



David A. McLennan

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EDUCATION

2013 - 2015	B.S. Earth & Environmental Sciences 2 Concentrations & Sustainability Minor [1] Geoscience [2] Atmosphere and Surface Processes	Indiana State University
Summer 2015	Geoscience Field Camp	Penn State University
2003 - 2005	United States Air Force	Active Duty US Air Force
1998 - 2002	Columbus, OH	The Ohio State University
1997 - 1998	Dayton, OH	Wright State University
1994 - 1998	Springfield, OH	Greenon High School

PROFESSIONAL EMPLOYMENT ^{#Science}

- [Oak Ridge National Laboratory](#) – Lab Technician (May 2016 – Present)
- Paleocyanography & Biogeochemistry Laboratory (ISU) – Research Assistant (Fall 2013 – Fall 2015)
- Office of Information & Technology (ISU) - Technical Support Analyst (Fall 2013 – Fall 2015)
- Summer Undergraduate Research Experience (Summer 2014)
- Supplemental Instructor [Physics/Envi 360: Intro to Astronomy] – (Fall 2015)

PUBLICATIONS

- (1) Guha, Anirban., Han, Jimei., Cummings, Cadan., McLennan, David A., Warren, Jeffrey M., (2018) Differential ecophysiological responses and resilience to heat wave events in four co-occurring temperate tree species, Environmental Research Letters., Volume 13 Number 6 5008.

ABSTRACTS AND PRESENTATIONS

Brown, Sabrina R., Stone, Jeffery R., McLennan, David A., Latimer, Jennifer C., Westover, Karlyn S., (In Production) Landscape-Lake Interactions in the Beartooth Mountains, Wyoming: a 350 Year Fire History Reconstruction, (Development)

McLennan, David A., Guha, Anirban., Warren, Jeffrey M., Childs, Joanne., Brice J., Deanne., Ward, Eric J., Hanson, Paul J., (2018) Glimpsing the Future: Boreal Peatland Ecophysiology under Whole-Ecosystem Warming and Elevated CO₂, [B431-2055], American Geophysical Union Fall Meeting, Washington D.C. (Poster In Development)

Guha, Anirban., McLennan, David A., Warren, Jeffrey M., (2018) Tune to thrive: photosynthetic and hydraulic adjustments in *Populus deltoides* to warming, Multiscale Plant Vascular Biology: Gordon Research Conference, West Dover, VT. (Poster Presentation)

Bluhm, Kyrstin, McLennan, David A., Warren, Jeffrey M., (2018) Carbohydrate Retention in Four Plant Species Exposed to Elevated Temperatures and CO₂ Concentrations, ORISE SULI/HERE Poster Session, Oak Ridge National Laboratory, April 26, 2018, Poster Presentation.

Guha, Anirban., Warren, Jeffrey M., McLennan, David A., Gu, Lianhong., Riccuito, Daniel M., (2018), Growth temperature effects on poplar ecophysiology and thermotolerance., Ecological Society of America Annual Meeting OOS 7-10, New Orleans, LA.

Ward, Eric J., Warren, Jeffrey M., Dusenge, Mirindi E., Way, Danielle A., Aguilar, Marisol Cruz., King, Anthony W., McLennan, David A., Montgomery, Rebecca A., Reich, Peter B., Stefanski, Artur., Murphy, Bridget K., Riccuito, Daniel M., Villanueva, Raimundo Bermudez., Wullschleger, Stan D., Hanson, Paul J., (2018), Impacts of Elevated CO₂ and Whole Ecosystem Warming on Photosynthesis and Respiration of two Ericaceous Shrubs in a Northern Peatland, Ecological Society of America Annual Meeting OOS 7-8, New Orleans, LA.

