
Introduction to Geographic Information Systems
Boston University. Department of Archaeology. Lecturer.
Great Discoveries in Archaeology
Boston University, Department of Archaeology. Teaching Assistant.
Courses: Archaeological Sciences; Great Discoveries in Archaeology; Introduction to Archaeology; Remote Sensing and Archaeology

ARCHAEOLOGICAL AND REMOTE SENSING PROJECTS (selected)

2016 – present Principal Investigator: “Climate and agroecological change in the Chicama Valley of Northern Peru, ca. 3000 – 600 years BP”. Integrated paleoclimatic and ecological modeling.
2013–2016 Project Lead. NASA ROSES Space Archaeology Program.
“An Archaeological Investigation into the Northern Peruvian Desert Region Using Landsat, Hyperion, Advanced Land Imager (ALI), and ASTER Data.”
2009 – 2014 Principal Investigator, “el Proyecto Arqueológico Lago Suches. Huaytire, Peru. Pedestrian survey, multispectral remote sensing, and palaeoclimate reconstruction.
2010, 2016 Topographic and Geophysical Survey, Xultun Regional Archaeological Project. Peten, Guatemala. William Saturno, Director (Boston University).
2011 Geophysical Surveys at Adam Park and Pine Grove, Singapore. Lim Chen Sian, Director (National University of Singapore).
2011 Geophysical Survey at Bukit Gombak, West Sumatra, Indonesia. Domink Bonatz, Director (Institut für Vorderasiatische Archäologie, Freie Universität Berlin).
2007 – 2011 Director of Geophysical Survey. Central Lydia Archaeological Survey, Chris Roosevelt, Director (Boston University). Sart, Turkey.
2008 Geophysical Survey at Roman bath complex. Ilidza, Bosnia, Christine Zitrides Atiyeh, Director (Kutztown University).
2008 Geophysical Survey and excavations at Pulau Majapahit, Kota Rentang, Indonesia. National University of Singapore, and Institute of Archaeology (Jakarta), Edmunds McKinnon, Director.
2008 Geophysical Survey at the Wakefield Estate, Milton, Massachusetts. Mary Beaudry, Director (Boston University).
2007 Geophysical survey at Senwosret III pyramid compound. Dahshur, Egypt. Dieter Arnold, Director (Metropolitan Museum of Art).
2007 Geophysical survey at Wits Cah Ak’al. Hattieville, Belize. Patricia McAnany, Director (Boston University).
2006 – 2007 Research Assistant, Xibun Archaeological Research Project. Boston University. Construction of GIS database for regional archaeological settlement analysis.
2006, 2007 Geophysical survey at Mersa/Wadi Gawasis. Safaga, Egypt. Rudolpho Fattovich (Università Degli Studi de Napoli “L’Orientale) and Kathryn Bard (Boston University), Directors.

2006 Field Director, Pedestrian surface survey for "el Proyecto Arqueológico Qawra Thaki". Huaytire, Peru. Charles Stanish (UCLA) and P. Ryan Williams (Field Museum of Natural History), Directors.
2006 Geophysical survey at Menkaure Valley Temple, Khentkawe Lower Town, and Khafre Valley Temple. Giza, Egypt. Giza Plateau Mapping Project, Mark Lehner, Director.
2005 Research Associate. Center for Archaeological Studies, Boston University.
Multispectral and radar remote sensing to detect relict coastlines and model landscape evolution, Epirus, Greece.
2001 – 2005 GIS and Image Analyst. Center for Remote Sensing, Boston University.
GIS and multispectral image analysis for natural resources inventory projects.
2004 Geophysical survey at Lianchengzhen, China. P. Ryan Williams and Anne Underhill, Directors (Field Museum of Natural History).
2004 Geophysical survey at Tiwanaku and Konkho Wankane (Jesús de Machaca), Bolivia. P. Ryan Williams and John Janusek, Directors.
2002 – 2004 Excavation supervisor and lithics analyst. Excavations at Cerro Baúl. P. Ryan Williams, Director (Field Museum of Natural History). Moquegua, Peru.

