



## SNR MONTHLY READER

NATURAL RESOURCES ALUMNI ASSOCIATION PRESENTS  
- THE 10TH ANNUAL -  
**TRIVIA IN THE WILD?**

**\$20**  
EACH PLAYER

**\$160**  
PER TEAM

**FRIDAY APRIL 3, 2020 - DOORS OPEN AT 6 PM**  
**SINGLE PLAYERS OR TEAMS (8 PEOPLE PER TEAM)**  
FOR RESERVATIONS CALL Laura Hertel : (573)882-1730 EMAIL: [hertell@missouri.edu](mailto:hertell@missouri.edu)  
Knights of Columbus Hall, Columbia, MO Benefits go to the MU Natural Resources Alumni Scholarship Fund

**Trivia in the Wild** will celebrate its 10th anniversary in 2020 (<https://cafnr.missouri.edu/2019/12/wild-about-trivia/>) with a new goal of raising \$10,000. That amount will allow the group to endow the **Laura J. Hertel School of Natural Resources Alumni Scholarship**, which goes to incoming SNR students.

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## HONORS and AWARDS



**SNR**  
**DIRECTOR'S**  
**HONOR LIST**  
Fall 2019  
Semester GPA of 3.75 or Greater

Adrian E Aguilar	Noah M Freemon	Joshua A Pearl
Ben Albertson	Isabelle J Fricano	Cole H Peine
Clint Alexander	Elias B Gaffney	Robert Peterson
Caitlyn Allen	Ryan C Galbierz	Tyler M Peterson
Parker D Anderson	Owen Gallagher	Chase M Phillips
Brock D Andreasen	Tabitha G Gatts	Drew W Phillips
Austin J Andrews	Matthew L Gibbs	Natalie R Radt
Tyler A Badie	Paul D Gomez	Lily C Ramsay
Troy G Baker	Julian P Gray	Maximillian X Richardson
Avanu N Barber	Erik M Griffen	Christian D Ricketts
Renae M Beasley	Armana R Gusewelle	Samuel B Ritter
Catlin M Bender	Tyler M Heaton	Brooke J Robbins
Daria A Black	Sarah J Higgins	Anna R Roberts
Nathaniel H Bock	Ethan C Hodges	Danielle M Rotert
Dan Breeding	Zoey E Hrabovsky	Luke Rubin
Alexander J Bross	Kayla L Huesgen	Emma F Schillinger
Thomas M Broyles	Jenny Hummel	Cade R Schmitz
Elias J Bunting	Kendall E Ivey	Chris Schrader
Noah L Cadwell	Isaac D Jones	Elizabeth N Schrader
Alexis R Chandler	Maddie Jones	Lauren M Schroer
Sky Ciccolini	Alyssa G Kaltenbronn	Scott G Schwartz
Henry P Clark	Jessica Kenville	Peter J Smith
Mikey Clever	Kesley A Kobielus	Dylan F Stark
Riley S Cole	Katherine G Larson	Griffin P Stark
Justin M Colley	Clayton M Lieberman	Patrick J Teehan
Galloway C Comparan	Ethan P Luebbering	Justin W Thoeni
Evan P Day	Hannah E Mayse	Hannah E Truitt
Mick Deaver	Madeleine M McCann	Grace E Tvetene
Denton C Diggins	Daniel P McDonald	Nicholas G Tyree
Matt Dmochowski	Jackson H McSherry	Jacob M Vanderpool
Hayden M Dorrell	Deanna M Meyer	Emily VanUnnik
Luke G Eaton	Josh Meyer	Nicholas C Vignati
Josh Eitel	Shae A Meyer	Kyle Watkinson
Jacob M Esser	Victoria P Moore	Olivia Wilhite
Dylan L Evins	Lauren Mott	Benton L Winfrey
Erica M Eyerly	Seeger M Nelson	Noah A Wood
Moses B Farr	Libby J Orr	Jacob A Worsham
Summer J Fisher	Richard R Parks	

Must be academically full time, and grades completed by the end of the semester.

## PRESENTATIONS/PUBLICATIONS/RESEARCH HIGHLIGHTS

Hu, C., T.J. Griffis, J.M. Baker, **J.D. Wood**, D.B. Millet, Z. Yu, X. Lee. 2020. Modeling the sources and transport processes during extreme ammonia episodes in the U.S. Corn Belt, *Journal of Geophysical Research: Atmospheres*, 125:e2019JD031207, doi: [10.1029/2019JD031207](https://doi.org/10.1029/2019JD031207).

