

RUTH SCHMIDT, PHD

Data Scientist & Analyst

Technical Acumen | Statistics & Big Data | Data visualization | Reproducibility

8+ years of global experience managing, analysing, visualizing and sharing research data. Completed PhD in Microbial Ecology and have extensive experience in transdisciplinary research, data analysis, scientific writing, and project management. Skilled in exploring data and turning them into accessible information. Adept at communicating and presenting complex data concepts to scientific and non-scientific audiences. Managed six projects featuring staff with diverse backgrounds and skills.



PROFESSIONAL EXPERIENCE

02/2021
|
present

Data Scientist

Nextgem

📍 Utrecht, The Netherlands

- Developing ML-based tool for financial economic crime (FEC) detection.
- Implemented marketing strategy for newly started company [Fectfinder](#) for FEC prevention.

10/2020
|
present

Freelance Data/Policy Analyst

DataMoves

📍 Utrecht, The Netherlands

- Developed benchmarking study for IFAD's (International Fund for Agricultural Development) biodiversity strategy.
- Created interactive visualizations of COVID-19 data for the Economics Observatory.
- Conducted multivariate analysis of biodiversity data for Louis Bolk Instituut.

01/2020
|
10/2020

Data Scientist

Plotly Technologies

📍 Montréal, Canada

- Developed two brand-new open-source Dash apps for molecular data from microbiome research. These tools offered a way to integrate genetics-related big data in a visually informative way.
- Utilized company's Dash R and Dash Bio libraries to create the interactive applications within four months.
- Presented workflow and examples of Dash apps to the open-source community at the Bioconductor Conference 2020 ([link to slides](#)).

06/2019
|
10/2019

Environmental Consultant

IUCN

📍 Remote

- Performed data analysis and report writing for IUCN's Common ground report on how soil and landscape biodiversity can benefit society and help overcome major challenges of climate change, biodiversity loss, and food and water insecurity.



ACADEMIC EXPERIENCE

01/2020
|
03/2020

Visiting Research Fellow

Kochi Core Center

📍 Kochi, Japan

- Conducted bioinformatics data analysis.
- Recognized for effectively performing highly targeted genetic analysis.
- Developed a faster, less expensive, and more accurate method of detecting bacterial gaseous compounds under challenging environmental conditions (e.g., deep sea, drought).

CONTACT INFO

🏠 Utrecht, The Netherlands

📞 +31 651-769-480

✉ schmidt.ruth@gmail.com

🌐 ruthschmidt.rbind.io

in linkedin.com/ruth-schmidt

🐙 github.com/ruthlys

KEY STRENGTHS

📊 Multivariate Statistics, Statistical Models, Machine Learning

🧬 Microbiome Research, Bioinformatic & Omic Tools

🔧 Data Cleaning, Processing, Archiving, Mining & Manipulation

👤 Innovative, Intuitive, Creative, Curious, Goal/Solution-oriented, Empowering leader, Excellent multilingual communication skills, Knowledgeable collaborator, Decision maker, Organizer, Critical thinker

TECHNICAL SKILLS

💻 R programming, Python, SQL, CSS & HTML, Git/Github, Power BI, Plotly Dash and graphing libraries

LANGUAGES

German (Native)
English (Excellent)
Dutch (Intermediate)
Spanish (Advanced)
French (Beginner)

- 02/2018
|
12/2019
- **Postdoctoral Fellow**
Institut national de la recherche scientifique (INRS) 📍 Montréal, Canada
 - Led 3 lab and field studies with wheat under drought conditions.
 - Conducted quantitative analysis of genetic-related big data.
 - Collaborated with researchers in The Netherlands (Netherlands Institute of Ecology) and the UK (Plymouth Marine Laboratory) on studies.
 - Co-supervised four PhD students and two master's degree students.
 - Presented findings at six international conferences.
- 02/2013
|
10/2017
- **PhD Candidate**
Wageningen University & Netherlands Institute of Ecology 📍 Wageningen, The Netherlands
 - Utilized a combination of genetic, microbiological, and analytical approaches to characterize the molecular mechanisms involved in soil microbe interactions.
 - Collaborated with five international research institutes and universities in the US (Institute for Genome Sciences, Baltimore); Germany (Greifswald, Jena & Center for Functional Genomics of Microbes, Max-Planck Institute for Chemical Ecology); and Sweden (Swedish University of Agricultural Sciences) on microbiomics projects.
 - Mentored four undergraduate and one graduate student on molecular biology research projects.
- 10/2010-
12/2012
- **University Assistant**
Graz University of Technology 📍 Graz, Austria
 - Led and conducted field study on the effect of biocontrol agents in field in Egypt.
 - Performed high-quality bioinformatics analysis of data.
 - Oversaw three team members.



EDUCATION

- 10/2017
- **PhD in Microbial Ecology**
Wageningen University & Netherlands Institute of Ecology (NIOO) 📍 Wageningen, The Netherlands
- 12/2012
- **Master of Science in Biotechnology**
Graz University of Technology 📍 Graz, Austria
- 09/2010
- **Bachelor of Science in Molecular Biology**
Graz University of Technology 📍 Graz, Austria



