LINDSAY CHANEY, PHD

CURRICULUM VITAE

EDUCATION

2010-2014 Ph.D. Biology; University of Cincinnati, Cincinnati, OH
Dissertation topic: Understanding the evolutionary potential of weeds
Advisor: Regina S. Baucom

2009-2010 B.S. Biology, *cum laude;* West Virginia University, Morgantown, WV
Mathematics minor

2005-2006 Utah State University, Logan, UT (transferred without degree)

2003-2005 A.S., *cum laude;* Snow College, Ephraim, UT

PROFESSIONAL APPOINTMENTS

2016-*present* Assistant Professor; Department of Biology, Snow College, Ephraim, UT

2014-2016 Post-Doctoral Fellow; USDA Forest Service Rocky Mountain Research Station Shrub Sciences Laboratory, Provo, UT
Advisor: Bryce A. Richardson

2014-2016 Post-Doctoral Fellow; Brigham Young University, Provo, UT
Advisor: Joshua A. Udall

ADDITIONAL WORK EXPERIENCE

2010-2014 Graduate Assistant; University of Cincinnati, Cincinnati, OH
Conducted quantitative genetic research with *Ipomoea purpurea* (common morning glory) both in the greenhouse and in the field.

2009-2010 Herbarium Aid; West Virginia University, Morgantown, WV
Mounted, pressed, and dried plants for use in the Herbarium. Filed plants according to taxonomical rules. Assisted in data input for collection database.

2009 STEP Biological Science Technician, USDA Forest Service, Morgantown, WV
Conducted research on growth rate of the invasive grass *Microstegium vimineum* (Japanese stilt grass) and its effect on *Quercus rubra* (northern red oak) seedling growth. Also studied the reproduction patterns of *Ailanthus altissima* (tree of heaven) to determine frequency of hermaphrodites.

2006 Biological Science Technician (Plants), USDA Forest Service, Provo, UT
Conducted vegetative surveys throughout the Uinta National Forest. Included burn area regrowth, noxious weed inventory, native seed collection and sensitive, threatened, and endangered plant surveys.

2005-2006 Lab Assistant, USU Crop Physiology Lab, Logan, UT
Collected, organized, maintained and oversaw experiments in the research greenhouse. Aided in growing dwarf plants that are used in conjunction with NASA, the International space station, and the Russian space station MIR.

TEACHING EXPERIENCE

2016-*present* Assistant Professor at Snow College; Ephraim, UT
General Biology (BIOL 1010)& Laboratory (BIOL 1015)
Environmental Biology (BIOL 1420) & Lab (BIOL 1425) – *new course, also online*
Biology II – Plants (BIOL 1620) & Laboratory (BIOL 1625)
Constructing My Story (HONR 2850, GNST 1200) – *new course*
Earth — the Landscape Around Us (GNST 1200) – *new course*
Undergraduate Research (BIOL 2925)
Cooperative Education - Co-op (BIOL 1997)

2015-2016 Adjunct Instructor at Utah Valley University; Orem, UT
College Biology I Laboratory (BIOL 1615)

2014 Dual-Enrollment Coordinator at University of Cincinnati; Cincinnati, OH
Introduction to Environmental Studies I (EVST 1011)

2013 Co-Instructor at University of Cincinnati; Cincinnati, OH
Introduction to Environmental Studies I (EVST 1011)

2013 Head Teaching Assistant at University of Cincinnati; Cincinnati, OH
Evolution, Ecology, and Genetics (BIOL 2082C)

2010-2012 Teaching Assistant at University of Cincinnati; Cincinnati, OH
Genetics and Cell (BIOL 2081C)
Ecology (BIOL 303)
Biology Lab (BIOL 112)
Genetics (BIOL 302)

2010 Teaching Assistant at West Virginia University; Morgantown, WV
Plant Systematics (BIOL 450)

PUBLICATIONS

Publications in Peer-Reviewed Journals: (* undergraduate student)

2020 **L. Chaney** & R.S. Baucom. "The soil microbial community alters patterns of selection on flowering time and fitness related traits in *Ipomoea purpurea*." *American Journal of Botany*. Accepted.

