

ANNIE B. BURGESS

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EDUCATION:

Postdoctoral Fellow, present, University of Southern California
Computer Science Department, Los Angeles, California
Adviser: Dr. Chris Mattmann (NASA JPL/USC)

PhD, 2013, University of Utah
Geography Department, Salt Lake City, Utah
Dissertation: [*Hydrologic Implications of Dust in Snow in the Upper Colorado River Basin*](#)
Adviser: Dr. Thomas Painter (NASA JPL/California Institute of Technology)

MA, 2007, Appalachian State University
Geography Department, Boone, North Carolina
Thesis: [*Mitigating the Effects of Differential Illumination in Multispectral Satellite Imagery*](#)
Adviser: Dr. Jeffery Colby

BA, 2003, State University of New York at Geneseo
Political Science Department, Geneseo, New York

POSITIONS:

Postdoctoral Fellow (1/14 – present), Computer Science, U. of Southern California, Los Angeles, CA
Postdoctoral Volunteer (6/13 – present), USGS Alaska Science Center, Anchorage, AK
Visiting Researcher (05/13 – 06/13), Colorado Basin River Forecast Center, SLC, UT
Project Asst. (01/11 – present), Snow Data Systems Project at NASA/JPL, Pasadena, CA
NASA Research Fellow (08/09 – 08/12), University of Utah, SLC, UT
Research Asst. (08/08 – 09/09), University of Utah Geography Department, SLC, UT
Instructor (06/07 – 07/08), Geography Department, Appalachian State University, Boone, NC
Teaching Asst. (08/05 – 05/07), Geography Department, Appalachian State University, Boone, NC
Project Coordinator (07/04 – 07/05), Center for Science in the Public Interest, Washington, DC
Research Asst. (09/03 – 07/04), Center for Science in the Public Interest, Washington, DC

PUBLICATIONS:

Wang, F., S. Miller, **A.B. Burgess**, and T.H. Painter (*in prep*) Temporally-Integrated Radiative Forcing of Aeolian Dust-Contaminated Snow Cover, *Journal of Hydrometeorology*.
Burgess, A.B. and C. Mattmann (2014) Automatically Classifying and Interpreting Polar Datasets with Apache Tika, *IEEE IRI 2014 Conference*.
Reynolds, R.L., H.L. Goldstein, B.M. Moskowicz, **A.C. Bryant**, S.M. Skiles, R.F. Kokaly, C.B. Flagg, K. Yauk, T. Berquo, G. Breit, M. Ketterer, D. Fernandez, M.E. Miller, and T.H. Painter (2013) Composition of dust deposited in snow cover in the Wasatch Range (Utah, USA): Controls on radiative properties of snow cover and comparison to some dust-source sediments, *Aeolian Research*, doi:10.1016/j.aeolia.2013.08.001

- Bryant, A.C.**, T.H. Painter, J.S. Deems, and S.M. Bender (2013) [Impact of dust radiative forcing in snow on accuracy of operational runoff forecasting in the Upper Colorado River Basin](#), *Geophys. Res. Lett.*, doi:10.1002/grl.50773.
- Painter, T.H., F.C. Seidel, **A.C. Bryant**, S.M. Skiles, and K. Rittger (2013) Imaging spectroscopy of albedo and radiative forcing of light absorbing impurities in mountain snow, *Journal of Geophysical Research-Atmospheres*, doi:10.1002/jgrd.50520, 2013.
- Painter, T.H., **A.C. Bryant**, and S.M. Skiles (2012) Radiative forcing by light absorbing impurities in snow from MODIS surface reflectance data, *Geophys. Res. Lett.*, doi:10.1029/2012GL052457.
- Painter, T.H., S.M. Skiles, J.S. Deems, **A.C. Bryant**, and C. Landry (2012), Dust radiative forcing in snow of the Upper Colorado River Basin: Part I. A 6 year record of energy balance, radiation, and dust concentrations, *Water Resour. Res.*, doi:10.1029/2012WR011985.
- Steenburgh, W.J, T.H. Painter, and **A.C. Bryant** (2012) Characterization of dust and pollutant loading to snow cover of wilderness areas of the Wasatch Cache National Forests. *Summary Report for the Uinta-Wasatch-Cache National Forest: 10-PA-11041914-045*.
- Skiles, S. M., T. H. Painter, J. S. Deems, **A. C. Bryant**, and C. Landry (2012), Dust radiative forcing in snow of the Upper Colorado River Basin: Part II. Interannual variability in radiative forcing and snowmelt rates, *Water Resour. Res.*, doi:10.1029/2012WR011986.
- Bryant, A.C.** and T.H. Painter (2010), Radiative forcing by dust in snowmelt dominated hydrologic systems using coupled satellite and in situ measurements. 78th *Annual Proceedings of the Western Snow Conference*, 43:47.
- Bryant, A.C.**, P. Jamison, C. Jenkins, S. Pepper and L. Weinstein (2007), [Interview with Jack Spadaro: On Being a Whistleblower for Mine Safety and Health](#). *Appalachian Journal* 34(3-4): 326-350.
- Bryant, A.C.** (2005) [Regulatory Cooperation by the United States and European Union Needed to Address the Transatlantic Epidemic of Obesity and Diet-Related Disease](#). *Official report from the Center for Science in the Public Interest*, Washington, DC.

