

DIEGO F. MORALES-BRIONES
POSTDOCTORAL ASSOCIATE
DEPARTMENT OF PLANT AND MICROBIAL BIOLOGY
UNIVERSITY OF MINNESOTA

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May 11th, 2018

Dr. Theresa Culley, Editor-in-Chief
Applications in Plant Sciences

Dear Dr. Culley:

I am pleased to apply to be part of the Applications in Plant Sciences Reviewing Editor Board 2018-2020. Currently, I am a Postdoctoral Associate in the Department of Plant and Microbial Biology at the University of Minnesota working with Dr. Ya Yang. As a young and motivated researcher in plant systematics and evolution, I believe I am an excellent candidate to join the Reviewing Editor Board.

My research focuses on the use of robust phylogenetic hypothesis to understand plant biodiversity, more specifically I'm interested in uncovering patterns of hybridization and polyploidy and investigate they role in the diversification of flowering plants. Recently, I join Dr. Yang's research group and I have been working in the phylogenomics of Amaranthaceae s.l. Using transcriptome data, I have started to explore potential hybridization events in this large family that includes well-known crops like beets, spinach and quinoa. Previously, I obtained my doctoral degree from the University of Idaho working with Dr. David Tank. My dissertation focused on the reticulate history of the Netropical genus *Lachemilla* of Rosaceae. During my dissertation research, I became proficient in phylogenomic approaches such as target enrichment and microfluidic PCR. For the latter, I have developed primers for single-copy nuclear genes and for chloroplast regions in *Lachemilla* and relatives. Additionally, I have designed PCR primers for nuclear and chloroplast regions in other plant groups such as the Indian paintbrushes (*Castilleja*, Orobanchaceae) and meadow-rues (*Thalictrum*, Ranunculaceae). Furthermore, I was involved in the development of a pipeline for processing and haplotype inference for double-barcoded PCR amplicons, such as the ones obtained from microfluidic PCR. Notably, the results of two of these projects have been published in APPS and another one is under review.

In addition to extensive experience with primer design and multiple phylogenomic approaches, I have served as reviewer for 10 journal articles in seven journals from 2014 to 2018. These include American Journal of Botany, New Phytologist, Systematic Biology, among others. Serving as reviewer have provided me the opportunity to become familiar with the peer-review process. However, I realize that being an author or reviewer is just a part of entire publishing process. The opportunity for early career researchers to be part of a review board is very rare and is an invaluable learning experience that I would like to acquire. Having the chance to learn the peer review process from the other side would definitely help me to be a better author and reviewer. Also, this will give me the chance of serving the botanical community, and the space to interact with authors, reviewers and editors. I believe that serving as active member of editorial boards of academic journals is an important role all scientist should pursue and I consider that being part of APPS will facilitate this in the future.

Thank you very much for your consideration of my application. I look forward to hearing from you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Diego F. Morales-Briones', with a long, sweeping flourish extending upwards and to the right.

Diego F. Morales-Briones

DIEGO F. MORALES-BRIONES

Postdoctoral Associate

Department of Plant and Microbial Biology, University of Minnesota

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EDUCATION

Ph.D., Biology 2017

University of Idaho, Moscow, Idaho, USA

Advisor: Dr. David C. Tank

Dissertation: Disentangling the Reticulate Evolutionary History of a Neotropical Plant Radiation

BS, Biological Sciences 2009

Pontificia Universidad Católica del Ecuador, Quito, Ecuador

RESEARCH EXPERIENCE

Postdoctoral Associate 2017 – present

Department of Plant and Microbial Biology, University of Minnesota

Graduate Research Assistant 2012 – 2017

Department of Biological Sciences, University of Idaho

Research Assistant 2009 – 2011

Escuela de Biología. Pontificia Universidad Católica del Ecuador

ADDITIONAL TRAINING

Phylogenomics Software School 2015

Universidad de Michigan, Ann Arbor, MI, USA

Bodega Bay Applied Phylogenetics Workshop 2014

University of California Davis, CA, USA

TEACHING EXPERIENCE

Teaching Assistant Spring 2015

Principles of Systematic Biology (BIOL 545). Department of Biological Sciences, University of Idaho (Instructor: Dr. Jack Sullivan)

PUBLICATIONS

Morales-Briones, D.F., A. Liston & D.C. Tank. 2018. Phylogenomic analyses reveal a deep history of hybridization and polyploidy in the Neotropical genus *Lachemilla* (Rosaceae). *New Phytologist* 218: 1668–1684

Morales-Briones, D.F., K. Romoleroux, F. Kolář & D.C. Tank. 2018. Phylogeny and Evolution of the Neotropical Radiation of *Lachemilla* (Rosaceae): Uncovering a History of Reticulate Evolution and Implications for Infrageneric Classification. *Systematic Botany* 43: 17–34

