

Jennifer L. Chandler, Ph.D.

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CURRENT POSITION

Assistant Professor

West Chester University of Pennsylvania, West Chester, PA

August 2017 – Present

Duties:

Establish and manage active, externally funded research programs. Train undergraduate students to efficiently and accurately collect field-based demographic data on the federally-regulated medicinal plant, American ginseng. Mentor students in field data collection using USDA Forest Inventory Analysis protocol. Instruct students in proper data curation and database development. Develop and teach undergraduate and graduate-level biology, ecology, biostatistics, and experimental design courses. Contribute to the University and department by serving on numerous committees.

Recent Research Focus:

- 1) Consequences of Age- vs. Size-Based Harvest Criteria for Sustainability of the American Ginseng Trade, and Suggestions for Altered Harvest Regulations
- 2) Investigating the Impact of the Recent Invasive Planthopper, Spotted Lanternfly (*Lycorma delicatula*), on Forest Species in the Mid-Atlantic Area

Diversity and Social Equity Involvement:

bioDIVERSITY Initiative – Founder and Faculty Advisory

2019 – 2020

A biology student mentoring program whose motto is “You belong here, because you belong everywhere.” The vision of bioDIVERSITY is to provide a space where underrepresented and marginalized individuals in science can meet and interact with other minorities and non-minorities to foster a sense of belonging and to create a more positive experience in college.

Courses Taught:

BIO 270 – General Ecology (with lab)
BIO 310 – Biostatistical Applications (with lab)
BIO 511 – Experimental Design and Analysis (with lab)
BIO 535 – Ethnobotany Course Topics (with lab)
BIO 110 – General Biology Laboratory
BIO 490 – Senior Seminar

EDUCATION

West Virginia University, Morgantown, West Virginia

2011 – 2016

Ph.D. Biology – GPA 4.0

Advisor: James B. McGraw, Ph.D.

Dissertation topic: "Ecological effects of forest canopy disturbance on the herbaceous understory and on American ginseng (*Panax quinquefolius* L.) in central Appalachia."

Classes taught as Teaching Assistant:

Bio 593H/302 - Biometry
 Bio 321 – Total Science Experience Capstone
 Bio 106L – Environmental Biology Lab
 Bio 115L – Principles of Biology Lab

Northern Kentucky University, Highland Heights, Kentucky 2007 – 2009
 B.S. Biology - Ecology, Evolution, and Organismal Concentration

Transylvania University, Lexington, KY 2000 - 2004
 B.A. Business Administration

RECENT POSITIONS

Arctic LTER Experimental Design and Analysis Consultant and Researcher

Wilkes University, Wilkes-Barre PA July 2016 – August 2017
 Supervised, instructed, and assisted undergraduate researchers in the collection of demographic data of reciprocally transplanted arctic plants. Developed and provided expertise for an experiment testing the hypothesis that climate change has resulted in adaptational lag of important tundra plant species in Northern Alaska.

Lecturer

Appalachian State University, Boone NC August 2016 – July 2017
 Developed and instructed the Biological Concepts II (BIO 1802) lecture, as well as undergraduate Ecology (BIO 3302) and Genetics (BIO 2410) labs. Trained both undergraduate and graduate students in the proper use of advanced ecological field equipment. Worked closely with plant genetics lab to locate wild American ginseng populations for future genetic studies.

Plant Scientist

West Virginia University, Morgantown WV May 2016 – August 2016
 Trained and supervised research technicians and led them in the census of 30 natural populations of wild American ginseng in field sites across seven states. Served as project liaison with private landowners and public land managers. Coordinated field research, data entry and archiving, and matching of long-term database.

Graduate Conservation Research Fellow

West Virginia University, Morgantown WV August 2014 – August 2015
 Fellowship included salary (\$33,000) and research funds. Responsibilities included managing a database of >13,000 rows of data, interacting with landowners, and mentoring all graduate and undergraduate students in the lab.

Finance Director – Congressional Campaign, KY 4th Congressional District

Fort Thomas, Kentucky

January 2006 – November 2006

Developed and administered the operating budget for a full congressional campaign.

