

# Brandon Monier

Curriculum Vitae  
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## Professional Experience

2018 - present **Postdoctoral Researcher** in Dr. Ed Buckler's laboratory  
School of Integrated Plant Sciences, Cornell University

## Education

2018 **Ph.D. Department of Biology and Microbiology**  
South Dakota State University  
Supervisors: Drs. Heike Bücking and Jose Gonzalez-Hernandez

2013 **M.S. Department of Agronomy, Horticulture and Plant Science**  
South Dakota State University  
Supervisor: Dr. Jose Gonzalez-Hernandez

2008 **B.S. Microbiology**  
South Dakota State University

## Technologies

R/Shiny, Python, Perl, bash/shell, C/C++, Neo4J/Cypher, markup languages including  $\LaTeX$ , R Markdown, HTML, CSS, and some superficial knowledge of JavaScript, and Java.

## Publications

### Research Papers (in preparation)

1. Monier, B, M Burch, A DeMell, LA Cat, J Gonzalez-Hernandez, and H Bücking (forthcoming). Impact of the arbuscular mycorrhizal symbiosis on the biomass potential of the bioenergy crop, prairie cordgrass.
2. Monier, B, J Gonzalez-Hernandez, and H Bücking (forthcoming). Transcriptome analysis of a model grass species reveals differential gene expression under mycorrhizal symbiosis.
3. Ma, A, J Xie, B Monier, S Cao, C Zhang, and Q Ma (forthcoming). BRIC: A shiny package for gene regulation inference and cell type prediction based on single-cell RNA-Seq data.

### Research Papers

1. Monier, B, A McDermaid, C Wang, J Zhao, A Miller, A Fennell, and Q Ma (2019). IRIS-EDA: an integrated RNA-Seq interpretation system for gene expression data analysis. *PLOS Computational Biology* **15**(2), e1006792.
2. McDermaid, A, B Monier, J Zhao, B Liu, and Q Ma (2018). Interpretation of differential gene expression results of RNA-seq data: review and integration. *Briefings in Bioinformatics*, bby067. eprint: [/oup/backfile/content\\_public/journal/bib/pap/10.1093\\_bib\\_bby067/2/bby067.pdf](https://oup/backfile/content_public/journal/bib/pap/10.1093_bib_bby067/2/bby067.pdf).
3. McDermaid, A, B Monier, J Zhao, and Q Ma (2018). ViDGER: An R package for integrative interpretation of differential gene expression results of RNA-seq data. *bioRxiv*. eprint: <https://www.biorxiv.org/content/early/2018/02/21/268896.full.pdf>.
4. Monier, B, A McDermaid, J Zhao, A Fennell, and Q Ma (2018). IRIS-EDA: An integrated RNA-Seq interpretation system for gene expression data analysis. *bioRxiv*. eprint: <https://www.biorxiv.org/content/early/2018/06/24/283341.full.pdf>.

### Book Chapters

1. Monier, B, V Peta, J Mensah, and H Bücking (2017). "Inter- and Intraspecific Fungal Diversity in the Arbuscular Mycorrhizal Symbiosis". In: *Mycorrhiza - Function, Diversity, State of the Art*. Ed. by A Varma, R Prasad, and N Tuteja. Cham: Springer International Publishing, pp. 253–274. [https://doi.org/10.1007/978-3-319-53064-2\\_12](https://doi.org/10.1007/978-3-319-53064-2_12).

### PhD Thesis

1. Monier, B (2018). "Microbial Communities and Their Impact on Bioenergy Crops in Dynamic Environments". PhD thesis. South Dakota State University.

### Master's Thesis

1. Monier, B (2013). "The Analysis of Cytotypic Variation and Construction of a BAC Library of Midwestern Prairie Cordgrass (*Spartina pectinata* Link) Genotypes". MS Thesis. South Dakota State University.

### Teaching Experience

2018	<b>Teaching Assistant</b>	BOT-327L, Plant Physiology South Dakota State University
2016	<b>Teaching Assistant</b>	BIOL-153L, General Biology II South Dakota State University
2015	<b>Teaching Assistant</b>	BOT-201L, General Botany South Dakota State University
2014 - 2017	<b>Teaching Assistant</b>	BIOL-151L, General Biology I South Dakota State University
2011	<b>Teaching Assistant</b>	PS-333L, Diseases of Field Crops South Dakota State University

### Mentoring Experience

- April DeMell, undergraduate (3 months, full-time), South Dakota State University, 2016
- Clarissa Mercado, undergraduate (3 months, full-time), South Dakota State University, 2016
- Jerry Cordero Sepulvéda, undergraduate (3 months, full-time) South Dakota State University, 2015
- Winly Mai, undergraduate (3 months, full-time), South Dakota State University, 2015
- Merritt Burch, undergraduate (3 months, full-time), South Dakota State University, 2014
- Vincent Peta, undergraduate (~9 months, part-time), South Dakota State University, 2013-2014
- Sabrina Bushlack, undergraduate (3 months, full-time), South Dakota State University, 2013
- Linh Anh Cat, undergraduate (3 months, full-time), South Dakota State University, 2013