

Joseph (Joey) Michael Hulbert  
Ornamental Plant Pathology,  
Puyallup Research and Extension Center,  
Washington State University,  
2606 West Pioneer, Puyallup, WA, 98371-4998 USA.  
<https://jmhulbert.github.io>  
1-541-908-5129  
hulbe@wsu.edu

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## Academic Appointments

2020-2022

**USDA NIFA Postdoctoral Fellow**, Ornamental Plant Pathology, WSU Puyallup Research and Extension Center, Washington State University.

## Education

2015-2020 (February)

**PhD** Plant Pathology, Forestry and Agricultural Biotechnology Institute, Dept. of Plant & Soil Science, University of Pretoria, South Africa. Dissertation: *Phytophthora* diversity in the Cape Floristic Region. Primary Supervisor: Mike Wingfield. Co-Supervisors: Treena Burgess, Francois Roets.

2016-2019

**Affiliate Research Student**, Dept. of Conservation Ecology & Entomology, Stellenbosch University, South Africa.

2012-2014

**Dual MSc** Dept. of Botany & Plant Pathology, Dept. of Wood Science & Engineering, Oregon State University. Thesis: Phytosanitation of Douglas-fir (*Pseudotsuga menziesii*) logs to mitigate the risk of artificially disseminating *Phytophthora ramorum* within the global trade of timber. Advisers: Everett Hansen & Jeff Morrell.

2006-2010

**BSc** Dept. of Natural Resource Sciences, Washington State University. Undergraduate Thesis: Influence of climatic variables on forest growth in the Sierra Nevada Mountains.

## Initiatives

2020-

Program director, *Forest Health Watch* (<https://foresthealth.org/>), Washington State University, United States Department of Agriculture, National Institute of Food and Agriculture.

2020-

Organizer, WSU Forestry Working Group, Washington State University.

2016-

Project leader, *Cape Citizen Science* (<https://citsci.co.za/>), Forestry and Agricultural Biotechnology Institute, University of Pretoria, Stellenbosch University, DST-NRF Centre of Excellence in Tree Health Biotechnology. 2019-

Prime mover, *Forest Health Citizen Science Community* (<https://fhcs.page/>).

2018-2019

Instructor, *R for biology and ecology workshop series* (<https://jmhulbert.github.io/r/>), two series offered at University of Pretoria and one series offered at Stellenbosch University.

2012-2014

Co-founder, *Inspiration Dissemination* (<http://blogs.oregonstate.edu/inspiration/>), KBVR 88.7fm, Oregon State University.

## Publications

### Peer-Reviewed

- Paap T, Wingfield MJ, Burgess I, **Hulbert JM**, Santini A. 2020. Harmonising the fields of invasion science and forest pathology. *NeoBiota* 62:301-332. DOI: 10.3897/neobiota.62.52991.
- **Hulbert JM**, Paap T, Burgess TI, Roets F, Wingfield MJ. 2019. Botanical gardens provide valuable baseline *Phytophthora* diversity data. *Urban Forestry and Urban Greening* 46:126461. DOI: 10.1016/j.ufug.2019.126461.
- Ryan SF and 41 others, 2018. The role of citizen science in addressing grand challenges in food and agriculture research, *Proceedings of the Royal Society B* 285(1891). DOI: 710.1098/rspb.2018.1977.
- **Hulbert JM**, Agne MC, Burgess TI, Roets F, Wingfield MJ. 2017. Urban environments provide opportunities for early detection of *Phytophthora* invasions, *Biological Invasions* 19:3629–3644. DOI: 10.1007/s10530-017-1585-z.
- Peterson E, Hansen EM, **Hulbert JM**. 2014. Source or Sink? The role of soil and water borne inoculum in the dispersal of *Phytophthora ramorum* in Oregon tanoak forests. *Forest Ecology and Management*, 322:48-57. DOI: 10.1016/j.foreco.2014.02.031.

### Not Peer-Reviewed

- **Hulbert JM**, Turner SC, Scott SL. 2019. Challenges and solutions to establishing and sustaining citizen science projects in South Africa, *South African Journal of Science*, 115(7/8). DOI: 10.17159/sajs.2019/5844.
- Auerbach J, Barthelmess E, Cavalier D, Cooper C, Fenyk H, Haklay M, **Hulbert JM**, Kyba C, Larson L, Lewandowski E, Shanley L. 2019. The problem with delineating narrow criteria for citizen science. *Proceedings of the National Academy of Sciences*, 116(31). DOI: 10.1073/pnas.1909278116.
- **Hulbert JM** 2019. Citizen science increases the ethics of foreign led research, *Narrative Inquiry in Bioethics*, Johns Hopkins University Press. Volume 9, Number 1, Spring 2019. DOI: 10.1353/nib.2019.0024.
- Van der Colff D, Ebrahim I, Powrie LW, Rebelo AG, Edge D, Mecenero S, Scott SL, Hoffman MT, **Hulbert JM**, Dithale N, Mahood K, Gafen M, Sink KJ, Franken M, Zikishe V, Grieve K, Parbhoo S, Dayaram A and Turner SC. 2019. ‘Biodiversity provides opportunities for citizen science’ chapter in *National Biodiversity Assessment 2018: Compendium of Benefits of Biodiversity*. South African National Biodiversity Institute, Pretoria. [hdl.handle.net/20.500.12143/6491](http://hdl.handle.net/20.500.12143/6491)
- **Hulbert JM**, Roets F. 2018. Science engagement in South Africa. *Science*, 361(6406):985. DOI: 10.1126/science.aav1499.
- **Hulbert JM**. 2016. Citizen science tools available for ecological research in South Africa, *South African Journal of Science*, 112:5/6. DOI: 10.17159/sajs.2016/a0152.

