Personal Information

Michael Gruenstaeudl (Grünstäudl), PhD

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Education

Habilitation in Bioinformatics and Botany	Freie Universität Berlin, Germany	2023
Habilitation thesis: "Development and application of bioinformatic tools toward process automation in plant phylogenetics"		
Ph.D. in Plant Biology	University of Texas at Austin, USA	2013
M.Sc. in Plant Biology	University of Vienna, Austria	2007

Professional Positions

Assistant Professor (Tenure-Track) Dept. Biological Sciences	Fort Hays State University, USA	2023–present
Postdoctoral Researcher Dept. Biology, Chemistry, Pharmacy	Freie Universität Berlin, Germany	2015–2022
Postdoctoral Researcher Dept. Evolution, Ecology & Organismal Biology	Ohio State University, USA	2014–2015

Grant Funding

NIH-1R01LM014506 Single PI	National Institutes of Health – National Library of Medicine Grant#: 1R01LM014506-01, Duration: 2024–present	$ 239,206.00
NSF-2417083 Co-PI	National Science Foundation – IUSE: EDU Grant#: 2417083, Duration: 2024–present	$ 385,971.00
KINBRE-GR509061 Single PI	Kansas Idea Network of Biomedical Research Excellence Grant#: P20GM103418/GR509061, Duration: 2023–2024	$ 24,765.18
DFG-418670221 Single PI	Deutsche Forschungsgemeinschaft – Sachbeihilfe Grant#: 418670221, Duration: 2018–2022	€ 69,360.00
FU-21224600 Single PI	Freie Universität Berlin Forschungskommission Grant#: 21224600, Duration: 2016–2018	€ 11,470.06
UT-F816842 Single PI	University of Texas at Austin Graduate Research Fellowship Grant#: F816842, Duration: 2011–2012	$ 26,772.00

Honors, Awards & Teaching Grants

Teaching grant–Experiential learning innovation	Fort Hays State University	2023
Teaching grant–Undergraduate research experience	Fort Hays State University	2023
Teaching grant–Industry 4.0	Freie Universität Berlin	2018
Teaching award	Freie Universität Berlin	2017

Scholarship of excellence	Land Niederösterreich	2012
Graduate student research award	American Society of Plant Taxonomists	2011
Graduate student research award	Mycological Society of America	2010
Graduate student research award	Botanical Society of America	2010
Teaching assistant award	University of Texas at Austin	2007

List of Publications

Graduate and undergraduate student mentees are underlined

Publications - Journal Articles

[26] JA Roestel, JH Wiersema, RK Jansen, T Borsch, and **M Gruenstaeudl**. On the importance of sequence alignment inspections in plastid phylogenomics – an example from revisiting the relationships of the water-lilies. *Cladistics*, 40:469–495, 2024. https://doi.org/10.1111/cla.12584.

[25] E Giorgashvili, K Reichel, C Caswara, V Kerimov, T Borsch, and **M Gruenstaeudl**. Software choice and sequencing coverage can impact plastid genome assembly – A case study in the narrow endemic *Calligonum bakuense*. *Frontiers in Plant Science*, 13:779830, 2022. https://doi.org/10.3389/fpls.2022.779830.

[24] B Escobari, T Borsch, TS Quedensley, and **M Gruenstaeudl**. Plastid phylogenomics of the Gynoxoid group (Senecioneae, Asteraceae) highlights the importance of motif-based sequence alignment amid low genetic distances. *American Journal of Botany*, 108:2235–2256, 2021. https://doi.org/10.1002/ajb2.1775.

[23] T Mehl and **M Gruenstaeudl**. airpg: Automatically accessing the inverted repeats of archived plastid genomes. *BMC Bioinformatics*, 22:413, 2021. https://doi.org/10.1186/s12859-021-04309-y.

