

## TONI KLEMM, PH.D.

USDA-ARS Rangeland Resources and Systems Research Unit, Fort Collins, Colorado, USA  
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**Research Social Scientist (postdoc), USDA-ARS Rangeland Resources and Systems Research Unit, Ft. Collins, CO** Since 1/2021  
 Project: "Vulnerability Assessment of Northern Mixed-Grass Prairie to Climate Change"  
 Supervisors: Justin D. Derner, Ph.D., Dannele E. Peck, Ph.D.

### PREVIOUS EMPLOYMENT

**Postdoctoral Research Associate, Texas A&M University** 3/2018 - 1/2021  
 Project: "Vulnerability Assessment of U.S. Great Plains Cattle Production to Climate Variability and Change"  
 Supervisor: David D. Briske, Ph.D.

**Graduate Research Assistant, South Central Climate Adaptation Science Center** 8/2012 - 2/2018  
 Supervisor: Renee A. McPherson, Ph.D.

### EDUCATION

**Ph.D., Geography, The University of Oklahoma** 2012 - 2018  
 Dissertation title: "Assessing User Needs and Model Accuracy of Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains"  
 Committee chair: Renee A. McPherson, Ph.D.

**Diplom-Geograf\*, Dresden University of Technology, Germany** 2004 - 2011  
 Thesis title: "The effects of the North Atlantic Oscillation on precipitation in Morocco"  
 Advisors: Christoph Zielhofer, Ph.D. (University of Leipzig), Arno Kleber, Ph.D. (Dresden University of Technology)  
 \* equivalent to MS Geography

### PROFESSIONAL DEVELOPMENT

**American Meteorological Society Summer Policy Colloquium** June-September 2020  
 Virtual  

- 7-day colloquium on science and climate policy, public-private partnerships, national and environmental security implications of climate change, and advocacy, taught by U.S. Senators, executives from private sector businesses and non-profit science organizations, senior political appointees and federal officials, and Senate staffers

**Software Carpentry** August 2019  
April 2016  
 Texas A&M University, The University of Oklahoma Library  

- 2-day interactive workshop on R, R Studio, GitHub, Unix Shell, and Python

**Summer School for Sustainable Climate Risk Management** Jul/Aug 2019  
 The Pennsylvania State University, University Park, PA  

- 5-day course on climate dynamics, policy analysis, robust decision making, social cost of carbon, risk analysis, integrated assessment modeling, ethical-epistemic analysis

**Toastmasters International** 2017 - 2018  
 Norman, OK  

- Modular, weekly course in leadership and public speaking

**Northwest Climate Science Center Boot Camp**

August 2012

HJ Andrews Experimental Forest, Oregon

- 5-day workshop on ecological monitoring of climate change impacts, infrastructure impacts of climate extremes, media communication, Native American Traditional Ecological Knowledge, mitigation and adaptation to climate change