## Manuscripts in Review or Revision

- **Hulbert JM**, Roets F, Burgess T, Paap T, Wingfield M. (under revision). Citizen science can enhance biosecurity in developing economies.
- **Hulbert JM**, Roets F, Burgess TI, Wingfield MJ. (submitted). Alleviating the threats of *Phytophthora* in South Africa with citizen science.
- **Hulbert JM**, Roets F, Burgess TI, Wingfield MJ. (under revision). Exotic and putatively native *Phytophthora* species are associated with distinct plant communities in southern Afrotropical Forests.
- Louw NL, Roets F, **Hulbert JM** (under revision). Molecular techniques reveal additional factors in the decline of the endangered silver tree (*Leucadendron argenteum*).
- **Hulbert JM**, Scholtz K, Roets F. (under revision). Youth participation in citizen science reveals differences between outreach and engagement and connects plant pathology research to public health.

## Manuscripts in Prep

- **Hulbert JM**, Cleary M, Hallett RA, Roy HE and others (in prep). Citizen science can add value to forest pest and pathogen management frameworks.
- Bose TB, **Hulbert JM**, Burgess TI, Paap T, Wingfield MJ, Two novel *Phytophthora* species from the Cape Floristic Region of South Africa.

## Academic Honors & Awards

2019

Getting the Message to the Public, Forestry and Agricultural Biotechnology Institute

2018

Travel Fund, British Society for Plant Pathology

2018

Stephen A. Johnston Student Travel Award, American Phytopathological Society

2016

Getting the Message to the Public, Forestry and Agricultural Biotechnology Institute

2016

Best Student Personal Website, Forestry and Agricultural Biotechnology Institute

2015

Best PhD Oral Presentation, Dept. of Plant Science Postgraduate Research Symposium

2014-2015

Graduate Scholarship, Oregon Lottery

2014

Travel Award, Oregon State University Graduate School

2014

Student Travel Award, Botany and Plant Pathology Graduate Student Association

2014

Bartholomew Memorial Scholarship

2014

Most Innovative Radio Program, Intercollegiate Broadcasting System

2014

Best WSE Oral Presentation, Western Forestry Graduate Research Symposium

2013-2014

Schutz Family Fellowship

2013-2014

Alfred W. Moltke Fellowship

2013-2014

Jack & Lila Saubert Fellowship

2013-2014

Larry Moore Award for Graduate Education in Plant Pathology

2013

Student Travel Award, Western International Forest Disease Work Conference

## **Outreach Grants**

2018

Social Impact Grant, Faculty of AgriScience, Stellenbosch University

2017

Mathre Education Endowment Award, American Phytopathological Society

2017

Plant Pathology Promotion Fund, British Society for Plant Pathology

## **Crowdfunded Projects**

2017

Engage Kayamandi Youth in Cape Citizen Science with Vision Afrika, DOI:10.18258/8690

2015

Discovering Plant Destroyers in South Africa with Citizen Science, DOI:10.18258/2066

## **Academic Leadership**

2020-

Voting Member, Puyallup Watershed Initiative, Forest Community of Interest

2017-2020

Committee Member, American Phytopathological Society, Committee for Diversity and Equality

2017-2020

Committee Member, American Phytopathological Society, Forest Pathology Committee

2016-

Founder and Project Leader, Cape Citizen Science

2015

Coordinator, University of Pretoria Invasive Species Journal Club

2014

Founder and Director, Botany and Plant Pathology BUDS Program

2014

Planning Committee Member, Western Forestry Graduate Research Symposium

2013-2014

President, Botany and Plant Pathology Graduate Student Association

2013-2014

Co-Founder and Director, Forest Graduate Undergraduate Mentorship Program

2013

Planning Committee Member, Western Forestry Graduate Research Symposium

2013

Planning Committee Member, College of Forestry Graduate Student Orientation

2013

Organizer, Natural Science Graduate Student BBQ

2012-2014

Co-host, Inspiration Dissemination

2012-2014

Officer, College of Forestry Graduate Student Council

2012-2014

Wood Science Steward, Coalition of Graduate Employees

2012-2014

Graduate Representative, Dept. of Wood Science and Engineering

2012-2014

Committee Member, Wood Science and Engineering Graduate Affairs

2012

Organizer, Natural Science Graduate Student BBQ

## **Conference Organization & Panels Served**

### **Conference Organization**

2019

Session Coordinator, *Forest health defenders: empowering citizens to protect forests through research contributions*, IUFRO XXV World Congress, Curitiba, Brazil.

2018

Event Co-organizer, *South Africa Citizen Science Fair, International Citizen Science Day Event*, Kirstenbosch National Botanical Garden, Cape Town, South Africa.

2017

Session Coordinator, *Early detection and monitoring of invasive forest pests and pathogens with citizen science*, IUFRO 125th Anniversary Congress, Freiburg, Germany.

2014

Symposium Planning Committee, *Canopies to construction: the ecology, management and use of tomorrow's forests*, Western Forestry Graduate Symposium, Corvallis, Oregon, USA.

2013

Symposium Planning Committee, *Branching out: communicating forest research beyond academics*, Western Forestry Graduate Symposium, Corvallis, Oregon, USA.

### **Invited Panel Participation**

2015

Is one tree worth a forest? World Forestry Congress, World Cafe Forest Health Session, Durban, South Africa.

2013

Maximizing your graduate education, fall Graduate School new student orientation, Oregon State University.

### **Presentations at Professional Meetings**

#### **International Conferences**

2019

**Hulbert JM**, 2019. Methods of public engagement in forest health research, IUFRO XXV World Congress, Curitiba, Brazil. Oral Presentation.

2019

**Hulbert JM**, Burgess T, Roets F, Wingfield MJ. 2019. Non-scientist engagement in plant disease research in South Africa, IUFRO XXV World Congress, Curitiba, Brazil. Oral Presentation.

2017

**Hulbert JM**, Burgess T, Roets F, Wingfield MJ. 2017. Public engagement to survey *Phytophthora* in South Africa, IUFRO Working Party *Phytophthora* in forests and natural ecosystems (7.02.09), Sapa, Vietnam. Oral Presentation.

