

PROFESSIONAL EXPERIENCE

2014 – Present. GIS Coordinator. Truckee Meadows Regional Planning Agency, Reno, NV.

2012 – 2014. GIS/Planning Analyst II. Truckee Meadows Regional Planning Agency, Reno, NV.

2011 – 2012. GIS Technician (part-time). Truckee Meadows Regional Planning Agency, Reno, NV.

2006 – 2007. GIS Programmer (part-time). FEMA Digital Flood Insurance Rate Map Modernization - Michael Baker Jr. Inc., Denver, CO.

2002 – 2006. Operations/Project Manager. Landbase Mapping for AT&T Telecom Engineering in CA/NV - Michael Baker Jr. Inc., Reno, NV.

RESEARCH EXPERIENCE

2011. Casual Laborer. Pollen identification and counting. Department of Geography Paleocology Laboratory, University of Nevada, Reno.

2010. Research Assistant. Modeling pediatric mortality from enteric disease across spatial scales in Brazil. Fogarty International Center; National Institutes of Health. P.I. Stefan Leyk

2009. Research Assistant. Automated generalization of hydrologic networks at different scales: National Hydrologic Dataset. United States Geological Survey. P.I. Barbara Buttenfield

2008. Research Assistant. Wildfire and Bark Beetle Outbreaks in Subalpine Forests: Cross-Scale Interactions Under Varying Climate. National Science Foundation. P.I. Thomas T. Veblen and Tania Schoennagel

2007. Research Assistant. Permanent forest plot re-measurement. United States Geological Survey. P.I. Thomas T. Veblen and Nate Stephenson

2007. Research Assistant. Spatialization of hydrologic GIS functions using Self-Organizing Maps (SOM). U.S. Geological Survey. P.I. Barbara Buttenfield

TEACHING EXPERIENCE

2015. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 407/607: Advanced GIS Analyses
2015. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 210R: Introduction to Geotechnology
2014. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 407/607: Advanced GIS Analyses
2014. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 210R: Introduction to Geotechnology
2013. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 103: Geography of the World's Environment
2012. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 103: Geography of the World's Environment
2010. Graduate Part-Time Instructor - Dept. of Geography, CU GEOG 1001:
Environmental Systems: Climate and Vegetation
- 2006 - 2010. Teaching Assistant - Dept. of Geography, CU
GEOG 4103/5103: Introduction to GIS
GEOG 4203/5203: GIS Modeling Applications
GEOG 4303/5303: GIS Programming
- 2003 - 2006. Letter of Appointment Instructor – Dept. of Geography, UNR
GEOG 103: Geography of the World's Environment
- 1998 - 2001. Teaching Assistant – Dept. of Geography, UNR
GEOG 103: Geography of the World's Environment

Invited Lectures

2015. *Open source GIS*. GEOG 416/616 Spatial Analysis. Dept. of Geography,
University of Nevada, Reno.

2012. *GIS applications*. GEOG/GEOL 210R Introduction to Geotechnology. Dept. of Geography, University of Nevada, Reno.
2012. *Open source GIS*. GEOG 416/616 Spatial Analysis. Dept. of Geography, University of Nevada, Reno.
2010. *Tracking subalpine tree mortality using permanent plots*. BL/ENVS 402 Principles of Ecology. Dept. of Biology. Regis University, Denver, CO.
2009. *Climate effects on temporal patterns of tree mortality in subalpine permanent forest plots*. GEOG 4371 Forest Geography. Dept. of Geography. University of Colorado – Boulder, CO.
2008. *Paleo Methods in Biogeography*. GEOG 3351. Dept. of Geography. University of Colorado – Boulder, CO.

GRANTS AND AWARDS

2010. Graduate School Dissertation Completion Fellowship 2010/2011. University of Colorado. approx. \$15,000
2010. John W. Marr Ecology Fund. University of Colorado. \$600
2008. National Science Foundation, Geography Program; *Effects of climate variation on tree mortality across spatially heterogeneous subalpine forest landscapes in the Front Range of Colorado*. Doctoral Dissertation Improvement Grant 2008 -2010 (Project Director Thomas T. Veblen). \$12,000.

