Julia Anne **Gustavsen**

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Education

University of British Columbia — *Vancouver, B.C., Canada*

PhD in Biological Oceanography — *April 2016*

- Thesis title: Drivers of viral diversity and community compositional change over spatial and temporal scales in coastal British Columbia

University of New Brunswick — *Fredericton, N.B., Canada*

BSc. (Hons) in Biology — *May 2005*

University of New Brunswick — *Fredericton, N.B., Canada*

BA in English — *May 2005*

Experience

Sophia Genetics — *Saint-Suplice, Switzernland*

Bionformatician — *October 2016 - present*

- Analyse human genomic data from various sequencing platforms
- Present and communicate analyses to clients at research institutes and hospitals
- Create new analyses and visualizations and improve current pipelines

Google Summer of Code

Student Intern — *May 2016 - September 2016*

- Enhance walkthroughs and vignettes in R package RCy3 for running Cytoscape

University of British Columbia — *Vancouver, BC, Canada*

Teaching Assistant — *2011-2016*

- Courses: Laboratory Exploration of Planet Earth (taught: plankton, waves, estuaries and hydrogeology) (100 level, Marine Pollution (400 level), Marine Microbiology(400 level), Data wrangling, exploration, and analysis with R (500 level)

Smithsonian Institution: Smithsonian Environmental Research Center: Marine Invasions Lab — *Edgewater, MD, USA*

Biological Technician — *2005-2007*

- Processing of ballast water information forms, and field related a study on the crab *Rhithropanopeus harrisii* and clam *Gemma gemma*

Teaching and Mentoring Experience

Marine Microbiology class (Earth and Ocean Science 475) — *Vancouver, Canada*

Guest Lecturer — *2012, 2013 and 2015*

- Lectures on viral diversity.

Statistics 547 (UBC) Basic Training for Data Science — *Vancouver, Canada*

Class session leader — *Nov. 2014*

- Developed and delivered two class session on : 'Introduction to Shiny and building your first Shiny app."

Undergraduate research opportunities (URO UBC) — *Vancouver, Canada*

Mentor — *2012-2013*

- Helped 3 undergraduate students come up with a research idea for a proposal, and turn this idea into a poster proposal.
- Poster was presented at Multidisciplinary Undergraduate Research Conference (UBC) and at the UBC Undergraduate Research Conference.

Software Carpentry Workshop *Various locations in Canada, USA and Switzerland*

Instructor *2012-2016*

- Taught: unix shell, introductory python and version control (git)

Publications

Heger, Thierry J and Giesbrecht, Ian JW and **Gustavsen, Julia** and del Campo, Javier and Kellogg, Colleen TE and Hoffman, Kira M and Lertzman, Ken and Mohn, William W and Keeling, Patrick J. 2018. High-throughput environmental sequencing reveals high diversity of litter and moss associated protist communities along a gradient of drainage and tree productivity. Environmental Microbiology, 20:1185–1203

Gustavsen, J., Winget, D., Tian, X. and C.A. Suttle. 2014. High temporal and spatial diversity in marine RNA viruses implies that they have an important role in mortality and structuring plankton communities. Frontiers in Microbiology, 5:703.

Moore, R.A, Warren, R.L., Freeman, J.D., **Gustavsen, J.A.**, Chenard, C., Friedman, J.M., Suttle, C.A., Zhao, Y., and Holt, R.A. 2011. The sensitivity of massively parallel sequencing for detecting candidate infectious agents associated with human tissue. PloS one, 6(5), e19838. doi:10.1371journal.pone.0019838

Presentations

OpenConSwitzerland *Bern, Switzerland*

Oral presentation *October 2018*

- Title: "Code sharing and review in the open with rOpenSci."

ISME meeting *Montreal, Canada*

Oral presentation *August. 2016*

- Title: "Network analysis reveals the strong role of the environment in structuring microbial communities in a estuarine environment."

ISME meeting *Montreal, Canada*

Poster presentation *August. 2016*

- Title: "(EDIT)Temporal shifts in the phylogenetic structure of viral and host communities implies their central role as structuring elements in marine planktonic communities."

EMBO Conference: Viruses of Microbes *Liverpool, United Kingdom*

Poster presentations *July. 2016*

- Title: "Temporal shifts in the phylogenetic structure of viral and host communities implies their central role as structuring elements in marine planktonic communities."
- Title: "Simple and reproducible visualization of virus-host co-occurrence networks using RCy3 and Cytoscape."