2017

**Hulbert JM**, Roux J, Burgess T, Roets F, Wingfield MJ. 2017. Citizen science initiatives: opportunities to manage global forest pest challenges, IUFRO 125th Anniversary Congress, Freiburg, Germany. Oral Presentation.

2017

**Hulbert JM**, Roux J, Burgess T, Roets F, Wingfield MJ. 2017. Cape Citizen Science: public engagement to detect and discover *Phytophthora* species in South Africa, IUFRO 125th Anniversary Congress, Freiburg, Germany. Poster Presentation.

2017

**Hulbert JM**, De Beer ZW, Wingfield MJ. 2017. Cape Citizen Science: public engagement for plant disease research in a biodiversity hotspot, International Botanical Congress, Shenzhen, China, Poster Presentation (not presenting author).

2014

**Hulbert JM**, Morrell JJ, Hansen EM, 2014. Wooden Vectors of *Phytophthora ramorum*: Are Douglas-fir Logs a Risk? Seventh Meeting of the IUFRO Working Party 7.02.09 *Phytophthora* in Forests and Natural Ecosystems, Esquel, Argentina. Poster Presentation (not presenting author).

2012

Peterson E, **Hulbert JM**, Hansen EM. 2012. Roads and streams are not significant pathways for SOD spread in tanoak forests. 6th IUFRO *Phytophthora* in Forest and Natural Ecosystems. Cordoba, Spain. Oral Presentation (not presenting author).

### South African Conferences

2018

**Hulbert JM** 2018. Igniting conversations with community engagement: establishing citizen science projects in South Africa, Science Forum South Africa, Pretoria, South Africa. Oral Presentation.

2017

**Hulbert JM**, Roets FR. 2017. Indigenous plant pathogens and their contributions to plant community diversity, Fynbos Forum, Swellendam, South Africa. Oral Presentation.

2017

**Hulbert JM**, Roets FR. 2017. Revealing hidden threats to fynbos biodiversity with citizen science, Fynbos Forum, Swellendam, South Africa. Oral Presentation.

2017

**Hulbert JM**, Roux J, Burgess TI, Roets F, Wingfield MJ. 2017. Methods of surveying plant pathogens with citizen science, South African Society for Plant Pathology, 50th anniversary meeting, Champagne Sports Resort, KwaZulu-Natal Province, South Africa. Oral Presentation.

2017

**Hulbert JM**, Roux J, Burgess TI, Roets F, Wingfield MJ. 2017. Public engagement in South Africa's ecological research: the 'how' and 'why' of citizen science, South African Association of Botanists, Annual Meeting, Cape Town, South Africa. Oral Presentation.

2016

**Hulbert JM**, Agne MC, Roux J, Burges TI, Roets F, Wingfield MJ. 2016. Records of *Phytophthora* invasions suggest that early detection programs should focus on urban environments, DST-NRF Centre of Excellence for Invasion Biology Workshop, *Non-native species in urban environments: patterns, processes, impacts and challenges*, Stellenbosch, South Africa. Oral Presentation.

2016

**Hulbert JM**. 2016. Monitoring invasive species with citizen science: an international review, Joint South African Association of Botanists-Southern Africa Society for Systematic Biology Conference, Bloemfontein, South Africa. Oral Presentation.

2015

**Hulbert JM**. 2015. Early detection and monitoring of invasive plant pests with citizen science, DST-NRF Centre of Excellence for Invasion Biology Workshop, *Evolutionary Dynamics of tree invasions: drivers, dimensions, and implications for management*, Stellenbosch, South Africa. Oral Presentation.

### North American Conferences

2018

**Hulbert JM**, Burgess TI, Roets F, Wingfield MJ. 2018. Pathogen hunters: nonscientist engagement in plant disease research, International Congress for Plant Pathology, Boston. Poster Presentation.



2018

**Hulbert JM**, Burgess TI, Roets F, Wingfield MJ. 2018. The Cape Town Hypothesis Test: *Phytophthora* in urban vs natural environments, International Congress for Plant Pathology, Boston. Poster Presentation.

2014

**Hulbert JM**, Morrell JJ, Hansen EM. 2014. Chemical treatment to sanitize *Phytophthora ramorum* colonized timber products and mitigate the risk of accidental dissemination of Sudden Oak Death. International Union of Forest Research Organizations, World Congress. Salt Lake City. Poster Presentation.

2014

**Hulbert JM**, Rosenberger R. 2014. Forest G.U.M.P. The value of graduate-undergraduate mentorship programs. International Union of Forest Research Organizations, World Congress. Salt Lake City. Poster Presentation.

2014

**Hulbert JM**, Morrell JJ, Hansen EM. 2014. Potential of using boron for mitigation of *Phytophthora ramorum* in Douglas-fir logs. International Research Group on Wood Protection 45th annual meeting. St. George, Utah. Oral Presentation.

2014

**Hulbert JM**, Kamvar Z. 2014. *Inspiration Dissemination: Science Communication for College Students*. American Association for the Advancement of Science Annual Meeting. Chicago, Illinois, Poster Presentation.

2014

**Hulbert JM** 2014. The value of graduate-undergraduate mentorship programs. Biennial Conference on University Education in Natural Resources Auburn University, Auburn, Alabama.

2014

**Hulbert JM**, Kamvar Z. 2014. *Inspiration Dissemination: Science Communication for College Students*. Biennial Conference on University Education in Natural Resources Auburn University, Auburn, Alabama.

2012

**Hulbert JM**, Morrell J, Hansen E. 2012. Chemical treatment to sanitize *Phytophthora ramorum* colonized timber products. Western International Forest Disease Work Conference, Tahoe City, California. Oral Presentation.

2011

Hansen E, **Hulbert JM**, Reeser P, Sutton W, Kanaskie A. 2011. Sudden larch death? Larch susceptibility to *Phytophthora ramorum*. Western International Forest Disease Work Conference, Leavenworth Washington. Poster Presentation.