Participated in grant application and completion

- 2008-2011. National Science Foundation, Ecological Studies Cluster: A Collaborative Research: Wildfire and mountain pine beetle outbreaks in subalpine forests: cross-scale interactions under varying climate.@ \$500,000. PI: T.T. Veblen. Co-PIs: T. Schoennagel and D. Kulakowski.

PUBLICATIONS

2015. (*in preparation, dissertation chapter 4*) **Smith, J.M.**, Holz, A., Veblen T. Spatio-temporal analysis of mountain pine beetle outbreak progression in the Central Front Range of Colorado.
2015. (*submitted*) Conlisk, E., Castanha C., Moyes, A., Germino, M., Kueppers, L., **Smith, J.M.**, Veblen, T. Declines in warm-edge subalpine tree populations outpace cool-edge population expansion with warming. *Proceedings of the National Academy of Sciences*.
2015. **Smith, J.M.**, Paritsis, J., Veblen, T., and Chapman, T. Permanent forest plots show accelerating tree mortality in subalpine forests of the Colorado Front Range from 1982 to 2013. *Forest Ecology and Management* 341, 8 – 17.
- 2013 Mensing, S., Sharpe, S., Tunno, I., Sada, D., Thomas, J., Starratt, S., and **Smith, J.M.** The Late Holocene Dry Period: multiproxy evidence for an extended drought between 2800 and 1850 cal yr BP across the central Great Basin, USA. *Quaternary Science Reviews* 78, 266-282.
2012. **Smith, J.M.**, Hart, S., Chapman, T., Veblen, T., Schoennagel, T. Dendroecological reconstruction of historic mountain pine beetle activity in northwestern Colorado. *Ecoscience* 19(2): 113-126.
2012. **Smith, J.M.** *An examination of background tree mortality and mountain pine beetle disturbance in subalpine forests of the Front Range of Colorado, USA*. PhD Dissertation: 257p. Department of Geography, University of Colorado.
2012. Schoennagel, T., Veblen, T.T., Negron, J., **Smith, J.M.** Effects of Mountain Pine Beetle on Fuels and Expected Fire Behavior in Lodgepole Pine Forests, Colorado, USA. *PlosOne* 7(1): e30002. doi:10.1371/journal.pone.0030002.
2011. Leyk, S., Phillips, T.P., **Smith, J. M.**, Nuckols, J. R. Spatial-temporal trends of diarrheal mortality of children in association with hydrographic regions of Brazil. *Cartography and Geographic Information Science* 38(2), 223-233.
2009. Wendel, J., Buttenfield, B., and **Smith, J.M.**. Spatialization of a GIS software toolbox. *Kartographische Nachrichten* 5; 257-263.

2009. van Mantgem, P.J., Stephenson, N.L., Byrne, J.C., Daniels, L.D., Franklin, J.F., Fulé, P.Z., Harmon, M.E., Larson, A.J., **Smith, J.M.**, Taylor, A.H., Veblen, T.T.. Widespread increase of tree mortality rates in the western United States. 2009. *Science* 323: 521-524.
2008. Mensing, S., **Smith J.M.**, Norman, K., and Allen, M. Extended drought in the Great Basin of western North America in the last two millennia reconstructed from pollen records. *Quaternary International* 188: 79-89.