2019 P.J. Maughan, **L. Chaney**, D.J. Lightfoot, B.J. Cox, M. Tester, E.N. Jellen, & D.E. Jarvis. "Mitochondrial and chloroplast genomes provide insights into the evolutionary origins of quinoa (*Chenopodium quinoa* Willd.)." *Nature Scientific Reports, 9*, 185. https://doi.org/10.1038/s41598-018-36693-6

2018 B.A. Richardson & **L. Chaney**. "Climate-based seed transfer of a widespread shrub: population shifts, restoration strategies and the trailing edge." *Ecological Applications*, 28(8), 2165-2174. https://doi.org/10.1002/eap.1804; Data: https://doi.org/10.5061/dryad.q477f90; Code: http://doi.org/10.5281/zenodo.1409268

2018 M.T. Stevens, C.D. Roush*, & **L. Chaney**. "Summer drought reduces the growth of invasive tree-of-heaven (*Ailanthus altissima*) seedlings." *Natural Areas Journal*, 38(4), 230-236. https://doi.org/10.3375/043.038.0403

2017 B. Richardson, **L. Chaney**, N.L. Shaw & S.M. Still. "Will phenotypic plasticity affecting flowering phenology keep pace with climate change?" *Global Change Biology, 23(6), 2499-2508.* https://doi.org/10.1111/gcb.13532

2017 **L. Chaney**, B.A. Richardson & M.J. Germino. "Climate drives adaptive genetic responses associated with survival in big sagebrush (*Artemisia tridentata*)." *Evolutionary Applications, 10 (4), 313-322*. https://doi.org/10.1111/eva.12440; Data: http://dx.doi.org/10.5061/dryad.32s2t; Analysis: github.com/lchaney/Sagebrush_Mort

2016 **L. Chaney**, R. Mangelson*, T. Ramaraj, E.N. Jellen, & P.J. Maughan. "The Complete Chloroplast Genome Sequences for Four Amaranthus Species (*Amaranthaceae*)". *Applications in Plant Sciences,* 4(9). https://doi.org/10.3732/apps.1600063

2016 **L. Chaney**, A.R. Sharp & J.A. Udall. "Next-generation mapping for structural variation detection in comparative plant genomics." *Trends in Plant Science,* 21(9), 770-780. https://doi.org/10.1016/j.tplants.2016.05.004

2014 **L. Chaney** & R.S. Baucom. The costs and benefits of tolerance to competition in *Ipomoea purpurea*, the common morning glory. *Evolution,* 68: 1698–1709. https://doi.org/10.1111/evo.12383; Data: doi:10.5061/dryad.v2b8t

2012 **L. Chaney** & R.S. Baucom. The evolutionary potential of Baker's weediness traits in the common morning glory*, Ipomoea purpurea* (Convolvulaceae). *American Journal of Botany,* (99)9, 1524-153. https://doi.org/10.3732/ajb.1200096

Published abstract:

2014 R.S. Baucom & **L. Chaney**. "The prevalence of fitness costs of tolerance across organisms" Symposium for The Society for Integrative and Comparative Biology. Austin, TX.

PRESENTATIONS

Oral Presentations:

2019 **L. Chaney** & B. A. Richardson. "Creating Empirical Seed-transfer Zones for Big Sagebrush (*Artemisia tridentata*)." Utah Crop Improvement Association Wildland Seed Collector Meeting. Ephraim, UT.

2017 **L. Chaney**, B.A. Richardson & M.J. Germino. "Climate drives adaptive genetic responses associated with survival in big sagebrush." Society for the Study of Evolution Annual Conference; Portland, OR. https://youtu.be/Uy3d4Spgfwo

2016 **L. Chaney**, B. Richardson, & M. Germino. "Climate drives adaptive genetics in big sagebrush (*Artemisia tridentata*)." Society of Ecological Restoration and Great Basin Native Plant Project. Boise, ID. *(Invited)*

2015 **L. Chaney**, D.M. Jaeger, & B.A. Richardson. "Survival and seed size in big sagebrush restoration." 2015. Utah Section Society for Range Management. Moab, UT. *(Invited)*

2015 B. Richardson, **L. Chaney**, N. Shaw, M. Germino. "Growth, seed yield and survivorship clines of big sagebrush (*Artemisia tridentata*): relationships to climate and development of seed transfer zones." Society of Ecological Restoration. Manchester, UK.