## University Symposia, Departmental Seminars, Invited and Public Talks

### University Symposia

2019

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Tree Protection Co-operative Program Annual Meeting, *Phytophthora multivora: local driver of plant diversity and global agent of bio-insecurity*.

2018

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Tree Protection Co-operative Program Annual Meeting, *Phytophthora diversity in southern Afrotropical forests*.

2017

Stellenbosch University, Dept. of Conservation Ecology & Entomology, Research Day, *Introduction to Cape Citizen Science: A project to engage the public in plant disease research.*

2016

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Tree Protection Co-operative Program Annual Meeting, *Developing a citizen science program on tree health in South Africa.*

2016

University of Pretoria, Forestry and Agricultural Biotechnology Institute, NRF-DST Centre of Excellence in Tree Health Biotechnology Annual Meeting, *The history of Phytophthora cinnamomi in South Africa.*

2015

University of Pretoria, Dept. of Plant & Soil Science Postgraduate Research Symposium, *Introduction to Cape Citizen Science: A project to engage the public in plant disease research.*

2014

Oregon State University, College of Forestry, Western Forestry Graduate Research Symposium, *Wooden vectors of Phytophthora ramorum: Are Douglas-fir logs really a risk?*

2013

Oregon State University, College of Forestry, Western Forestry Graduate Research Symposium, *Chemical treatments to sanitize Phytophthora ramorum colonized timber material and mitigate the risk of artificial Sudden Oak Death dissemination.*

### **Departmental Seminars and Lab Meetings**

2020

Washington State University, 4-H Eco-Stewards Program meeting, *Forest Health Watch - community science in the Pacific Northwest* (Video Conferencing Presentation).

2020

University of Pretoria, Forestry and Agricultural Biotechnology Institute, *A quest for plant destroyers in the Cape Floristic Region: a story of the growth of an indigenous-plant pathologist* (PhD Prestige Seminar).

2018

Stellenbosch University, Dept. of Conservation Ecology and Entomology, Roets, Oberlander, and Dryer Join Lab Meeting, *The Cape Town Hypothesis Test.*

2017

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Thursday Morning Seminar Series, *The trade of live plants in Africa: a risk to tree health?*

2016

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Research Discussion Seminar, *The role of scientists in society: developing a responsible protocol in case we discover an internationally regulated plant pathogen.*

2016

University of Pretoria, Dept. of Plant and Soil Science, Fall Seminar Series, *Citizen science tools available for phytogeographical research in South Africa.*

2016

Stellenbosch University, Dept. of Plant Pathology, Friday Forum Seminar Series, *Cape Citizen Science: community engagement to survey Phytophthora species in the fynbos*.

2016

University of Pretoria, Forestry and Agricultural Biotechnology Institute, Thursday Morning Seminar Series, Methods of sampling *Phytophthora* with citizen science.

2015

Oregon State University, Dept. of Botany and Plant Pathology, Spring Seminar Series, *Crowdfunding and citizen science applications in biology*.

2013

Oregon State University, Dept. of Wood Science & Engineering, Spring Seminar Series, *Using wood science to mitigate the impact of Sudden Oak Death*.

### **Invited Talks**

2020

Washington State Department of Agriculture, Plant Protection Group Meeting, *Forest Health Watch - upcoming community science program* (Video Conferencing Presentation).

2020

South King County Culture (SoCoCulture), Member Update, *Forest Health Watch - partnering with SoCoCulture to promote the Engaging Trees platform* (Video Conferencing Presentation).

2020

Forest Adaptation Network, Bi-Annual Meeting, *Forest Health Watch - engaging communities in forest adaptation science* (Video Conferencing Presentation).

2020

Seattle Urban Forestry Interdepartmental Team, Quarterly Meeting, *Forest Health Watch - upcoming community science program* (Video Conferencing Presentation).

2020

Seattle Urban Forestry Commission, Monthly Meeting, *Forest Health Watch - community science in the Pacific Northwest* (Video Conferencing Presentation).

2020

City of Seattle, Urban Forest Core Team, monthly Meeting, *Forest Health Watch - an upcoming community science program in the Pacific Northwest* (Video Conferencing Presentation).

2020

Puyallup Watershed Initiative, Forest Community of Interest, Bimonthly Meeting, *Forest Health Defenders - Pacific Northwest citizen science - brainstorm and discussion* (Video Conferencing Presentation).

2020

Forestry and Natural Resources Extension Coffee Hour, Oregon State University, *Forest Health Defenders - Pacific Northwest citizen science - brainstorm and discussion* (Video Conferencing Presentation).

2020

EcoPhysiology Working Group, Reed College, Portland State University & WSU Vancouver, *Forest Health Defenders - Pacific Northwest citizen science - brainstorm and discussion* (Video Conferencing Presentation).

2020

Urban Ecology Research Laboratory, University of Washington, *Seattle Urban Forest Atlas project proposal*.

2019

National Research Foundation, South African Agency for Science and Technology Advancement, FAMELAB Alumni Network Event, *Public engagement with citizen science in South Africa*.

2018

Transatlantic Science Education Cooperative, Annual Workshop, Stellenbosch University, *Cape Citizen Science: methods of youth engagement*.

2018

Imbovane Outreach Workshop, Centre for Excellence in Invasion Biology, Stellenbosch University, *Microscopic organisms: why and how we study them*.

2018

Plant Conservation Unit, University of Cape Town, *Benefits and challenges of citizen science: the experiences of @CapeCitSci in South Africa*.

2018

Farm to Table Working Group, North Carolina State University, *Citizen science in South Africa: applications for agriculture* (teleconference).

2018

University of Pretoria, Forestry and Agricultural Biotechnology Institute, 20th Anniversary Meeting, *Inspiring a new generation of plant health specialists in Africa*.