ACADEMIC SERVICE

Peer Review

Manuscript reviews: *Journal of Archaeological Science; Journal of Archaeological Research; Latin American Antiquity; Remote Sensing*; *Sustainability; Geosciences, American Anthropologist; Archaeological Prospection; Historical Archaeology*
2014-present National Science Foundation: SBE (Archaeology) ad hoc review; EAPSI-SBE Proposal Review Panel.
2014–present Member, Advisory Board for Research Evaluation, Office of the Vice President of Research, *Pontifica Universidad la Catolica*, Lima, Perú

Conference/Symposia Organizer

2019 – present Program Chair, Institute of Andean Studies Annual Meeting.
2017 "Landscapes of Change: Integrated Socio-ecological histories in the Chicama Valley, Peru," organized with Jeff Quilter and Ari Carimanica, 82nd Annual Meeting of the Society for American Archaeology, Vancouver, BC.

Internal and National Committees

2015 – present Society for American Archaeology Climate Change Strategies and Archaeological Resources Committee (SAA-CCSAR)

2018 – present Undergraduate Student Committee, Department of Anthropology
2016 – 2018 Committee for Diversity and Inclusion, Department of Anthropology
2004 – 2011 Administrator, Geographic Information Systems and Remote Sensing Committee. Department of Archaeology, Boston University.

Academic Advising
Advisees:
Sam Martin, Ph.D. in Anthropology, University of Arkansas (2018-present).
Hali Thurber, Ph.D. in Anthropology, University of Arkansas (2017-2018).
Seth Price, Ph.D. and M.A. in Anthropology, University of Arkansas (2016-present).
Mitra Panahipour, Ph.D. in Anthropology, University of Arkansas (2016-present).
Committees:
Marc Marino, Ph.D. in Anthropology, University of Arkansas (2017 – present)
Kyle Urqhart, Ph.D. in Anthropology, University of Arkansas (2017 – present)
Jacob Scnhider, Ph.D. in Anthropology, University of Arkansas (2017 – present)
Jeremy Menzer, Ph.D. in Environmental Dynamics, University of Arkansas (2016-present).
Caleb Ward, M.A. in Anthropology, University of Arkansas (2016-2018).
Forest Follett, M.A. in Anthropology and Classics, University of Arkansas (2016-present).
Christopher Motz, M.A. in Classics and Archaeology, Tufts University (2012).

PROFESSIONAL MEMBERSHIPS and AFFILIATIONS
2013 – present Institute for Andean Studies
2011 – 2014 American Anthropological Association
2005 – present Register of Professional Archaeologists
2003 – present Society for American Archaeology
SPECIALITIES AND SKILLS

Multispectral and SAR/radar remote sensing image-analysis. Image processing using Research Systems, Inc. ENVI (v. 4 – 5); ERDAS Imagine.
Geographic Information Systems (GIS) methods applied to settlement, ecology, and Agent-based modeling. GIS database construction and analysis. Software Packages: ESRI ArcGIS (v. 9 – 10.2, including earlier Arcview (v. 3.2 – 10) and ArcInfo suites); Agent Analyst; Golden Surfer.
Spatial Ecology Modeling: Geospatial Modeling Environment; MaxEnt; NetLogo.

Surveying/mapping using total stations (Topcon and Sokkia EDM's) and Global Positioning Systems (Topcon HiPerLite+ Real-Time Kinematic GPS, Trimble GEO-series and Garmin handheld GPS with mobile GIS).
Near-Surface geophysical survey: Magnetometry (Geometrics G-858 and GEM-19 overhauser magnetometers); Electromagnetic Induction (Geonics EM38 and EM31); Ground-penetrating Radar (GSSI SIR-2000/3000 and RAMAC systems); Electrical Resistivity (TRSystems Twin Probe Array).
Statistical analysis using SPSS PSAW, Systat packages. R. Basic knowledge of Matlab.

LANGUAGES
English: Native speaker.
Spanish: Written and spoken fluency.