2015 B. Richardson, **L. Chaney,** N. Shaw, & M. Germino. "Clines in growth, seed yield and survivorship among subspecies big sagebrush: relationships to climate and development of seed transfer zones." Great Basin Consortium Native Plant Program. Boise State University; Boise, ID.

2014 **L. Chaney** & R.S. Baucom. "Plants that persist: Are highly tolerant plants also the most fit?" Society of the Study of Evolution. Raleigh, NC.

2014 **L. Chaney** & R.S. Baucom. "Baker's General Purpose Genotype: Are highly tolerant weeds also the most fit?" Midwest Ecology and Evolution Conference. Dayton, OH. *(Invited)*

2013 **L. Chaney** & R.S. Baucom. "The evolution of tolerance to competition in the common morning glory, *Ipomoea purpurea*." Society of the Study of Evolution. Snowbird, UT.

Internal Oral Presentations:

2019 L. Smith, G. Wright, S. Hood, & **L. Chaney.** "Professing What We Don't Know: What Scholar Are Still Trying to Learn." Snow College Convocations. Ephraim, UT. https://youtu.be/-cKk_VwQ-SI?t=2061

2019 **L. Chaney**. "Evolution Everywhere: Examples and Evidence." Natural Science and Mathematics Division Seminar, Snow College. Ephraim, UT.

2018 **L. Chaney**. "Evolution of Plants: Using Ecological Genetics to Understand How Plants Adapt to a Changing Environment." Natural Science and Mathematics Division Seminar, Snow College. Ephraim, UT.

2018 **L. Chaney**. "The Other Faces of Evolution." Natural Science and Mathematics Division Seminar, Snow College. Ephraim, UT.

2017 **L. Chaney. "**Teaching Evolution to Increase Scientific Literacy." Snow College Pedagogy & Practice Conference. Ephraim, UT.

2016 **L. Chaney.** "Genetics in the Classroom." Snow College Science Teacher Workshop. Ephraim, UT.

2015 **L. Chaney.** "What's the story morning glory? Understanding the evolutionary potential in an agricultural weed." Brigham Young University Plant and Wildlife Sciences department seminar. Provo, UT.

2014 **L. Chaney**. "The evolution of weeds: tolerance to competition." University of Cincinnati Department of Biological Sciences Seminar Series and Awards Ceremony. Cincinnati, OH.

2013 **L. Chaney.** "The evolution of tolerance across nature: what is tolerance and why is it interesting?" University of Cincinnati Department of Biological Sciences Bioblitz Retreat. Fernbank Park, Cincinnati, OH.

Table-talk Presentations: (* undergraduate student)

2019 **L. Chaney**. "Impact of Group Exams in Non-majors Biology: a Mixed Methods Analysis." Society for the Advancement of Biology Education Research Conference; Minneapolis, MN.

2017 M. Cox*, E. Hinds*, & **L. Chaney**. "Constructing My Story – an Interdisciplinary Course with Genetics, Folklore, and Woodworking." Folklore Society of Utah Meeting. Ephraim, UT.

Poster Presentations: (* undergraduate student)

2020 **L. Chaney**, D. Allred & M. Jenkins. "Integrative Learning: The Foundation of General Education." Association of American Colleges and Universities Conference on General Education, Pedagogy, and Assessment. Jacksonville, FL. *Accepted*.

2017 **L. Chaney**. "Effectiveness of different assessment strategies in non-majors introductory biology." National Association of Biology Teachers Annual Conference; St. Louis, MO.

2017 *C. D. Roush, **L. Chaney**, & M. T. Stevens. "Summer drought reduces the growth of invasive tree-of-heaven seedlings." Utah Conference on Undergraduate Research. Orem, UT.

2016 **L. Chaney** & B. Richardson. "Climate at the local and landscape level drive adaptive genetic responses associated with survival in big sagebrush (*Artemisia tridentata*)." Sagebrush Ecosystem Conference. Salt Lake City, UT.

2016 **L. Chaney**, B. Richardson, & M. Germino, "Climate at the local & landscape level drive adaptive genetic responses associated with survival in big sagebrush (*Artemisia tridentata*)." Great Basin Native Plant Project. Boise, ID

2016 **L. Chaney**, B. Richardson, & J. Udall. "Genome map of quacking aspen (*Populus tremuloides*)." Plant and Animal Genome Conference XXIV. San Diego, CA.