2018

University of Washington, School of the Environment and Forests, Harvey Lab Meeting, *Citizen science and plant disease in South Africa*.

2016

Stellenbosch University, Dept. of Conservation Ecology and Entomology, Regional Universities Forum for Capacity Building in Agriculture (RuForum) visit, *Conserving Biodiversity with citizen science*.

2016

Agricultural Research Council, Stellenbosch University, Dept. of Plant Pathology, Pre-symposium Fungal Pathogens Discussion Group, ARC-PPRI 24th Interdisciplinary Symposium on Soil-borne Plant Diseases, *Public engagement to survey plant destroyers in South Africa*.

2016

Stellenbosch University, Centre of Excellence in Invasion Biology, Dept. of Zoology, Invasives in the Cape Discussion Group, *Is the greatest threat to South Africa's natural resources something we cannot see?*

2015

Oregon State University, Dept. of Integrative Biology, Undergraduate Club, Spring Term Meeting, *Deciding how to impact the world: Issues, options, and tools*.

2015

Oregon State University, Science Communication Brown Bag Lunch Seminar Series, *Crowdfunding: creating new possibilities for science*.

2014

Oregon State University, Science Communication Brown Bag Lunch Seminar Series, *The Process of Podcasting: Using College Radio to Communicate Science*.

2014

Oregon State University, College of Forestry, Researcher Teacher Partnerships: Making global climate change relevant in the classroom, Spring Workshop, *Invasive Species: Service Learning Opportunities for K-12*.

2014

Oregon State University, College of Forestry, Researcher Teacher Partnerships: Making global climate change relevant in the classroom, Spring Workshop, *Inspiring Science as Graduate Students*.

## **Public Talks**

2020

Washington State University, *Forest Health Watch - Collaborator Update Meeting 1* (Video Conferencing Presentation).

2018

South African Citizen Science Project Fair, International Citizen Science Day, Old Mutual Conference Center, Kirstenbosch National Botanical Garden, *Cape Citizen Science*.

2018

Friends of Brackenfell Nature Reserve, Brackenfell Nature Reserve, monthly meeting, *How citizens can protect the Cape Floral Kingdom from new plant diseases*.

2018

Wildlife and Environment Society of South Africa, Tygerberg Nature Reserve, Big Friends Group Event, *How citizens can protect the Cape Floral Kingdom from new plant diseases*.

2017

South African National Biodiversity Institute, Kirstenbosch National Botanical Garden, Room To Grow Wednesday Talks Series, *Cape Citizen Science: plant disease in the fynbos*.

## **Competitive Presentations**

### **Travel Awards**

2020

Washington State University, Innovation and Research Engagement Office, Research Week, *Washington State Forest Health and Climate Change Research Cooperative*.

### **Science Communication**

2013

Scholars Insights, Oregon State University, *It only takes one spore to start an epidemic*.

## **Teaching Experience**

### **Guest Lectures**

2018

Cape Peninsula University of Technology, Faculty of Applied Sciences, Btech Plants Module, Lecture, *Invasive microscopic organisms: plant pathogens and biosecurity*.

2018

Stellenbosch University, Dept. of Conservation Ecology & Entomology, CONSECOL414: Advanced Conservation Management, Lecture, *Microscopic organisms: plant promoters and plant destroyers*.

2017

Stellenbosch University, Dept. of Conservation Ecology & Entomology, CONSECOL414: Advanced Conservation Management, Lecture, *A look into the microscopic world: lifelines or invisible threats*.

2017

Stellenbosch University, Dept. of Conservation Ecology & Entomology, CONSECOL414: Advanced Conservation Management, Field Course, Drie Kulien Nature Reserve.

2016

Stellenbosch University, International Winter School, Biodiversity & Ecology Course, Lecture, *Surveying Phytophthora species with citizen science*.

### **Workshop Series (multiple sessions)**

2019

University of Pretoria, Faculty of Natural and Agricultural Sciences, *R for biology data science workshop series (5 sessions, 76 participants, packages: ggplot2 and dplyr)*.

2019

University of Pretoria, Forestry and Agricultural Biotechnology Institute, *RStudio and R package workshop series (5 sessions, 35 participants, packages: ggplot2, dplyr, vegan and Markdown)*.

2018

Stellenbosch University, Dept. of Conservation Ecology & Entomology, *RStudio and R package workshop series (4 sessions, 23 participants, packages: ggplot2, dplyr, and vegan)*.

### **Science Outreach**

#### **Youth Engagement Activities**

2018

Kluitjieskraal and Waterval Junior Rangers, *Part 2: Collecting bark and ambrosia beetles*, Cape Nature, Wolseley.

2018

Littlewood Primary, *Part 2: Collecting bark and ambrosia beetles*, Cape Nature, Wolseley.

2018

Littlewood Primary, *Part 1: Collecting bark and ambrosia beetles*, Cape Nature, Wolseley.

2018

Kluitjieskraal and Waterval Junior Rangers, *Part 1: Collecting bark and ambrosia beetles*, Cape Nature, Wolseley.

2017

SANParks Junior Rangers, *Hike to De Mond*, Cape Point, Table Mountain National Park.

2017

Noordhoek Primary, *Cape Citizen Science Presents: Cape Nature Junior Ranger Adventures in Rochepan Nature Reserve*, Cape Nature, Veldrift.

2017

Littlewood Primary, *Cape Citizen Science Presents: Cape Nature Junior Ranger Adventures in Drift Sand Nature Reserve*, Cape Nature, Blue Downs.

2017

Se7en +1 homeschool group, *Cape Citizen Science Presents: Lab Visit with Se7en +1*, Stellenbosch University, Stellenbosch.

2017

Fish Hoek Girl Guides, *Adventures with First Fish Hoek Girl Guides*, Fish Hoek.

2017

Se7en +1 homeschool group, *Mountain hike with Seven+1*, Fish Hoek.

2017

Mamre Girls Brigade, *Cape Citizen Science Presents: Adventures in Silwer Stream*. Cape Nature, Mamre.

