



TEXAS TECH UNIVERSITY

## Climate Science Center™

CSC Researchers Present at 20<sup>th</sup> ICB

TTU Climate Science Center researchers presented at the International Society of Biometeorology Conference in Cleveland, Ohio.

The International Society of Biometeorology (ISB) held the 20th International Congress of Biometeorology (ICB) Sept. 28 through Oct. 2 in Cleveland, Ohio. Two of the Texas Tech Climate Science Center's researchers, Dr. Jennifer Vanos and Daniel Vecellio both made presentations at this year's ICB.

Dr. Vanos' presentation was titled "Heat-Mortality Demographic Sensitivities in Los Angeles County and Potential Climate Change Impacts." Los Angeles County is expected to experience increasing frequency and severity of excessively hot days. Dr. Vanos' research is examining how these different types of "oppressive" air masses responsible for these heat events are correlated with mortality to develop historical algorithms that will allow us to better understand the effects that these different types of air masses will have on human health.

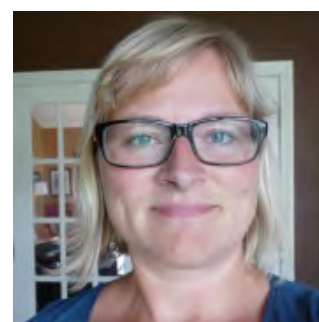
Dan Vecellio's presentation was titled "Determining Synoptic Air

Mass Modifications for Advanced Health-Effect Preparedness." Dan's research examines how the temperature and moisture content of air masses are modified when in motion. Research has shown that specific types of air masses can be harmful to human health depending on location. The objective is to create a model that can process meteorological variables by examining the changes in these air masses from place to place and comparing those findings to the effects on human health to better predict how these air masses will affect populations.

Dr. Vanos has also been elected the Chairwoman for the ISB Students and New Professionals Group. Accordingly, she gave updates on progress within the group since the last ICB three years ago, as well as the overall experience for the group at this year's workshop.

The ICB convenes every three years at locations around the world and serves as a major catalyst for the advancement of biometeorological research.

More info: <http://goo.gl/NCJ13l>

**Dr. Anne Stoner**

Dr. Stoner has a B.S. in Geology from Aarhus University, Denmark, and an M.S. and Ph.D. in Atmospheric Sciences from the University of Illinois. She began as a postdoc at Texas Tech with Dr. Hayhoe in 2011 and has since been working on projects involving statistical downscaling using the Asynchronous Regional Regression Model (ARRM) that she and Dr. Hayhoe built together while Dr. Stoner was working on her Ph.D. Recently Dr. Stoner was awarded a NSF-SEES postdoc fellowship working with the University of New Hampshire and the ICNet to develop models that can solidify an understanding of the effects of climate change on infrastructure. The goal is to increase communication between climate scientists and infrastructure engineers. Dr. Stoner is originally from Denmark, and still visits her family there often.

**Featured Publication:** Vanos, Jennifer K., Hebborn, Christopher, Cakmak, Sabit. "Risk assessment for cardiovascular and respiratory mortality due to air pollution and synoptic meteorology in 10 Canadian cities." *Environmental Pollution*: 185. (2014): 322-332. <http://goo.gl/rGttPB>

## October Climate Science Seminar Speakers



**Dr. Mark Stoll**

**History and Environmental Studies  
Texas Tech University**

**“The Historical Roots of Evangelical  
Denial of Global Warming”**

Dr. Stoll’s defines evangelicals as those who believe in doctrinal purity, conversion, and emotional warmth. Both Baptists and Charismatics are considered evangelicals. The evangelical belief is that once all have been converted, all social, economic, and environmental problems will be solved. Dr. Stoll believes this has created a divide between those who make prioritize conversion, any who converted to other, more “green” religions, and those who begin environmental movements within their church.



**Dr. Paxton Payton**

**USDA-ARS Cropping Systems Research  
Laboratory**

**“Weather Event Influences on  
Population Growth of Quail”**

Dr. Payton’s research laboratory looks at crop management specifically related to water, and what genetic and bio-technologies are available. The lab must examine targets; types of germ plasm diversity available; how -omics info can be used to enhance target traits in crop plants; and how to integrate/scale up to systems-level approaches for abiotic stress when it isn’t apparent what factors are affecting stress. The future for Dr. Payton’s lab is about identifying, quantifying, and managing stress in food crops.



**Dr. Venki Uddameri**

**Civil and Environmental Engineering  
Texas Tech University**

**“A Tale of Two Aquifers in Texas”**

Dr. Uddameri’s research specifically examines the effects of drought on groundwater resources. Dr. Uddameri has found that our groundwater usage does go down during drought, but we are more heavily. Dr. Uddameri also looked at Edwards Aquifer (Karst), and the Ogallala Aquifer (Clastic) water level data, and has found that the type of aquifer significantly affects the drought “signatures” in water level data, and makes it harder to monitor water levels. This demonstrates the need for high resolution monitoring data taken over longer periods of time.

### Coming up on November 4th:

**Jennifer Moore-Kucera** – “Soil Microbes as Key Players in Climate Change”

**Patricia Solis** – “Mapping as a Collaboration Process for Interdisciplinary Teams in Climate Change Research and Education”

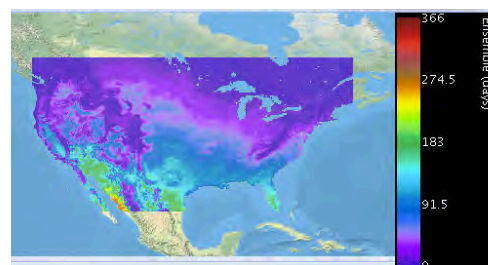
**Cristina Bradatan** – “Drought and Conflict in Three Settings in Texas”

### Other highlights from this month:

- Cody Griffin and Alix Godar won “Best Student Poster” at the Oklahoma Ornithological Society Meeting. Poster titled “Does Weather Influence Lesser Prairie-Chicken Demographic Parameters Disproportionately in the Sand Shinnery Oak Prairie Compared to the Sand Sagebrush Prairie?”
- Dr. Vanos is involved in the Avenue J. revitalization project in downtown Lubbock set to take place Oct. 20 – Nov. 7<sup>th</sup>. Pictures and details available next month!
- Dr Hayhoe was named to the Top 100 Leading Global Thinkers Foreign Policy List
- Dr. Vanos participated in the 2014 Texas Tribune Fest Environment track, and spoke on the “Texas vs. the EPA” panel at the end of September

### CSC Featured Dataset

The high-resolution climate projections generated by the TTU CSC are now online as part of the USGS GeoData Portal. They can be used to make interactive climate maps of a host of variables (shown: days per year with maximum temperatures above 90°F)  
<http://goo.gl/OF49Ep>



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