Blischak, P.D., M. Latvis, **D.F. Morales-Briones**, J.C. Johnson, V.S. Di Stilio, A.D Wolfe & D.C. Tank. 2018. Fluidigm2PURC: automated processing and haplotype inference for double-barcoded PCR amplicons. *Applications in Plant Sciences* (in press)

Latvis, M., S.M. Mortimer, **D.F. Morales-Briones**, S. Torpey, S. Uribe-Convers, S.J. Jacobs, S. Mathews & D.C Tank. 2017. Targeting the most variable parts of the plastome using genomic data: primers for *Castilleja* and their utility across Orobanchaceae. *Applications in Plant Sciences* 5: 1700020

Morales-Briones, D.F. 2016. *Lachemilla mexiquense* (Rosaceae), a new species from Mexico. *PhytoKeys* 62: 25–32

Romoleroux, K. & **D.F. Morales-Briones**. 2012. *Lachemilla jaramilloi* and *L. talamanquensis* spp. nov. (Rosaceae) from Ecuador and Costa Rica. *Nordic Journal of Botany* 30: 732–736

In review:

Morales-Briones, D.F., T. Arias, V.S. Di Stilio & D.C Tank. The Complete Plastome of *Thalictrum thalictroides* (Ranunculaceae) and Chloroplast Primers for Clade-Wide Phylogenetic Studies. *Applications in Plant Sciences*

Jenkins, C.E., **D.F. Morales-Briones**, D. New, M. Dybdahl, & J.L. Kelley. Transcriptomic resources for a model of host-parasite coevolution: characterization of the *Microphallus* sp. transcriptome and its phylogenetic relationship to other digenean trematodes. *Infection and Immunity*

In preparation:

Morales-Briones, D.F. & D.C Tank. Extensive Allopolyploidy in the Neotropical Genus *Lachemilla* (Rosaceae) Revealed by Incomplete Concerted Evolution of the Nuclear Ribosomal DNA Cistron and Plastid Phylogenomics

Morales-Briones, D.F., K. Romoleroux & D.C Tank. Three new South American species of *Lachemilla* (Rosaceae)

PRESENTATIONS AT PROFESSIONAL MEETINGS

Talks:

- Morales-Briones, D.F.**, A. Liston & D.C. Tank. Phylogenomic Analysis of the Neotropical plant genus *Lachemilla* (Rosaceae). Society of Systematic Biologists, Baton Rouge, Louisiana, USA, 2017
- Morales-Briones, D.F.**, K. Romoleroux, F. Kolář & D.C. Tank. Reticulate evolution, divergence times and infrageneric classification insights of the Neotropical genus *Lachemilla* (Rosaceae). Evolution 2016, Austin, Texas, USA, 2016
- Morales-Briones, D.F.** & D.C. Tank. Divergence Time Estimates and Historical Biogeography of the Neotropical Genus *Lachemilla* (Rosaceae). Botany 2015, Edmonton, Alberta, Canada, 2015
- Morales-Briones, D.F.** & D.C. Tank. The role of polyploidy and hybridization in *Lachemilla* (Rosaceae) diversification. Botany 2014, Boise, Idaho, USA, 2014
- Morales-Briones, D.F.**, A. Liston & D.C. Tank. Phylogenomics of *Lachemilla* (Rosaceae): Coalescent based Species Trees using Sequence Capture Data. Botany 2013, New Orleans, Louisiana, USA, 2013
- Morales-Briones, D.F.**, K. Romoleroux & D.C. Tank. Phylogenetic relationships of *Lachemilla* and its relatives in subtribe Alchemillinae (Rosaceae): intergeneric relationships, polyploidy, and hybridization. Botany 2012, Columbus, Ohio, USA, 2012

Posters:

- Morales-Briones, D.F.**, K. Romoleroux, F. Kolář & D.C. Tank. Reticulate evolution, divergence times and infrageneric classification insights of the Neotropical genus *Lachemilla* (Rosaceae). EVO-WIBO (Evolution in Washington, Idaho, British Columbia, and Oregon), Port Townsend, Washington, USA, 2016
- Morales-Briones, D.F.** & D.C. Tank. Origin and Phylogeny of *Lachemilla* (Rosaceae) and relatives. Third Meeting of the Network for Neotropical Biogeography. Bogota, Colombia, 2014
- Romoleroux, K. & **D.F. Morales-Briones**. Systematic studies in *Lachemilla* (Rosaceae) Xth Symposium of the International Organization of Plant Biosystematists in Evolution of Plants in Mountainous and Alpine Habitats. Vysoké Tatry, Slovakia, 2008

AWARDS AND HONORS

- College of Science Dean's Graduate Award** **2017**
Presented to the Outstanding Graduate Student in the Department of Biological Sciences, University of Idaho

Outstanding Graduate Research Poster 2016
College of Sciences Research Exposition, University of Idaho