Ward, Eric J., Dusenge, Mirindi E., Warren, Jeffrey M., Way, Danielle A., King, Anthony W., McLennan, David A., Murphy, Bridget K., Stefanski, Artur., Montgomery, Rebecca A., Reich, Peter B., Aguilar, Marisol Cruz., Wullschleger, Stan D., Villanueva, Raimundo Bermudez., Hanson, Paul J., (2017), Ecophysiology at SPRUCE: Impacts of whole ecosystem warming and elevated CO₂ on leaf-level photosynthesis and respiration of two ericaceous shrubs in a boreal peatland [B32B-04], American Geophysical Union Fall Meeting, New Orleans, LA.

Smith, Erika L., McLennan, David A., Stone, Jeffery R., Latimer, Jennifer C., (2016), Reconstructed Impacts Of Acid Mine Drainage On An Indiana Lake Using Diatom And Geochemical Sediment Records, Geological Society of America Annual Meeting, Denver, Colorado. (Poster)

McLennan, D., Smith, E, Latimer, J.C., Stone, J.R., (2016), Monitoring Increased Nutrient Loads on a Lake Acting as a Heavy Metal Reservoir, Posters on the Hill (CUR), Capitol Hill, Washington D.C.

Smith, E., Stone, J.R., McLennan, D., Latimer, J.C., (2016), Reconstructing the Impacts of Acid Mine Drainage on Nutrient Cycling in a Lake Using Diatom and Geochemical Analyses, Geological Society of America (North-Central Section Meeting), Champaign, Illinois.

McLennan, D., Smith, E, Latimer, J.C., Stone, J.R., (2015), The Potential Impact of Increased Phosphorus Loads in Lakes Acting as Heavy Metal Reservoirs: A case study from west-central Indiana, American Geophysical Union Fall Meeting, San Francisco.

McLennan, D., Smith, E, Latimer, J.C., Stone, J.R., (2015), Monitoring Biogeochemical Cycles In A Lake Impacted By Increasing Phosphorus And Heavy Metals, Geological Society of America Annual Meeting, Baltimore, Maryland. Oral Presentation.

Smith, E., McLennan, D., Stone, J.R., Latimer, J.C., (2015), Paleolimnology: Diatom Analysis of Reclaimed Scott Lake-Green Valley, Center for Student Research and Creativity Exposium: A Celebration of Student Research & Creativity, Indiana State University, Terre Haute, Indiana.

Smith, E., McLennan, D., Stone, J.R., Latimer, J.C., (2015), Diatom Analysis of Reclaimed Scott Lake-Green Valley, Symposium, 10th Annual SURE Symposium, Poster Presentation.

McLennan, D., Williams, T.M., Latimer, Jennifer C., Stone, J.R., Brake, S.S., (2015), Investigating The Effects Of Ongoing Acid Mine Drainage On Lake Nutrient And Metal Cycling In The Green Valley Public Fishing Area, National Conference on Undergraduate Research, Spokane, Washington.

McLennan, D., William T.M., Latimer J.C., Stone, J.R., (2015), Highlighting Undergraduate Student Research, Center for Student Research and Creativity Exposium: A Celebration of Student Research & Creativity, Indiana State University, Terre Haute, Indiana.

McLennan, D., William T.M., Latimer J.C., Stone, J.R., Brake, S.S., (2015), Monitoring Heavy Metals and Phosphorus in Green Valley State Fishing Area, American Democracy Project – Greening the Capitol: ISU Day at the State House, Indianapolis, Indiana. **INVITED**.

Latimer, J.C., McLennan, D., Stone, J.R., Memmer, E., Foster, J., Hardin, K.J., Nickerson, Z., Portwood, C.A., **Williams, T., (2014), Short sediment cores as archives of urban pollution, American Geophysical Union Fall Meeting, San Francisco.

McLennan, D., Latimer, J.C., Williams, T., Brown, S.R., Stone, J.R., McCune, A., (2014), Phosphorus fluxes in the Beartooth Mountains: A record of P geochemistry from Island Lake, American Geophysical Fall Meeting, San Francisco.

Brown, S., Stone, J.R., McLennan, D., Williams, T., Latimer, J.C., (2014), Holocene climate and stratification of Island Lake, Wyoming, Geological Society of America Annual Meeting, Vancouver, British Columbia.

