

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, 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

CERTIFICATES & EXECUTIVE EDUCATION

LHH Executive Program for Leaders & Managers 4-month training in communication, transition managem., interviews, hearings, assessments	LHH OTM Career Development	2022
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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**. anonex2embl: 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 tussilaginoide 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 —

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| <p>2024 Invited Seminar
<i>Wichita State University, USA</i></p> <p>2024 Contributed Talk
<i>20th International Botanical Congress: Madrid, Spain</i></p> <p>2024 Contributed Talk
<i>Austrian Bioinformatics Workshop 2024: Graz, Austria</i></p> <p>2021 Contributed Talk (online)
<i>Deutsche Bot. Gesellschaft: Oldenburg, Germany</i></p> <p>2021 Contributed Talk (online)
<i>19. Österreichische Botanik-Tagung: Krems, Austria</i></p> <p>2021 Workshop Organizer (online)
<i>Conf. - Bot. Society of America: Connecticut, USA</i></p> <p>2021 Contributed Talk (online)
<i>Conf. - Bot. Society of America: Connecticut, USA</i></p> <p>2020 Contributed Talk (online)
<i>Barcode of Life Initiative: Vienna, Austria</i></p> <p>2019 Workshop Organizer
<i>Gesellschaft für Biol. Systematik: Munich, Germany</i></p> <p>2019 Contributed Talk
<i>Gesellschaft für Biol. Systematik: Munich, Germany</i></p> <p>2018 Contributed Talk
<i>Deutsche Botanische Gesellschaft: Klagenfurt, Austria</i></p> <p>2018 Workshop Organizer
<i>Gesellschaft für Biol. Systematik: Vienna, Austria</i></p> | <p>2018 Contributed Talk
<i>Gesellschaft für Biol. Systematik: Vienna, Austria</i></p> <p>2017 Contributed Talk
<i>Genomics in Biodiversity Research: Berlin, Germany</i></p> <p>2016 Contributed Talk
<i>Dahlem Center of Plant Sciences: Berlin, Germany</i></p> <p>2015 Contributed Talk
<i>VISCEA Ecology and Evolution Conf.: Vienna, Austria</i></p> <p>2015 Invited Seminar
<i>University of Leipzig, Germany</i></p> <p>2014 Contributed Talk
<i>Conf. - Society for the Study of Evolution, USA</i></p> <p>2011 Invited Seminar
<i>University of Wageningen, The Netherlands</i></p> <p>2010 Contributed Talk
<i>Flora of Macaronesia Int'l Symposium: Azores, Portugal</i></p> <p>2010 Contributed Talk
<i>9th Int'l Mycological Conf.: Edinburgh, UK</i></p> <p>2009 Contributed Talk
<i>Conf. - Botanical Society of America: Utah, USA</i></p> <p>2008 Contributed Talk
<i>Botany 2008 Conf.: Vancouver, Canada</i></p> <p>2007 Contributed Talk
<i>Botany & Plant Biology 2007 Conf.: Chicago, USA</i></p> |
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Teaching Experience

G graduate-level course

— LIST OF COURSES TAUGHT —

— Assistant Professor at Fort Hays State Univ. —

Principles of Biology – Lectures

Number of terms: **4 semesters** (spring 2023, fall 2023, fall 2024, spring 2025)

Course number: BIOL180, Credit Hours: 3, Role: sole instructor

Genetics – Lectures

Number of terms: **3 semesters** (spring 2023, spring 2024, fall 2024)

Course number: BIOL325, Credit Hours: 3, Role: sole instructor

Genetics – Labs

Number of terms: **3 semesters** (spring 2023, spring 2024, fall 2024)

Course number: BIOL325, Credit Hours: 1, Role: sole instructor

Botany – Lectures

Number of terms: **2 semesters** (fall 2023, spring 2025)

Course number: BIOL250, Credit Hours: 3, Role: sole instructor

Botany – Labs

Number of terms: **2 semesters** (fall 2023, spring 2025)

Course number: BIOL250L, Credit Hours: 1, Role: sole instructor

Topics in Biology: Bioinformatics **G**

Number of terms: **1 semester** (fall 2023)

Course number: BIOL607/G, Credit Hours: 3, Role: sole instructor

Topics in Biology: Molecular Biology **G**

Number of terms: **1 semester** (fall 2023)