REFERENCES
Dan Sandweiss
Professor
Anthropology Department, University of Maine 5773 South Stevens Hall, room 234A Orono, Maine 04469-5773 USA
Email: dan.sandweiss@umit.maine.edu, telephone: (207) 581-1889
Patrick Ryan Williams
Associate Curator and Chair,
Department of Anthropology, Field Museum of Natural History
Lake Shore Drive, Chicago, IL, 60605-2496
Email: prwill@gmail.com, telephone: (312) 665-7008
Mark Abbott
Professor
Department of Geology and Environmental Science, University of Pittsburgh
315 SRCC 4107 O'Hara Street Pittsburgh, PA 15260
Email: mabbott1@pitt.edu, telephone: (412) 624-1408
Ram Natarajan
Assistant Professor
Department of Anthropology, University of Arkansas Old Main 346, Fayetteville, AR 72701
email: ramnatarajan18@gmail.com

Appendix B:

I. Workforce Analysis
This document was submitted to Nathan Smith

II. Course Evaluation Template

I. Workforce Analysis Request Form

Workforce Analysis Request Form

Directions: An institution shall use this form to request workforce data analysis of a proposed degree program. In completing the form, the institution should refer to the document AHECB Policy 5.11 Approval of New Degree Programs and Units, which prescribes specific requirements for new degree programs. **Note:** This form is required to be submitted by the Chief Academic Officer or individual(s) they designate. Answers need not be confined to the space allotted but may extend to several pages.

Program Information for Analysis
1. Institution: University of Arkansas
2. Program Name – Show how the program would appear on the Coordinating Board's program inventory (*e.g., Bachelor of Business Administration or Associate of Science in Accounting*): Master of Environmental Dynamics
3. Proposed CIP Code: If the proposed program does not fit easily into one CIP Code, provide the code it most closely falls into and explain differences / nuances of your program 03.0104. This code is general code to describe our program however we have graduates that fit quite a few other codes as shown in 4a. The very nature of the program reaches across traditional lines of student and provides our students with proficiency to challenge complex problems that reach across multiple disciplines.
4a. Standard Occupational Classification (SOC) from CIP-SOC Crosswalk: Take SOC codes from NCES Crosswalk of CIP to SOC, ranked in order of relevance (i.e., the degree to which program graduates are expected to desire and/or be qualified to work in each occupation) **(See Appendix A) ENDY is interdisciplinary so our students are qualified to work across CIP categories and here are some of the most prevalent.** 19-2041 Environmental Scientists and Specialists, including health

25-1053 Environmental Science Teachers, Postsecondary

They are also qualified to work in CIP 40.0699

11-9121 Natural Sciences Managers

19-2043 Hydrologists

25-1051 Atmospheric, Earth, Marine, and Space Science Teachers, Postsecondary

They are also qualified to work in CIP 45.0299

11-9199 Managers

19-3091 Anthropologists and Archeologists

25-1061 Anthropology and Archeology Teachers, postsecondary

They are also qualified to work in CIP 45.0799

11-9199 Managers

19-3092 Geographers

25-1064 Geography Teachers, Postsecondary

4b. Standard Occupational Classification (SOC) from Expert/Staff Opinion (optional): If you think the standard NCES crosswalk accurately represents the list of occupations in which graduates of the proposed program will be qualified to work, leave this blank. If you think the list of target occupations is longer, shorter, or different, please provide an alternative list here, ranked in order of relevance. Feel free to add qualitative information about the variety of jobs and pay scales that may exist within target occupations, and where you expect graduates to fit in. **(See Appendix A)**

Since ENDY is an interdisciplinary program our students are qualified and do accept jobs across many areas including Biological Sciences, Anthropology, Geosciences, Crop, Spoils and Environmental Sciences, Agricultural Economics, Environmental remediation, public policy, environmental justice and so on. The salaries that accompany these jobs range from mid-range salaries for land managers and teachers to high salaries in the private sector with large companies or as Consultants.

Governmental jobs start at between (GS 9-14) $33-51,000, DOD jobs up to GS 15 with pay up to $61,000, Private Environmental firms pay higher wages from $56-90,000 and there is a need across the state. Extension agencies across the state high at various pay grades and levels with salaries generally between $40-100,000 depending on experience and education.

5. Brief Program Description – Describe the proposed program, the costs and investments involved in implementing it, the students you expect to recruit into it, and its educational objectives.