**PUBLICATIONS**

Hunt, Eric, Cory Walters, <b>Toni Klemm</b> , and Iyore Eronmwon: Using seasonal climate analogs to improve grain marketing decisions. <i>Choices Magazine</i> .	Submitted
Schulz, Terri, Hailey Wilmer, Heather Yocum, Eric Winford, Dannele Peck, Anna Clare Monlezun, Heidi Schmalz, <b>Toni Klemm</b> , Kathleen Epstein, Vincent Jansen, Windy Kelley, Retta Bruegger, Stephen Fick, Joseph Gazing Wolf, Joshua Grace, and Justin Derner: Campfire Conversations at the 2020 SRM Annual Meeting: Insights & Lessons Learned from “Cuss-and-Discuss” rather than “Chalk-and-Talk”. <i>Rangelands</i> .	Submitted
Guckian, Meaghan, Ezra M. Markowitz, Clay S. Tucker, Elsitia Kiekebusch, <b>Toni Klemm</b> , Lindsey Middleton, Adrienne Wootten, and Michelle D. Staudinger: Assessing the impact of an online climate science community: The Early Career Climate Forum. <i>Weather Climate, and Society</i> . ( <a href="#">link</a> )	2021
Briske, David D., John P. Ritten, Amber R. Campbell, <b>Toni Klemm</b> , and Audrey E. King: Future Climate Variability Will Challenge Rangeland Beef Cattle Production in the Great Plains. <i>Rangelands</i> . ( <a href="#">link</a> )	2021
<b>Klemm, Toni</b> , David D. Briske, and Matthew C. Reeves: Potential Natural Vegetation and NPP Responses to Future Climates in the U.S. Great Plains. <i>Ecosphere</i> , 11 (10), e03264. ( <a href="#">link</a> )	2020
<b>Klemm, Toni</b> , David D. Briske, and Matthew C. Reeves: Vulnerability of Rangeland Beef Cattle Production to Climate-Induced NPP Fluctuations in the U.S. Great Plains. <i>Global Change Biology</i> , 26, 4841-4853. ( <a href="#">link</a> )	2020
<b>Klemm, Toni</b> and David D. Briske: Retrospective Assessment of Beef Cow Numbers to Climate Variability Throughout the U.S. Great Plains. <i>Rangeland Ecology &amp; Management</i> . ( <a href="#">link</a> )	2019
<b>Klemm, Toni</b> and Renee A. McPherson: Assessing Decision Timing and Seasonal Climate Forecast Needs of Winter Wheat Producers in the South-Central United States. <i>Journal of Applied Meteorology and Climatology</i> , 57, 2129-2140. ( <a href="#">link</a> )	2018
<b>Klemm, Toni</b> and Renee A. McPherson: The development of seasonal climate forecasting for agricultural producers. <i>Agricultural and Forest Meteorology</i> 232, 384-399. ( <a href="#">link</a> )	2017

**GRANTS AND AWARDS RECEIVED**

American Association of State Climatologists Dissertation Award	\$1,000	2020
SCRiM Summer School travel grant	\$1,578	2019
ORAU travel grant	\$1,674	2018
AMS travel grant	\$1,374	2017
U.S. Geological Survey travel grant	\$990	2016
Graduate Climate Conference travel grant	\$300	2016
Society of Environmental Journalists, 3rd prize poster competition	\$100	2015
National Weather Center Biennale, finalist (photography)		2013
Ralph and Margaret Olson Scholarship	\$1,000	2013
Robberson Conference Presentation & Creative Exhibition Travel Grant	\$500	2013

## MENTORING AND TEACHING

<b>Science Fair Judge</b>	2020
Texas Science and Engineering Fair (online), May 4-11, 2020	
<ul style="list-style-type: none"> <li>• <i>judge for Earth and Environmental Science projects by middle school students or student teams</i></li> </ul>	
<b>Undergraduate/graduate student mentor</b>	Since 2019
Society of Range Management annual meetings	
<ul style="list-style-type: none"> <li>• <i>mentoring students and young professionals in range science and range management about academic and non-academic career options</i></li> </ul>	
<b>Youth group activity (6th - 12th grade) "Why stewardship matters to us,"</b>	2019
Friends Congregational Church (UCC), College Station, TX, October 20, 2019	
<ul style="list-style-type: none"> <li>• <i>discussing solutions to global environmental problems</i></li> </ul>	
<b>Volunteer online educator with Skype a Scientist (<a href="http://www.skypeascientist.com">www.skypeascientist.com</a>)</b>	Since 2018
<ul style="list-style-type: none"> <li>• <i>teaching 4th - 12th grade school students via Skype about climate science, climate change impacts, and food production, following state standards for science education</i></li> </ul>	
<b>Educator, guided inquiry lecture on impacts of climate change</b>	2017
Irving Middle School, Norman, OK, May 23, 2017 ( <a href="#">blog post</a> )	
<ul style="list-style-type: none"> <li>• <i>answered questions of 8th-grade students for science projects about climate change impacts on marine life and ecology, agriculture, and food production</i></li> </ul>	
<b>Lecturer teaching "Cloud formation and air masses"</b>	2016
University of Oklahoma, September 27, 2016	
<ul style="list-style-type: none"> <li>• <i>75-minute lecture for ca. 150 freshmen students in physical geography</i></li> <li>• <i>presenting lecture content for students from science and non-science majors</i></li> </ul>	
<b>High school student mentor</b>	2014, 2015, 2017
University of Oklahoma School of Meteorology meteorology camp	
<ul style="list-style-type: none"> <li>• <i>mentoring high school students about science, science careers, and study abroad</i></li> </ul>	
<b>Teaching assistant, Regional Climatology (Dr. Renee McPherson)</b>	2014, spring semester
University of Oklahoma	
<ul style="list-style-type: none"> <li>• <i>in-class assistant, homework grading, one-on-one student meetings</i></li> </ul>	
<b>Panelist on annual undergraduate panels on career and professional development</b>	2014 - 2018
Department of Geography and Environmental Sustainability, University of Oklahoma	
<b>Journal club presenter and discussion moderator</b>	2012 - 2018
South Central Climate Adaptation Science Center journal club	
<b>Lecturer, creative photography workshops</b>	2011 - 2012
Church summer camps, Germany	
<ul style="list-style-type: none"> <li>• <i>teaching image composition, storytelling, and camera techniques to teenagers</i></li> </ul>	

