CURRICULUM VITAE

René HEIM (Postdoctoral Researcher)

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Education

2015-2019	Joint PhD (Grade 1.0 "Magna Cum Laude"), Macquarie University Sydney/Australia and Universität Hamburg/Germany
2012-2014	Master of Science (Grade: 1.12), Universität Hamburg/Germany
2010-2010	Semester Abroad, University of Valencia/Spain
2008-2012	Bachelor of Science (Grade: 2.1), Bioengineering-University of Applied Sciences Hamburg/Germany
2003-2006	Vocational Education (Grade: 3.0), Biological-Technical-Assistant

German Grading Scale

1.0-1.3 = Excellent	1.7-2.3 = Good	2.7-3.3 = Satisfactory	3.7-4.0 = Sufficient	5.0 = Insufficient

Awards and Grants

2020	Collaboration Project Funding - Forestry and Agricultural Biotechnology Institute South Africa (€40000)
2020	Travel Grant – Flanders Scientific Research Fund
2018	Fellow – German Scholarship Foundation (€17400)
2018	Macquarie University Postgraduate Research Fund (AU$3000)
2018	University Hamburg MIN Graduate School (DAAD) (€1800)
2018	Ecology Across Borders, Student Poster Prize Winner (£250)
2017	Barbara Rice Memorial Award, Best Project Presentation (AU$500)

2016	Ecological Society of Australia, Travel Grant (AU$240)
2016	Tony Price Award for Plant Biology Research (AU$1000)
2015	Macquarie University Research Excellence Scholarships (AU$52800)
2010	Erasmus Scholarship (€1200)

Publications and Projects

2019	Fungi, C; **Heim, RHJ**.; Oldeland J; Griffith, S; Schütt, W. Using remote sensing to predict grass species biomass in arid ecosystems as a proxy for bird migration. Submitted.
2019	**Heim, RHJ**; Carnegie, AJ; Zarco-Tejada, PJ. Breaking down barriers between remote sensing and plant pathology. *Tropical Plant Pathology*, 44, 4, doi: 10.1007/s40858-019-00300-4
2019	**Heim, RHJ**; Wright, IJ; Scarth, P; Carnegie, AJ; Taylor, D; Oldeland, J. Multispectral, aerial disease detection for myrtle rust (*Austropuccinia psidii*) on a lemon myrtle plantation. *Drones*, 3, 25, doi: 10.3390/drones3010025
2019	**Heim, RHJ**; Wright, IJ; Geedicke I; Allen, A; Oldeland, J. Developing a spectral disease index for myrtle rust (*Austropuccinia psidii*). *Plant Pathology*, 68, 738-745, doi: 10.1111/ppa.12996
2018	Chang, HC; **Heim, RHJ**; Tomkins, K. Hyperspectral discrimination of invasive Orange Hawkweed (*Hieracium aurantiacum*) in the Mount Kosciuszko National Park, New South Wales, Australia. Not published.
2018	**Heim, RHJ**; Wright, IJ; Chang, HC; Carnegie, AJ; Pegg GS; Lancaster, EK; Falster, DS; Oldeland, J. Detecting myrtle rust (Austropuccinia psidii) on lemon myrtle trees using spectral signatures and machine learning. *Plant Pathology* 67, 1114-1121, doi: 10.1111/ppa.12830.
2015	**Heim, RHJ**; Jürgens, N; Große-Stoltenberg, A; Oldeland, J. The Effect of Epidermal Structures on Leaf Spectral Signatures of Ice Plants (*Aizoaceae*). *Remote Sensing* 7, 16901–16914, doi: 10.3390/rs71215862.
2015	Falter, C; Ellinger, D; von Hülsen, B; **Heim, RHJ**; Voigt, CA. Simple preparation of plant epidermal tissue for laser microdissection and downstream quantitative proteome and carbohydrate analysis. *Frontiers in Plant Science* 6, 1-9, doi:10.3389/fpls.2015.00194

Employment History

2020-date	**Postdoctoral Researcher** – UAV Research Centre, Department of Plants and Crops, University of Ghent, Belgium
2019-2020	**Postdoctoral Researcher** – Herbert Wertheim College of Engineering, University of Florida, United States of America
2017-2018	**R&D - Product Development** (Plant disease and stress detection) – SKYLAB GmbH, Hamburg
2017-2018	**Research Assistant** – Department Environmental Sciences Macquarie University
2016-2016	**Administration** - Department Biological Sciences Macquarie University
2012-2015	**Freelancer** - Technical Service and Transport - Schirmherrschaft GmbH Hamburg, Germany
2012-2015	**Freelancer** Technical Service and Promotion - Fleck Promotions GmbH Hamburg, Germany
2012-2015	**Research Assistant** Biodiversity Evolution and Ecology of Plants – Department of Biology, Universität Hamburg
2011-2012	**Trainee** Plant Pathology - Department of Biology, Universität Hamburg
2009-2009	**Trainee** Metal Processing - Facilities Engineering Hamburg, Germany
2007-2008	**Employee** Plasma Fractionation, Octapharma GmbH Springe, Germany

Supervision and Teaching

2019	Thesis (Ph.D.). Mentoring (TBA), Dylan Stewart, Electrical and Computer Engineering, University of Florida, USA
2019	Thesis (Ph.D.). Mentoring (Interactive Segmentation with Automatic Feature Learning), Xiaolei Guo, Electrical and Computer Engineering, University of Florida, USA