McLennan, D., Latimer, J.C., 2014, 31 Ma record of phosphorus burial and diagenesis from metalliferous sediments recovered from the South Pacific Ocean, Geological Society of America Annual Meeting, Vancouver, British Columbia, **INVITED**.

Williams TM, McLennan, DA, Latimer, J.C., Stone J.R. (2014), Anthropogenic Impacts Recorded in Lacustrine Environments: Examples from Green Valley Lake and Goose Pond Mid-America Prosperity and Security Conference, Terre Haute, IN. Poster Presentation.

McLennan, D., Williams, T.M., Latimer, J.C., 2014, 31 Ma record of phosphorus burial and diagenesis from metalliferous sediments recovered from the South Pacific Ocean, 9th Annual SURE Symposium, Poster Presentation.

Williams T.M., McLennan, DA, Latimer, J.C., Stone J.R. (2014), Anthropogenic Impacts Recorded in Lacustrine Environments: Examples from Green Valley Lake and Goose Pond, Symposium, 9th Annual SURE Symposium, Poster Presentation.

In The News

[Plants—Surviving the heat](#)

[Undergrad Researcher Honored](#)

[Indiana State Students Present Research](#)

INTERESTS ^{#Science}

Planetary Geology, Oceanography, Astrobiology, Extreme Environments, Climate Change Science, Ecosystem Science, Ecophysiology, Hydrothermal Geochemistry/Ecology, Resource Distributions, Stable Isotopes, Paleoclimatology, Paleoceanography, Planetary Science, Martian Hydrothermal Settings, Low Temperature Geochemistry, Aqueous Geochemistry.

RESEARCH METHODOLOGY: I am passionately curious

RESEARCH EXPERIENCE

Equipment: Hand-held Thermo Scientific Niton® XL3 Series XRF analyzer, Shimadzu UV-Vis Spectrophotometer, ThermoScientific Spectronic 20D+, Muffle Furnace, Standard equipment for sample analysis (centrifuge, analytical balances, convection ovens, pH meter, etc.), Millipore Milli-Q water purification system, Geno/Grinder, Fume and Laminar flow hoods, soil/sediment/water sampling equipment, Livingstone/Bolivia and Griffith sediment corers, HTH surface sediment corer, 5m² portable modular coring platform, YSI multiparameter instrument for analyzing (Salinity, DO, pH, ORP, Ammonium, Nitrate, Chloride, Temperature, etc.), Digital depth finder, Secchi disk, 2.2 liter vertical beta water sampler, 3-person inflatable Zodiac boat, Flowatch digital current/air velocity meters, Petrographic microscopes, Olympus transmitted light microscopes (100 - 1000x), Large diameter rock cutting saws, and Grinding wheels, Constant head & Falling head permeameters, Stream tables, LICOR-6400XT, Li-COR 6800, Greenhouse/headhouse, Costech Elemental Combustion System (pneumatic & zero blank), Conviron BDW80 Walk in Growth Chamber & BDW80 Extreme Temperature Growth Chamber, Conviron E15 Reach-in Growth Chambers, Conviron (CMP6050, CMP4060, CMP3244) Control Systems, Model 610 & 615D Pressure Chamber Instrument, LI-6252 CO₂ Analyzer, SpectraMax Plus 384 Microplate Reader, Biotek Synergy2 Microplate Reader, High Flux Isotope Reactor - Cold Neutron Imaging Beam Line CG-ID, CI-203 Handheld Laser Leaf Area Meter, Fluke TiR4 IR FlexCam Thermal Imager, Walz Gas-Exchange Chamber 3010-GWK1, Walz Multi-Channel Chlorophyll Fluometer (Monitoring-PAM), LI-3110 Area Meter, Cambell Scientific Data Loggers, Soil Wetness Sensors,