## LEADERSHIP AND PROFESSIONAL EXPERIENCE

<b>Co-organizer, workshop "Improving Communication and Collaboration Among Diverse Experts"</b>	2020
Society for Range Management annual meeting, Denver, CO, February 19, 2020	
<ul style="list-style-type: none"> <li>• <i>workshop applying the Compass Message Box concept to reframe results of scientific studies for more effective interdisciplinary collaboration</i></li> <li>• <i>Idea and content development, facilitation</i></li> </ul>	

<b>Co-organizer, symposium “Vulnerability of Beef Cattle Production to Ecological and Socio-Economic Challenges of Future Climates”</b>	2020
Society for Range Management annual meeting, Denver, CO, February 19, 2020	
<ul style="list-style-type: none"> <li>• <i>content development, speaker selection, facilitation, moderation of presentations</i></li> <li>• <i>author on proceedings paper (draft stage)</i></li> </ul>	
<b>Round-table discussion facilitator on “Rangelands and Climate Change”</b>	2020
Society for Range Management annual meeting, Denver, CO, February 18, 2020	
<ul style="list-style-type: none"> <li>• <i>World Café style conversations between ranchers, federal land managers, Tribal members, and researchers on climate change impacts on rangeland operations and potential solutions</i></li> </ul>	
<b>Session moderator</b>	2018
Symposium on Agricultural and Ecological Vulnerability to a Changing Climate, College Station, TX, October 26, 2018	
<ul style="list-style-type: none"> <li>• <i>introducing speakers, moderating Q&amp;A</i></li> </ul>	
<b>Session assistant</b>	2017
Climate Diagnostics and Prediction Workshop, Norman, OK, October 23-26, 2017	
<ul style="list-style-type: none"> <li>• <i>introducing speakers, taking time, moderating Q&amp;A</i></li> </ul>	
<b>Session organizer and chair, “Agriculture under Climate Change”</b>	2017
American Association of Geographers annual meeting, Boston, MA, April 8, 2017	
<ul style="list-style-type: none"> <li>• <i>developing concept and scope, recruiting diverse, international speakers, coordinating individual presentations, individual introductions, moderating Q&amp;A</i></li> </ul>	
<b>Sergeant-at-arms</b>	2017-2018
Toastmasters International club “Boomer Nooners”, Norman, OK	
<ul style="list-style-type: none"> <li>• <i>calling to order and adjourning weekly Toastmasters meetings</i></li> </ul>	
<b>Co-organizer and -host, workshop “Communicating with the media”</b>	2016
National Climate Science Center Early Career Training, Amherst, MA, November 3, 2016	
<ul style="list-style-type: none"> <li>• <i>content development, facilitation</i></li> </ul>	
<b>Photographer and videographer</b>	Since 2013
TEDx conferences, Norman, OK ( <a href="http://www.tedxou.com">www.tedxou.com</a> ) and College Station, TX ( <a href="http://www.tedxtamu.com">www.tedxtamu.com</a> )	
<ul style="list-style-type: none"> <li>• <i>providing professional coverage of TEDx talks, break activities, behind the scenes</i></li> </ul>	
<b>Co-founder, editorial board member, contributor, Early Career Climate Network</b>	Since 2012
<a href="http://www.earlycareerclimate.org">www.earlycareerclimate.org</a>	
<ul style="list-style-type: none"> <li>• <i>concept and content development, strategic planning and leadership, funding</i></li> <li>• <i>content creator (blog posts, videos, podcasts), social media management</i></li> </ul>	
<b>Editorial Intern, “Die Erde” (English language peer-reviewed journal)</b>	2009
Geographical Society of Berlin, Berlin, Germany, October - December 2009	
<ul style="list-style-type: none"> <li>• <i>management of all editorial stages of producing a peer-reviewed journal</i></li> <li>• <i>communication with authors and reviewers, proof reading, copy editing, page building</i></li> </ul>	
<b>Research intern</b>	2009
Department of the Environment, Agriculture and Geology of the State of Saxony Dresden, Germany, January - February 2009	
<ul style="list-style-type: none"> <li>• <i>comparing and reporting statewide, station-based precipitation data</i></li> </ul>	
<b>Research intern</b>	2007
German Weather Service, Lindenberg Meteorological Observatory Lindenberg, Germany, July - September 2007	
<ul style="list-style-type: none"> <li>• <i>homogenizing historic high altitude weather balloon data with recent records</i></li> </ul>	