[22] **M Gruenstaeudl**. annonex2embl: automatic preparation of annotated DNA sequences for bulk submissions to ENA. *Bioinformatics*, 21:207, 2020. doi: https://doi.org/10.1093/bioinformatics/btaa209.

[21] **M Gruenstaeudl** and N Jenke. PACVr: Plastome Assembly Coverage Visualization in R. *BMC Bioinformatics*, 36:3841–3848, 2020. doi: https://doi.org/10.1186/s12859-020-3475-0.

[20] I Duran, A Marrero, F Msanda, C Harrouni, **M Gruenstaeudl**, J Patino, J Caujape-Castells, and C Garcia-Verdugo. Iconic, threatened, but largely unknown: Biogeography of the Macaronesian dragon trees (*Dracaena* spp.) as inferred from plastid DNA markers. *Taxon*, 69:217–233, 2020. doi: https://doi.org/10.1002/tax.12215.

[19] **M Gruenstaeudl**. Why the monophyly of Nymphaeaceae currently remains indeterminate: An assessment based on gene-wise plastid phylogenomics. *Plant Systematics and Evolution*, 305:827–836, 2019. doi: https://doi.org/10.1007/s00606-019-01610-5.

[18] **M Gruenstaeudl** and Y Hartmaring. EMBL2checklists: A Python package to facilitate the user-friendly submission of plant and fungal DNA barcoding sequences to ENA. *PLoS ONE*, 14:e0210347, 2019. doi: https://doi.org/10.1371/journal.pone.0210347.

[17] A Szukala, N Korotkova, **M Gruenstaeudl**, AN Sennikov, GA Lazkov, SA Litvinskaya, SA Gabrielian, T Borsch, and E von Raab-Straube. Phylogeny of the Eurasian genus *Jurinea* (Asteraceae: Cardueae): Support for a monophyletic genus concept and a first hypothesis on overall species relationships. *Taxon*, 68:112–131, 2019. doi: https://doi.org/10.1002/tax.12027.

[16] **M Gruenstaeudl**, N Gerschler, and T Borsch. Bioinformatic workflows for generating complete plastid genome sequences - An example from *Cabomba* (Cabombaceae) in the context of the phylogenomic analysis of the water-lily clade. *Life*, 8:25, 2018. doi: https://doi.org/10.3390/life8030025.

[15] TS Quedensley, **M Gruenstaeudl**, and RK Jansen. Phylogenetic relationships of the Mexican tussilaginoid genera (Asteraceae: Senecioneae). *Journal of the Botanical Research Institute of Texas*, 12:481–498, 2018. ISSN 1934-5259.

[14] V Di Vincenzo, **M Gruenstaeudl**, L Nauheimer, M Wondafrash, P Kamau, S Demissew, and T Borsch. Evolutionary diversification of the African achyranthoid clade (Amaranthaceae) in the context of sterile flower evolution and epizoochory. *Annals of Botany*, 122:69–85, 2018. doi: https://doi.org/10.1093/aob/mcy055.

[13] **M Gruenstaeudl**, L Nauheimer, and T Borsch. Plastid genome structure and phylogenomics of Nymphaeales: Conserved gene order and new insights into relationships. *Plant Systematics and Evolution*, 303:1251–1270, 2017. doi: https://doi.org/10.1007/s00606-017-1436-5.

[12] **M Gruenstaeudl**, BC Carstens, A Santos-Guerra, and RK Jansen. Statistical hybrid detection and the inference of ancestral distribution areas in *Tolpis* (Asteraceae). *Biological Journal of the Linnean Society*, 121:133–149, 2017. doi: https://doi.org/10.1093/biolinnean/blw014.

[11] E Maharramova, I Huseynova, S Kolbaia, **M Gruenstaeudl**, T Borsch, and LAH Muller. Phylogeography and population genetics of the riparian relict tree *Pterocarya fraxinifolia* (Juglandaceae) in the South Caucasus. *Systematics and Biodiversity*, 16:14–27, 2017. doi: https://doi.org/10.1080/14772000.2017.1333540.

