

William C. Beckerson, Ph.D. – Curriculum Vitae

Contact Information:



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Research:



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WCBeckerson/

Socials:



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@williamycete.bsky.social



@WilliaMycete



@aBitofBiology

Languages: [\(CEFR\)](#)



English - C2
Native



Spanish - A2.1
Elementary



Dutch - A1.1
Elementary

Professional Website:



WilliamCBeckersonPhD.com

EDUCATION

Doctor of Philosophy in Biology (Ph.D.) 08/2015-08/2020

Program on Disease Evolution

University of Louisville - 📍 Louisville, Kentucky, USA

Master of Science in Biology (M.Sc.) 08/2015-05/2017

Program on Disease Evolution

University of Louisville - 📍 Louisville, Kentucky, USA

Bachelor of Science in Biology (B.Sc.) / Business Management 08/2009-12/2013

Department of Biology

Georgetown College - 📍 Georgetown, Kentucky, USA

RESEARCH EXPERIENCE

Postdoctoral Research:

ERC: Marie Skłodowska-Curie Action Postdoctoral Fellowship [\(link\)](#)

Universiteit Utrecht - 📍 Utrecht, NL

08/2023-07/2025

PI: Sander van den Heuvel

Research project title: Characterizing the neuronal effects of *Ophiocordyceps* secreted proteins using *C. elegans*.

NSF: Postdoctoral Research Fellowship in Biology [\(link\)](#)

University of Central Florida - 📍 Florida, USA

08/2021-07/2023

PI: Charissa de Bekker

Research project title: Linking parasite genomes, environmental ques, and host phenomes in *Ophiocordyceps*.

Dissertation Research:

Ruhr-Universität Bochum - 📍 Bochum, DE

08/2018-07/2019

Collaborator: Dominik Begerow

Research project title: Implementation of CRISPR Cas9 in *Microbotryum lychnidis-dioicae*.

AdF: Chateaubriand Fellowship Awardee [\(link\)](#)

Université Paris-Sud - 📍 Orsay, FR

05/2016-08/2016

Collaborator: Tatiana Giraud

Research project title: Comparative genomics of species-specific effectors in the *Microbotryum* genus.

University of Louisville - 📍 Kentucky, USA

08/2015-08/2020

PI: Michael Perlin

Research project title: Molecular analysis of secreted proteins in the *Microbotryum* genus.

Pedagogical Research:

University of Louisville - 📍 Kentucky, USA

09/2017-07/2021

PI: Deborah Yoder-Himes

Research project title: Analyzing the impact of active learning on students of different social personalities.

PUBLICATIONS

I preferentially support the publication of research findings in societal journals who value open access. As such, I have published the majority of my research in journals from the Animal Behavior Society (*Animal Behaviour*), the American Society for Microbiology (*mBio*), and the National Science Teaching Association (*Journal of College Science Teaching*). These journals are known for their rigorous review processes led by field-specific experts, their emphasis research quality, and for reaching a broad scientific audience.

Peer-Reviewed Research Articles:

- Tsai MC, Barati MT, Kuppireddy VS, Beckerson WC, Long G, Perlin MH. (2024). Characterization of *Microbotryum lychnidis-dioicae* secreted effector proteins, their potential host targets, and localization in a heterologous host plant. *Journal of Fungi* 10(4), 262. <https://doi.org/10.3390/jof10040262>
- Beckerson WC, Anderson JO, Kulkarni S, Perpich JD, Yoder-Himes D. (2024). It's About Time: Exploring the dose-dependent effects of active learning on students of different social personalities in an upper-level biology course. *Journal of College Science Teaching*. <https://doi.org/10.1080/0047231X.2024.2316378>
- Will I, Beckerson WC, de Bekker C. (2023). Using machine learning to predict protein-protein interactions between a zombie ant fungus and its carpenter ant host. *Scientific Reports* 13, 13821. <https://doi.org/10.1038/s41598-023-40764-8>
- Beckerson WC, Krider C, Mohammad UA, de Bekker C. (2023). 28 Minutes Later: Investigating the role of aflatrem-like compounds in *Ophiocordyceps* parasite manipulation of zombie ants. *Animal Behaviour* 203, 225-240. <https://doi.org/10.1016/j.anbehav.2023.06.011>
- De Bekker C, Beckerson WC, Carolyn Elya. (2021). Mechanisms Behind the Madness: How do zombie-making fungal entomopathogens affect host behavior to increase transmission? *mBio* 12(5), e01872-21. <https://doi.org/10.1128/mBio.01872-21>
- Beckerson WC, Anderson JO, Perpich JD, Yoder-Himes D. (2020). An Introvert's Perspective: Analyzing the impact of active learning on social personalities in an upper-level biology course. *Journal of College Science Teaching* 49(3), 47-57. https://doi.org/10.2505/4/jcst20_049_03_47
- Beckerson WC, de la Vega RCR, Hartmann FE, Duhamel M, Giraud T, Perlin MH. (2019). Cause and Effectors: Whole genome comparisons reveal shared but rapidly evolving effector sets among host-specific plant-castrating fungi. *mBio* 10:e02391-19. <https://doi.org/10.1128/mBio.02391-19>
- Kuppireddy VS, Uversky VN, Toh SS, Tsai M-C, Beckerson WC, Cahill CC, Carman B, Perlin MH. (2017). Identification and initial characterization of effectors of an anther smut fungus and the potential host target proteins. *International Journal of Molecular Science* 18, 2489. <https://doi.org/10.3390/ijms18112489>