Yu, X., D.B. Millet, K.C. Wells, T.J. Griffis, X. Chen, J.M. Baker, S.A. Conley, M.L. Smith, A. Ghvakharia, E.A. Kort, G. Plant, **J.D. Wood**. 2020. Top-down constraints on methane point source emissions from animal agriculture and waste based on new airborne measurements in the US Upper Midwest, *Journal of Geophysical Research: Biogeosciences*, 125:e2019JG005429, doi: [10.1029/2019JG005429](https://doi.org/10.1029/2019JG005429).

**SNR Professors in Innovations in Agriculture** (stories and photographs by *Columbia Missourian* reporters and photojournalists, January 23, 2020) featuring **Pat Guinan** and **Neil Fox**.

Weather stations are providing the latest technology to improve farm life:

[https://www.columbiamissourian.com/innovations/agriculture/weather-stations-are-providing-the-latest-technology-to-improve-farm/article\\_57fecb9a-ffd5-11e9-8f21-0bf50c0076de.html](https://www.columbiamissourian.com/innovations/agriculture/weather-stations-are-providing-the-latest-technology-to-improve-farm/article_57fecb9a-ffd5-11e9-8f21-0bf50c0076de.html)

MU professor making rainfall prediction more accurate in Missouri:

[https://www.columbiamissourian.com/innovations/agriculture/mu-professor-making-rainfall-prediction-more-accurate-in-missouri/article\\_3543581a-fceb-11e9-9663-cbb2e9cced19.html](https://www.columbiamissourian.com/innovations/agriculture/mu-professor-making-rainfall-prediction-more-accurate-in-missouri/article_3543581a-fceb-11e9-9663-cbb2e9cced19.html)

**SNR Atmospheric Science Students: Science into Service:** When winter weather occurs, only a few degrees difference over distances as small as 50 km or less can mean the difference between ordinary rain, or dangerous conditions such as heavy snow, sleet, or freezing rain. In order to make a forecast for such events it is good to know the atmospheric temperature and moisture conditions between the clouds that generate precipitation and the ground. The National Weather Service launches weather balloons twice a day at approximately 120 locations across the USA. However, the nearest weather stations to mid-Missouri that launch balloons are located in Topeka, KS, Springfield, MO, or Lincoln, IL. Weather models ingest this data and can give us some idea what is happening here in the middle of Missouri. Given the fact that small differences in the temperature of atmosphere over short distances can be crucial to rain or snowfall, it is no wonder forecasting winter weather in Missouri is so difficult.





**Dr. Neil Fox** and his students **Chris Steward** and **Jon Bongard** are studying how temperature and moisture conditions change in the lower part of the atmosphere preceding a rain event. The focus of this work is to examine how dry layers impact the onset of precipitation events. Steward needs to collect data by launching weather balloons to study these events. In wintery conditions, however, a layer of warm air above the surface can have a dramatic influence on whether or not rain or snow falls. Such was the situation with a messy rain-snow event occurring from Wednesday 22 January

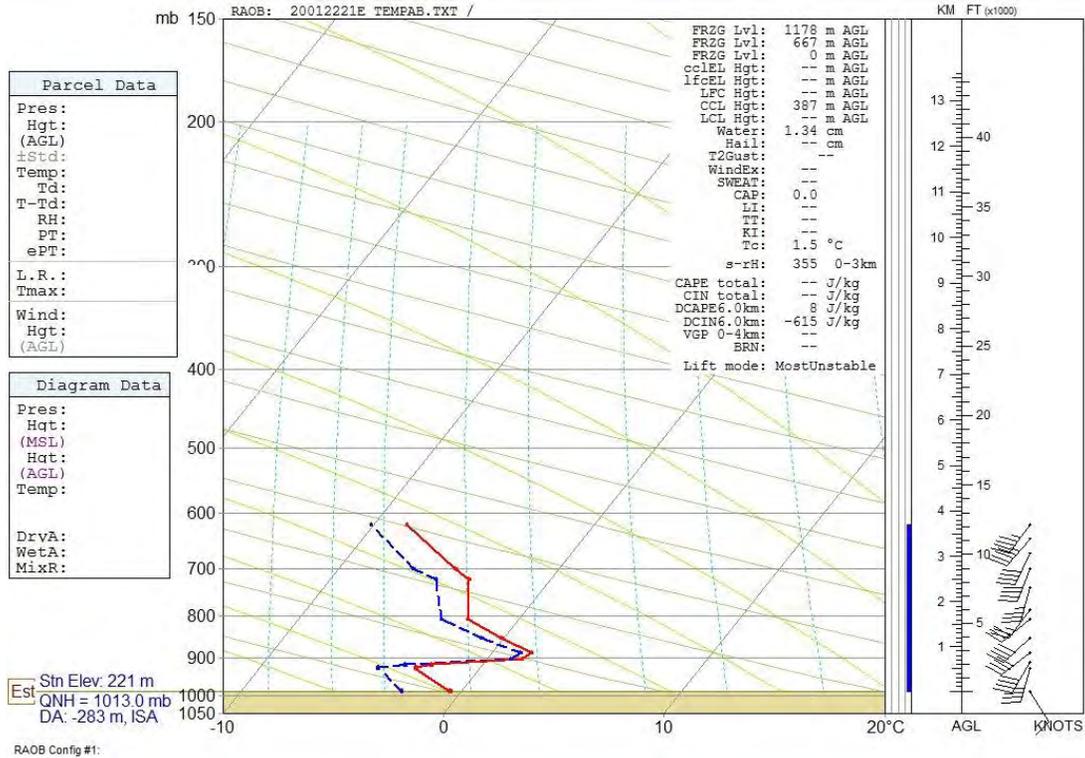
to Friday 24 January. In the days leading up to this event, weather models and forecasts have not been confident in the type of precipitation that will fall and how much, if any, snow would accumulate.