2015 B. Richardson, **L. Chaney,** N. Shaw, & M. Germino. "Clines in growth, seed yield and survivorship among subspecies big sagebrush: relationships to climate and development of seed transfer zones." Great Basin Consortium Native Plant Program. Boise State University; Boise, ID.

2014 **L. Chaney** & R.S. Baucom. "The costs and benefits of tolerance: a look across multiple systems and stressors." Invasion Genetics: The Baker and Stebbins Legacy Symposium. Asilomar, CA.

2014 *L. Gilfillan & **L. Chaney.** "Artificial herbivory and its effects on high and low fitness groups of *Ipomoea purpurea*." University of Cincinnati Undergraduate Research Conference. Cincinnati, OH.

2013 **L. Chaney** & R.S. Baucom. "Tolerance and plasticity in an agricultural weed, the common morning glory." University of Cincinnati Graduate Poster Forum. Cincinnati, OH.

2013 *Z. Ahmed, **L. Chaney**, & R.S. Baucom. "Photosynthetic capability of *Ipomoea purpurea* under salt and drought stress." University of Cincinnati Undergraduate Research Conference. Cincinnati, OH.

2013 *T. Schaible, **L. Chaney**, & R.S. Baucom. "The effect of salinity on the relative growth rate of *Ipomoea purpurea*." University of Cincinnati Undergraduate Research Conference. Cincinnati, OH.

2012 **L. Chaney** & R.S. Baucom. "The evolutionary potential of weediness traits in the common morning glory, *Ipomoea purpurea*." Midwest Ecology of Evolution Conference. Cincinnati, OH.

2012 **L. Chaney** & R.S. Baucom. "The evolutionary potential of weediness traits in the common morning glory, *Ipomoea purpurea*." University of Cincinnati Graduate Poster Forum. Cincinnati, OH.

2010 *__L. Chaney__, et al. "The interactive effects of carbon dioxide and temperature on the competitive interaction between invasive Japanese stiltgrass (*Microstegium vimineum* (Trin.)) and native American ginseng (*Panax quinquefolius* L.)." West Virginia University Senior Capstone Poster Symposium. Morgantown, WV.

Guest Lecture:

2019 **L. Chaney**. "DNA and the Storage of Genetic Information." Information in our Lives and the Universe (HONR 2850), Snow College.

2014 **L. Chaney.** "Creating a Genome Physical Map." Genomics (PWS 468), BYU.

SERVICE

Snow College Committees and Service:

- Bio Club Advisor (2018 – Present)
- Curriculum Committee: Chair (2019 – Present)
- Curriculum Committee: Science Division Representative (2018 – Present)
- Service Learning Committee: Curriculum Committee Representative (2019)
- Great Basin Station Task Force (2019 – Present)
- Advisor for Honors Thesis: Robyn DeMann, "A Needling Question: Vaccines and the Scientific and Ethical Reasons Parents Should Employ Them" (2017)
- New A&T Document Ad Hoc Writing Committee (2017–2018)
- Greenhouse Committee: attended greenhouse planning and construction meetings and arranged tours of other greenhouses (2018)
- Science Displays Committee: a 2nd floor representative (2019)
- Planetarium Steering Committee (2018)
- Faculty/Peer Evaluation Team x3
- Faculty Search Committee for New Hires x2
- Darwin Day: organized evolution related activities campus wide (2018, 2019)
- Earth Day: organized environmental education booths (2018)

Community Science Outreach Events:

- Girls in Engineering, Math, and Science (GEMS): organized and lead event for middle- and high-school girls in the community. Included over 20 hand-on science activities put on by professional from the college and community. Hosted over 50 attendees in 2018 and over 110 attendees from over 21 different schools in 2019.
- Science Olympiad: put on events and wrote exams (2017, 2018, 2019)
- Science Nights: weekday evening community events (2016, 2017, 2018, 2019)
- Snow Blast: college recruitment tours (2019)
- Growing Plants in Space – 50th Anniversary of Apollo community celebration (2019)
- Fieldtrips for local elementary school kids (2017 x2, 2018, 2019)
- Botany lesson and greenhouse tour for local girl scout troop (2017)
- Organized, recruited, and mentored 7-12th grade biology teachers for a five-week Research Experience for Teachers (RET) on plant genomics. (2016, 2017)
- Treasurer for Biology Grad Student Association at UC (2012-2014)
- Volunteer judge at the Regional Science and Engineering Exposition for grades 6-12 (2011, 2013, 2014)
- Volunteer at National Lab Day at Hughes STEM High School (2011)