Peer-Reviewed Teaching Lessons:

- Beckerson WC, de Bekker C. (2025). Zombie Ants VR: Using virtual reality to teach about coevolution and extended phenotypes. *CourseSource*. - **In Preparation**
- Beckerson WC. (2024). Replicating Darwin's Theory: Teaching evolution with microbiology by means of replica plating. *CourseSource*. - **Accepted**
- Beckerson WC. (2022). Small Organisms with Big Consequences: Understanding the microbial world around us. *CourseSource*. <https://doi.org/10.24918/cs.2022.27>

Textbooks:

- Beckerson WC, Laraba I, Torres-Cruz TJ, Steinkraus D, Hajek A. (2024). *Mechanisms of Host Manipulation and Mimicry in Fungi*. In: Haelewaters D. (ed.) *Biodiversity and Evolution of Fungal Parasites and Pathogens*. Amsterdam, Netherlands: Elsevier. (ISBN: [9780323885331](https://doi.org/10.22541/au.172124619.90197485/v1)) – **Preprint** <https://doi.org/10.22541/au.172124619.90197485/v1>
- Savchenko K, Beckerson WC, Aime C. (2024). *Economically Important Plant Parasites: Rusts and smuts*. In: Haelewaters D. (ed.) *Biodiversity and Evolution of Fungal Parasites and Pathogens*. Amsterdam, Netherlands: Elsevier. (ISBN: [9780323885331](https://doi.org/10.22541/au.172175972.21516456/v1)) – **Preprint** <https://doi.org/10.22541/au.172175972.21516456/v1>
- Perlin MH, Beckerson WC, Gopinath A, Cobbs G. (2019). *Molecular and Cellular Genetics: Laboratory Studies*. San Diego, California United States: Cognella Academic Publishing. **2nd Edition**. ISBN: [9781793514943](https://doi.org/10.22541/au.172175972.21516456/v1)
- Perlin MH, Beckerson WC, Gopinath A, Cobbs G. (2018). *Molecular and Cellular Genetics: Laboratory Studies*. San Diego, California United States: Cognella Academic Publishing. **1st Edition**. ISBN: [9781516528288](https://doi.org/10.22541/au.172175972.21516456/v1)

Science Journal for Kids: *An open access platform for kid-friendly adaptations of peer-reviewed science articles

- Beckerson WC, Krider C, Mohammad U, de Bekker C. (2025). How do some fungi make ants walk like zombies? In: Panayotova E & Firth F. *Science Journal for Kids*. - **In Preparation**. adapted from: <https://doi.org/10.1016/j.anbehav.2023.06.011>

De Bekker C, [Beckerson WC](#), Carolyn Elya (2023). How do some fungi turn insects into zombies? In: Panayotova E & Firth F. *Science Journal for Kids*. <https://www.sciencejournalforkids.org/articles/how-do-some-fungi-turn-insects-into-zombies/>. adapted from: <https://doi.org/10.1128/mBio.01872-21>

FUNDING

My success in securing grant funding for various research projects has been facilitated by highlighting the value of interdisciplinary research approaches that bridge biology with complementary fields. By fostering strategic collaborations across a diverse range of disciplines, I have consistently demonstrated the capacity for cross-disciplinary endeavors to address complex research questions.

Extramural Funding and Fellowships (\$519,210 & €213,446):

HORIZON Marie Skłodowska-Curie Actions Postdoctoral Fellowship - 🇳🇱 (€203,464) 📅08/2022

Grant agreement ID: I01108298 (DOI: [10.3030/I01108298](https://doi.org/10.3030/I01108298))

NSF Postdoctoral Research Fellowship in Biology - 🇺🇸 (\$138,000) 📅06/2021

Award number: [2109435](#)

GSA Fungal Genetics Conference Travel Award - 🇺🇸 (\$250) 📅03/2019

DAAD Short Term Research Grant - 🇩🇪 (\$4,075) 📅11/2018

Chateaubriand STEM Fellowship - 🇫🇷 (\$5,280) 📅05/2016

Intramural Funding: Utrecht University (€9,982):

Public Engagement Seed Fund - 🇳🇱 (€9,982) 📅07/2024

Intramural Funding: University of Central Florida (\$55,000):

Preminent Postdoctoral Program - 🇺🇸 (\$55,000) 📅08/2020

Co-written with: Dr. Charissa de Bekker

Intramural Funding: University of Louisville (\$3,236):

Biology 1970's Cohort Fund Grant - 🇺🇸 (\$200) 📅06/2019

Graduate Student Council Travel Grant - 🇺🇸 (\$350) 📅01/2019

Graduate Network of Arts and Science Travel Grant - 🇺🇸 (\$250) 📅01/2019

Graduate Student Council Travel Grant - 🇺🇸 (\$350) 📅05/2018

Arts & Science Research & Creative Activities Grant - 🇺🇸 (\$500) 📅04/2018

Biology Graduate Student Association Travel Grant - 🇺🇸 (\$175) 📅02/2018

Joint Arts & Science Research & Creative Activities Grant - 🇺🇸 (\$1,311) 📅04/2016