2017

South African Education and Environment Project, *SAEP and Cape Citizen Science Present: Adventures in Helderberg Nature Reserve*, three activities (July 29, August 5, and October 7), Cape Town Municipality, Somerset West,

2017

South African Education and Environment Project, *SAEP and Cape Citizen Science Present: Adventures in Cape Point*, three activities (June 10, 17 and 24), Cape Point, Table Mountain National Park.

2017

Vision Afrika, *Pathogen hunting in Jonkershoek Nature Reserve on Earth Day*, Jonkershoek Nature Reserve, Stellenbosch.

2016

Helderberg Eco-Rangers, *Sampling streams for Phytophthora and monitoring stream health with miniSASS*, Edward Wood Environmental Education Center, Somerset West.

2016

Helderberg Eco-Rangers, *Training to be citizen scientists: reporting dying plants with IspotNature*, Helderberg Eco-Rangers, Edward Wood Environmental Education Center, Somerset West.

2016

Four Cape Town Scout Troops, *Cape Citizen Science: plant disease on Hoys Koppie*, Hermanus, Scout excursion.

2016

Helderberg Eco-Rangers, *Disease in our fynbos*, Edward Wood Environmental Education Center, Somerset West.

2015

Se7en +1 homeschool group, *Sampling in Kirstenbosch National Botanical Garden*, South African National Biodiversity Institute, Cape Town.

2014

Wood Magic Volunteer, *Forest products in everyday materials*, World Forestry Institute, Portland, Oregon.

2013

Wood Magic Volunteer, *Forest products in everyday materials*, World Forestry Institute, Portland, Oregon.

### **Promotional Table Events**

2018

Science Forum South African, Council for Scientific and Industrial Research, Pretoria.

2018

Biodiversity Careers Day, Kirstenbosch Research Centre, Cape Town.

2017

Science Forum South African, Council for Scientific and Industrial Research, Pretoria.

2017

National Science Week\_\_,\_\_ African Institute of Mathematical Sciences, Khayelitsha.

2017

Open Day, Faculty of AgriSciences, Stellenbosch University.

2016

Hermanus Botanical Society Flower Festival, Hermanus.

2016

Funky Fynbos Festival, Gaansbai.

2015

Arbor Week Expo, Stellenbosch.

2013

Spring Discovery Days, Oregon State University.

2013

Fall Discovery Days, Oregon State University.

### **Stakeholder Engagement**

#### **Presentations**

2017

South African National Biodiversity Institute, *Introduction to Phytophthora*, Plant Pest Monitoring and Prevention Workshop, International Plant Sentinel Network, Kirstenbosch National Botanical Garden, November 6-7, 2017.

2017

South Africa National Parks, *Forest Phytophthoras: invisible threats or contributors to plant community diversity?* Garden Route National Park SANParks Office, Knysna, South Africa.

2017

Cape Town Municipality, *Plant disease in the Cape Floristic Region*, Branch Meeting, Cape Town.

2017

Cape Town Municipality, Cape Nature, World Wildlife Foundation, *Plant disease in the Cape Floristic Region*, BioNet Steering Committee Meeting, Cape Town.



2016

South Africa National Parks, *Cape Citizen Science: Sampling Phytophthora with Citizen Science*, Research Committee Feedback Discussion, Cape Research Centre, Tokai, Cape Town.

2016

Cape Nature, *Involving Cape Nature to study dying plants in the fynbos*, Eastern Division Quarterly Ecological Meeting, George.

2016

Cape Nature, *Engaging citizens in research through workshops and targeted sampling*, Central Division Quarterly Ecological Meeting, Fernkloof Nature Reserve, Hermanus.

2016

Cape Nature, *Community driven research about plant disease in the fynbos*, Western Division Quarterly Ecological Meeting, Porterville.

### **Plant Disease Workshops and Research Activities**

2017

South African National Parks, *Hunting for Phytophthora in West Coast National Park*, SANParks office, Langebaan, West Coast.

2017

Stellenbosch Municipality, *Surveying Phytophthora in Jan Marais Nature Reserve*, Stellenbosch.

2016

Cape Nature, *Surveying Phytophthora in Marloth Nature Reserve*, Marloth Nature Reserve, Swellendam.

2016

South African National Biodiversity Institute, *Recognizing plant disease, sampling soil, and testing hypotheses*, Harold Porter Botanical Garden, Bettys Bay.

2016

Stellenbosch University, *Recognizing plant disease and sampling soil for Phytophthora spp.*, Stellenbosch University Botanical Garden, Stellenbosch.

2016

South African National Biodiversity Institute, *Hypothesis testing in Kirstenbosch National Botanical Garden with Citizen Science*, Kirstenbosch National Botanical Garden, Kirstenbosch Garden Office, Cape Town.

2016

South African Botanical Society, *Surveying Phytophthora species in Fernkloof Nature Reserve*, Fernkloof Nature Reserve Hall, Hermanus.

2016

South Africa National Parks, *Surveying Phytophthora species in Agulhas National Park*, SANParks Office, Agulhas.

2016

South African National Biodiversity Institute, *Phytophthora soil baiting in the Protea Garden*, Kirstenbosch National Botanical Garden, Kirstenbosch Garden Office, Cape Town.

2016

South Africa National Parks, *Sampling dying plants and the Breede river in Bontebok National Park*, Bontebok National park, Swellendam.

2016

South African National Biodiversity Institute, *Recognizing plant disease: why and how*, Kirstenbosch National Botanical Garden, Kirstenbosch Garden Office, Cape Town.

2016

South Africa National Biodiversity Institute, *Introduction to Phytophthora*: plant destroyers in South Africa, Kirstenbosch National Botanical Garden, Kirstenbosch Garden Office, Cape Town.

## **Mentorship and Supervision**

2018

Eric Norton

BSc Honors (4th year), Dept. of Conservation Ecology and Entomology, Stellenbosch University.