Peer Reviewer:

- Applications in Plant Sciences (APPS)
- Weed Science
- PLOS ONE
- Course Source
- Macmillan Learning
- Oxford University Press
- Sinauer Associates

GRANTS AND SOURCES OF FUNDING

In preparation:

2020 NSF Scholarships in Science, Technology, Engineering, and Mathematics Program (S-STEM). ($95,000,000). "Sense of belonging in STEM students when returning back to school after a leave of absence." PI: **L. Chaney**, Co-PI's: S. Ferguson, R. Taylor, & K. Sorenson.

Awards External to the College:

2019 Travel and full registration award for CRISPR in the Classroom Workshop.
2019 Travel and full registration award for Failure as a part of Learning: A Mindset Education Network (FLAMEnet) Workshop.
2018-2019 CC Bio INSITES (Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship): travel, meeting participation, infrastructure, conference travel, and regional retreats.
2017 Publication grant from Text and Academic Authors ($1,000).

Awards Internal to the College:

2019 Snow College Student Travel Award – funding course Capital Reef Field Trip
2018 Dean's Council: travel for National Association of Biology Teachers Conference; San Diego, CA
2018 Foundation course development funds
2018 Undergraduate Quality Initiative: ASM Improving Undergraduate Biology Education course
2017 Dean's Council: travel for National Association of Biology Teachers Conference; St. Louis, MO
2017 Undergraduate Quality Initiative: Ancestry DNA test and DC stay
2017 Online course development funds
2017 Open Educational Resources development funds
2016 Undergraduate Quality Initiative: Publications charges
2016 Dean's Council: travel for National Association of Biology Teachers Conference; Denver, CO
2015 Summer Institute in Statistics Modeling Infectious Diseases Tuition Scholarship
2015 Summer Institute in Statistics Modeling Infectious Diseases Travel Scholarship
2013, 2014 University of Cincinnati Graduate Student Governance Association Presenter Travel Award
2013 University of Cincinnati department of Biological Sciences Weiman / Benedict Research Awards. *Examination of the 'general purpose genotype' in an agricultural weed,* Ipomoea purpurea. $800 funded June 2013 to June 2014.
2013 Society for the Study of Evolution Travel Award

2012 University of Cincinnati department of Biological Sciences Benedict Research Awards. *Assessing the evolutionary potential of weeds: a look at Baker's traits in the common morning glory,* Ipomoea purpurea. $800 funded June 2012 to June 2013.
2012 Summer Institute in Statistical Genetics Tuition Scholarship
2012 Summer Institute in Statistical Genetics Travel Scholarship
2011 University of Cincinnati department of Biological Sciences Wendal Botany Grant. *Natural Selection on Weediness in* Ipomoea purpurea*: Response To Competition*. $1,976.94 funded June 2011 to May 2012.
2011 University of Cincinnati department of Biological Sciences Benedict Research Awards. *Natural Selection on Weediness in* Ipomoea purpurea*: Response To Competition*. $1,200 funded June 2011 to May 2012.
2010-2014 University of Cincinnati University Graduate Scholarship (UGS)
2010-2012 University of Cincinnati Chose Ohio First Scholarship
2005-2006 Utah State University Aggie Scholar Scholarship
2003-2005 Snow College Academic Excellence Scholarship
2003-2005 Snow College Athletic Volleyball Scholarship