Co-written with: Venkata S. Kuppireddy

Graduate Network of Arts and Sciences Research Fund - 🇺🇸 (\$100) 📅01/2016

Significant Contributions and Other Grants (\$313,369):

NSF Gordon Research Seminar Standard Grant - 🇺🇸 (\$16,480) 📅04/2024

Co-written with: Andrew Swafford & Anna Selmecki Award number: 242438I

NSF Track I International Research Experience for Students - 🇺🇸 (\$296,889) 📅08/2018

Co-written with: (PI) Dr. Michael H. Perlin Award number: 182485I

TEACHING

I approach teaching with the same rigor and dedication that I apply to my biological research, continuously seeking evidence-based strategies to improve instruction and enhance student learning outcomes. I am particularly committed to integrating technology and active learning techniques to create dynamic, student-centered university classrooms that foster critical thinking and engagement.

Teaching Qualifications:

Universiteit Utrecht Teaching Qualification Program - 🇳🇱 Utrecht University, NL 📅02/2024-10/2024

The "Basis Kwalificatie Onderwijs, or "BKO", is a mark of quality used by all Dutch universities. It functions as a reliable frame of reference with respect to one's didactic skills. The BKO track consists of modules that allow lecturers to assess and develop all facets of teaching. At the end of the track, the participant is awarded a BKO certificate and is qualified for teaching at all Dutch universities: ([link](#))

Preparing Tomorrow's Faculty Program - 🇺🇸 University of Central Florida, USA 📅08/2021-12/2021

Participants in the Preparing Tomorrow's Faculty (PTF) course engage in a learning community facilitated by Faculty Center staff at the University of Central Florida. During the course, participants assemble a teaching portfolio following modules on student learning and motivation, integrated course design, teaching pedagogies, assessment and feedback, course climate, and career development: ([link](#))

Teaching Experience:

Invited Group Lecturer for Developmental Biology - 📍 Wageningen University, NL

📅05/2024

EZO30306: Developmental Biology of Animals

1 sections 120 min 16 students One class Spring 2024

MSCA Postdoctoral Research Fellow - 📍 Universiteit Utrecht, NL

📅08/2023-07/2025

B-MEBIFB19: Fungal Biology

1 section 105 min/class 12 students Once/week Autumn 2024

MBLS-107: Functional Biology

2 sections 120 min/class 5 & 5 students Once/month Spring 2024

B-MEBIFB19: Fungal Biology

1 section 105 min/class 13 students Once/week Autumn 2023

NSF Postdoctoral Research Fellow - 📍 University of Central Florida, USA

📅08/2021-07/2023

Concurrent teaching for the duration of a PRFB fellowship is prohibited as outlined on pg. 15 of the administrative guide for the Postdoctoral Research Fellowships in Biology program: ([link](#))

Adjunct Faculty of Record - 📍 Georgetown College, USA

📅08/2019-08/2020

BIO 100: Introductory Biology for Non-Majors (100% Remote Learning)

1 section 75 min/class 24 students Four/week Summer 2020

BIO 111: Introductory Biology for Majors

1 section 75 min/class 24 students Twice/week Autumn 2019

BIOL 111: Introductory Biology Lab

1 section 110 min/class 24 students Once/week Autumn 2019

Invited Group Lecturer for Biotechnology Methods - 📍 University of Louisville, USA

📅08/2018-12/2018

BIOL 416: Biotechnology Methods

2 sections 240 min/class 4 & 5 students Twice/week Autumn 2018

Teaching Innovation Learning Lab in Microbiology - 📍 University of Louisville, USA

📅08/2017-12/2019

BIO 357: General Microbiology

1 section 75 min/class 64 students Eight/Semester Autumn 2019

BIO 357: General Microbiology

1 section 75 min/class 49 students Four/Semester Autumn 2018

BIO 357: General Microbiology

1 section 75 min/class 43 students Four/Semester Spring 2018

BIO 357: General Microbiology

1 section 75 min/class 65 students Four/Semester Autumn 2017

Graduate Teaching Assistant - 📍 University of Louisville, USA

📅08/2015-04/2020

BIOL 331: Genetics and Molecular Biology

2 sections 110 min/class 20 & 20 students Twice/week Spring 2020

BIOL 331: Genetics and Molecular Biology

2 sections 110 min/class 20 & 22 students Twice/week Autumn 2019

BIOL 331: Genetics and Molecular Biology

2 sections 110 min/class 20 & 22 students Twice/week Spring 2019

BIOL 331: Genetics and Molecular Biology

1 section 110 min/class 19 students Twice/week Autumn 2018

BIOL 104: introduction to Biological Systems

2 sections 110 min/class 14 students Three/week Summer 2018

BIOL 331: Genetics and Molecular Biology

2 sections 110 min/class 20 & 21 students Twice/week Spring 2018

BIOL 331: Genetics and Molecular Biology

1 section 110 min/class 8 students Twice/week Autumn 2017

BIOL 258: Microbiology

2 sections 90 min/class 15 & 6 students Four Days/week Summer 2017

BIOL 331: Genetics and Molecular Biology

2 sections 110 min/class 17 & 21 students Twice/week Spring 2017

BIOL 331: Genetics and Molecular Biology

1 section 110 min/class 16 students Twice/week Autumn 2016

BIOL 244: Principles of Biology

2 sections 110 min/class 27 & 28 students Twice/week Spring 2016

BIOL 104: Introduction to Biological Systems

3 sections 110 min/class 33, 33, 33 students Once/week Autumn 2015

STUDENTS MENTORED

The success of junior scientists depends on both academic support and the creation of an inclusive learning environment. Towards this end, I am active in promoting inclusivity in my own lab and in the research community as a whole so that individuals from all backgrounds feel safe and empowered to meaningfully contribute to science, regardless of their age, gender, race, sexual orientation, ethnicity, or socioeconomic status.