<p><b>Freelance photographer, writer, and editor</b>  Germany</p> <ul style="list-style-type: none"> <li>• <i>online and print media</i></li> <li>• <i>topics: science, sports, travel, human interest</i></li> <li>• <i>story development and pitching, scheduling, writing, photography, communication with co-authors and editors</i></li> <li>• <i>page planning, staff management, copy editing, review and feedback to authors</i></li> </ul>	2007-2012
<p><b>Farm hand</b>  Australia</p> <ul style="list-style-type: none"> <li>• <i>moving and herding cattle and sheep on motorbike, horse, and quad/ATV</i></li> <li>• <i>rotational grazing, fence maintenance, weed control</i></li> <li>• <i>branding, milking, and feeding cattle</i></li> <li>• <i>sheering and vaccinating sheep</i></li> </ul>	2003 - 2004

## RESEARCH SEMINARS

<p><b>Department of Atmospheric Sciences, University of Hawaii at Manoa (invited, virtual)</b>  “Ranching in a Warming World - How Climate Change Will Affect Cattle Production in the Great Plains”, October 7, 2020</p>	2020
<p><b>Department of Ecology and Conservation Biology, Texas A&amp;M University</b>  “Vulnerability of rangeland beef cattle production to future climates across the Great Plains”, February 11, 2020</p>	2020
<p><b>Department of Atmospheric Sciences, Texas A&amp;M University</b>  “Assessing User Needs and Model Accuracy of Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, March 27, 2019</p>	2019
<p><b>National Center for Atmospheric Research (NCAR), Capacity Center for Climate &amp; Weather Extremes (C3WE), Boulder, CO</b>  “Developing Tailored Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, October 11, 2017</p>	2017
<p><b>North Central Climate Science Center, Ft. Collins, CO</b>  “Developing Tailored Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, October 10, 2017</p>	2017
<p><b>Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK</b>  “Developing Tailored Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, May 5, 2017</p>	2017
<p><b>National Weather Service (NWS), Climate Prediction Center (CPC), College Park, MD</b>  “Improving Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, November 1, 2016</p>	2016
<p><b>USDA Grazinglands Research Laboratory, El Reno, OK</b>  “Improving Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, September 29, 2016</p>	2016

## CONFERENCE PRESENTATIONS AND POSTERS

<p><b>American Association of State Climatologists annual meeting (invited, virtual)</b>  Presentation: “What Farmers Want: Developing Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains”, June 12, 2020 (<a href="#">Video</a>)</p>	2020
<p><b>Society for Range Management annual meeting, Denver, CO</b>  Presentation: “Future Climate and Forage Projections: Implications for Beef Cattle Numbers and Distribution”, February 19, 2020</p>	2020