GRANTS AND FUNDING

RevBayes Workshop Travel Award, \$500 2017
GPSA Travel Award, University of Idaho, \$700 2016
GPSA Travel Award, University of Idaho, \$603 2016
BEACON Student/Postdoc Travel Award, \$500 2016
Research Assistant Fellowship, University of Idaho, \$17,581 2016
Phylogenomics Symposium and Software School Travel Award, \$500 2015
Society for Systematic Biologists Travel Award, \$500 2015
GPSA Travel Award, University of Idaho, \$900 2015
NSF DEB, Doctoral Dissertation Improvement Grant, \$18,743 2015
Research Assistant Fellowship, University of Idaho, \$17,537 2015
Botanical Society of America Travel Award, \$335 2014
Herbarium Collecting Expeditions, University of Idaho, \$10,700 2014
International Association for Plant Taxonomy, Research Grant Program
in Plant Systematics, \$1,000 2014
American Society of Plant Taxonomists Graduate Student Research
Award, \$800 2013
Botanical Society of America Graduate Student Research Award, \$500 2013
Herbarium Collecting Expeditions, University of Idaho, \$10,750 2013
GPSA Travel Award, University of Idaho, \$700 2013
University of Idaho GPSA Travel Award, \$792 2012
Herbarium Collecting Expeditions, University of Idaho, \$10,965 2012
GPSA Travel Award, University of Idaho, \$490 2012
Research Office Seed Grant, University of Idaho, \$1,492 2012
IPO Scholarship, University of Idaho, \$5,634 2012
SENESCYT Doctoral Fellowship, \$156,000 2012 – 2015

SERVICE

Chair 2013 – 2014
Travel Award Committee, Graduate and Professional Student Association,
University of Idaho
Department of Biological Sciences Senator 2012
Graduate and Professional Student Association, University of Idaho

President**2007 – 2008**

Student Association, Department of Biological Sciences, Pontificia Universidad Católica del Ecuador

Scientific Peer Review:

American Journal of Botany (2014), Annals of Botany (2015), Journal of Biogeography (2017), Journal of Systematics and Evolution (2018), Molecular Phylogenetics and Evolution (2014), New Phytologist (2016, 2017, 2018), Systematic Biology (2017)

Student Grant Review:

American Society of Plant Taxonomists Graduate Student Research (2018)

FIELDWORK EXPERIENCE

I have conducted plant collections in Ecuador (2007-2011), Peru (2012), Bolivia (2013), USA (Idaho, 2013), Colombia (2013) and Mexico (2015). I have collected around 700 specimens mostly in montane grasslands and shrublands

LANGUAGES

Spanish (native) and English (fluent)

REFERENCES

Dr. Ya Yang

University of Minnesota
Department of Plant and Microbial Biology
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Dr. David C. Tank

University of Idaho
Department of Biological Sciences
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Dr. Katya Romoleroux

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UNIVERSITY OF MINNESOTA

May 12, 2018

Dear members of Applications in Plant Sciences Editorial Board,

It is my pleasure to recommend Dr. Morales for the opportunity to serve on the Reviewing Editor Board of Applications in Plant Science.

Dr. Morales is most impressive in that he has first-hand experience working with **three phylogenomic methods**: transcriptome, hyb-seq, and microfluidic PCR, and has experience developing regular PCR and microfluidic PCR primers for both nuclear and chloroplast regions in multiple plant families. Since he joined my lab as a postdoctoral scholar October 2017, he has become the go-to person in our department when anyone needs advice on choice of markers and primers for systematics projects. Currently in my lab he is improving methods for using transcriptome as a tool for detecting hybridization and has made significant contribution to the analytical pipeline. Besides his expertise in lab work, he is an experienced field botanist and is gaining experience in coding in R and Python for data analysis. Dr. Morales is one of the most method-savvy researcher I have known and we are very lucky to have him around.

Dr. Morales has exceptionally **impressive experience as reviewers** for a number of reputable journals in botany, such as American Journal of Botany, Annals of Botany, Journal of Biogeography, Journal of Systematics and Evolution, Molecular Phylogenetics and Evolution, New Phytologist, and Systematic Biology. The diverse array of journals he has reviewed for speaks to his reputation as a scholar in botany and his extensive experience in peer review that is rare for his career stage.

Dr. Morales comes from Ecuador, and is **determined to return to Ecuador to become a faculty member there** following his training in the US. I believe the editorial experience he gains will be particularly valuable not only for his career development, but also for Latin American biodiversity as he brings the experience back to his native Ecuador and incorporate the knowledge in training the new generation of botanists there.

Finally, although I myself is an incoming associate editor of APPS, Dr. Morales has a much broader knowledge of plant phylogenetics and phylogenomics methods than I do. The two of us will contribute different sets of expertise and service to APPS and I do not see the fact that the two of us working in the same lab would be of concern.

I whole-heartedly support Dr. Morales' application to serve on the Reviewing Editor board of APPS. If you require further information, please do not hesitate to contact me.

Sincerely,



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Assistant Curator, University of Minnesota Herbarium (MIN)
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