Master's Students:

I have supervised 6 master's students. For 3 of these master's students, I acted as a mentor on their research projects, while I acted as in a more official capacity as the daily supervisor for the other 3. For the later 3, I was responsible for guiding the students through the successful completion of their master's theses. The work from 2 of these master's students for whom I acted as daily supervisor will be included in a joint publication on which they are both listed as contributing authors.

Of these students: 4 identify as female, 1 identifies as male, and 1 identifies as trans-male. 6 described themselves as white. 4 were born in the Netherlands, 1 was born in Germany, and 1 was born in Spain. 5 were taught in the Netherlands and 1 was taught in the United States of America.

Undergraduate Students:

I have supervised 11 undergraduates. For these undergraduate students, I was the supervisor for all 11 on a variety of research projects. The work from 2 of these students was included in a joint publication on which they are both listed as contributing authors.

Of these students: 6 identify as female and 5 identify as male. 5 described themselves as white, 5 described themselves as black, 1 describe themselves as middle eastern. 11 of these students were born in the United States of America. 11 of these students were taught in the United States of America.

OUTREACH *hyperlinks imbedded in the logos*

I am a strong proponent of public engagement in science and believe in the importance of making scientific knowledge accessible to local communities. As such, I have participated in numerous outreach events, aiming to inspire curiosity and promote a deeper understanding of biology among a broad range of audiences. For me, public education is just as vital as university education. It helps bridge the gap between scientific research and the broader community and fosters a more informed and scientifically literate society.

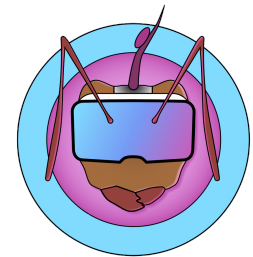
Virtual Reality Videogame Project: **Zombie Ants VR**

- Associate Producer, Concept Artist, Director of Voice Acting^(ENG) -


Website: <https://www.williambeckersonphd.com/outreach>

Steam download: https://store.steampowered.com/app/2416150/Zombie_Ants_VR/


Zombie Ants VR is a short (10-15 minute) educational experience that takes the player through the life cycle of Ophiocordyceps, a fungus that drives creatures (in this case ants) to change their behavior in order to propagate the fungus then ultimately kills them. This fungus was a large inspiration for the video game series Last of Us and is often affectionately referred to as the "Zombie Fungus".




VR Events:

 11/2024

Pathways to Sustainability Conference 2024 - 📍 Utrecht, NL

 11/2024

Utrecht University Faculty Club Event - 📍 Utrecht, NL

 2/2022


Otronicon: 3-day Alpha testing of ZombieAntVR with kids - 📍 Orlando, Florida, USA

Pint of Science


- Presenter and Coordinator

Pint of Science is an annual science festival that aims to communicate contemporary scientific developments to the public by bringing scientists to pubs, cafés and other public places to share their research and findings. The festival takes place annually in the month of May and covers all aspects of research. Each year, thousands of researchers across more than 400 cities and 25 countries share and discuss their findings with people.

VR Events:

 05/2025

Event Coordinator - 📍 Utrecht, NL

 05/2024

Presenter: A Fungus and its Zombie Ant: A very real example of zombie-making parasites ([link](#)) - 📍 Utrecht, NL



Community Science Initiative: the **Zombie Fungus Foray**









- Creator -

Website: <https://wcbeckerson.wixsite.com/thezombiefungusforay>

iNaturalist: <https://www.inaturalist.org/projects/the-zombie-fungus-foray>





K-12 Classroom Outreach:

-  10/2022 Amsterdam International Community School - 📍 Amsterdam, NL
-  10/2021 Wharton High School: National Honor Society - 📍 Tampa, FL, USA
-  10/2021 Freedom High School: Environmental Science Periods I-7 - 📍 Tampa, FL, USA
-  10/2021 Wharton High School: SPLASH Club, and Biology Sections I-6 - 📍 Tampa, FL, USA
-  2/2021 Mica Mountain High School: Sections III & VI - 📍 Tucson, AR, USA
-  10/2020 Jackson Heights Middle School: Ecology - 📍 Oviedo, FL, USA
-  10/2020 Oviedo High School: Sophomore Biology Sections 2, 3, 6, & 7 - 📍 Oviedo, FL, USA
-  10/2020 Oviedo High School: AP Biology Sections I & II - 📍 Oviedo, FL, USA






iNaturalist Curator:

-  8/2020-current Curator for the *Ophiocordyceps* genus
-  8/2020 The Zombie Fungus Foray Project Creator





Seminole County Parks Partnership:

-  10/2021 Chuluota Wilderness Area Guided Hike for Zombie Ants - 📍 Geneva, Florida, USA
-  7/2021 Eco Camp: Grossology Week Guide to Zombie Ants - 📍 Geneva, Florida, USA
-  6/2021 Eco Camp: Biology Bootcamp Guide to Zombie Ants - 📍 Geneva, Florida, USA





Orlando Science Center Partnership:

-  10/2021 Pumpkins and Protons Halloween Party Exhibit - 📍 Orlando, Florida, USA
-  10/2019 Spooky Science Week Exhibit: Real-life Zombie Ants! - 📍 Orlando, Florida, USA




stemCONNECT Partnership:













-  10/2021 Spooky Themed Month Virtual Presentation - 📍 Orlando, Florida, USA
Real-life Zombies and Where to Find Them
-  4/2021 EARTH DAY Virtual Presentation - 📍 Orlando, Florida, USA
Real-life Zombies and Where to Find Them



TikTok:

-  6/2021-2022 @TheZombieFungusForay ([link](#))

Other Outreach Activities:

- Interview with a student from Escuela Maranatha Cristiana - 📍 El Escalón, SV  09/2024
5th Grade Oral Presentation on a scientist
- Interview with a student from Russelberg Highschool - 📍 Tessenderlo, BE  04/2024
What is *Ophiocordyceps*, how does it infect ants, and is it similar to the *Cordyceps* in “The Last of Us”
- Museum of Natural Sciences: International Microorganism Day - 📍 Brussels, BE  10/2023
In collaboration with the Young Belgian Society for Microbiology
- Guest on Val 202’s Frekvenca X show about “The Last of Us” ([link](#)) - 📍 SI  03/2023
- Guest on NPR’s The Colin McEnroe Show: “The Last of Us” ([link](#)) - 📍 Connecticut, USA  02/2023
- Correspondent for Inverse: Science behind “The Last of Us” ([link](#)) - 📍 New York, USA  01/2023
- Correspondent for Newsweek: Science behind “The Last of Us” ([link](#)) - 📍 New York, USA  01/2023
- Orlando MegaCon Presenter ([link](#)) - 📍 Florida, USA  05/2022
Examining the Science Behind Zombie Movies
- Orlando Taste of Science - Science Festival, Scientists Inc. ([link](#)) - 📍 Florida, USA  04/2022
Real-life Zombies and Where to Find Them
-  TikTok:  12/2021-082022
@aBitoffBiology ([link](#))
- Orlando MegaCon Panelist - 📍 Florida, USA  08/2021
The Last Damn Zombie Science Panel You’ll Ever Need!

Interview a Biologist - 📍 Vermont, USA with Stacey Grimaldo Garcia of Middlebury College	📅 10/2021
Skype a Scientist Live: Orlando - 📍 Florida, USA Spooky Science: Real Life Zombies and Where to Find Them (link)	📅 02/2021
Beer with a Scientist: Monnik Beer Company - 📍 Kentucky, USA Our Friends the Fungi: The many types of fungi and the history of how we've used them	📅 03/2020
Skype a Scientist	📅 04/2019-10/2021
10/2020 Creekside Middle School: Sixth Grade Class – 📍 Bentonville, Arizona, USA	
5/2019 Marie Curie Institute: Fourth and Fifth Grade Class – 📍 Amsterdam, New York, USA	
5/2019 Corry Area High School: Ninth Grade Class – 📍 Corry, Pennsylvania, USA	
4/2019 Newark Central: Second Grade Class – 📍 Newark, New York, USA	
4/2019 E.K. Powe Elementary School: First Grade Class – 📍 Durham, North Carolina, USA	
4/2019 Annunciation Catholic School: Seventh Grade Class – 📍 Denver, Colorado, USA	
Guest Speaker at University of Louisville: Meet the Professor - 📍 Kentucky, USA Science Information Literacy & Oral Communication	📅 04/2019
Guest Speaker at Lexington Christian Academy High School - 📍 Kentucky, USA The history of genetic modification of our food	📅 12/2018
Guest Speaker at Lexington Christian Academy High School - 📍 Kentucky, USA What is a GMO?	📅 02/2016
ExBEERiment: Socialize with Science at Louisville Science Center - 📍 Kentucky, USA The science of brewing beer	📅 09/2016

CONFERENCE PRESENTATIONS

The transparent sharing of new findings and data with other research groups significantly accelerates scientific progress. By presenting my up-to-date research findings openly at a diverse set of conferences, I aim champion open science practices and facilitate international cooperation. Through global collaborations that value our diverse expertises, we can better address complex scientific challenges.