PC: ArcGIS, SigmaPlot, C2, R, MS Office, WinRHIZO, LI6400 Software, Google Earth, GFS Win,

Experience: Cold Neutron Imaging ([HFIR](#)), Basic Radiological Worker, Liquid Nitrogen Handling & Use, Soil & Sediment Sampling, Loss on Ignition (LOI), Sequential Phosphorus Extractions (SEDEX & Schenau), Total Phosphorus Digestion, Lake and Wetland Sample Collection, Potassium Chloride Extraction of Ion-Exchange Resins, Non Structural Carbohydrate Analysis, Leaf & Stem Water Potential, Fluorometric Measurement of Potential Soil Extracellular Enzyme Activities, Dimethyl-sulfoxide Chlorophyll and Carotenoids Extraction for Spectral Analysis, Leaf Relative Water Content, Plant Gas Exchange Field Sampling ([SPRUCE](#)), Greenhouse and Growth Chamber Ecophysical measurements, Leaf Disk Heat Sensitivity Assays, Chlorophyll A Fluorescence Induction (OJIP), Chlorophyll Fluorescence Field Protocol Development, Chlorophyll Fluorescence Light-Dark Measurements, 6800 RACiR Curves, Plant Tissue Sampling for Molecular Analysis(RNA), Solar Induced Fluorescence, Field Collection N Fixation, Root Nodule Biomass Collection, Point Center Quarter (PQD) Transects, Root Sample Voucher Collection, Stem Respiration Protocol Development, Plant Hydraulic Flow Meter & Conductivity measurements, Soil Water Release Curve w/ Neutron Imaging, Tree Allometry,

Oak Ridge National Laboratory – Climate Change Science Institute (CCSI) – Current –

- As a Member of the Integrative Ecosystems Science group: provide ecophysiological field and laboratory support focused on the response of terrestrial ecosystems to climate change, including elevated atmospheric CO₂, increased temperature and shifts in precipitation patterns.
- Primary duties focus on direct measurements of mechanistic plant responses including foliar and woody gas exchange (photosynthesis and respiration), phenology, chemistry, anatomy and water relations. Travel to N. Minnesota for 1-2 week long measurement campaigns at our flagship experiment '[Spruce and Peatland Responses Under Climatic and Environmental Change](#)' ([SPRUCE](#)) & support other projects within the group as needed, including the Next Generation Ecosystem Experiments ([NGEE Arctic](#); [NGEE Tropics](#)) and The Impact of Extreme Weather Events on Plant Species, Competition, and Ecological Function.
- Experience with ecophysiology techniques and equipment, including use of the Li-COR 6400 and LiCOR 6800 photosynthesis and fluorescence systems, Picarro isotope analyzers, Scholander pressure chamber (leaf water potential), soil moisture sensors, sap flow sensors, Campbell dataloggers, pressure-volume curves, tissue sectioning and mounting, wet-chemistry lab techniques, and general lab experience. Written and oral communication skills, able to troubleshoot problems with equipment & some data processing and analysis.

Research Technician at Oak Ridge National Laboratory Cont'd.