Responsibilities included balancing and reconciling accounts, ensuring campaign donations were received according to regulation, and *planning and executing several political fundraisers, two of which featured speeches and in-person meet-and-greets with both a former President and a former Vice President of the United States of America.*

PEER-REVIEWED PUBLICATIONS

Chandler JL, Fetcher N, McGraw JB, Moody ML, Tang J, and Voltzow J. Ecotypic differences in population growth in reciprocally transplanted and passively warmed *Eriophorum vaginatum* in Northern Alaska. *In prep for Arctic, Antarctic, and Alpine Research.*

Bickel J, Desko M, Schiebel C, Silverman S, and **Chandler JL**. Probability of spotted lanternfly (*Lycorma delicatula*) capture depends on life stage and band type. *Student-led publication currently in prep.*

McGraw JB and **Chandler JL**. 2018. Demographic hallmarks of an overbrowsed population state in American ginseng. *Global Ecology and Conservation*. DOI: 10.1016/j.gecco.2018.e00435.

Chandler JL. 2017. A slow opportunist: Physiological and growth response of an obligate understory plant to patch cut harvesting. *Oecologia*. DOI:10.1007/s00442-017-3808-5.

Chandler JL and McGraw JB. 2017. Demographic stimulation of the obligate understorey herb, *Panax quinquefolius* L., in response to natural forest canopy disturbances. *Journal of Ecology* 105: 736-749. DOI:10.1111/1365-2745.12695.

Chandler JL and McGraw JB. 2015. Variable effects of timber harvest on the survival, growth, and reproduction of American ginseng (*Panax quinquefolius* L.). *Forest Ecology and Management* 344: 1-9. DOI: 10.1016/j.foreco.2015.02.007.

Chandler JL, McGraw JB, Bennington C, Shaver GR, Vavrek MC, Fetcher N. 2015. Tiller population dynamics of reciprocally-transplanted *Eriophorum vaginatum* L. ecotypes in a changing climate. *Population Ecology* 57: 117-126. DOI: 10.1007/s10144-014-0459-9.

McGraw JB and **Chandler JL**. 2015. Flipping the biostatistics classroom, with a twist. *Bulletin of the Ecological Society of America* 96: 375-384. DOI: 10.1890/0012-9623-96.2.375.

McGraw JB, Turner JB, **Chandler JL**, Vavrek MC. 2014. Disturbances as hot spots of ecotypic variation: A case study with *Dryas octopetala*. *Arctic, Antarctic, and Alpine Research* 46(3): 542-547.

McGraw JB, Lubbers AE, Van der Voort M, Mooney EH, Furedi MA, Souther S, Turner J, and **Chandler JL**. 2013. Ecology and conservation of American ginseng (*Panax quinquefolius*) in a changing world. The Year in Ecology and Conservation Biology, Annals of the New York Academy of Sciences. 1286: 62-91.

BOOK CHAPTERS

Chandler JL and McGraw JB. *In press*. History, Conservation, and Cultivation of American Ginseng, North America's Most Famous Medicinal Plant. In: Medicinal and Aromatic Plants of North America.

PUBLISHED DATA

McGraw J, Van der Voort M, Furedi M, Lubbers A, Mooney E, Souther S, Turner-Skoff J, **Chandler J**, Thyroff E. 2017. Long Term Research in Environmental Biology: Demographic census data for thirty natural populations of American Ginseng: 1998-2016. Environmental Data Initiative. <http://dx.doi.org/10.6073/pasta/1ca9aff9f5d3a703cfa17c468431e371>

FELLOWSHIPS, GRANTS, and AWARDS

USDA APHIS Plant Pest and Disease Management and Disaster Prevention Program.

Title: Assessing the impact of Spotted Lanternfly on forest species in the Mid-Atlantic Area
USDA (2019-2020 - **\$98,923**).

Technology Fee Grant

West Chester University (2018-2019). Equipment grant (\$12,490).

G. Cullen Biology Department Grant

West Chester University (2018 - \$3,999)

Provost Research Grant

Title: Consequences of age- vs. size-based harvest criteria for sustainability of the American ginseng trade.

West Chester University (2018 - \$9,954)

Technology Fee Grant

West Chester University (2017-2018). Equipment grant (\$13,225).

University Provost Graduate Fellowship for Continuing Students

West Virginia University (2015-2016). Included stipend (\$17,000) & full tuition waiver.

WVU Foundation Distinguished Doctoral Scholarship

West Virginia University (2015 - \$5,000).

Outstanding Graduate Teaching Assistant Award

West Virginia University (2014 - \$1,000).

Earl L. Core Memorial Scholarship

West Virginia University (2014 - \$1,000).