The Environmental Dynamics faculty prepare program graduates to enter the workforce as leaders in the global effort to understand interactions between humans and the environment. Environmental Dynamics students can learn from nearly 100 affiliated faculty members and make use of state-of-the-art research facilities and laboratories throughout our campus. Our approach is interdisciplinary and allows students to work across departments and colleges to gain the tools needed to address today's most pressing environmental issues. The Environmental Dynamics program's focus is unique and two-tiered, providing students with a deep-time perspective, which gives human-environmental interactions context, and sustainability/resilience, which gives them relevance. This approach benefits all Environmental Dynamics students and prepares them to meet the challenges of employment that advanced degree-holding professionals face in today's world.

The proposed program can be accommodated with existing resources and will attract more and better quality ENDY applicants. We expect to attract international sponsored students, and those with BS/BA degrees in hand who wish to find jobs in fields documenting, responding to or managing environmental issues along with people who wish to work in governmental agencies where an interdisciplinary approach to environmental problems is crucial.

6. North American Industry Classification System (NAICS) – List some industries and/or companies which graduates would be most likely and/or qualified to work in (optional), and feel free to comment on why/in what capacity. Also, a description of the target industry in your region, its relative strength or weakness relative to other regions, and the reasons for that relative strength or weakness, is welcome. Lookup NAICS Code 54 professional, scientific and technical services

We are producing professionals to take on the challenges of a changing climate, which greatly effects our agricultural state through work in Extension Agency Offices. They will also be sought after by the entire Arkansas supply chain for their ability to find solutions to complex problems facing large companies. They will be innovators that help the Natural State use its resources in a responsible and sustainable way, protecting the environment for future generations. They will also be well suited to correct pollution problems of the past and plan for those in the future.

We also have people who fit 51 (information), 56 (Administrative and support and waste management and remediation services) and 61 (educational services)

7. Region of Possible Position(s) – Describe the region where you think graduates are most likely to work, e.g., in terms of a list of counties, a metropolitan statistical area, or a commuting radius:

ENDY graduates are sought in rural areas dealing with environmental contamination and clean-up, to manage state lands, to aid farms in sustaining agricultural productivity, and in state and federal governmental agencies across the state and nation in policy roles to use and protect our state and federal resources. Their expertise is needed anywhere changes are affecting productivity, production or sustainability of our natural resources -- including people. Our students have a strong interdisciplinary background to assess problems and risks and to create plans of action for the betterment of all in our state and beyond. The students will have opportunities in all counties at extension agencies (there is one in each county). Additionally, students will likely be hired by governmental agencies as USGS (Fayetteville and Little Rock), US Forest Service (Clarksville, Hector and Mt. Ida), Bureau of Land Management (Little Rock), USDA (Little Rock), and at various community colleges around the state in the following communities (Little Rock, Blytheville, Beebe, West Memphis, Mountain Home, Newport,

Pocahontas, Rogers, Malvern, De Queen, Forrest City, Hot Springs, Harrison, Bentonville, Melbourne, Helena, El Dorado, Pine Bluff, Camden, Batesville, Hope, Morrilton, and Mena. Students will also likely have opportunities with large companies like Walmart, JB Hunt, Tyson and others as their operations focus more on environmental changes and risk and sustainable practices.

8. Existing Data – Describe any existing anecdotes or data you have that would shed light on the job prospects of graduates from the proposed academic program. This data can be helpful to ADFA in conducting labor market analysis.

The ENDY program office was recently contacted by one of our graduates who works for a large Environmental firm. He emphasized that his broad interdisciplinary training was why he was hired and why a large number of recent graduates in traditional fields are not. Companies now want environmental professionals who can span different specialties and find solutions to complex environmental problems that affect us all.

Our students have always had success across various disciplines because of the interdisciplinary nature of their training. The understand complex issues and how to go about solving them which makes them valuable employees.

Of the last three years of graduates, two have gone to work for the Arkansas state government, one is a professor at Arkansas State, one is faculty at Arizona State, one works for the Federal government, one is teaching overseas, two are consultants in northwest Arkansas and one is a researcher in Northwest Arkansas.