[10] N Korotkova, G Parolly, A Khachatryan, L Ghulikyan, H Sargsyan, J Akopian, T Borsch, and **M Gruenstaeudl**. Towards resolving the evolutionary history of Caucasian pears (*Pyrus*, Rosaceae) - Phylogenetic relationships, divergence times and leaf trait evolution. *Journal of Systematics and Evolution*, 56:35–47, 2017. doi: https://doi.org/10.1111/jse.12276.

[9] **M Gruenstaeudl**. WARACS: Wrappers to automate the reconstruction of ancestral character states. *Applications in Plant Sciences*, 4:1500120, 2016. doi: https://doi.org/10.3732/apps.1500120.

[8] BC Carstens, **M Gruenstaeudl**, and NM Reid. Community trees: Identifying codiversification in the Paramo dipteran community. *Evolution*, 70:1080–1093, 2016. doi: https://doi.org/10.1111/evo.12916.

[7] **M Gruenstaeudl**, NM Reid, GL Wheeler, and BC Carstens. Posterior predictive checks of coalescent models: P2C2M, an R package. *Molecular Ecology Resources*, 16:193–205, 2015. doi: https://doi.org/10.1111/1755-0998.12435.

[6] **M Gruenstaeudl**, A Santos-Guerra, CV Hawkes, and RK Jansen. Molecular survey of arbuscular mycorrhizal fungi associated with *Tolpis* on three Canarian islands (Asteraceae). *Vieraea*, 41:233–252, 2013. ISSN 0210-945X. doi: http://dx.doi.org/10.31939/vieraea.2013.41.17.

[5] **M Gruenstaeudl**, A Santos-Guerra, and RK Jansen. Phylogenetic analyses of *Tolpis* Adans. (Asteraceae) reveal patterns of adaptive radiation, multiple colonization and interspecific hybridization. *Cladistics*, 29:416–434, 2013. doi: https://doi.org/10.1111/cla.12005.

[4] **M Gruenstaeudl**, E Urtubey, RK Jansen, R Samuel, MHJ Barfuss, and TF Stuessy. Phylogeny of Barnadesioideae (Asteraceae) inferred from DNA sequence data and morphology. *Molecular Phylogenetics and Evolution*, 51:572–587, 2009. doi: https://doi.org/10.1016/j.ympev.2009.01.023.

Publications - Book Chapters

[3] **M Gruenstaeudl**, CV Hawkes, A Santos-Guerra, and RK Jansen. Preliminary investigations of correlated diversification between plants and their associated arbuscular mycorrhizal fungi in Macaronesia. In J Caujape-Castells, G Nieto-Feliner, and JM Fernandez-Palacios, editors, *Proceedings of the Amurga International Conferences on Island Biodiversity 2011*, pages 146–153. Fundacion Canaria Amurga Maspalomas, Las Palmas, Spain, 2013. ISBN 978-84-616-7394-0.

[2] TF Stuessy, E Urtubey, and **M Gruenstaeudl**. Barnadesieae (Barnadesioideae). In V.A. Funk, A. Susanna, T.F. Stuessy, and R. Bayer, editors, *Systematics, Evolution and Biogeography of the Compositae*, pages 215–228. IAPT, Vienna, Austria, 2009. ISBN 978-39-501-7543-1.

[1] V Funk, A Anderberg, B Baldwin, R Bayer, J Bonifacino, I Breitwieser, L Brouillet, R Carbajal, R Chan, A Coutinho, D Crawford, J Crisci, M Dillon, S Freire, M Galbany Casals, N Garcia-Jacas, B Gemeinholzer, **M Gruenstaeudl**, HW Lack, and L Watson. Compositae metatrees: the next generation. In VA Funk, A Susanna, TF Stuessy, and R Bayer, editors, *Systematics, Evolution and Biogeography of the Compositae*, pages 747–777. International Association For Plant Taxonomy (IAPT), Vienna, Austria, 2009. ISBN 978-39-501-7543-1.

