

KEITH V. OLSON

Faculty Research Assistant, Chemical, Biological and Environmental Engineering,
PRISM Climate Group
Computational Modeling Researcher, Northwest Alliance for Computational Science and
Engineering

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EDUCATION

University of Portland	M.S. (Geology)	2013
Oregon Institute of Technology	B.S. (Computational Engineering)	1992

PROFESSIONAL EXPERIENCE

2013-	Faculty Research Assistant, Northwest Alliance for Computational Science and Engineering
2011-2013	Research Assistant, Portland State University
1991-2014	Web Developer/Software Developer
2007-2011	Geologist Intern, Oregon Department of Geology & Mineral Industries (DOGAMI)

PROFESSIONAL ACTIVITIES

Keith Olson's expertise is in using computer technologies to enable the operational production of geospatial climatology data for PRISM (Parameter-elevation Regressions on Independent Slopes Model) modeling. He has prior background in software and a graduate degree in geology, as well as prior experience developing software procedures to analyze and process model data for research on snow depth and climate change. His geology thesis research was conducted under the direction of Scott Burns on the debris flows that occurred on Mt. St Helens during the November 2006 PNW "Pineapple Express" event.

Keith has been a Computational Modeling Researcher in Oregon State University's PRISM Climate Group, Northwest Alliance for Computational Science and Engineering, since 2013. The group developed and continues to update digital maps of long-term normals and daily and monthly time series for the conterminous US, downloaded approximately 750,000 times per month from the PRISM Web site. They developed the first-ever detailed climate and species suitability maps for the People's Republic of China, aiding Oregon grass seed growers in creating a multi-million dollar market for their seeds in China. They have also been updating official NOAA extreme precipitation maps that provide guidance used by states, counties, and municipalities to determine building codes and regulations. They released the first digital USDA Plant Hardiness Zone Map, the key plant selection guide for horticulturalists, nurserymen, and gardeners; this map received 20 million online accesses in the first two weeks of release. The group has an ongoing relationship with the USDA Risk Management Agency, which oversees the federal crop insurance program. In an effort to improve the integrity and efficiency of the claims process, the RMA asked the group to provide high-quality spatial weather and climate data on a daily basis for every farm in the lower 48 states. In addition, PRISM long-term climate datasets are being used in conjunction with soils data and a water balance model to establish zones of crop suitability to provide greater accuracy and spatial detail in crop insurance underwriting.

PUBLICATIONS

Daly, C., Doggett, M.K., Smith, J.I., **Olson, K.V.**, Halbleib, M.D., Dimcovic, Z., Loiselle, R.A., Ryan, A.D., Pancake, C.M., Kaspar, E.M. 2021. Challenges in observation-based mapping of daily precipitation across the conterminous United States. *Journal of Atmospheric and Oceanic Technology*. Accepted.

Daly, C., J.I. Smith, and **K.V. Olson**. 2015. Mapping atmospheric moisture climatologies across the conterminous United States. *PloS ONE* 10(10):e0141140. doi:10.1371/journal.pone.0141140.