9. Proposed Implementation Date – (MM/DD/YY): 08/15/2020

10. Contact Person – Provide contact information for the person who can answer specific questions about the program:

Name: Jo Ann Kvamme

Title: Assistant Director

E-mail: jkvamme@uark.edu

Phone: 479-575-6603

Email the completed form: Dr. Nathan Smith (Nathan.Smith@adfa.arkansas.gov)

After the labor market analysis has been completed, the institution will be invited to respond, providing further information that might shed light and help to interpret the data provided.

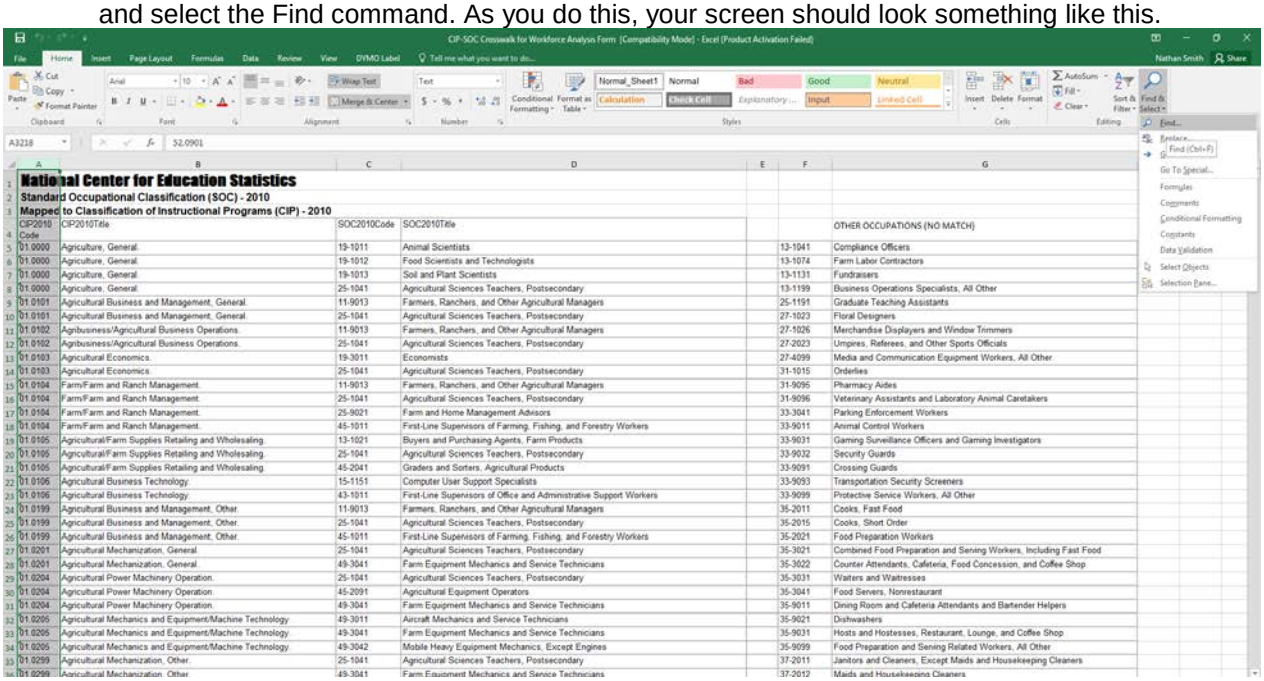
APPENDIX A. CIP-SOC MATCHING AND THE NCES CROSSWALK (Question 4a & 4b)

Labor market analysis for academic program requires the combination of diverse data sources. The National Center for Education Statistics (NCES) and the Bureau of Labor Statistics (BLS) developed a "CIP-SOC crosswalk" linking fields of study, classified by a well-established classification scheme called Classification of Instructional Programs (CIP), with occupations, classified by a well-established classification scheme called Standard Occupational Classifications (SOC). The CIP-SOC crosswalk is available here, and guidelines on how to use the scheme are posted online here.