Conference Presentations

2024 **Contributed Talk**
20th International Botanical Congress: Madrid, Spain

2024 **Contributed Talk**
Austrian Bioinformatics Workshop 2024: Graz, Austria

2021 **Contributed Talk (online)**
Deutsche Bot. Gesellschaft: Oldenburg, Germany

2021 **Contributed Talk (online)**
19. Österreichische Botanik-Tagung: Krems, Austria

2021 **Workshop Organizer (online)**
Conf. - Bot. Society of America: Connecticut, USA

2021 **Contributed Talk (online)**
Conf. - Bot. Society of America: Connecticut, USA

2020 **Contributed Talk (online)**
Barcode of Life Initiative: Vienna, Austria

2019 **Workshop Organizer**
Gesellschaft für Biol. Systematik: Munich, Germany

2019 **Contributed Talk**
Gesellschaft für Biol. Systematik: Munich, Germany

2018 **Contributed Talk**
Deutsche Botanische Gesellschaft: Klagenfurt, Austria

2018 **Workshop Organizer**
Gesellschaft für Biol. Systematik: Vienna, Austria

2018 **Contributed Talk**
Gesellschaft für Biol. Systematik: Vienna, Austria

2017 **Contributed Talk**
Genomics in Biodiversity Research: Berlin, Germany

2016 **Contributed Talk**
Dahlem Center of Plant Sciences: Berlin, Germany

2015 **Contributed Talk**
VISCEA Ecology and Evolution Conf.: Vienna, Austria

2015 **Invited Seminar**
University of Leipzig, Germany

2014 **Contributed Talk**
Conf. - Society for the Study of Evolution, USA

2011 **Invited Seminar**
University of Wageningen, The Netherlands

2010 **Contributed Talk**
Flora of Macaronesia Int'l Symposium: Azores, Portugal

2010 **Contributed Talk**
9th Int'l Mycological Conf.: Edinburgh, UK

2009 **Contributed Talk**
Conf. - Botanical Society of America: Utah, USA

2008 **Contributed Talk**
Botany 2008 Conf.: Vancouver, Canada

2007 **Contributed Talk**
Botany & Plant Biology 2007 Conf.: Chicago, USA

Teaching Experience

G graduate-level course

List of Courses Taught

— Assistant Professor at Fort Hays State Univ. ——

Fall 2024

BIOL180	Principles of Biology	Lectures
BIOL325	Genetics	Lectures

BIOL325L	Genetics Laboratory	Labs

Spring 2024

BIOL325	Genetics	Lectures
BIOL325L	Genetics Laboratory	Labs
BIOL607/G G	Topics in Biology: Molecular Biology	Lectures & Labs

Fall 2023

BIOL180	Principles of Biology	Lectures
BIOL250	Botany	Lectures
BIOL250L	Botany Laboratory	Labs
BIOL607/G G	Topics in Biology: Bioinformatics	Lectures & Labs

Spring 2023

BIOL180	Principles of Biology	Lectures
BIOL325	Genetics	Lectures
BIOL325L	Genetics Laboratory	Labs

— Lecturer at the Freie Universität Berlin ————

Fall 2021 (online)

23106, 23108a-e	Einführung in Botanik & Biodiversität	Lectures & Labs
23700	Botanik & Mikrobiologie für das Fach Biochemie	Lectures
23760b-c	Allg. Botanik & Pflanzenphys. für Veterinärmed. & Pferdewiss.	Lectures
23771a-b	Genetik & Genomforschung	Lectures & Labs

Spring 2021 (online)

23653,23654a-b G	Prakt. Vertiefung spez. Themen der Biologie - Evolution	Seminar & Labs

Fall 2020 (online)

