

Education

2020– Master of Science, Ecology & Evolutionary Biology, University of Tennessee Knoxville
2020 Bachelor of Science, General Biology, Lock Haven University of Pennsylvania

Research & Professional Experience:

2020– Master's Thesis under the co-advisement of Karen Hughes & Stephanie Kivlin. University of Tennessee, Knoxville, TN.

2018-20 Independent Research under the advisement of Barrie Overton. Lock Haven University, PA.

- *Sp20 Project title: Fungal Taxonomy & Virulence.*
 - Described *Pseudogymnoascus palmeri* sp. nov. & *Gymnascella minnisii* sp. nov. from PA; Analyzed hemolysis & sporulation as virulence factors in *Pseudogymnoascus*. Conducted pilot intracladal mating studies.
- *Fa19 Project title: Fungal Pathology.*
 - Analyzed dimorphic fungi & dimorphism as a virulence factor in *Pseudogymnoascus*; Continued β -glucan ELISA tests. Ran pilot hemolysis experiments.
- *Sp19 Project title: Microscopy.*
 - Trained in BX53 Compound, Dissecting, & Scanning Electron Microscopy. Measured fungal structures; Described two novel species of *Pseudogymnoascus* from PA; Ran pilot β -glucan ELISA tests using a EPOCH Biotek plate reader.
- *Fa18 Project title: Fungal Morphology.*
 - Evaluating *Pseudogymnoascus destructans* for virulence factors; applied DAPI staining methods; Elucidated morphological characters to discern phylogenetic species in the genus *Pseudogymnoascus*; Generated a dichotomous key to *Pseudogymnoascus* clades in PA; Established methods for a new oatmeal-sediment agar for teleomorph growth in vitro.

2018–20 Research Assistant, Barrie Overton's lab. Lock Haven University, PA
Isolated fungi & bacteria from bat hibernacula soil, performed PCR to amplify fungal DNA for sequencing, maintained culture collections, & reported sequence data as part of an ongoing US Fish & Wildlife grant to study the non-target effects of Polyethylene Glycol on microbial communities in bat hibernacula.

2019 Summer Mycology Lab Assistant, Department of Biological Sciences, Lock Haven University, PA
Maintained fungal culture collections, isolated fungi from soil, sequenced fungal DNA

Teaching Experience & Development

2022 Biology Education: Theory & Practice Course, Spring 2022. CIRTTL Scholar Certification May 19th, 2022.
Teaching-as-Research Project – Student perceptions: the relationship between curiosity, difficulty, & anxiety.

2022 Religion & Inclusive Pedagogy in STEM Classrooms workshop; attendee

2020– Graduate Teaching Assistantship, Ecology & Evolutionary Biology, University of Tennessee – Knoxville.
Secondary Instructor – Plant Diversity and Evolution, Fall 2022
Secondary Instructor – Plant Anatomy, Spring 2022
Secondary Instructor – Field Mycology, Fall 2021
Teaching assistant – Intro to Plant Biology, Spring 2021
Teaching assistant – Intro to Plant Biology, Fall 2020

2019-20 Undergraduate Teaching Assistant, Department of Biological Sciences, Lock Haven University, PA.
Class Tutor – Basic Biology, Spring 2020
Lab assistant – Human Biology for Social Workers, Spring 2020
Lab assistant – Field Natural History, Fall 2019

Publications

- 2020 **Rea-Ireland, A.E.**, D.L. Lindner, C.W. Smyth, B.J. Sewall, & B.E. Overton. 2020. *Pseudogymnoascus palmeri*. Fungal Planet 1156, Persoonia 45:352-353.
- 2020 Adam, J.D., **A.E. Rea-Ireland**, A.J. Mileto, C.W. Smyth & B.E. Overton. 2020. *Gymnascella minnisii*. Fungal Planet 1155, Persoonia 45:350-351.
- 2019 **Rea, A.E.**, B.J. Sewall, C.W. Smyth & B.E. Overton. 2019. *Pseudogymnoascus turneri*. Fungal Planet 1028, Persoonia 43:394-395.
- 2019 **Rea, A.E.**, B.J. Sewall, C.W. Smyth & B.E. Overton. 2019. *Pseudogymnoascus lindneri*. Fungal Planet 1027, Persoonia 43:392-393.