GRANTS & AWARDS

- 2021
- **AI Inclusive Fellowship (Dataquest)**
- 2019
- **Mitacs Postdoctoral Fellowship (60,000 CAD)**
Visualization of multi-omics data in microbiome research 📍 Montréal, Canada
- 2019
- **Japan Society for the Promotion of Science (JSPS) Award (8,000 CAD)**
Uncovering microbial chemical ecology in the extreme sub-seafloor environment 📍 Kochi Core Centre, Japan
- 2019
- **Coalesce BioArt residency (2,000 USD)**
[Microbial Scents and Olfactory Prosthesis for the Future](#) 📍 Coalesce: Center for Biological Art, University at Buffalo, USA
- 2018
- **Quebec Centre for Biodiversity Science (QCBS) Travel grant (1,500 CAD)**
International Phytobiome meeting 📍 Montpellier, France
- 2018
- **QCBS Seed grant (5,000 CAD)**
[Aural soilscapes: creating ecological consciousness to global warming](#) 📍 Montréal, Canada
- 2018
- **QCBS Travel grant (1,500 CAD)**
ISME17 meeting 📍 Leipzig, Germany
- 2017
- **International Society of Chemical Ecology (ISCE) Travel Grant (1,000 USD)**
Annual Meeting ISCE17 📍 Kyoto, Japan

- 2017 ● **Best Talk Award (150 USD)**
Annual Meeting ISCE17 📍 Kyoto, Japan
- 2017 ● **Federation of European Microbiological Societies (FEMS) Research Grant (5,000 Eur)**
Research on fungal genomics at the Swedish University of Agricultural Sciences (SLU) 📍 Uppsala, Sweden
- 2016 ● **International Society for Microbial Ecology (ISME) Travel Grant (800 Eur)**
ISME16 meeting 📍 Montréal, Canada
- 2015 ● **FEMS Meetings Attendance Grant (300 Eur)**
Ecology of Soil Microorganisms meeting 📍 Prague, Czech Republic
- 2015 ● **Best Poster Award (100 Eur)**
Ecology of Soil Microorganisms meeting 📍 Prague, Czech Republic



PRESENTATIONS

- 10/2020 ● **Vedanta Biosciences (talk)**
Data from dirt - using Omics to understand microbial drivers in soil 📍 Boston, USA (virtual)
- 07/2020 ● **Bioconductor 2020 (talk)**
Interactive data visualization in microbiome research with Dash R & Dash Bio ([link to slides](#)) 📍 Boston, USA (virtual)
- 06/2020 ● **INRS Seminar series (talk)**
Nitrapyrin effects on soil microbial community structure, composition, diversity & function ([link to slides with interactive graphs](#)) 📍 Montréal, Canada
- 02/2020 ● **Kochi Core Center (talk)**
Uncovering microbial terpenes in the extreme sub-seafloor environment. 📍 Kochi, Japan
- 06/2019 ● **International Society of Chemical Ecology, ISCE 35 (talk)**
Microbial chemical ecology: past, present and future. 📍 Atlanta, USA
- 05/2019 ● **Second International Holobiont meeting (talk)**
How microbial volatiles help plants survive in times of drought. 📍 Montréal, Canada
- 12/2018 ● **Quebec Centre for Biodiversity Science Annual Symposium (talk)**
Microbial aromas might help plants survive drought. 📍 Montréal, Canada
- 12/2018 ● **International Phytobiomes Conference (poster)**
Microbial terpenes in the plant holobiont as a strategy to adapt to drought. 📍 Montpellier, France
- 08/2018 ● **International Symposium on Microbial Ecology, ISME 17 (talk)**
Do bacteria and fungi have a fragrant language all their own? 📍 Leipzig, Germany
- 08/2018 ● **International Symposium on Microbial Ecology, ISME 17 (speaker in roundtable session)**
Microbial chemical ecology: intra- and interspecies communication. 📍 Leipzig, Germany
- 06/2018 ● **Champalimaud Centre for the Unknown**
Microworld - the most powerful life on earth. 📍 Lisbon, Portugal
- 08/2017 ● **International Society of Chemical Ecology, ISCE 34 (talk)**
Terpenes as *lingua franca* between fungi and bacteria. 📍 Kyoto, Japan
- 08/2016 ● **International Symposium on Microbial Ecology, ISME 16 (poster)**
Transcriptional responses of a beneficial soil bacterium to volatiles of a plant pathogen. 📍 Montréal, Canada
- 12/2015 ● **Ecology of soil microorganisms, ESM (poster)**
Microbial small talk: Volatiles in fungal-bacterial interactions. 📍 Prague, Czech Republic
- 04/2014 ● **4th International student conference on Microbial Communication, MiCom (talk)**
Chemical dialogues: The ability of bacteria to sense fungal volatiles. 📍 Jena, Germany
- 12/2013 ● **CNRS-Jacques Monod conference: bacterial-fungal interactions: a federative field for fundamental and applied microbiology**
The role of fungal volatiles as signaling compounds in bacterial-fungal interactions. 📍 Roscoff, France

- 06/2013 ● **Boston Bacterial Meeting, BBM (poster)**
Microbial interactions via secondary metabolites in soil. 📍 Boston, USA
- 02/2013 ● **Netherlands Annual Ecology Meeting, NERN (poster)**
The best bacterial competitive strategies in the rhizosphere. 📍 Lunteren, The Netherlands



TEACHING EXPERIENCE

- 09/2020 ● **Video tutorial on visualizing COVID-19 data using Plotly's R graphing library**
Jumping Rivers 📍 Newcastle, UK (virtual)
- 10/2018 ● **MIT Global Community Biosummit workshop on biomaterials**
MIT Media Lab 📍 Boston, USA
- 04/2018 | 09/2019 ● **Various hands-on workshops on molecular biology/microbiology experiments for kids and adults**
Bricobio 📍 Montréal, Canada
- 09/2015 ● **Instructor in two days hands-on course on proteomics**
Netherlands Institute of Ecology 📍 Wageningen, The Netherlands
- 10/2013 ● **Teaching Assistant in Laboratory Course in Environmental Biotechnology**
Graz University of Technology 📍 Graz, Austria
- 06/2012 ● **Research Assistant in Laboratory Course in Biochemistry and Molecular Biology**
Karl-Franzens University 📍 Graz, Austria