Most Productive WVU Biology Graduate Student Award

West Virginia University (2013 - \$1,000) (2014 - \$1,000) (2015 - \$1,000).

Arctic Climate Change Graduate Research Fellowship

West Virginia University (2011 & 2012). Fellowships included salary each year (\$2000), research expenses, and travel expenses.

Eberly College Doctoral Research Grant

West Virginia University (2012 - \$700) (2013 - \$700) (2014 - \$700) (2015 - \$700).

Eberly College Graduate Travel Award

West Virginia University (2012 - \$400) (2014 - \$400) (2015 - \$750).

Biology Department Research Poster Award

West Virginia University (2014 - \$150).

ORAL PRESENTATIONS and POSTER SESSIONS

Chandler JL. Identifying and managing the invasive insect, Spotted Lanternfly – A walk-and-talk in the Gordon Natural Area. West Chester University. West Chester, PA. *Cancelled due to COVID-19 pandemic.

Chandler JL. Spotted lanternfly update and training for management. WCU Urban Forest Conference. West Chester, PA. *Cancelled due to COVID-19 pandemic.

Silverman S, Bickel J, Desko M, Schiebel C, and **Chandler JL.** Probability of spotted lanternfly capture depends on life stage and band type. Northeastern Ecology Conference. Lake Ariel, PA. 09/28/19.

Chandler JL. Multifaceted response of wild-harvested, medicinal understory herbs to natural disturbances in the eastern United States. Saint Joseph's University. Philadelphia, PA. 04/24/19. *Invited Seminar*

Mesaros E and **Chandler JL.** Baseline measurements of woody plant composition, coverage, and diversity surrounding spotted lanternfly's host species, Tree-of-Heaven (*Ailanthus altissima*), in the Gordon Natural Area. WCU Spring Research Day. 04/26/19.

Chandler JL. Shine a light on me: Population response of wild American ginseng to canopy disturbances. *Tree Talk: The Morton Arboretum*. Lisle, IL. 10/09/17. *Invited Seminar*

Chandler JL. Demographic response of American ginseng to three disturbances in the eastern deciduous forest. Presentation. United Plant Savers – The Future of Ginseng and Forest Botanicals. Morgantown, WV. 07/12/17.

Chandler JL. Demographic response of American ginseng (*Panax quinquefolius* L.) to canopy dynamics in disturbed eastern deciduous forests. University of North Carolina Asheville. Asheville, NC. 04/20/17. *Invited Seminar*

Chandler JL. Forest canopy disturbance and American ginseng: A multidimensional synthesis. US Forest Service – Northern Research Station. Morgantown, WV. 04/20/16. *Invited Seminar*

Chandler JL. Demographic response of American ginseng (*Panax quinquefolius* L.) to climate-altered natural disturbances in a mixed mesophytic forest. Presentation. Pioneer Showcase. Glenville, WV. 04/19/16.

Chandler JL. Response of American Ginseng to Changes in Canopy Dynamics. Presentation. Ginseng Mini-Conference. West Virginia University. Morgantown, WV. 10/29/15.

Chandler JL. Ecotype performance in a changing climate: A test of the adaptational lag hypothesis using the arctic sedge, *Eriophorum vaginatum* L. Glenville State College. Glenville, West Virginia. 10/22/15. *Invited Seminar*

Chandler JL. Variable effects of timber harvest on the survival, growth, and reproduction of American ginseng (*Panax quinquefolius* L.). Presentation. Ecological Society of America. Baltimore, MD. 8/13/15.

Chandler JL. A multifaceted response of American ginseng (*Panax quinquefolius* L.) to canopy gaps formed during timber extraction. Presentation. WVU Three-Minute Thesis Competition. West Virginia University. Morgantown, WV. 4/9/15.

Chandler JL. Response of American ginseng (*Panax quinquefolius* L.) to timber harvest. University of Akron. Akron, OH. 2/19/15. *Invited Seminar*

Chandler JL. Effects of forest logging on the survival and growth of American ginseng (*Panax quinquefolius* L.). Presentation. North American Congress for Conservation Biology. Missoula, MT. 7/15/14.

Chandler JL. Sugarbush for syrup and stewarding 'sang: A workshop discussing two major economic uses of a woodlot. Presentation. Buckeye Trailfest. Hocking Hills, OH. 4/25/2014.

Chandler JL, Burnham M, Hruska A, Mathias J, and Walter, C. Tree Damage from Superstorm Sandy Across Cutting Treatments. Presentation. Superstorm Sandy - Fernow Experimental Forest Research Conference. Morgantown, WV. 1/24/14.