2018	Honours Thesis (B.Sc.). Supervisor (Using physical leaf traits to predict myrtle rust (*Austropuccinia psidii*) susceptibility), Larissa Krey, Department of Biology, Universität Hamburg, Germany
2017	Thesis (M.Sc.). Co-supervisor (Evaluating the use of Remote Sensing to locate weeds in Kosciuszko National Park), Chad Ajamian, Department of Environmental Sciences Faculty of Science and Engineering, Macquarie University, Sydney, Australia
2017-2017	Tutor - S1 BIOL114 Organisms to Ecosystems, Macquarie University, Sydney, Australia
2017-2017	Tutor - S1BIOL373 Aquatic Ecosystems, Macquarie University, Sydney, Australia
2016-2017	Tutor - S2 BIOL347 Plants and Ecosystems, Macquarie University, Sydney, Australia
2016-2017	Tutor - S2 BIOL227 Ecology, Macquarie University, Sydney, Australia
2016-2016	Lecturer - S2 BIOL115 The Thread of Life, Macquarie University, Sydney, Australia
2015-2015	Lecturer - Principles in Botany (61-008), Universität Hamburg, Germany

Academic and Non-Academic Services

2018-date	Leadership - Open Plant Pathology Network, https://www.open-plantpathology.org/
2017	Teaching - *R* Programming Introductions (+40 h)
2017	Founder - Macquarie University *R* Statistical Environment Users Group, Macquarie University, Sydney, Australia
2017	Higher Degree Research Representative for Field Work Administration - Biological Sciences Macquarie University, Sydney Australia
2016	Founder - *R* Statistical Environment Users Group, Department of Biological Sciences, Macquarie University, Sydney, Australia
2015	Established research collaboration between the working group of Prof. Norbert Jürgens, Universität Hamburg, Germany and Prof. Ian Wright, Macquarie University, Australia
2015	Technical support - ecology workshop by Dr. Ute Schmiedel – Universität Hamburg, Germany

2015	Organisation - Career Information Day - Biocentre Klein Flottbek, Universität Hamburg, Germany
2015	Organisation - Summer Fair 2015 - Biocentre Klein Flottbek, Universität Hamburg, Germany
2009	Student Representative - University of Applied Sciences, Hamburg, Germany
2008	Freshman Tutor - University of Applied Sciences, Hamburg, Germany

Key Skills and Languages

German	Native
English	C2 (TOEFL iBT score 100/120)
Spanish	B2

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R Environment	Certified Software Instructor
	(e.g. R Markdown, caret, hsdar, ggplot2, raster)
GIS Software	Advanced
	(e.g. QGIS, ArcGIS, Agisoft Metashape)
Office Software	Professional
	(e.g. Word, PowerPoint, Excel, OneNote)
HTML/CSS	Beginner
Python	Advanced
	(e.g. Numpy, Pandas, Scipy, OpenCV, Rasterio)
Graphic Design	Advanced
	(e.g. Inkscape, Photoshop, Prezi)

Presentations

2019	**(Invited Talk)** "Assimilation of remote sensing in plant pathology: The case of myrtle rust in Australia". Presented at: 30th Annual Meeting of the Tree Protection Co-operative Programme (TPCP) and the DST-NRF Centre of Excellence in Tree Health Biotechnology (CTHB), Pretoria, South Africa

2018	**(Conference Talk)** "Multiscale remote sensing of plant pathogens: Detecting and monitoring myrtle rust". Presented at: Eucalyptus 2018 Conference "Managing Eucalyptus plantations under global changes", Montpellier, France
2018	**(Conference Talk)** "Multiscale remote sensing of plant pathogens: Detecting and monitoring myrtle rust". Presented at: International Congress of Plant Pathology 2018, Boston, Massachusetts, U.S.A.
2017	**(Conference Poster)** "Multiscale Remote Sensing of Plant Pathogens: Detecting Myrtle Rust in Australia". Presented at: Ecology Across Borders: Joint Annual Meeting 2017, Ghent, Belgium
2017	**(Conference Talk)** *"Hyperspectral Remote Sensing of Plant Pathogens: Detecting and Monitoring Myrtle Rust".* Presented at: Higher Degree Research Conference 2017 Macquarie University, Sydney, Australia
2016	**(Conference Talk)** *"I spy with my drone eye: high capacity detection and monitoring of Myrtle Rust".* Presented at: 2016 Ecological Society of Australia Annual Conference, Fremantle, Australia
2016	**(Conference Talk)** *"I spy with my little eye: Spectral detection and monitoring of plant species susceptible to Myrtle Rust".* Presented at: Higher Degree Research Conference 2016 Macquarie University, Sydney, Australia
2016	**(Invited Talk)** „*I spy with my little eye: Remote and near-range spectral detection of plant species susceptible to Myrtle Rust".* Presented at: Queensland Centre for Advanced Technology (CSIRO Robotics) Pullenvale, Brisbane, Australia
2016	**(Invited Talk)** *"Remote Sensing, Drones, and Plant Pathogens: A general introduction and a closer look on Myrtle Rust detection."* Presented at: EcoSciences Precinct CSIRO and Queensland Government, Brisbane, Australia
2016	**(Conference Talk)** *"Aerial and hyperspectral near-range spectrometry of Puccinia psidii (Myrtle Rust)".* Presented at: Unmanned Aircraft Systems for Remote Sensing Applications Conference 2016, Brisbane, Australia
2015	**(Conference Poster)** "*Spectral responses of leaf surface traits of Aizoaceae*". Presented at: The Ecological Society of Germany, Austria and Switzerland Conference 2015, Goettingen, Germany
2015	**(Invited Talk)** *"M.Sc. Graduation Opening Speech".* Presented at: Biocentre Klein Flottbek Department of Biology Universität Hamburg, Hamburg, Germany

2015   **(Workshop Talk)** *"Spectral responses of leaf surface traits of Aizoaceae"*. Presented at: EnMAP Summerschool by Earth Observation Center of German Aerospace Center (DLR), Lauenburg, Germany