Conference Chair:

Gordon Research Seminar: Cellular Molecular Fungal Biology - 📍 New Hampshire, USA Chaired with co-chair Andrew Swafford	📅 07/2022-06/2024
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Oral Presentations:

Host-Microbe Genetics Meeting - 📍 Leiden, NL “The First of Us: Yeast two-hybrid unveils a novel scramblase binding protein in the repertoire of <i>Ophiocordyceps</i> effectors”	📅 10/2024
Gordon Research Conference: Cellular Molecular Fungal Biology - 📍 New Hampshire, USA CEREBRALfungi: Characterizing the neuronal effects of behavioral-modifying protein from the zombie fungi, <i>Ophiocordyceps</i> , using <i>C. elegans</i>	📅 06/2024
8th Conference on Physiology of Yeasts and Filamentous Fungi - 📍 Cork, IR Using Yeast to heterologously study the behavior-modifying effects of recalcitrant zombie fungi biomolecules	📅 06/2023
Gordon Research Seminar: Cellular Molecular Fungal Biology - 📍 New Hampshire, USA 28 Minutes Later: Analyzing the role of aflatoxin-like effectors in the behavioral manipulation of Zombie Ants	📅 06/2022
Animal Behavior Society Online Conference - 📍 Online 28 Minutes Later: The role of secreted effectors in the behavioral manipulation of zombie ants	📅 08/2021
Ruhr-Universität Bochum <i>Microbotryum</i> Symposium - 📍 Bochum, DE An Unorthodox CRISPR Approach for an Unorthodox Fungus	📅 07/2019
Asilomar Fungal Genetics Conference: Smut Convergence - 📍 California, USA Cause and Effectors: Secretome comparison of members from the anther-smut pathogen species complex, <i>Microbotryum violaceum</i>	📅 03/2019
Gordon Research Seminar Cellular Molecular Fungal Biology - 📍 New Hampshire, USA The First Cut is the Deepest: Implementing CRISPR Cas9 as a transformation system for site specific gene disruptions in the fungal pathogen species complex <i>Microbotryum violaceum</i>	📅 06/2018
Kentucky Academy of Science Conference - 📍 Kentucky, USA Identifying unique small-secreted proteins in divergent species of the fungal pathogen complex <i>Microbotryum violaceum</i>	📅 11/2016
Ruhr-Universität Bochum <i>Microbotryum</i> Symposium - 📍 Bochum, DE Analyzing the role of protein-protein interactions in host/pathogen co-evolution	📅 06/2016

Poster Presentations:

- European Worm Meeting** - 📍 Utrecht, NL 📅 07/2024
Zombie Worms: Using *C. elegans* to characterize the behavior-modifying effects of an *Ophiocordyceps* zombie fungus protein
- Gordon Research Conference: Cellular Molecular Fungal Biology** - 📍 New Hampshire, USA 📅 06/2024
CEREBRALfungi: Characterizing the neuronal effects of behavioral-modifying protein from the zombie fungi, *Ophiocordyceps*, using *C. elegans*
- European Conference on Fungal Genetics** - 📍 Innsbruck, AT 📅 03/2023
28 Minutes Later: A proof of concept for testing behavior-manipulating compounds from zombie-making fungi
- Gordon Research Conference Cellular Molecular Fungal Biology** - 📍 New Hampshire, USA 📅 06/2022
28 Minutes Later: Analyzing the role of aflatrem-like effectors in the behavioral manipulation of Zombie Ants
- National Association of Biology Teachers: Professional Conference** - 📍 Gorgia, USA 📅 11/2021
It's About Time: Exploring the dose-dependent effects of active learning on student social personality in an upper-level biology course
- National Association of Biology Teachers: Professional Conference** - 📍 Gorgia, USA 📅 11/2021
The Zombie Fungus Foray: Community science outreach using iNaturalist to discover Zombie Ants
- National Association of Biology Teachers: Professional Conference** - 📍 Illinois, USA 📅 11/2019
An Introvert's Perspective: Analyzing the impact of active learning on multiple levels of class social personalities in an upper-level biology course
- Asilomar Fungal Genetics Conference** - 📍 California, USA 📅 03/2019
Cause and Effectors: Secretome comparison of members from the anther-smut pathogen species complex, *Microbotryum violaceum*
- Gordon Research Conference Cellular Molecular Fungal Biology** - 📍 New Hampshire, USA 📅 06/2018
The First Cut is the Deepest: Implementing CRISPR Cas9 as a transformation system for site specific gene disruptions in the fungal pathogen species complex *Microbotryum violaceum*

PROFESSIONAL PRESENTATIONS

The exchange of knowledge between researchers from different institutions is essential for stimulating new scientific ideas through the lens of new perspectives. Towards this end, I actively engage with other researchers to share my academic insights. These interactions have resulted in the formation of lasting collaborations, enhanced my research capabilities, and strengthened my scientific network.