SELECTED PRESENTATIONS

2015. Hardcastle, J., Kazmerski, M., Smith, J.M. and Potts, B. EPIC Northern NV: Projecting Job and Population Changes. Presentation – Annual Meeting of the Nevada Chapter of the American Planning Association Conference.
2013. Smith, J.M. Spatial prediction of population and employment growth to support regional planning in the Truckee Meadows. Presentation – Nevada State GIS Conference, Reno, NV.
2012. Bang, P., Smith, J.M., and Wang, X. Quantitative Evaluation Methodology in TOD Planning. Presentation – Annual Conference of the Nevada Chapter of the American Planning Association.
2009. Smith, J.M. Identifying the ecological role of limber pine in the current mountain pine beetle outbreak: exploring spatial data with fuzzy sets. Presentation – Mountain Pine Beetle Science Symposium, Colorado State University, Ft. Collins, CO.
2009. Smith, J.M., Paritsis, J, and T.T. Veblen. Climate effects on temporal patterns of tree mortality in subalpine permanent forest plots. Presentation – Ecological Society of America Annual Meeting, Albuquerque, NM.
2008. Smith, J.M., Paritsis, J, and T.T. Veblen. Subalpine Tree Demography and Climate Variation in the Colorado Front Range. Presentation – Annual Meeting of the Association of American Geographers, Boston, MA.
2007. Smith, J.M., Holz, Andrés and Kyle Davis. Spatio-Temporal Analysis of Current *Dendroctonus ponderosae* outbreak in Central Front Range, CO.

Poster presentation – Rocky Mountain – Great Plains Regional Association of American Geographers Conference, Denver, CO.

2003. Smith, J.M. Pine Pollen: Long Distance Transport by Wind. Poster presentation - Nevada State GIS Conference.

UNDERGRADUATE SUPERVISION

2009. Connor Paige. University of Colorado – Undergraduate Research Opportunities Program (UROP). Assisted with field data collection, tree-ring measurement and GIS data input.
2009. Matthew Woodthorpe. University of Colorado – Undergraduate Research Opportunities Program (UROP). Assisted with tree-ring measurement and GIS data input.
2009. Sarah Wurzbacher. CU Ecology and Evolutionary Biology Research Experience for Undergraduates. Summer program at the Mountain Research Station. Research topic: Forest Succession and climate.
2008. Erica Goad. CU Ecology and Evolutionary Biology Research Experience for Undergraduates. Summer program at the Mountain Research Station. Research topic. Species preference and tree-growth patterns in mountain pine beetle attacked trees. Research done in partial completion of an honors thesis at Whitman College.
2007. Kyle Davis. CU Ecology and Evolutionary Biology Research Experience for Undergraduates. Summer program at the Mountain Research Station. Research topic. Spatio-temporal patterns of mountain pine beetle activity in Boulder, County.

OUTREACH

- 2013 Online Webinar Series. *Elements of Physical Geography*. Davidson Institute for Talent Development.
- 2013 Young Scholar Annual Summit. *Exploring Geographic Information Systems and Maps*. Davidson Institute for Talent Development.

- 2012 Young Scholar Annual Summit. *Tree coring: intro to dendro methods*. Davidson Institute for Talent Development.
2009. Online Young Scholar Colloquium. *Mapping our world: Exploring online maps and geographic information systems (GIS)*. Davidson Institute for Talent Development.
2009. Online Young Scholar Colloquium. *Tree-Eating Insects Devour Western Forests!* Davidson Institute for Talent Development.
2009. Online Young Scholar Colloquium. *Exploring Remotely Sensed Imagery with Python*. Davidson Institute for Talent Development.
2008. Invited Speaker. *Why has the mountain pine beetle population erupted in the last decade?* Teaching Climate Change: Impacts to Colorado. CIRES Education Outreach Program.
2008. Online Young Scholar Colloquium. *Introduction to Tree-Ring Studies*. Davidson Institute for Talent Development.
2007. Online Young Scholar Colloquium. *Internet Mapping: Games, Google and GIS*. Davidson Institute for Talent Development.
2007. GIS mapping – Grants by Country (excl. Africa). Urgent Action Fund for Women’s Human Rights.

HONORS

2007. Department of Geography, University of Colorado – Excellence in Graduate Teaching Award
2004. Department of Geography, University of Nevada, Reno - Outstanding Graduate Student
2000. University of Nevada, Reno - Outstanding Teaching Assistant

AFFILIATIONS AND SERVICE

Member - Association of American Geographers

2015. President Elect/VP – Truckee Meadows Tomorrow Board of Directors

2013 – 2014. Board Member – Truckee Meadows Tomorrow Board of Directors

2007. Graduate Student Representative 2007/2008 – Department of Geography,
University of Colorado