2018

Ashleigh Basel

BSc Honors (4th year), Dept. of Conservation Ecology and Entomology, Stellenbosch University.

2017

Grég Thiry

MSc Environmental Education, Université of Montpellier, France. South African Environmental Education Project Intern.

2017

Nicolas Louw

BSc Honors (4th year), Dept. of Conservation Ecology and Entomology, Stellenbosch University.

2017

Adam Wentzel

Work Integrated Learning Student, Cape Nature, Jonkershoek Nature Reserve, Dept. of Biodiversity and Conservation, Cape Peninsula University of Technology.

2017

Tara Nair Van Ryneveld

BSc Honors (4th year), Plant Conservation Unit, Dept. of Biological Sciences, University of Cape Town.

2017

Liza-Marie Dippenaar

BSc Plant Pathology 4th year project, Dept. of Plant Pathology, Stellenbosch University.

2017

James Coldrey

BSc Plant Pathology 4th year project, Dept. of Plant Pathology, Stellenbosch University.

2016

Jeff Groenewald

BSc (3rd year), Biodiversity and Ecology, Dept. of Botany and Zoology, Stellenbosch University.

2014

Emma Buczkowski

BSc Zoology, Dept. of Botany & Plant Pathology Undergraduate Mentorship Program (BUDS) Oregon State University.

2014

Joey DeSheilds

BSc Molecular and Cell Biology, Dept. of Botany & Plant Pathology Mentorship Program (BUDS), Oregon State University.

2014

Kayla Nass

BSc Wood Science and Engineering, Hourly Morrell Lab Student Employee, Oregon State University.

2014

Al Pancoast

BSc Forest Engineering, Forestry Graduate Undergraduate Mentorship Program (GUMP), Oregon State University.

2014

Alex Abair

BSc Botany & Plant Pathology, Hourly Hansen Lab Student Employee, Oregon State University.

2013

Josh Petitmermet

Hourly Hansen Lab Student Employee, Oregon State University.

2013

Jake Kotche

Hourly Hansen Lab Student Employee, Oregon State University.

2013

Patrick Duyck

BSc Forest Engineering, Personal Initiative.

## Mentorship Outcomes

- Basel A, **Hulbert JM**, Midgley G, Jacobs S, Dreyer L, Roets F. 2018. Disease or drought? A physiological analysis on the effects of *Phytophthora* infection and water stress on *Leucadendron argenteum*, Fynbos Forum, Worcester, South Africa. Oral Presentation.
- Groenewald J, Roets F, **Hulbert JM**. 2017. *Phytophthora cinnamomi*: a driver behind endangered flora in the CFR?, South African Association of Botanists, Annual Meeting, Cape Town, South Africa. Poster Presentation.
- Louw NL, Roets F, **Hulbert JM**. 2017. The diminishing silver lining: re-evaluating the microscopic threats to South Africa's silver tree, Fynbos Forum, Swellendam, South Africa. Oral Presentation.

## **Workshops Attended**

2018

Citizen science and youth education in South Africa, Transatlantic Science Education Cooperative, Stellenbosch University.

2017

The People Side of Ecology, Social Science Methods Workshop, Dept. of Conservation Ecology and Entomology, Stellenbosch University.

2016

Introduction to Phylogenetics Workshop, Forestry and Agricultural Biotechnology Institute, University of Pretoria.

2016

Microsatellite Workshop, Forestry and Agricultural Biotechnology Institute, University of Pretoria.

## **Digital Media Production**

### **Video Production**

2017

A year of empowering young minds. YouTube.

2016

Engage Kayamandi youth in Cape Citizen Science with Vision Afrika. Experiment.com.

2016

Release your inner scientist (website header). YouTube.

2015

Discovering plant destroyers in South Africa with citizen science. Experiment.com.

### **Podcast Production**

2017

*Dylan*, Cape Citizen Science.

2015

*Behind the Research*, Oregon State University, College of Forestry.

2012-2014

*Inspiration Dissemination*, Oregon State University, 88.7fm KBVR.

### **Web Development**

2020-

Ornamental Plant Pathology, Wordpress (<https://ppo.puyallup.wsu.edu/>).

2020-

PNW Citizen Science, Github Pages (<https://pnwcitsci.org/>).

2019-

Forest Health Citizen Science Community, Github Pages (<https://fhcs.page/>).

2018-

R Workshop Series, html & R Markdown (<https://jmhulbert.github.io/r/>).

2015-

Cape Citizen Science, Wordpress (<https://citsci.co.za>).

2015-2016

Personal website, Drupal (<https://jmhulbert.me>).

2013-2014

Inspiration Dissemination, Drupal ([oregonstate.edu/inspire](http://oregonstate.edu/inspire)).

2013-2014

Botany and Plant Pathology Graduate Student Association, Drupal (<https://gsa.bpp.oregonstate.edu>).

2013-2014

Western Forestry Graduate Research Symposium, Drupal ([gradsymp.forestry.oregonstate.edu](http://gradsymp.forestry.oregonstate.edu)).

2013-2014

Forest Graduate Undergraduate Mentorship Program, Drupal ([gump.forestry.oregonstate.edu](http://gump.forestry.oregonstate.edu)).