- Universiteit Utrecht Faculty Pedagogical Journal Club** - 📍 Utrecht, NL 📅 02/2024
The dose-dependent effect of group-based active learning on students with different social personalities.
- Arkansas State University Queretaro STEM Week Invited Speaker** - 📍 Queretaro, MX 📅 02/2023
Real-life Zombies and Where to Find Them: How fungi manipulate animal behavior!
- Utrecht U. Molecular Life Sciences Honors Program Invited Speaker** - 📍 Utrecht, NL 📅 10/2022
Observations from the Crypt: The science behind zombie ants and their fungal parasites
- University of Oxford Invited Speaker** - 📍 Oxford, UK 📅 09/2022
28 Minutes Later: The role of secreted effectors in the behavioral manipulation of zombie ants
- University of Louisville Invited Speaker Series** - 📍 Kentucky, USA 📅 09/2020
Comparative secretomics and functional analysis of effectors utilized by the *Microbotryum* genus of anther-smut fungal pathogens, and their role in host-specificity
- University of Central Florida Invited Speaker Series** - 📍 Florida, USA 📅 09/2020
Comparative secretomics and functional analysis of effectors utilized by the *Microbotryum* genus of anther-smut fungal pathogens, and their role in host-specificity
- Georgetown College Invited Speaker Seminar** - 📍 Kentucky, USA 📅 11/2019
Cause and Effectors: How rapidly evolving effectors lead to host-specificity between *Microbotryum* and Caryophyllaceae
- Belknap Academic Building Anniversary Event** - 📍 Kentucky, USA 📅 08/2019
An Introvert's Perspective: Analyzing the impact of active learning on multiple levels of class social personalities in an upper-level biology course
- Ruhr-Universität Bochum Invited Speaker** - 📍 Bochum, DE 📅 06/2019
The History and Future of CRISPR Cas9
- Ruhr-Universität Bochum Invited Speaker** - 📍 Bochum, DE 📅 06/2018
The First Cut is the Deepest: CRISPR Cas9 and how to get started
- Georgetown College Invited Speaker Seminar** - 📍 Kentucky, USA 📅 10/2016
Here and Back Again: A GCPALS tale
- Université du Paris Sud Chateaubriand Fellowship Invited Speaker** - 📍 Orsay, FR 📅 05/2016
Identification of Small-Secreted Proteins in the *Microbotryum* genus

PROFESSIONAL DEVELOPMENT

The pursuit of scientific knowledge is a life-long journey of learning, and one that extends beyond the confines of a formal education. To be effective scientists, mentors, and educators, we should constantly sharpen our ideas and competencies by learning from other experts in our fields. To improve my own teaching and research skills, I actively participating in annual workshops, trainings, and educational conferences, ensuring that I am up to date of new findings and adapt to an ever-expanding body of knowledge.

Training/Workshops/Conferences:

Fiji ImageJ Software Workshop - 📍 Utrecht, NL	📅 10/2024
Teaching and Learning Inspiration Days Conference - 📍 Utrecht, NL	📅 01/2024-02/2024
Feb 1 st Using open educational resources	
Jan 30 th AR/VR: Experience the future of learning	
Jan 30 th Evidence-informed educational change	
Jan 29 th Education with societal partners in practice	
Parametric Modeling for 3D Printing w/ Fusion – Basics Workshop - 📍 Utrecht, NL	📅 01/2024
Fused Deposition Modeling for 3D Printing – Basics Workshop - 📍 Utrecht, NL	📅 12/2023
2023 Royal Dutch Association for Microbiology Mycology Conference - 📍 Utrecht, NL	📅 11/2023
Public Engagement Academy for Postdocs - 📍 Utrecht, NL	📅 11/2023-11/2024
Founding member of an academy to teach and facilitate outreach by postdoctoral scholars including the following modules:	
Aug 6 th Dialogue training	
May 14 th Media training Popular science writing	
Apr 2 nd Engaging children	
Feb 20 th Public communication skills	
Jan 9 th Impact measurements	
Wetenschnapps: Public Engagement - recognition and rewards in practice - 📍 Utrecht, NL	📅 11/2023
Universiteit Utrecht Professional Media Communication Training - 📍 Utrecht, NL	📅 11/2023
2022 Royal Dutch Association for Microbiology Mycology Conference - 📍 Utrecht, NL	📅 11/2022
NSF Improving Undergraduate STEM Education Program - 📍 Florida, USA	📅 03/2022-05/2022
Mar-May the Inclusive STEM Teaching Project	
Collaborative Institutional Training Initiative - 📍 Florida, USA	📅 01/2021-03/2021
Mar 3 rd Human Subjects Research – Group 2	
Feb 24 th Social/Behavioral Research Investigators and Key Personnel	
Feb 10 th Communicating Research Findings	
Jan 13 th Conflict of Interest	
NIH Grant Writing Virtual Conference - 📍 Florida, USA	📅 05/2020
Training with Remote Teaching Options for COVID-19 - 📍 Kentucky, USA	📅 02/2020
Research Academy RUHR: Open Access Science Workshop - 📍 Bochum, DE	📅 08/2019
Faculty Search Committee: Diversity Training - 📍 Kentucky, USA	📅 02/2019
Professional Societies/Organizations:	
Animal Behavior Society	📅 08/2021-current
American Society for Microbiology	📅 08/2021-2023
National Science Teaching Association	📅 11/2019-2023
National Association of Biology Teachers	📅 11/2019-2023
2021-2022 Justice, Equity, Diversity, and Inclusion Committee	
2019-2020 Community Science Committee	
Genetics Society of America	📅 03/2018-current
2022 Science Communication Virtual Networking Moderator for the 31 st FGC	
Kentucky Academy of Science	📅 11/2014-7/2020

ACADEMIC AND UNIVERSITY SERVICES

Throughout my academic career, I have actively engaged in extracurricular activities within the university to help build a connected academic community. My commitment to these roles reflects my dedication to cultivating an enriching environment for both students and staff that places value in the overall university experience beyond the formal teaching and research settings.

