Matthew D. Miksch

Curriculum Vitae

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Research Interests

Land-air interactions, remote sensing of land surfaces, urban energy balance and climate

Education

Utah State University **May 2019 (expected)**
M.S. in Climate Science, GPA: 4.0 **Logan, UT**
Advising Professors: Dr. Lawrence Hipps and Dr. Simon Wang
Thesis: Evapotranspiration and Energy Balance of Irrigated Urban Turfgrass

Iowa State University **May 2016**
B.S. in Meteorology, GPA: 3.71 **Ames, IA**

Research Experience

Graduate Research Assistant **August 2016 - Present**
Utah State University, iUTAH, US Golf Association **Logan, UT**

- Collecting and processing eddy covariance, energy balance, and weather station data at a sub-urban golf course during the 2016-2018 growing seasons
- Comparing observed latent heat fluxes to simple remote sensing evapotranspiration models using surface imagery from Landsat and MODIS
- Diagnostically modeling evapotranspiration to estimate changes in water use for large irrigated urban landscapes

Biological Science Aid **May 2014 - June 2016**
National Laboratory for Agriculture and the Environment **Ames, IA**

- Assisted technician in the micrometeorology group to maintain and troubleshoot weather and eddy covariance stations
- Utilized Microsoft Excel and Python to assist with preliminary data QA/QC
- Performed instrument calibrations and kept lab organized

Atmospheric Science REU **Summer 2015**
Texas A&M University **College Station, TX**

- Studied forecast uncertainty in global ensemble models in the Southern Hemisphere extra-tropics
- Participated in a field experience measuring properties of the sea breeze in Galveston, TX
- Presented poster at the end of the REU and at the National AMS Student Conference

Teaching Experience

Student Helper **Fall 2018**
***Software and Data Carpentry*, Utah State University, Course size: 8-13** **Logan, UT**
- Aided students with properly setting up their Python environments, debugging code, and providing insights outside of the in-class exercises

Teaching Assistant **Spring 2018**
***Aviation Weather*, Utah State University, Course size: 64** **Logan, UT**
- Assisted in creating course content, grading labs, and answering student questions during labs and outside of class

Teaching Assistant **Fall 2017**
***The Atmosphere and Weather*, Utah State University, Course size: 119** **Logan, UT**
- Gave weather discussions, created visualizations to supplement lecture material, and graded assignments and exams

Conference Posters and Presentations

Miksch, M., L. Hipps, S. Wang (2018), Evapotranspiration and Energy Balance of Irrigated Urban Turfgrass, *33rd Conference on Agricultural and Forest Meteorology*, Boise, ID (presentation)

Miksch, M. and L. Hipps (2018), Evapotranspiration and Energy Balance of Irrigated Urban Turfgrass: Testing a Simple Remote Sensing Model, *Spring Runoff Conference*, Logan, UT (poster, lightning talk)

Miksch, M., I. Szunyogh, M. Herrera (2016), The Southern Hemisphere Forecast Uncertainty Dynamics in the THORPEX Interactive Grand Global Ensemble (TIGGE), *96th American Meteorological Society Annual Meeting*, New Orleans, LA (poster)

Other Select Presentations

Miksch, M., L. Hipps, S. Wang (2018), Quantifying Inter-Annual Changes in Evapotranspiration by Using a Diagnostic Evapotranspiration Model, *PSC 2018 Spring Seminar Series*, Logan, UT

Miksch, M., L. Hipps, S. Wang (2017), Evapotranspiration and Energy Balance of Urban Turfgrass in a Semi-Arid Environment, *PSC 2017 Fall Seminar Series*, Logan, UT

Miksch, M., I. Szunyogh, M. Herrera (2015), The Southern Hemisphere Forecast Uncertainty Dynamics in the THORPEX Interactive Grand Global Ensemble (TIGGE), *ISU Atmospheric Science Undergraduate Research Symposium*, Ames, IA

Awards and Fellowships

Apogee Instruments – Campbell Scientific Graduate Fellowship **April 2017**
USU College of Agriculture and Applied Sciences

Burt Tanner – Campbell Scientific Graduate Fellowship **April 2017**
USU College of Agriculture and Applied Sciences

Runner-Up Senior Thesis Award **December 2015**
ISU Department of Geological and Atmospheric Sciences

Short Courses

10th Annual Flux Course **July 2017**
University of Colorado Mountain Research Station **Nederland, CO**

- Took a two-week intensive course taught by several scientists and professors about measuring and modeling CO2 and H2O fluxes
- Completed two mini group projects: using machine learning for CO2 flux synthesis and examining which sensitivities drive NEE in carbon ensemble models

Technical Skills

Programming Languages

- Multiple years of experience in Python, including: reading and processing of timeseries and gridded data products, plotting, and multiprocessing
- Proficient in Fortran, JavaScript, and CR Basic
- Elementary knowledge of MATLAB, Java, HTML, CSS, and MPI-Fortran

Other Computing Skills

- Comfortable in both Unix and Windows environments
- Some experience with bash commands and shell scripting
- Working knowledge of Google Earth Engine API
- Experience with Adobe InDesign, Lightroom, and Photoshop

Affiliations

National American Meteorological Society — August 2013 - Present
ISU AMS Student Chapter — August 2012 - May 2016
Central Iowa National Weather Association — August 2013 - May 2016

Service

Utah Public Radio Forecaster — December 2016 - Present
ISU AMS Student Chapter Webmaster — Fall 2014 - Spring 2015
Central Iowa NWA Technology Committee — Spring 2015