## Selected Popular Writing

- Hulbert JM, Roets F. 2017. Citizen science: how ordinary people can guard Cape Town's biodiversity, The Conversation-Africa.
- Hulbert JM. 2017. Pathogen Hunters: citizen scientists track plant diseases to save species, The Conversation-Africa.
- Hulbert JM. 2017. Two species of plant killing genus *Phytophthora* found in a Western Cape garden, Veld & Flora Vol 103(1).
- Hulbert JM. 2017. Citizen Science, Supernova: the magazine for curious kids Vol 6.1.
- Hulbert JM. 2016. Citizen driven science: the citizen science movement in South Africa, Quest Magazine, Vol 12 (2).
- Hulbert JM. 2016. Plant Destroyers, Supernova: the magazine for curious kids, Vol 5.6.
- Hulbert JM. 2016. Super Fungi, Supernova: the magazine for curious kids, Vol 5.5.
- Hulbert JM. 2016. Citizen science: research experience for all, Veld & Flora, Vol 102(2).
- Hulbert JM. 2016. Recycled pathogens: avoiding accidental infection through awareness, Agrikultuur Magazine, Vol 34.
- Hulbert JM. 2015. Microbes, Supernova: the magazine for curious kids, Vol 5.3.
- Hulbert JM. 2015. Citizen engagement in research to protect fynbos—and forests, SA Forestry.
- Hulbert JM, Navarro S. 2011. Effective collaboration slows the spread of Sudden Oak Death in Oregon, Western Forester, Vol 56(3).

## Selected Media Coverage

- Articles
  - de Bruin L. 2018. Be part of the Cape Town hypothesis test, University of Pretoria homepage, online article.
  - Duvenage E. 2017. Jy kan PhD-student help met grondmonsters, Die Burger, newspaper article.
  - Burt B. 2017. Citizen scientists around the world take to the woods in an effort to improve the health of forests, IUFRO Spotlight # 49, online article.
  - Duvenage E. 2017. Citizen science crowdfunding project pays off, SciBraai, online article.
  - Brits E. 2016. 'Publiek kan help om fynbos te red, Netwerk 24, newspaper article.
  - Heyl A. 2016. Join the hunt for pathogens in the fynbos, UP News, online article.

- Editor. 2016. Science Project aims to boost fynbos conservation, Boland Gazette, Hermanus Times, newspaper article.
- DeKlerk, R. 2016. Identifying plant diseases at the southernmost point of Africa SanParks Times, magazine article.
- Radio Interviews
  - Middag op RSG, RSG 100-104FM, January 23, 2018.
  - Detour, Maties MFM 92.6FM, November 29, 2017.
  - Green Living, Radio Helderberg 93.6FM, February 23, 2017.
  - KLCC News, NPR KLCC 89.7, April 8, 2015.

## Science Community Service

2020

Adhoc Reviewer, Journal of Science Communication (1 Manuscript)

2020

Adhoc Reviewer, Journal of Plant Pathology (1 Manuscript)

2020

Adhoc Reviewer, Scientific Reports (1 Manuscript)

2019

Adhoc Reviewer, African Journal of Marine Biology (1 Manuscript)

2018

Adhoc Reviewer, Biological Invasions (1 Manuscript)

2016

Adhoc Reviewer, IMAfungus (1 Manuscript)

## Research Positions

2020-2022

Postdoctoral Research Associate, Washington State University, Dept. of Plant Pathology, Puyallup Research and Extension Center. Primary Supervisor: Gary Chastagner.

2015-2019

Graduate Student, University of Pretoria, Dept. of Plant and Soil Sciences, Pretoria, Gauteng, South Africa. Primary Supervisor: Mike Wingfield. Co-supervisors: Treena Burgess, Francois Roets.

2016-2018

Affiliate Research Student, Stellenbosch University, Dept. of Conservation Ecology and Entomology, Stellenbosch, Western Cape Province, South Africa. Supervisor: Francois Roets.

2012-2014

Graduate Research Assistant, Oregon State University, Dept. of Wood Science and Engineering, Corvallis, Oregon, USA. Supervisors: Everett Hansen, Jeff Morrell.

2011-2012

Research Technician, Oregon State University, Dept. of Botany and Plant Pathology, Corvallis, Oregon, USA. Supervisors: Everett Hansen, Paul Resser, Wendy Sutton.

2010

Field Technician, Oregon State University, Dept. of Forest Engineering, Resources and Management, Corvallis, Oregon, USA. Supervisors: Dave Shaw, Travis Woolley.

2009

Forest Service STEP Field Technician, Joint project with U.C. Davis and Forest Service Sierra Nevada Research Center, Davis, California, USA. Supervisors: Seth Bigelow, Michael Papaik, Malcolm North.

2008

Field Technician, Joint project with University of Idaho and Forest Service Rocky Mountain Research Station, Moscow, Idaho, USA. Supervisors: Andrew Hudak, Penny Morgan.

2008

Volunteer Lab Technician, Forest Pathology Lab, Forest Service Rocky Mountain Research Station, Moscow, Idaho, USA. Supervisors: Ned Klopfenstein, Mee-Sook Kim.

2007-2010

Research Technician, Washington State University, Dept. of Plant Pathology, Pullman, Washington, USA. Supervisor: Patricia Okubara.

2004

Research Technician, Kansas State University, Dept. of Plant Pathology, Manhattan, Kansas, USA.

## References

### *Primary Postdoc Mentor*

**Gary Chastagner** Professor, Washington State University Extension Specialist, WSU Research and Extension Center in Puyallup chastag@wsu.edu

### *Primary PhD Supervisor*

**Mike J. Wingfield** Advisor to the Executive, University of Pretoria Past President, International Union of Forest Research Organizations Founding Director, Forestry and Agricultural Biotechnology Institute Professor, Department of Microbiology and Plant Pathology University of Pretoria, Pretoria, South Africa 0002 mike.wingfield@up.ac.za

### *PhD Co-Supervisor*

**Treena I. Burgess** Research Director - Institutes, Murdoch University Director, Centre of *Phytophthora* Science and Management Professor, Plant Biology Murdoch University, Murdoch, Western Australia 6150 t.burgess@murdoch.edu.au

### *PhD Co-Supervisor*

**Francois Roets** Assistant Professor, Dept. of Conservation Ecology and Entomology Stellenbosch University, Stellenbosch, South Africa 7600 fr@sun.ac.za

### *MSc Supervisor*

**Everett M. Hansen** Professor Emeritus, Dept. of Botany and Plant Pathology Oregon State University, Corvallis, Oregon, USA 97330 hansene@oregonstate.edu