<b>Society for Range Management annual meeting, Minneapolis, MN</b>	2019
Presentation: "Projections of Climate-Induced Land Cover Change in the U.S. Great Plains", February 11, 2019	
<b>International Conferences on Subseasonal to Decadal Prediction, Boulder, CO</b>	2018
Poster: "Assessing User Needs and Model Accuracy of Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains", September 19, 2018	
<b>American Meteorological Society annual meeting, Austin, TX</b>	2018
Presentation: "Assessing User Needs and Model Accuracy of Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains", January 8, 2018	
<b>Climate Diagnostics and Prediction Workshop, Norman, OK</b>	2017
Presentation: "Developing Tailored Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains", October 24, 2017	
<b>American Association of Geographers annual meeting, Boston, MA</b>	2017
Presentation: "Developing Tailored Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains", April 9, 2017	
<b>National Climate Science Center Early Career Training, University of Massachusetts, Amherst, MA</b>	2016
Poster: "Needs for Seasonal Climate Forecast Products for Winter Wheat Producers in the South-Central U.S.", November 2, 2016	
<b>Graduate Climate Conference, Pack Forest, WA</b>	2016
Poster: "Needs for Seasonal Climate Forecast Products for Winter Wheat Producers in the South-Central U.S.", October 29, 2016	
<b>Conference of the Southwest Division of the American Association of Geographers, Denton, TX</b>	2016
Presentation: "Needs for Seasonal Climate Forecast Products for Winter Wheat Producers in the Southern Great Plains", October 21, 2016	
<b>NSF EPSCoR Site Visit, Stillwater, OK</b>	2016
Poster: "Improving Seasonal Climate Forecasts for Winter Wheat Producers in the South-Central U.S.", September 21, 2016	
<b>Oklahoma EPSCoR annual state conference, Norman, OK</b>	2015
Poster: "Improving Seasonal Climate Forecasts for Winter Wheat Producers in the South-Central U.S.", December 3, 2015	
<b>GIS Day, University of Oklahoma, Norman, OK</b>	2015
Poster: "Improving Seasonal Climate Forecasts for Winter Wheat Farmers in the South-Central U.S.", November 17, 2015	
<b>Conference of the Southwest Division of the American Association of Geographers, San Antonio, TX</b>	2015
Poster: "Improving Seasonal Climate Forecasts for Oklahoma Winter Wheat Farmers", November 6, 2015	
<b>Annual meeting of the Society of Environmental Journalists, Norman, OK</b>	2015
Poster: "Improving Seasonal Climate Forecasts for Winter Wheat Farmers in the South-Central U.S.", October 7, 2015 (3 <sup>rd</sup> prize poster competition)	
<b>Annual Climate Predictions Applications Science Workshop, Las Cruces, NM</b>	2015
Poster: "Tailoring Long-Term Climate Forecasts for Agricultural Producers in Oklahoma — Proposed Dissertation Research", March 24, 2015	
<b>South Central Climate Science Center Early Career Workshop, Norman, OK</b>	2014
3-minute speed talk: "Tailoring Long-Term Climate Forecasts for Agricultural Producers in Oklahoma", June 16, 2014	

**Drought Symposium, Lincoln, NE**

2014

Poster: "Improving Seasonal Climate Forecasts to Help Manage Future Droughts — Proposed Dissertation Research", April 2, 2014

**Graduate Climate Conference, Woods Hole, MA**

2013

Poster: "Improving Seasonal Climate Projections to Help Agricultural Producers Adapt to Climate Variability - Proposed Dissertation Research", November 1, 2013

**Conference of the Southwest Division of the American Association of Geographers, Nacogdoches, TX**

2013

Poster: "Improving Seasonal Climate Projections to Help Agricultural Producers Adapt to Climate Variability — Proposed Dissertation Research", October 25, 2013

**PROFESSIONAL MEMBERSHIPS**

Society for Range Management (SRM)

Since 2019

American Meteorological Society (AMS)

Since 2013