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Dear AASC Awards Committee,

I am writing to nominate myself for the 2024 New Scientist Award in Applied Climatology, encouraged by Dr. Nina Oakley, Geohazards Climatologist for the California Geological Survey. Dr. Oakley has followed my work through the completion of my PhD in August 2023, and supported my passion to bridge research and operations.

My nontraditional path to a PhD included work with national hydromet authorities abroad and water managers in the Western US, giving me insights into operational needs unanswered by academia and the constraints of operational forecasting and decision-making. A pivotal moment in my career was a conversation with a prominent water manager in California, who said, "We have no idea how the snow will respond during a rain-on-snow event." Drawing on my experience with in-situ monitoring networks, I developed a near real-time snowpack runoff situational awareness tool for rain-on-snow events, using hourly data from the Natural Resource Conservation Service SNOw TElemetry (SNOTEL) network. Since decision support tools lie at the intersection of science and society with a potentially large impact on decision-making, I believe that such tools should specifically address visual communication best practices like effective and accessible use of color.

While my drive to develop decision support tools for rain-on-snow led me to my PhD, it was an invitation to participate on a NOAA Weather Program Office grant that allowed me to flourish. My role on the project was to conduct a literature review at the intersection of graphic design and social science, leading to the development of "plug-and-play" templates and a one-page quick guide for visual communication of probabilistic forecast information. Our work was published in the Bulletin of the American Meteorological Society in 2023, under the title "Visual communication of probabilistic information to enhance decision support," and was just invited to be highlighted in the BAMS magazine to broaden the readership of the highly ranked publication.

The paper caught the attention of the NWS National Science and Operations Officer (SOO) who invited me to present the findings at a national meeting for all the SOOs and Development and Operations Hydrologist (DOH) to every NWS office with over 200 attendees. This presentation led to invitations to present to specific NWS regions and individual NWS offices from Tampa, FL to Honolulu, HI, helping to further connect the research findings directly with forecast offices. The publication of our work on the Zenodo repository has also garnered significant attention, with over 1,200 views and 960 downloads to date.

The rapid integration of this research into operational practices underscores the need for improved visual communication of climate data. By developing tools and guides to enhance the visual communication of climate data, we can empower forecasters to create clear and accessible visuals that inspire action among their core partners and communities.

Thank you for your consideration and I look forward to contributing further to the field.

Sincerely,

Anne Heggli, PhD  
Research Scientist, Mountain Hydrometeorology