Chandler JL and Turner JB. Cross-Boundary Conservation: Working Together to Improve our Future. Invited Guest Lecturer. Osher Lifelong Learning Institute at West Virginia University. Morgantown, WV. 2013.

Chandler JL and Turner JB. Conservation Catalyst – Non-Timber Forest Products. Invited Guest Lecturer. Osher Lifelong Learning Institute at West Virginia University. Morgantown, WV. 2013.

Chandler JL and McGraw JB. Short-term effects of timber harvest on the survival and growth of American ginseng (*Panax quinquefolius* L.). Poster. Maryland Native Plant Society Annual Conference. Frostburg, MD. 9/21/13.

Chandler JL, McGraw JB, Fetcher N, Turner JB, Bennington CC, Shaver G, and Vavrek M. Evaluating the ecotypic response of *Eriophorum vaginatum* L. to shifts in high latitude climate patterns using a Leslie matrix model of tiller populations. Poster. Arctic LTER Conference. Woods Hole, MA. 3/4/13 – 3/7/13.

Chandler JL, McGraw JB, Fetcher N, Turner JB, Bennington CC, Shaver G, and Vavrek M. Evaluating the ecotypic response of *Eriophorum vaginatum* L. to shifts in high latitude climate patterns using a Leslie matrix model of tiller populations. Ecological Society of America. Poster. Portland, OR. 8/5/12 – 8/10/12.

Turner JB, Fetcher N, McGraw JB, **Chandler JL**, Bennington CC, Shaver G, and Vavrek M. A test of the adaptational lag hypothesis using a long-term reciprocal transplant study with an arctic sedge (*Eriophorum vaginatum*). Presentation. Ecological Society of America. Portland, OR. 8/5/12 – 8/10/12.

Chandler JL, Turner JB, and McGraw JB. Ecotypic differentiation and climate change in Alaskan tundra plants. Poster. Research Horizons. Morgantown, WV. 4/5/12.

UNIVERSITY AND DEPARTMENTAL COMMITTEES – WEST CHESTER UNIVERSITY

University Committees

Gordon Natural Area Advisory Committee	2018-present
West Chester University Campus Tree Advisory Committee	2018-present
Sustainability Advisory Council	2017-present
Sustainable Food Systems and Green Spaces Committee	2017-present
New Faculty Orientation Committee	2017-present
- Co-webmaster	

Departmental Committees

Biology Department Core Curriculum Committee	2019-present
Distance Education Committee	2019-present

Advisory (Evaluation) Committee	2018-present
Microbiologist search Committee	2018-2019
Student Grants and Awards Committee	2017-present

Graduate Committee Member

Sarah Polohovich, MS Biology, West Chester University	2019-present
Charlotte Brown, MS Biology, West Chester University, <i>Faculty Advisor</i>	2018-2019
Genevieve Pomeroy, MS Biology, West Chester University	2017-2019
Anne Jarrell, BS Honors Biology, West Virginia University	2015-2016
Michael Elza, BS Honors Biology, West Virginia University	2013-2015

PROFESSIONAL SERVICE

Peer Reviewer

American Midland Naturalist
 Natural Areas Journal
 Ecosphere
 Castanea

PROFESSIONAL LEADERSHIP and TRAINING

Brandywine Project	2018
Selected attendee. Training in the three pillars of sustainability, and ways in which sustainability can be introduced in the classroom, in the University, and in the community.	
President, WVU Biology Graduate Seminar Planning Committee	2014
Hiring committee, WVU arboretum specialist and lecturer	2014
Graduate Coordinator, WVU Biology Colloquium Committee	2013-2014
Treasurer, WVU Graduate Student Advancement Society	2013-2014
Minorities in Agriculture, Natural Resources, and Related Sciences	2013
WVU Biology Graduate Student Association Executive Council	2012-2013
Peer Mentor (2013)	
Peer Mediator (2013)	
Social Coordinator (2012-2013)	
Fundraising Committee – WVU Graduate Student Networking	2012