Not awarded

2016 Using big sagebrush to improve big sagebrush restoration. 2016 David H. Smith Conservation Research Fellowship. $145,000; July 2016 to June 2018.
2015 Comparative genomics of two *Populus* trees by creating whole genome physical maps. American Association of University Women Fellowship for Postdoctoral Research. $30,000; July 2015–June 2016.
2014 Examination of the general purpose genotype in an agricultural weed, *Ipomoea purpurea*. Sigma Xi Student Grants-In-Aid of Research University of Cincinnati Chapter. $3,000; 2014.
2013 Environmental studies dual enrollment outreach grant. University of Cincinnati dual enrollment partnership grant. $1,000; 2013. [Not funded due to changes in university administration and accompanying priorities]
2013 Examination of the general purpose genotype in an agricultural weed, *Ipomoea purpurea*. University of Cincinnati University Research Council. $3,000; 2013.
2013 The evolutionary potential of an agricultural weed, *Ipomoea purpurea*. University of Cincinnati Graduate Summer Undergraduate Mentoring Program. $3,000; 2013.
2011 Natural selection on weediness in *Ipomoea purpurea*: response to competition. University of Cincinnati University Research Council. $3,000; 2011.
2011 Weediness in morning glory and its response to competition with corn. University of Cincinnati Graduate Summer Undergraduate Mentoring Program. $3,000; 2011.

AWARDS AND HONORS

2015 U.S. Presidential Management Fellows Semi-Finalist (fellowship program through US federal government agencies)
2014 University of Cincinnati Department of Biology J. Robie Vestal Award for Outstanding Doctorate Student
2011 University of Cincinnati Department of Biology J. Robie Vestal Award for Outstanding Master Student
2009-2010 West Virginia University President's List and Dean's List
2003-2005 Snow College Dean's List

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Utah Cut Flower Farm Association (UCFFA) – Associate Member
- Society for the Advancement of Biology Education Research (SABER)
- National Association of Biology Teachers (NABT)
- Utah Science Teacher Association (UtSTA)
- National Science Teacher Association (NSTA)
- Botanical Society of America (BSA)
- Society for the Study of Evolution (SSE)
- American Society of Microbiologists (ASM)
- Natural Areas Association (NAA)
- Utah Society for Environmental Education (USEE)
- Textbook and Academic Authors Association (TAAA)
- Association for Women in Science (AWIS)

WORKSHOPS, CONFERENCES, & COURSES ATTENDED

2020	Association of American Colleges and Universities (AAC&U) Conference on General Education, Pedagogy, and Assessment; Jacksonville, FL.
2019	National Science Teacher Association (NSTA) Area Conference; Salt Lake City, UT.
2019	Failure as a part of Learning: A Mindset Education network (FLAMEnet) Workshop; Atlanta, GA.
2019	Strengthening CC Bio INSITES: Mentoring for BER Success; Washington, DC. Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship
2019	Society for the Advancement of Biology Education Research Conference; Minneapolis, MN.
2019	CRISPR in the Classroom: workshop for undergraduate educators to implement CRISPR; Minneapolis, MN
2018	American Society of Microbiology's Improving Undergraduate Biology Education Based on Research in Science Learning Online Course.
2018	National Association of Biology Teachers Annual Conference; San Diego, CA.
2018	Summer Institutes of Scientific Teaching Online Webinars.
2018	Folklore Society of Utah Meeting; Ephraim, UT.
2018	Birds of Sanpete – Snow College Community Education; Ephraim, UT.
2018	CC Bio INSITES: Launch Meeting; Washington, DC.
2017	National Association of Biology Teachers Annual Conference; St. Louis, MO.
2017	Utah Society for Environmental Education Annual Conference; Logan, UT.
2017	Society for the Study of Evolution Annual Conference; Portland, OR.
2017	Society for the Study of Evolution - Education Meeting; Portland, OR.
2016	National Association of Biology Teachers Annual Conference; Denver, CO.
2015	Metagenomics Analysis at the Summer Institute in Statistics & Modeling in Infectious Diseases; Seattle, WA.
2015	Publish and Flourish. Brigham Young University; Provo, UT.
2014	Experiencing Evolution: A Professional Development Workshop for Undergraduate Educators. Society for the Study of Evolution; Raleigh, NC.
2013	Avoiding Extinction in the Classroom. Society for the Study of Evolution; Snowbird, UT.
2013	Professional Development in Academic Biology. University of Cincinnati; Cincinnati, OH.
2012	Quantitative Genetics and Mixed Models in Quantitative Genetics at Summer Institute in Statistical Genetics; Seattle, WA.
2010	Evidence Based Teaching. University of Cincinnati; Cincinnati, OH.