CONFERENCE PRESENTATIONS (1ST AUTHOR):

- Burgess, A.B.** and C. Mattmann (2014), [A case for polar data: integrating the NetCDF file type into Apache Tika](#), Presented (talk) at the 2014 ApacheCon Conference, Denver, CO.
- Bryant, A.C.**, T.H. Painter, J.S. Deems, and S. Bender (2013), *Hydrologic response to dust deposition on snow in the Upper Colorado River Basin*, Presented (talk) at the 2013 Fall Meeting AGU, San Francisco.
- Bryant, A.C.**, T.H. Painter, M. Skiles (2012), *Radiative forcing by light absorbing impurities in snow in the Upper Colorado River Basin using MODIS surface reflectance data (invited)*, Presented (talk) at the 2012 Fall Meeting AGU, San Francisco.
- Bryant, A.C.** and T.H. Painter (2011) *Hydrologic response to dust radiative forcing of snow in the Upper Colorado River Basin*, Presented (poster) at 2011 Fall Meeting, AGU, San Francisco, CA.
- Bryant, A.C.** and T.H. Painter (2010) *Scale and sensor dependency of measurements of dust radiative forcing in snow*. Presented (talk) at the 2010 Fall Meeting, AGU, San Francisco, CA.
- Bryant, A.C.** and T.H. Painter (2010) *Radiative forcing by dust in snowmelt-dominated hydrologic systems using coupled satellite and in situ measurements*. Presented (talk) at the 2010 Remote Sensing and Hydrology Symposium, Jackson, WY.
- Bryant, A.C.** and T.H. Painter (2010) *Radiative forcing by desert dust in alpine environments inferred from MODIS data*. Presented (talk) at the 2010 Cryospheric Changes and Influences Conference, Lijiang, China.

- Bryant, A.C.** and T.H. Painter (2010) *Radiative forcing by desert dust in the Colorado River Basin from 2000 to 2009 inferred from MODIS data*. Presented (talk) at the 2010 Western Snow Conference, Logan, UT.
- Bryant, A.C.** and T.H. Painter (2009) *Radiative forcing by desert dust in the Colorado River Basin from 2000 to 2009 inferred from MODIS data*. Presented (poster) at the 2009 American Geophysical Union Meeting, San Francisco, CA.
- Bryant, A.C.** and T.H. Painter (2009) *Radiative forcing by dust in mountain snow from MODIS surface reflectance data*. Presented (talk) at the American Geophysical Union Joint Assembly Meeting, Toronto, Ontario.
- Bryant, A.C.** and T.H. Painter (2009) *Influence of Topographic Heterogeneity on Spectral Variability*. Presented (talk) at the 2009 Association of American Geographers Meeting, Las Vegas, NV.
- Bryant, A.C.** and J. Colby (2007) *Mitigating the Effects of Differential Illumination in Multispectral Satellite Imagery in the Appalachian Mountains*. Presented (talk) at the meeting of the South-Eastern Division of the Association of American Geographers, Charleston, SC.
- Bryant, A.C.** and J. Colby (2007) *Mitigating the Topographic Effect Found in Multi-Spectral Satellite Images in the Appalachian Mountains*. Presented (talk) at the 2007 Student Research Day at Appalachian State University, Boone, NC.
- Bryant, A.C.** and J. Colby (2007) *Mitigating the Topographic Effect Found in Multi-Spectral Satellite Images in the Appalachian Mountains*. Presented (talk) at the North Carolina GIS Conference, Winston-Salem, NC.