SCIENTIFIC SERVICE and OUTREACH

Super Science Saturday – West Chester University, West Chester, PA	2019
Developed and led an outdoor, field ecology workshop geared toward underrepresented middle school and high school aged female students. The workshop provided participants valuable experience in forest biometrics.	
Judge – Sigma Xi Poster Competition – West Chester University, West Chester PA	2019
Judge for undergraduate and graduate level scientific research poster session.	
Judge – Saints Philip and James School Science Fair, Exton, PA	2018
Judge for mixed grade level science fair.	
Conservation Consultant – Canadian Ministry of Natural Resources & Forestry	2014-2016
Advised the Ministry on the best forest management strategies to conserve wild ginseng in Canada. Consulting work will shape timber harvest and development policy in areas of Ontario that contain wild American ginseng.	
Biometry for High School Students - Tutorial Video Series	2015-2016
Developed and produced a series of twenty-one instructional biostatistics videos aimed at helping high school students build their statistical “toolbox” so that they are well equipped both to design and perform scientific research and to analyze scientific data.	
WVU Arboretum and Green Space Committee. Morgantown, WV	2014-2015
Developed plans and protocol to preserve land at the Core Arboretum and to create a new urban arboretum in Morgantown, West Virginia.	
EnvironMentors, West Virginia University. Morgantown, WV	2013-2014
Mentored high school students and provided one-on-one guidance through each stage of scientific research, including developing an environmental science-based research question, performing a literature review on the topic, devising a scientifically rigorous experiment to test the original hypothesis, and presenting research at a conference.	
Parsons Arboretum - Collaborative & Community-Based Conservation. Parsons, WV	2013
Collaborated with community stakeholders to identify baseline issues, concerns, and opportunities for a community arboretum conservation project. Produced an interpretive signage plan aimed at enhancing the community’s awareness, appreciation, and respect for the biological and cultural heritages unique to the arboretum site. Presented the interpretive plan to the United States Forest Service Northern Research Station.	
Experimental and Statistical Design Consulting. Morgantown, WV	2013
Provided consulting services and expertise in experimental design (both statistical and methodological) to the director of the West Virginia University chapter of EnvironMentors.	

Research Manager – Multi-state Medicinal Plant Reintroduction. 2012

Organized and was personally accountable for volunteers in a large-scale medicinal herb reintroduction effort. This project was implemented to develop an indicator of ecological recovery in the herbaceous understory, and was a collaborative effort among West Virginia University, The Wilds Conservation Area, and the Forks of Cheat Nature Preserve.

Survey Consultant – Conservation of Ginseng in Appalachia. Morgantown, WV 2012

Analyzed and revised a doctoral dissertation survey that examined the conservation knowledge and harvesting behaviors surrounding medicinal plants.

Research Manager – Small Mammal Seed Dispersal. WV & NY 2012 – 2014

Independent field study investigating whether small mammals were dispersers or predators of American ginseng seeds. Duties included set up and maintenance of field equipment, small mammal tracking, and willingness to adapt to experimental changes required due to environmental uncertainty.

Reforest Northern Kentucky Initiative. Boone County, KY 2009

Guided students (elementary through college) in a reforestation effort in the suburbs of Cincinnati, OH.

Northern Kentucky University Chemistry Video Series. Highland Heights, KY 2009

Featured in a short video demonstrating simple chemistry concepts that middle school teachers can use to engage their science classrooms.

MEDIA COVERAGE

“The Promise and Predicament of Ginseng in Appalachia” Expert interview. Expatalachians magazine (2019).

“Podcast Episode 7: Final Destinations” PLANTED: Finding Your Roots in STEM Careers. The Morton Arboretum (2018).

“You Can See Ginseng in America” World Today – Korean Broadcasting System (2013).

SOFTWARE and EQUIPMENT

LiCor LI6400XT – Portable Photosynthesis System

GPS navigation

Microsoft Excel, Word, and PowerPoint

SAS JMP, Statistical discovery software

SPSS, Statistical software

MATLAB

ArcGIS, ESRI Geographic Information Systems (GIS) software

Gap Light Analyzer, Canopy structure and gap light transmission index software
Blackboard Learning Management System
D2L Learning Management System

PROFESSIONAL AFFILIATIONS

Ecological Society of America (ESA)
Society for Conservation Biology (SCB)
Association for Women in Science (AWIS)

VOLUNTEER POSITIONS

Pack it Up and Pass it On Sustainable Living Initiative. West Chester, PA
Friends of Decker's Creek. Morgantown, WV
Animal Husbandry Volunteer – Newport Aquarium, Newport, KY
Urban Forestry Initiative Park Restoration Project. Denver, CO
Emergency Communities Hurricane Katrina rehabilitation. New Orleans, LA