EMBO Conference: Viruses of Microbes *ETH, Zurich, Switzerland*

Poster presentation *Jul. 2014*

- Title: "Describing the richness of the Picornavirales in coastal waters along a nutrient gradient using high-throughput sequencing."

Aquatic Virus Workshop 7 *St. Petersburg, Florida, USA*

Poster presentation *Nov. 2013*

- Title: "Distribution and patchiness of Picornavirales in coastal waters."

Center for Microbial Diversity and Evolution/CIFAR Integrated Microbial Diversity *Whistler, BC, Canada*

Poster presentation *May 2013*

- Title: "The high richness of aquatic RNA viral communities in coastal British Columbia revealed using amplicon deep sequencing."

Canadian Society for Microbiology Conference *Vancouver, BC, Canada*

Oral presentation *Jul. 2012*

- Title: "The uneven structure of RNA viral communities in coastal B.C. revealed using amplicon deep sequencing"

Center for Microbial Diversity and Evolution retreat *Harrison Hot Springs, BC, Canada*

Poster presentation *May 2012*

- Title: "The uneven structure of aquatic RNA viral communities in coastal British Columbia revealed using deep amplicon sequencing."

CIFAR Integrated Microbial Diversity *Quebec City, PQ, Canada*

Poster presentation *May 2012*

- Title: "The uneven structure of aquatic RNA viral communities in coastal British Columbia revealed using deep amplicon sequencing."

UBC/ SFU/ UVic/ VIU Ecology and Evolution Retreat *Brackendale, BC, Canada*

Poster presentation *Nov. 2011*

- Title: "RNA viral richness at Jericho Pier."

Center for Microbial Diversity and Evolution retreat *Harrison Hot Springs, BC, Canada.*

Poster presentation *May. 2011*

- Title: "Viral and bacterial abundances at Jericho Pier (Vancouver, BC) show variation over time and correlation with environmental parameters."

Research Techniques and Skills

Data and Statistical analysis	Multivariate and other analyses with R and Python, Bash shell, Makefiles
Bioinformatics	Phylogeny, biomarker/indicator species, sequence analysis (Sanger, 454, Illumina)
Writing and report generation	Microsoft office, Latex, Markdown and Rmarkdown, Adobe Illustrator and Photoshop
Version control	git, Github, basic svn
Molecular biology lab techniques	Various extraction methods, PCR, RT-PCR, qPCR, 454 and Illumina library preparation
Culturing	Culturing of phytoplankton and bacteria and isolation of viruses

Awards

2016	**ECO-DAS (declined)**, Ecological Dissertations in the Aquatic Sciences	*Hawaii, USA*
2015	**FENS and IBRO-PERC**, Travel award for Advanced Scientific Programming in Python course	*Munich, Germany*
2014	**University of British Columbia**, BRITE International travel award	*Vancouver, Canada*
2011-2013	**University of British Columbia**, Four year Doctoral Scholarship	*Vancouver, Canada*
2009-2011	**Natural Sciences and Engineering Research Council**, Postgraduate Scholarship Doctoral	*Vancouver, Canada*
2007-2009	**Natural Sciences and Engineering Research Council**, Postgraduate Scholarship Masters	*Vancouver, Canada*
2003	**Natural Sciences and Engineering Research Council**, Undergraduate Student Research	*Fredericton, Canada*
2000-2004	**University of New Brunswick**, Lord Beaverbrook Scholar	*Fredericton, Canada*

Workshops attended

satRday Paris *Paris, France*

23 February 2019

- R user one-day conference

useR 2017 *Brussels, Belgium*

July, 2017

- R user conference

Advanced Scientific Programming in Python at G-Node *Munich, Germany*

Bernstein Center for Computational Neuroscience Munich and the Graduate School of Systemic Neurosciences *31 Aug — 5 Sep, 2015*

- Advanced topics in python programming including testing, visualization, version control, pipeline managers and advanced numpy.

Strategies and Techniques for Analyzing Microbial Population Structure *Woods Hole, MA, USA*

Marine Biological Laboratory *6-15 Aug 2014*

- Key bioinformatic techniques for microbial ecology and NGS sequence analysis.

Project Management *Vancouver, Canada*

UBC/MITACS *Oct. 2010*

- Introduction to skills and strategies to take on complex projects.

Professional Service

Reviewer, Journals: Environmental Microbiology, Methods in Ecology and Evolution, Scientific Reports

Code reviewer, ROpenSci (https://github.com/ropensci/onboarding)

Software Carpentry and Data Carpentry Instructor, Officially certified instructor since 2013

Languages

English Native speaker

French Fluent reading, speaking and writing. DALF C1: 2018