Presentations (Underlined name indicates presenter(s))

- 2022 Ireland, A.E. & K. Hughes. Delineation of *Pseudogymnoascus* taxa: a comparison of loci. *Poster Presentation*. Mycological Society of America Annual Meeting: Mycology in the Swamp, Gainesville, FL.
- 2022 Ireland, A.E. & K. Hughes. Delineation of *Pseudogymnoascus* taxa: a comparison of loci. *Oral Presentation*. Mid-Atlantic States Mycology Conference. Clemson University, SC.
- 2022 Ireland, A.E. & K. Hughes. Delineation of *Pseudogymnoascus* taxa: a comparison of loci. *Oral Presentation*. 2nd & 4th Year Graduate Seminar: Virtual Seminar Series. University of Tennessee, Knoxville, TN.
- 2022 Adam, J.D., **A.E. Rea-Ireland**, C.W. Smyth & B.E. Overton. New species of *Gymnascella* from guano in bat maternity colony. *Oral Presentation*. 53rd Annual Commonwealth of PA University Biologists Meeting. Lock Haven University, PA.
- 2021 Smith, Z., **A. Rea-Ireland** & K. Hughes. Culturing *Pseudogymnoascus* from post-wildfire soils of the Great Smoky Mountains. *Poster Presentation*. Botany 2021. Online.
- 2021 Smith, Z., **A. Rea-Ireland** & K. Hughes. Culturing *Pseudogymnoascus* from post-wildfire soils of the Great Smoky Mountains. *Poster Presentation*. 25th annual Exhibition of Undergraduate Research & Creative Achievement. University of Tennessee, Knoxville, TN.
- 2021 Smith, Z., **A. Rea-Ireland** & K. Hughes. Culturing *Pseudogymnoascus* from post-wildfire soils of the Great Smoky Mountains. *Oral Presentation*. Mid-Atlantic States Mycology Conference. University of North Carolina at Chapel Hill, NC.
- 2019 **Rea, A.E.**, C.W. Smyth, & B.E. Overton. Two new species from Pennsylvania: *Pseudogymnoascus turneri* & *Pseudogymnoascus lindneri*. *Oral Presentation*. 6th Annual PASSHE Student Research Conference in Science, Technology, Engineering & Mathematics. Kutztown University, PA.
- 2019 **Rea, A.E.**, & B.E. Overton. White-nose Syndrome & two new species of *Pseudogymnoascus* from Pennsylvania. *Oral Presentation*. Central PA Mushroom Club. Lock Haven University, PA.
- 2019 Ortiz, N., K.L. Owens, **A.E. Rea**, J. Adams, C.W. Smyth, & B.E. Overton. Elucidating morphological characters to discern phylogenetic species in the genus *Pseudogymnoascus*. *Oral Presentation*. 50th Annual Commonwealth of PA University Biologists Meeting. Edinboro University, PA.
- 2019 **Rea, A.E.**, C.W. Smyth & B.E. Overton. Evaluation of *Pseudogymnoascus destructans* conidia for virulence factors. *Oral Presentation*. 50th Annual Commonwealth of PA University Biologists Meeting. Edinboro University, PA.
- 2019 **Rea, A.E.**, N. Ortiz, K.L. Owens, C.W. Smyth, & B.E. Overton. Two new species of *Pseudogymnoascus* from Pennsylvania. *Oral Presentation*. 50th Annual Commonwealth of PA University Biologists Meeting. Edinboro University, PA.

Leadership Experience

2022–	Junior Member, Ecology & Evolutionary Biology Mentoring Committee, University of Tennessee – Knoxville
2022–	Ecology & Evolutionary Biology Undergraduate Mentor Program Mentee: Reagan Abbott. Major: Ecology & Evolutionary Biology Mentee: Alex Dowd. Major: Ecology & Evolutionary Biology, Minor: Psychology
2021	Undergraduate Mentor, Karen Hughes' Lab. University of Tennessee – Knoxville Mentee: Zane Smith. Major: Plant Genetics & Biotechnology, Minor: Biology
2019–20	Head Student Research Technician, Barrie Overton's Lab. Lock Haven University, PA. Trainee: Jacob Adam. Major: Organismal Biology Trainee: Alina Pislari. Major: Applied Health Studies, Minor: Biology
2017–20	Member, Lock Haven University of Pennsylvania Global Honors Program. Lock Haven, PA..
2018–19	Secretary & Media Coordinator, Lock Haven Band Executive Board. Lock Haven University, PA.