In question 4a of the form, institutions are asked to copy and paste a list of occupations that match with their instructional programs, taken directly from the NCES CIP-SOC crosswalk, which can be downloaded here: https://static.ark.org/eeuploads/adhe/CIP-SOC_Crosswalk_for_Workforce_Analysis_Form.xls

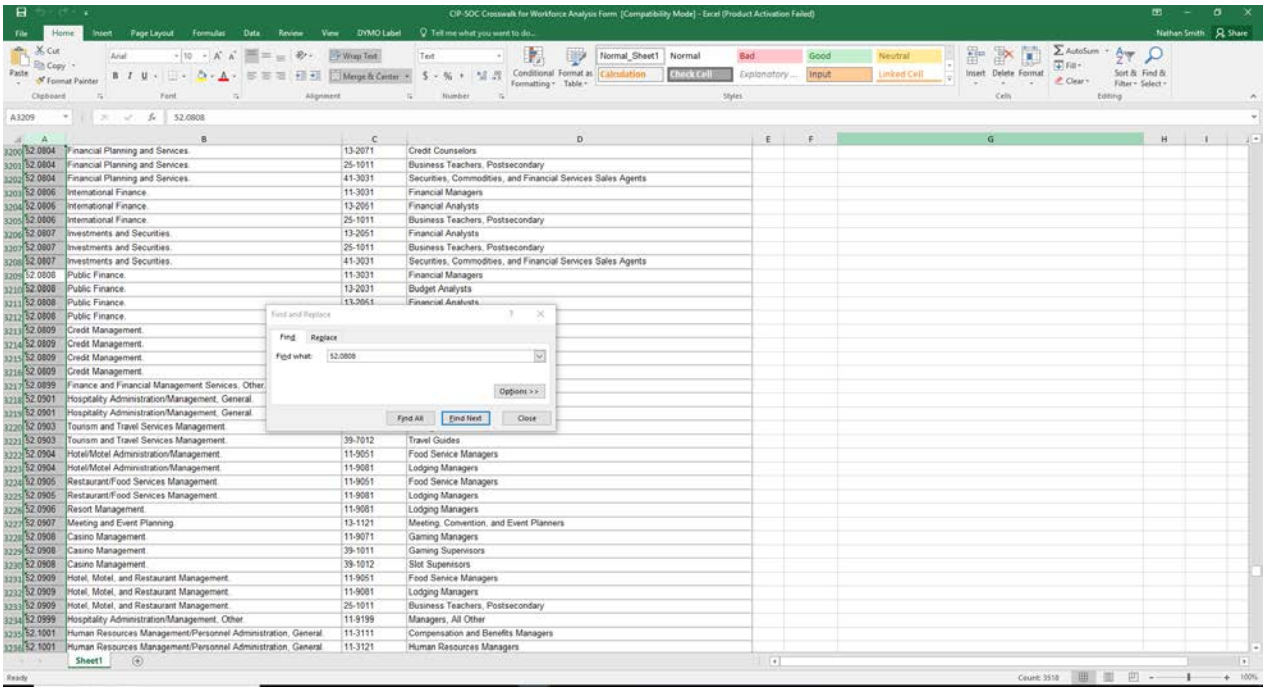
To use this file to answer question 4a:

1. Select Column A.
2. In the Home ribbon, Editing section of the toolbar, click Find & Select to get a drop-down menu, and select the Find command. As you do this, your screen should look something like this.