COMMUNITY ENGAGEMENT:

Early Career Advisory Committee Member, EarthCube GeoSoft Project, Present.

Committee Member, Funded Project Gap Analysis, EarthCube Science Committee Ad Hoc Working Group, Present.

Lead Organizer, [Women of ASF Luncheon](#), ApacheCon 2015, Denver, CO.

Co-Organizer, [NSF DataVis Hackathon for Polar CyberInfrastructure](#), 2015, NYC, NY.

Contributing Author, [What's open source got to do with Earth Science? NASA explains](#), June 2014.

[Lecture](#) to high school students in the Alaska Native Science and Engineering Program, June 2014.

Hydrologic impacts of light absorbing impurities in snow, Presented for a US Geological Survey visiting lecturer series, Anchorage, AK, September 2013.

[Working Group Member](#), Conceptualizing an Institute for Sustainable Earth and Environmental Software, Santa Barbara, August 2013.

Aspen Public Radio, [Study: River forecasting in Rockies needs dusting](#), August 2013.

[Scientist in the Spotlight](#), Natural History Museum of Utah, May 2013.

Radiative forcing by light absorbing impurities in snow in the Upper Colorado River Basin using MODIS surface reflectance data, Presented as a Cooperative Institute for Research in the Atmosphere visiting lecture series, Ft. Collins, CO, November 2012.

Participant, NSF Becoming a Messenger, Salt Lake City, UT, August 2012.

Impact of dust radiative forcing in snow on accuracy of operational runoff prediction in the Upper Colorado River Basin, Presented at the Colorado Basin River Forecast Center, May 2013.

[American Geophysical Union representative](#), Science and Engineering and Technology Congressional Visit Day, Washington, DC, 2011.

GRANTS AWARDED:

Travel award from the Linux Foundation to attend ApacheCon conference (2015), \$1,500.

Student travel award from the Linux Foundation to attend ApacheCon conference (2014), \$1,500.

Global Change and Ecosystem Center Student Research Grant (2011), \$1,500.
Student travel award from the Climate and Cryosphere (CliC) Project to the Cryospheric Change and its Influences conference (2010), Lijiang, China, \$2,300.
NASA Earth System and Space Fellowship (2009), \$90,000.
Julian Yoder Scholarship for Geography (2006), \$450.

FIELD WORK EXPERIENCE:

Co-coordinator (2008 – 2012), [Colorado Dust on Snow Field Campaign](#), Rocky Mountains, CO.
Duties: AVIRIS over-flight coordination, spectral irradiance measurements, spectral albedo measurements, directional reflectance measurements, and dust in snow sample collections.
Coordinator (2009 – 2011), USFS Wilderness Air Quality Monitoring, Wasatch Mountains, UT.
Duties: Dust in snow sample collections, spectral albedo measurements, coordinate efforts with Forest Service personnel on dust in snow collection procedures.
Coordinator (2007), Vegetation surveys for LANDSAT data, Great Smoky Mountains, NC.
Teaching Assistant (2006), Mountain Geography, Sawtooth Mountain Range, ID.
Student (2006), Geomorphology and Cultural Geography, Garhwal Himalaya, India.

ORGANIZATIONS:

Association for Women Geoscientists
American Geophysical Union
Association of American Geographers

COMPUTER SKILLS:

Image Processing: ENVI, ArcGIS, GDAL, Google Earth, Erdas Imagine
Programming: IDL, Unix, Java, HTML, KML
Open Source Projects: PMC Committer for Apache Tika

References:

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Appalachian State University
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Salary History:

Center for Science in the Public Interest (2003/2004):	\$28,000
Center for Science in the Public Interest (2003/2005):	\$32,000
Appalachian State University <i>TA</i> (2005 – 2007):	\$15,000
Appalachian State University <i>instructor</i> (2007/2008):	\$32,000
University of Utah Research Assistant (2008/2009):	\$18,000
NASA NESSF Fellow (2009 – 2013):	\$24,000
NASA Project Assistant (2013/2014):	\$38,000
USC Postdoctoral Fellow (2014 – present):	\$42,000