- Independent responsibility applying established technology routinely to well-defined, moderate sized physical science projects
- Work in support of larger projects.
- Plan and carry out routine work. Responsible for organizing work, following methods, protocols, & guidelines, while recognizing conditions that may affect the findings.
- Create adaptations to protocols & accepted practices to handle unexpected conditions arising in the normal course of the work.
- Work involves conventional methods & techniques, but requires adapting methods to the problems at hand and using precedents to inform decision making.
- provide technical guidance and instructions to a variety of interns & less experienced personnel.
- Able to supervise, lead, or perform nonprofessional work in the physical sciences associated with normal activities required by the position.
- Support scientists & engineers in the laboratory & field by collecting data and helping refine and test methods and equipment for scientific studies, operational programs, and basic and applied research.
- Devise novel approaches to problems and situations.
- Learn & use many types of equipment and instruments to collect, prepare, and/or analyze samples. Record observations and gather data personally, in coordination with other personnel, and from remote locations via automated systems. Monitor information obtained in real time or periodically via automated systems.
- Install, monitor, and ensure that equipment, power sources, and data transmission/recording systems are functional. Test equipment and review data for conformance with expected results and/or the presence of anomalies.
- Conduct analyses to determine qualitative and/or quantitative information regarding the physical and chemical properties of samples and data. Collect field samples and compile and reduce data for use in reports and to support further scientific work.
- Knowledge of, and skill in applying, standardized rules, procedures, and operations of basic laboratory or field equipment that require considerable training and experience.
- Analyze samples using scientific measurement instruments, and wet chemical procedures
- Perform basic standardization checks and make simple operational adjustments to instruments & use manual or automated systems to record results of analysis and document procedures applied.
- Prepare laboratory samples for analysis by grinding, filtration, centrifugation, thin-section cutting, blending, and splitting
- Set-up, adjust, and maintain instrumentation to ensure proper functioning
- Operate analytical instruments, such as gas chromatographs, spectrophotometers, and mass spectrometers, to carry out quantitative or qualitative analyses & maintain detailed laboratory records.

FIELD OPERATIONS (Oak Ridge National Laboratory)

- Spruce and Peatland Responses Under Climatic and Environmental Change [[SPRUCE](#)]
(Marcell Experimental Forest, MN)
 - 2016: [August 15-19], [October 3-7]
 - 2017: [May 11-14], [June 17 - July 2]; [July 16-22], [August 12-27]
 - 2018: [Jul 9-13], [August 13-16], [September 4-21]
- Next-Generation Ecosystem Experiments Arctic [[NGEE Arctic](#)] (Seward Peninsula, AK)
 - 2017: July [22-31]

Office of Information Technology Student Admin (Indiana State)

- Provide training to faculty and students on the use of Blackboard, Tegrity, Turnitin, Collaborate, Respondus, and other instructional software. Implement thorough testing of instructional software in preparation for yearly upgrades. Test, research, and troubleshoot problems with software and other technology. Train and mentor new technicians in problem solving and office procedures including customer service, phone etiquette, procedures, etc. Collaborate with ISU Computer Programmers to implement testing and new features. Attend staff meetings when required

Supplemental Instructor (ISU)

- Intimately familiar with the content and learning objectives. Conduct study sessions/seminars in which students compare notes, discuss readings, develop organizational tools and predict test items. Employ interactive study techniques and a variety of learning strategies in sessions.

Pre-Science Summary of Experience 1997-2015

- 15 years of service industry experience to include: {dish-washing, line cook, serving, bartending, prep, barista, baker, busser, hosting, catering prep & delivery, carry-out, special events(in-store and festival), certified trainer (in-store, new store opening, & new manager), administrative assistant, quality control, shift lead, supervisor, hourly managing, acting manager roles(bar, service, and GM)} -- providing me with knowledge of the inner-workings (front and back of house) of many restaurant design models, concepts, and functionalities. Comfortable with a broad range of business models with experience in pub, family restaurant, specialty, cafe, breakfast, lunch, dinner casual dining, banquet and large function dining, family-owned, corporate owned, and name branding.
- Military : 1999 – 2005 (2003 – 2005 Active Duty 2A3x3 Tactical Fighter Aircraft Crew Chief) Responsible for maintaining tactical aircraft (A-10), support equipment, forms and records. Performs in collaboration with the flight chief, expeditor, other crew chiefs, repair and reclamation, quality assurance, and other maintenance support personnel to ensure mission readiness. Performance of aircraft inspections, sortie generation, hot pit refueling, maintenance and repair of aircraft systems including engines, hydraulics, and structural components, conducts functional tests, towing operations, rigging and aircraft jacking operations, and other repairs in concordance with unit mission.