National Center for Education Statistics					
Standard Occupational Classification (SOC) - 2010					
Mapped to Classification of Instructional Programs (CIP) - 2010					
CIP2010 Code	CIP2010Title	SOC2010Code	SOC2010Title		OTHER OCCUPATIONS (NO MATCH)
01.0000	Agriculture, General.	19-1011	Animal Scientists	13-1041	Compliance Officers
01.0000	Agriculture, General.	19-1012	Food Scientists and Technologists	13-1074	Farm Labor Contractors
01.0000	Agriculture, General.	19-1013	Soil and Plant Scientists	13-1131	Fundraisers
01.0000	Agriculture, General.	25-1041	Agricultural Sciences Teachers, Postsecondary	13-1199	Business Operations Specialists, All Other
01.0101	Agricultural Business and Management, General.	11-9013	Farmers, Ranchers, and Other Agricultural Managers	25-1191	Graduate Teaching Assistants
01.0101	Agricultural Business and Management, General.	25-1041	Agricultural Sciences Teachers, Postsecondary	27-1023	Floral Designers
01.0102	Agribusiness/Agricultural Business Operations.	11-9013	Farmers, Ranchers, and Other Agricultural Managers	27-1026	Merchandise Displayers and Window Trimmers
01.0102	Agribusiness/Agricultural Business Operations.	25-1041	Agricultural Sciences Teachers, Postsecondary	27-2023	Umpires, Referees, and Other Sports Officials
01.0103	Agricultural Economics.	19-3011	Economists	27-4099	Media and Communication Equipment Workers, All Other
01.0103	Agricultural Economics.	25-1041	Agricultural Sciences Teachers, Postsecondary	31-1015	Orderlies
01.0104	Farm/Farm and Ranch Management.	11-9013	Farmers, Ranchers, and Other Agricultural Managers	31-9095	Pharmacy Aides
01.0104	Farm/Farm and Ranch Management.	25-1041	Agricultural Sciences Teachers, Postsecondary	31-9096	Veterinary Assistants and Laboratory Animal Caretakers
01.0104	Farm/Farm and Ranch Management.	25-9021	Farm and Home Management Advisors	33-3041	Parking Enforcement Workers
01.0104	Farm/Farm and Ranch Management.	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	33-9011	Animal Control Workers
01.0105	Agricultural/Farm Supplies Retailing and Wholesaling.	13-1021	Buyers and Purchasing Agents, Farm Products	33-9031	Gaming Surveillance Officers and Gaming Investigators
01.0105	Agricultural/Farm Supplies Retailing and Wholesaling.	25-1041	Agricultural Sciences Teachers, Postsecondary	33-9032	Security Guards
01.0105	Agricultural/Farm Supplies Retailing and Wholesaling.	45-2041	Graders and Sorters, Agricultural Products	33-9091	Crossing Guards
01.0106	Agricultural Business Technology.	15-1151	Computer User Support Specialists	33-9093	Transportation Security Screeners
01.0106	Agricultural Business Technology.	43-1011	First-Line Supervisors of Office and Administrative Support Workers	33-9099	Protective Service Workers, All Other
01.0199	Agricultural Business and Management, Other.	11-9013	Farmers, Ranchers, and Other Agricultural Managers	35-2011	Cooks, Fast Food
01.0199	Agricultural Business and Management, Other.	25-1041	Agricultural Sciences Teachers, Postsecondary	35-2015	Cooks, Short Order
01.0199	Agricultural Business and Management, Other.	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	35-2021	Food Preparation Workers
01.0201	Agricultural Mechanization, General.	25-1041	Agricultural Sciences Teachers, Postsecondary	35-3021	Combined Food Preparation and Serving Workers, Including Fast Food
01.0201	Agricultural Mechanization, General.	49-3041	Farm Equipment Mechanics and Service Technicians	35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
01.0204	Agricultural Power Machinery Operation.	25-1041	Agricultural Sciences Teachers, Postsecondary	35-3031	Waiters and Waitresses
01.0204	Agricultural Power Machinery Operation.	45-2091	Agricultural Equipment Operators	35-3041	Food Servers, Nonrestaurant
01.0204	Agricultural Power Machinery Operation.	49-3041	Farm Equipment Mechanics and Service Technicians	35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers
01.0205	Agricultural Mechanics and Equipment/Machine Technology.	49-3011	Aircraft Mechanics and Service Technicians	35-9021	Dishwashers
01.0205	Agricultural Mechanics and Equipment/Machine Technology.	49-3041	Farm Equipment Mechanics and Service Technicians	35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
01.0205	Agricultural Mechanics and Equipment/Machine Technology.	49-3042	Mobile Heavy Equipment Mechanics, Except Engines	35-9099	Food Preparation and Serving Related Workers, All Other
01.0299	Agricultural Mechanization, Other.	25-1041	Agricultural Sciences Teachers, Postsecondary	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
01.0299	Agricultural Mechanization, Other.	49-3041	Farm Equipment Mechanics and Service Technicians	37-2012	Maids and Housekeeping Cleaners

3. In the Find and Replace dialog box, enter the CIP code that you're interested in, and click "Find Next." Your screen should then look like this:



4. Since the CIP-SOC crosswalk file is already sorted by row, you can find all the rows corresponding to your CIP simply by starting from the first cell selected and then reading down in column A until you encounter a different CIP code.
5. Select all of these rows, columns A through D, this will form a table that can be pasted directly into the response field for question 4a.