University Services:

Utrecht Selective Life Sciences Extra Curricular Track selection committee 2024 - 📍 Utrecht, NL	📅 11/2024-1/2025
Utrecht Selective Life Sciences Extra Curricular Track selection committee 2023 - 📍 Utrecht, NL	📅 11/2023-1/2024
2022 University of Louisville Biology Alumni Advice Panel - 📍 Kentucky, USA	📅 11/2022
2021 University of Louisville Biology Alumni Advice Panel - 📍 Kentucky, USA	📅 08/2021
Chair of the University of Central Florida Invited Speaker Series - 📍 Florida, USA	📅 08/2021-04/2022
Diversity, Equity, and Inclusion: Classroom Isolation Subcommittee - 📍 Florida, USA	📅 02/2021
Biology Undergraduate Student Association: Graduate Student Panel - 📍 Kentucky, USA	📅 10/2019
Biology Faculty Search Committee: Graduate Student Representative - 📍 Kentucky, USA	📅 02/2019
Student Grievance & Discipline Committee - 📍 Kentucky, USA	📅 08/2016-4/2017
2016-2017 Natural Science Division Representative	
Graduate Network of Arts & Sciences - 📍 Kentucky, USA	📅 08/2016-4/2018
2017-2018 Vice President	
2017 Natural Science Rep. for Grant Review Committee	
2016-2018 Department of Biology Representative	
Biology Graduate Student Association - 📍 University of Louisville, USA	📅 08/2015-7/2020
2019-2020 President	
2018-2019 Graduate Student Rep.	
2016-2017 Social Chair	
2016 & 2020 Webmaster	
2016-2020 Member	

Community Services:

Florida Undergraduate Research Conference Abstract Reviewer - 📍 Florida, USA	📅 06/2021
UCF Student Scholar Symposium for Undergraduate Research Judge - 📍 Florida, USA	📅 03/2021
DuPont Manual Regional Science Fair Judge - 📍 Kentucky, USA	📅 06/2019
DuPont Manual Regional Science Fair Judge - 📍 Kentucky, USA	📅 06/2018
Louisville Regional Science & Engineering Fair Judge - 📍 Kentucky, USA	📅 03/2018

Peer Review Services:

Reinvention Journal of Undergraduate Research	1 primary research article	📅 2024
Genome Biology and Evolution	2 primary research article	📅 2024
Molecular Ecology	2 primary research articles	📅 2022-2023
CourseSource	3 primary research articles	📅 2020-2024
	1 conference publication	
Society for Molecular Plant-Microbe Interactions	1 primary research article	📅 2020

HONORS & AWARDS

I am fortunate to have been granted several honors and awards for my work over the years. Here are some of the items that pertain to the recognition that I have received that are separate from the grants and fellowship that I have obtained:

European Worm Meeting 2024 – 2 nd Place for outstanding poster (link) - 📍 Utrecht, NL	📅 03/2023
UU News: MSCA fellowships for five Utrecht researchers (link) - 📍 Utrecht, NL	📅 03/2023
UCF Today: Stories of impact + innovation (link) - 📍 Florida, USA	📅 02/2021
Graduate Dean's Citation (link) - 📍 Kentucky, USA	📅 12/2020
Graduate Student Publication Award - 📍 Kentucky, USA	📅 04/2020
Graduate School of Arts and Sciences Student Spotlight (link) - 📍 Kentucky, USA	📅 03/2020
Introductory Biology Lab Development Award - 📍 Kentucky, USA	📅 07/2019
Graduate Student Research Presentation Award - 📍 Kentucky, USA	📅 04/2019
Biology Department Service Award - 📍 Kentucky, USA	📅 04/2019
College of Arts and Science Student Profile (link) - 📍 Kentucky, USA	📅 02/2016

REFERENCES

Collaborative efforts in scientific teaching and research have been the cornerstone of my work. The exchange of ideas, expertise, and perspectives from a diverse group of fellow colleagues and students has enriched my understanding and undoubtedly augmented my approach to complex scientific problems. While the overall list of collaborators with whom I have worked with through my career is much too long to include, here are some of the individuals who have particularly shaped my career in science.

Dr. Pauline Krijgheld	Universiteit Utrecht, NL/ Teaching Mentor	<u>P.Krijgheld@uu.nl</u>
Dr. Steffen Werner	Wageningen University, NL/ Collaborator	<u>Steffen.Werner@wur.nl</u>
Dr. Sander van den Heuvel	Universiteit Utrecht, NL/ PI	<u>S.J.L.vandenHeuvel@uu.nl</u>
Dr. Charissa de Bekker	University of Central Florida, USA/ PI	<u>A.M.deBekker@uu.nl</u>
Dr. Michael Perlin	University of Louisville, USA/ PI	<u>Michael.Perlin@louisville.edu</u>
Dr. Tatiana Giraud	Université Paris-Sud, FR/ Collaborator	<u>Tatiana.Giraud@u-psud.fr</u>
Dr. Dominik Begrow	Universität Hamburg, DE/ Collaborator	<u>Dominik.Begrow@uni-hamburg.de</u>
Dr. Scott Gold	USDA Georgia, USA/ Advisor	<u>Scott.Gold@ARS.USDA.Gov</u>