Grants, Academic & Professional Awards

* Undergraduate mentee

2022	Outstanding Teaching by a Graduate Student, Ecology & Evolutionary Biology, University of Tennessee – Knoxville.	
2022	*Silver Medal in Platform Session: Cellular & Molecular Biology A. 53 rd annual meeting of the Commonwealth of PA University Biologists. <i>Project – New species of Gymnascella from guano in bat maternity colony.</i>	
2022	Ray & Linda Holton Plant Research Graduate Endowment, Ecology & Evolutionary Biology, University of Tennessee – Knoxville. <i>Project – Comparative metabolomics of Pseudogymnoascus</i>	\$1600
2022	L.R. Hesler Fund at the UT Herbarium (TENN), University of Tennessee – Knoxville. <i>Project – Description of novel species of Pseudogymnoascus based on a multi-gene phylogeny</i>	\$1640
2021	*College of Arts & Sciences: Natural Sciences Award of Excellence. 25th annual Exhibition of Undergraduate Research & Creative Achievement. University of Tennessee – Knoxville. <i>Project – Culturing Pseudogymnoascus from post-wildfire soils of the Great Smoky Mountains.</i>	
2021	*Office of Undergraduate Research Fellowship Gold Medal, College of Arts & Sciences: Natural Science. 25th annual Exhibition of Undergraduate Research & Creative Achievement. University of Tennessee – Knoxville. <i>Project – Culturing Pseudogymnoascus from post-wildfire soils of the Great Smoky Mountains.</i>	
2017-20	Dean's List for all semesters, Lock Haven University, PA.	
2020	Commonwealth of PA University Biologists: Outstanding Student in Biology, Lock Haven University, PA.	
2019	J. Frederick Hunter Memorial Scholarship in Biology. Lock Haven University, PA	
2019	Biology Honors Award. 59 th annual Natural Science Convocation. Department of Biological Sciences, Lock Haven University, PA.	\$200
2019	Central Pennsylvania Mushroom Club Award.	\$500
2019	Natural, Behavioral, & Health Science Undergraduate Research Funds, Lock Haven University, PA. <i>Project – Exploring the yeast phase of Pseudogymnoascus destructans.</i>	\$350
2019	Silver Medal in Platform Session 4: Ecology & Organismal Biology & Biological Secondary Education. 50 th annual meeting of the Commonwealth of PA University Biologists. <i>Project – Two new species of Pseudogymnoascus from Pennsylvania.</i>	

2019	Silver Medal in Platform Session 3: Ecology & Organismal Biology. 50 th annual meeting of the Commonwealth of PA University Biologists. <i>Project – Evaluation of Pseudogymnoascus destructans conidia for virulence factors.</i>	
2019	Barry Goldwater Scholarship Nominee, Lock Haven University, PA.	
2017	William Keno Beezer Scholarship, Philipsburg-Osceola Area School District.	\$1000
2017	Fullington Service Award for excellence in education & community service.	\$1000
2017	Pennsylvania Association of School Retirees Award for academic excellence.	\$550
2017	Osceola Mills All Veterans Scholarship Award for academic excellence.	\$500
2016	Eagle Scholarship for Academic Achievement, Lock Haven University, PA.	\$2000
2013	Kiwanis Club of Philipsburg Science Award.	\$100

Outreach

2021	Volunteer booth display: “Protect the bats, man!”, Science Expo Day, North Clinton Elementary, TN.	
2021	Invited Speaker: “Undergraduate Research, Graduate Impact”, Mycology, Lock Haven University, PA	
2021	Specimen Transcriber: Worldwide Engagement for Digitizing Biocollections (WeDigBio), Virtual Natural History Collections Event. Transcribed 120 specimen labels.	
2020	Invited Speaker: “Protecting bats & native fungal biodiversity”, Philipsburg-Osceola Area High School, PA.	
2020	Public talk with B.E. Overton “Treating White-nose Syndrome: The importance of protecting bats & native fungal biodiversity”, Lock Haven University Faculty Lecture Series. Lock Haven University, PA.	
2020	Invited speaker: “Treating White-nose Syndrome: The importance of protecting bats & native fungal biodiversity.” Global Honors Program Student Highlight Collaborative Collegiate Event. Lock Haven University, PA.	
2019	Invited speaker: “White-nose Syndrome in Bats” Nittany Christian School, PA.	