52.0808	Public Finance.	11-3031	Financial Managers
52.0808	Public Finance.	13-2031	Budget Analysts
52.0808	Public Finance.	13-2051	Financial Analysts
52.0808	Public Finance.	25-1011	Business Teachers, Postsecondary

6. If desired, ask a faculty or staff member to sort the matched occupations from the CIP-SOC crosswalk by relevancy/importance, with the occupations that seem most likely to employ your graduates ranked first.
7. Missing occupations from the list should be addressed in question 4b.

Question 4b, is requesting information from your local staff/workforce experts at your institution on the applicability of the NCES list. We are aware that the NCES might be “globally” wrong—the CIP/SOC match may never have been very accurate, or may become obsolete as fields and occupations evolve—or “locally” wrong—the CIP/SOC match may be reasonably robust in general, but fail to capture the role your particular program plays in students’ career paths. Graduates of a particular program may be over or underqualified for some of the matched occupations. Also, there may be SOCs not matched to your CIP

by NCES for which, however, your program does help to prepare students, and which are likely to provide gainful employment for your graduates. Question 4b is the place to tell us about those as well.

I. ENDY Course Evaluation Template

GRAD 1-1189 (Fall 2018) Survey 1 - 1189 (2018)

Course: **ENDY** [redacted]
Department: **Environmental Dynamics**
Faculty: [redacted]

The University of Arkansas provides online instructor/course evaluations for all end of course evaluations. Please note the following as you complete this online course evaluation:

1. Evaluations are located on a confidential evaluation site.
2. Your instructor will not see the evaluations until after final grades have been submitted. Your instructor's department chair and college dean will receive the composite results.
3. There is one open-ended question. If you provide a response, only the instructor will see it unless he/she decides to share responses with his/her department chair and/or college dean.
4. Your evaluations will be confidential. Your responses to scaled questions will be simply part of the composite data reported to your Instructor. Also the instructor will not be able to attribute any comments you make in the open-ended questions to you unless you write something that identifies you either directly or indirectly.

If you have questions or comments about this survey, click here to send a message to the survey administrator.

Demographics

UofA Student Demographics

Your class

○ Freshman ○ Sophomore ○ Junior ○ Senior ○ Graduate ○ Other

Expected grade

A/PASS B C D F/FAIL

Your College:

College of Education and Health Professions
College of Engineering
Dale Bumpers College of Agricultural, Food and Life Sciences
Fay Jones School of Architecture and Design
J. William Fulbright College of Arts and Sciences
Sam M. Walton College of Business
School of Law
Graduate School
UNDECLARED

Course required

Yes No

GRAD College Core: Course Based Questions

Course Based Questions

This course has clearly stated objectives.

Strongly Agree Agree Undecided Disagree Strongly Disagree

This course builds understanding of concepts and principles.

Strongly Agree Agree Undecided Disagree Strongly Disagree

The stated goals of this course are consistently pursued.

Strongly Agree Agree Undecided Disagree Strongly Disagree

GRAD College Core: Instructor Based Questions

[redacted]

Instructor Based Questions

[redacted]

My instructor displays a clear understanding of course topics.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor demonstrates the importance and significance of the subject matter.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor is fair and impartial when dealing with students.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor makes good use of examples and illustrations.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor provides opportunity for questions during class.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor is readily available for consultation.

Strongly Agree Agree Undecided Disagree Strongly Disagree

My instructor explains difficult material clearly.

Strongly Agree Agree Undecided Disagree Strongly Disagree

University Core Course

Course Based Questions

Overall, I would rate this course as:

Excellent Good Fair Poor Very Poor

University Core Instructor

[redacted]

Instructor Based Questions

[redacted]

Overall, I would rate this instructor as:

Excellent Good Fair Poor Very Poor

My Instructor is fluent in English

Strongly Agree Agree Undecided Disagree Strongly Disagree

Faculty Comment Questions

Comments:

[redacted]

Comments:

If you have questions or comments about this survey, click here to send a message to the survey administrator.

Thank you for your time and participation in online instructor/course evaluations.

Close Preview