

1001 E. Elm St.

Tucson, AZ, 85719

AJGarnello@email.arizona.edu

**Research Interests**

- Exploring the boundary between ecosystem and climate interactions using remote sensing techniques. A large part of my research focus is exploring the future of carbon cycling in the two largest terrestrial carbon pools: tropical rainforests and arctic peatlands. I am motivated to implement novel near-surface remote sensing techniques to measure micro-scale ecosystem processes that can then be linked to broader-scale eco-climate systems.

**Education**

MS 2015-present

**The University of Arizona**, Tucson, AZ.*Department: Ecology and Evolutionary Biology*

BS 2015

*Magna Cum Laude***Honors College at The University of Arizona**, Tucson, AZ*Major: Ecology and Evolutionary Biology*

Thesis Title: "Can Permafrost Soil Thaw be Characterized by Hyperspectral Reflectance and Plant Community Structure?"

**Awards and Scholarships**

2015-2016

Graduate Research Assistantship

2014-2015

NASA Space Grant Fellowship

Summer, 2014

Northern Ecosystems Research for Undergraduates participant, National Science Foundation Research Experience for Undergraduates fellowship

2012-2015

University of Arizona Deans List with Academic Distinction

2011-2015

Arizona's Instrument to Measure Standards Academic Scholarship

**Academic Presentations**

Garnello, A., D. Dye, R. Bogle, J. Vogle, P. Crill, S. Saleska, "Measuring Plant Phenology with Digital Repeat Photography using Novel High-Dynamic-Range Imaging." (Seminar), *Abisko Naturvetenskapliga Station/Climate Impacts Research Center*, Abisko, Sweden, June 2014, June 2015.

Garnello, A., D. Finnell, M. Palace, J. Wu, L. Lepine, P. Crill, R. Varner. "Characterization of Permafrost Degradation and Plant Communities Using Hyperspectral Reflectance." (Poster) *American Geophysical Union*, San Francisco, CA, Dec 2014.

Garnello, A., K. Paredes, U. K. Trinh, J. Wu, S. Saleska. "An Innovative Way to Monitor Leaf Aging" (Poster) *American Geophysical Union*, San Francisco, CA, Dec 2013.

**Publications**

Wu, Jin; Chavana-Bryant, Cecilia; Prohaska, Neill; Serbin, Shawn; Guan, Kaiyu; Albert, Loren; Yang, Xi; van Leeuwen, Willem; Garnello, Anthony; Martins, Giordane; Malhi, Yadvinder; Gerard, France; Oliveira, Raimundo; Saleska, Scott. "Convergence in relations among leaf traits, spectra and age across diverse canopy environments and two contrasting tropical forests" (accepted) *New Phytologist*, 2016.

### **Publications in Process**

Herrick C., M. Palace, D. Finnell, A. Garnello, F. Sullivan, S. Anderson, R. Varner. "Use of High Resolution UAS Imagery to Classify Sub-Arctic Vegetation Types

Garnello, A., D. Finnell, M. Palace, J. Wu, P. Crill, R. Varner. "Characterization of Permafrost Degradation and Plant Communities Using Hyperspectral Reflectance."

Wu J., N. Prohaska, S. P. Serbin, L. P. Albert, C. Chavana-Bryant, A. Garnello, G. Martins, X. Yang, A. Macias, S.R. Saleska. "An innovative way to monitor leaf age demographics in a tropical evergreen forest"

### **Research and Professional Experience**

2015-present      **Graduate Research Assistantship**, University of Arizona.  
Amazon rainforest tower-based automated camera imaging system construction, installation, and upkeep. Swedish Peatland automated camera system installation and upkeep.

2014                **Northern Ecosystems Research for Undergraduates**, University of New Hampshire, Durham, NH  
Subarctic permafrost peat land ecological monitoring and near-ground remote sensing in Abisko Sweden.

2014                **Field Research Assistant**, University of Arizona, Tucson, AZ  
Aided in the humane capture, tagging, and radio telemetry recording of Antelope Jackrabbits (*Lepus alleni*) in Buenos Aires National Wildlife Refuge, Tucson, AZ.

2013-2014        **Undergraduate Research Assistant**, University of Arizona, Tucson, AZ  
Leaf-level trait analysis using hyperspectral remote sensing, with cross-biome comparisons: Amazon, Brazil, Biosphere 2, Tucson, AZ,

### **Outreach and Service**

2015-present     **University of Arizona Sky School Fellow**, Mt. Lemmon Sky Center, Tucson, AZ  
Mentor Tucson elementary students through inquiry-based scientific exploration

2015                **Biosphere 2 Haury Outreach Scholar**, Tucson, AZ  
Science mentor for 6-12<sup>th</sup> grade students at Biosphere 2 Summer Science Academy

2014                **Flandrau Science Center Teaching Fellow**, Tucson, AZ  
Teacher at K-8 Marine Biology Program

### **Software and Technological Skills**

**Software:** Excel, PowerPoint, JMP Pro, Adobe Illustrator, Matlab, R.

**Sampling and Analysis:** Field Spectroradiometer, Multi-band Camera, Hex-rotor and Fix-wing plane UAS, GPS,