23106, 23108a-e	Einführung in Botanik & Biodiversität	Lectures & Labs
23700	Botanik & Mikrobiologie für das Fach Biochemie	Lectures
23760b-c	Allg. Botanik & Pflanzenphys. für Veterinärmed. & Pferdewiss.	Lectures
23771a-b	Genetik & Genomforschung	Lectures & Labs

Spring 2020 (online)

23653, 23654a-b G	Prakt. Vertiefung spez. Themen der Biologie - Evolution	Seminar & Labs

Fall 2019

23106, 23108a-e	Einführung in Botanik & Biodiversität	Lectures & Labs
23700	Botanik & Mikrobiologie für das Fach Biochemie	Lectures
23760b-c	Allg. Botanik & Pflanzenphys. für Veterinärmed. & Pferdewiss.	Lectures
23771a-b	Genetik & Genomforschung	Lectures & Labs

Spring 2019

23653, 23654a-b G	Prakt. Vertiefung spez. Themen der Biologie - Evolution	Seminar & Labs

Fall 2018

23106, 23108a-e	Einführung in Botanik & Biodiversität	Lectures & Labs
23700	Botanik & Mikrobiologie für das Fach Biochemie	Lectures
23760b-c	Allg. Botanik & Pflanzenphys. für Veterinärmed. & Pferdewiss.	Lectures
23771a-b	Genetik & Genomforschung	Lectures & Labs

Spring 2018

23653, 23654a-b G	Prakt. Vertiefung spez. Themen der Biologie - Evolution	Seminar & Labs

Fall 2017

23106, 23108a-e	Einführung in Botanik & Biodiversität	Lectures & Labs
23700	Botanik & Mikrobiologie für das Fach Biochemie	Lectures
23760b	Allg. Botanik & Pflanzenphys. für Veterinärmed.	Lectures
23771a-b	Genetik & Genomforschung	Lectures & Labs

Spring 2017

23653, 23654a-b G	Prakt. Vertiefung spez. Themen der Biologie - Evolution	Seminar & Labs

Fall 2016

23108a-d	Einführung in Botanik & Biodiversität	Labs

Thesis Supervision

Master's Advisees as Primary Advisor

Biology	Louisa Acquah	Fort Hays State University	2024–present
Bioinformatics	Nils Jenke	Freie Universität Berlin	2020–2021
Bioinformatics	Yannick Hartmaring	Freie Universität Berlin	2020–2021
Biology	Eka Giorgashvili	Freie Universität Berlin	2019–2020
Biology	Jessica Röstel	Freie Universität Berlin	2019–2020

Undergraduate Advisees as Primary Advisor

Bioinformatics	Tilman Mehl	Freie Universität Berlin	2020
Bioinformatics	Nils Jenke	Freie Universität Berlin	2019
Bioinformatics	Yannick Hartmaring	Freie Universität Berlin	2019

Service Activities

Peer-review

Funding agencies

- Deutsche Forschungsgemeinschaft (DFG)

Scientific journals

- Annals of Botany
- BMC Plant Biology
- Botanical Journal of the Linnean Society
- Frontiers in Plant Science
- GigaScience
- Mathematical Biosciences
- Mitochondrial DNA Part B
- Molecular Ecology
- Molecular Ecology Resources
- Nordic Journal of Botany
- Plant Systematics and Evolution
- PLOS One
- Systematic Botany
- Taxon
- Willdenowia

Committee work

University committees

Faculty Senate–Alternate Member
Fort Hays State University, 2024

Departmental Graduate Education Committee
Fort Hays State University, 2024

Departmental Hiring Committee
Fort Hays State University, 2024

Departmental Scholarship Committee
Fort Hays State University, 2023–2024

Departmental Infrastructure Committee
Freie Universität Berlin, 2018–2019

Scientific Memberships

- International Society for Computational Biology (ISCB)
- International Association for Plant Taxonomy (IAPT)
- Austrian Scientists & Scholars in North America (ASCINA)
- Bioinformatics.org

Last updated: 2024-10-01