RELATED COURSEWORK

Coursework – Indiana State University

Intro to Environmental Science	Structural Geology	Sustainable Development (H)
Physical Geology	Weather and Climate	Process Geomorphology
General Astronomy	Quaternary Environments	Lakes and Wetlands
Historical Geology	Intro to Hydrology	Global Biogeochemical Cycles
Environmental Geology	Conservation and Sustainability	Igneous and Metamorphic Petrology
Environmental Ethics	Intro to Field Geology	Geoscience Field Camp (Penn State)
Sedimentary and Stratigraphy	Mineralogy	Groundwater Hydrology (G)
Paleoecology		Seminar - Early Life (Observer)
ISU Seminar Lecture Series (Observer-Multiple)		Oceanography
Seminar - Extreme Aquatic Environments		Seminar – Paleoceanography
Remote Sensing / GIS: Comprehensive (G)		(G) = Graduate (H) = Honors

Additional Training

- ESRI Web Course – Building Models for GIS Analysis Using ArcGIS
- LI-COR Biogeosciences: LI-6400XT Training Course
- LI-COR Biogeosciences: LI-6800 Training Course
- GSA 2015 – Short Course 502: Sequence Stratigraphy for Graduate Students
- FERPA for Higher Education
- Workshop on Human Activity at Scale in Earth Systems Models (ORNL)
- Oak Ridge National Laboratory(ORNL) & Environmental Molecular Sciences Laboratory (EMSL) Joint Workshop

Community Service and Selected Synergistic Activities (Post Graduation)

- ORNL Travelling Science Fair (Science & Engineering Expo, D.C., April 2018)

GRANTS & AWARDS (While at Indiana State University)

- McBeth Talisman (Spring 2014)
- Summer Undergraduate Research Experience Full Time Scholarship (2014), \$3,500
- On To the Future (OTF) scholarship - 2014 Annual GSA Meeting (Vancouver, BC. Canada), \$275
- Center for Student Research and Creativity, \$500 (2013-2014), \$500 (2014-2015)
- Department of Earth and Environmental Systems Travel Grants (2014 & 2015)
 - GSA (2) - \$600
- Center for Student Research and Creativity Travel Grants
 - GSA (2)- \$1030
 - AGU (2)- \$495
- Indiana State University College of Arts and Sciences Travel Grants (2014 & 2015)
 - AGU (2) - \$600
- Center for Student Research and Creativity Grant
 - National Conference for Undergraduate Research (2015) – Full Funding
 - ISU at the Capitol (2015) – Full Funding
 - Posters on the Hill (D.C.) *Honorarium* (2016) - \$1000
- Geology Field Camp Scholarship (2015), \$500
- Jerry and Joan Reel Scholarship (2015), \$1000
- Dwaine and Martha Woolsey - Charles and Phyllis Campbell Memorial Scholarship (2015), \$500
- Council on Undergraduate Research (CUR): [GeoCUR Award](#) for Excellence in Undergraduate Student Research (2015)
- ISU - Earth and Environmental Systems: Outstanding Undergraduate Research Award (2015)
- GSA North-Central Section Student Travel Grant (2015), \$100
- GSA/ExxonMobil Bighorn Basin Field [Award](#) (August 2015)

ACADEMIC HONORS

Dean's List (4.0) [Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015] – All 5 Semesters at Indiana State

Oak Ridge National Lab Training

- Radiological Worker HFIR and SNS
- Basic Radiological Worker Training
- Scientific Laboratory Access Training for Neutron Sciences Users
- Heat Stress Training
- Local Building Emergency Squad Training
- Materials of Trade
- Local Emergency Squad Training

FIELD EXCURSIONS (While Attending Indiana State)