Course number: BIOL607/G, Credit Hours: 4, Role: sole instructor

Readings in Biology: The Impact of AI on Biology and Medicine **G**

Number of terms: **1 semester** (fall 2023)

Course number: BIOL482/BIOL882, Credit Hours: 2, Role: sole instructor

— Lecturer at the Freie Universität Berlin —

Genetik & Genomforschung – Vorlesung (*Genetics & Genomics – Lectures*)

Number of terms: **4 semesters** (fall of 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23771a, Role: sole instructor

Genetik & Genomforschung – Praktikum (*Genetics & Genomics – Labs*)

Number of terms: **4 semesters** (fall of 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23771b, Role: sole instructor

Einführung in Botanik & Biodiversität – Vorlesung (*Introduction to Botany & Biodiversity – Lectures*)

Number of terms: **5 semesters** (fall of 2017, 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23106, Role: sole instructor

Einführung in Botanik & Biodiversität – Praktikum (*Introduction to Botany & Biodiversity – Labs*)

Number of terms: **6 semesters** (fall of 2016, 2017, 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23108a-e, Role: co-instructor

Botanik & Mikrobiol. für das Fach Biochemie – Vorlesung (*Botany & Microbiol. for Biochemists – Lectures*)

Number of terms: **5 semesters** (fall of 2017, 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23700, Role: co-instructor

Allg. Botanik & Pflanzenphys. für Veterinärmed. – Vorlesung (*Botany & Plant Phys. for Veterinary Sci. – Lectures*)

Number of terms: **5 semesters** (fall of 2017, 2018, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23760b-c, Role: co-instructor

Prakt. Vertiefung spez. Themen der Biologie–Evolution – Seminar (*Topics in Biology: Evolution – Seminar*) ^G

Number of terms: **5 semesters** (spring of 2017, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23653, Role: co-instructor

Prakt. Vertiefung spez. Themen der Biologie–Evolution – Praktikum (*Topics in Biology: Evolution – Labs*) ^G

Number of terms: **5 semesters** (spring of 2017, 2019, 2020 (online) & 2021 (online))

Course number: LVNr.23654a-b, Role: co-instructor

GRADUATE STUDENT SUPERVISION

As Primary/Thesis Advisor

- Buddha Thapa Magar, M.S., ongoing
- Louisa Acquah, M.S., ongoing
- Nils Jenke, M.S., 2021
- Yannick Hartmaring, M.S., 2021
- Eka Giorgashvili, M.S., 2020
- Jessica Röstel, M.S., 2020

As Committee Member

- Alfred Appiah, M.S., ongoing
- Jacob Alexander, M.S., 2025
- Isaac Odoi, M.S., 2024

UNDERGRADUATE STUDENT SUPERVISION

Note: In Austria and Germany, B.S. degrees require a mandatory research thesis.

As Primary/Thesis Advisor

- Tilman Mehl, B.S., 2020
- Nils Jenke, B.S., 2019
- Yannick Hartmaring, B.S., 2019

Service Activities

COMMITTEE WORK

University committees

Department. Hiring Committee , Chair	Fort Hays State University	2025–present
Faculty Senate , Alternate Member	Fort Hays State University	2024–present
Department. Graduate Education Committee , Member	Fort Hays State University	2024–present
Department. Hiring Committee , Member	Fort Hays State University	2024
Department. Scholarship Committee , Member	Fort Hays State University	2024
Department. Infrastructure Committee , Member	Freie Universität Berlin	2017–2018

PEER-REVIEW

Funding Agencies

- Deutsche Forschungsgemeinschaft (DFG)

Scientific Journals

- | | |
|---|---|
| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Molecular Ecology Resources • Nordic Journal of Botany • Plant Systematics and Evolution • PLOS One • Systematic Botany • Taxon • Willdenowia |
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SCIENTIFIC MEMBERSHIPS

- | | |
|---|--|
| <ul style="list-style-type: none"> • International Society for Computational Biology (ISCB) • International Association for Plant Taxonomy (IAPT) • Austrian Scientists & Scholars in North America (ASCINA) | <ul style="list-style-type: none"> • German Association of University Professors and Lecturers (DHV) • Council on Undergraduate Research (CUR) |
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