- GSA/ExxonMobil Bighorn Basin (2–9 August 2015)
- Geoscience Field Camp (Penn State; May 28, 2015 – July 12, 2015)
- Allegheny County Soil Sampling (Spring 2016)
- Wabashiki Wetland Terrestrial Soil Sample Collection (Fall 2013 & 2015, Spring 2015)
- Vigo County / Terre Haute Soil Sample Collection (Summer & Fall 2013 & Spring 2015)
- Walnut Creek data collection in order to conduct a stream flow analysis (Spring 2014)
- Stream ecology assessment at East Fork Big Creek (Spring 2014)
- Ordovician to Silurian paleontological outcrop investigation of fossils near Madison, IN (Spring 2014)
- Geode extraction & Identification in shale & limestone outcrops near Bloomington, IN (Spring 2014)
- Quaternary glacial landform investigations in Illinois and Indiana (Spring 2014)
- Maple Pond, Goose Pond, & Green Valley Lake water & sediment core sampling (Summer 2014)
- Sedimentary Paleo Environment Investigation at Indiana Dunes, IN (Fall 2014)
- Sedimentary Paleo Environment Investigation at Shades State Park, IN (Fall 2014)
- Sedimentary Paleo Environment Investigation at Sulfur, IN (Fall 2014)
- Rock cutting, polishing, and petrographic slide creation (Fall 2014)
- Kentland, IN Meteor Crater Field Trip with AIPG Illinois-Indiana Chapter (Fall 2014)
- Wabash River & Maple Pond – Limnology Field Equipment Intro (Summer 2014 & Spring 2015)
- Dobbs Park Frozen Lake Limnology Sampling (Spring 2015)
- Core Logging – Cloverdale Core (Spring 2015)
- Theodolite Surveying Introduction (Spring 2015)
- Orienteering Field Exercise (Spring 2015)
- Gravity Coring and Limnological sampling at Maple Pond (Spring 2015)
- Geologic Mapping Field Experience – Paradox Valley Salt Anticline (Utah) (Spring 2015)
- Arches National Park Field Excursion (Utah) (Spring 2015)
- Mesalands College Dinosaur Museum and Natural Science Laboratory Visit (New Mexico) (Spring 2015)
- Petrogenetic evaluation of the St Francois Caldera Complex (Mo) (Spring 2015)
- Economic Geology - Gordonsville Zinc Mine (TN) (Spring 2015)
- Limnology Coring and Lake Sampling – Jimmerson Lake (Spring 2015)
- Proposed ISU Eco-Village Property Ground Assessment (Fall 2015)
- ISU Campus Sustainability Walking Tour (Fall 2015)
- Aquaponics Introduction (Greener Scenes Aquaponics) (Fall 2015)
- (ISU – RoseHulman Eco-Village) Collaborative Meeting (Fall 2015)

Community Service and Selected Synergistic Activities (While Attending Indiana State)

- Geode Collection for Earth Day Give Away (Spring 2014)
- Institute of Community and Sustainability – Community Gardens: Site maintenance including pathway mulching, soil and compost addition to plots, creation of a community strawberry patch, and assisting gardeners with plot maintenance. (Spring 2014)
- Earth Day (Indiana State University): Communication regarding the Department of Earth and Environmental Systems, Geode giveaway, plaster fossil creation and fossil dig for kids, and coloring and painting of discovered fossils. (Spring 2014)
- Earth Day Vigo County Library: Set up of events and equipment, litter and recycling hands on kids table, and bubble station (Spring 2014)
- Lead(Pb) testing in Terre Haute yards: Community Outreach & Education. (Summer 2015 – Fall 2015)
- Earth Science Club Member (Spring 2014 – Fall 2015)
- Authorized Driver for Field Trips & Class Exercises (12 Passenger Van) (Spring 2015 – Fall 2015)
- TuBiShevat Gardening Resource Fair – Safe Urban Gardening and Pb Initiative Volunteer (Spring 2015)
- Mentor new student lab workers (Summer 2014 – Fall 2015)
- Wabashiki Wetland Assistant (Fall 2015)
- Geological Society of America Student Volunteer (15 hours), Baltimore MD (2015)
- American Geophysical Union Student Volunteer (8 Hours; Press Room), (Fall Meeting, 2015)
- Eco Village Soil Sampling Prep & Analysis (Fall 2015)
- Indiana State University Democracy Project –RIFRA- (Spring 2015)