SNR Atmospheric Science MS student Chris Steward gathered a few student volunteers like **Brendan Heaven** and **Evan Travis** to help him launch three weather balloons from the Atmospheric Science South Farm station during the morning and early afternoon on Wednesday 22 January 2020. The information gained from these balloon launches was valuable for weather professionals anticipating a changeover from rain to snow across mid-Missouri and beyond. When Steward launches these weather balloons, he shares this with National Weather Service offices and broadcast meteorologists across the region. The meteorologists use this data in order to determine how well the models are treating the current situation and whether or not the local forecasts need to be refined.

Steward has led balloon launches in order to gather data for his research, but also during times when the weather could turn deadly. The best example is when he and Jon Bongard led a group of students out to South Farm to launch weather balloons on the fateful day of 22 May 2019. While the National Severe Storms Center knew the day would be rough, information Steward and the SNR students shared contributed to the issuance of a tornado watch and the realization that mid-Missouri would get strong storms later that day.



SNR faculty and students, like Dr. Neil Fox, Chris Steward, and Jon Bongard are not only producing ground breaking research that will help improve how we look at weather data, but Chris, Jon, and his fellow students are sharing data in real time with weather professionals. This data will improve weather forecasts and weather warnings that will help enhance public safety. (Submitted by **Tony Lupo.**)



A sample of the weather information that is gathered from the weather balloon launches. The red line is temperature (°C) and the blue dashed line is dew point (°C). The y-axis is pressure and the x-axis is temperature. Wind direction (degrees) and speed (kts) are included on the right axis.

## EVENTS/MEETINGS/ANNOUNCEMENTS





# Save the Date!

## Friday, March 20, 2020

Leclaire Room at  
Lewis and Clark Community College

NO Nelson Campus, 600 Troy Road  
Edwardsville, IL 62025

### Native by Design: Nature at your Doorstep

7:30 a.m. – 12:00 p.m.

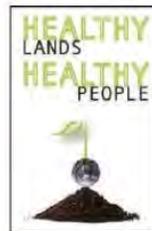
Cost: \$30 – includes breakfast

CEUs available for Landscape Architects and IL MGs/MNs

#### Agenda:

- 7:30 am – Registration & Breakfast, visit exhibitors
- 8:00 am – Keynote Presentation: Kelly Norris
- 9:00 am – Break
- 9:15 am – Keynote Presentation: Dr. Sarah Lovell
- 10:15 am – Break
- 10:30 am – Panel Discussion: *A panel of native plant enthusiasts, experts, and backyard gardeners will share their experiences in this field and take questions from the audience on how they can bring nature to their doorstep.*
- 12:00 pm – Workshop ends

Presented by the Grow Native!  
Southwestern Illinois Event Committee:



For more information, call 888.843.6739 or  
email [grownative@moprairie.org](mailto:grownative@moprairie.org)

*Grow Native! is a program of the Missouri Prairie Foundation*

Featuring keynote  
presentations by  
Kelly Norris and  
Dr. Sarah Lovell



Kelly D. Norris is an award-winning author and plantsman from Iowa and the director of horticulture and education at the Greater Des Moines Botanical Garden, a revitalized public garden in Des Moines, Iowa. Throughout his career, his work has been featured in *The New York Times*, *Organic Gardening*, *Better Homes and Gardens*, *Martha Stewart Living*, *Garden Design* and in numerous local and regional media appearances.



Dr. Sarah Lovell serves as H.E. Garrett Endowed Chair Professor and Director for the Center for Agroforestry at University of Missouri. Her interdisciplinary background include an MS and PhD in Agronomy followed by a Master in Landscape Architecture (MLA). Dr. Lovell's research program has emphasized whole-farm planning, agroforestry, and urban agriculture.

## SPOTLIGHT ON SNR FACULTY, STAFF AND STUDENTS

**MU gets into maple syrup making:** MU students and faculty will have chances to participate in maple syrup production in February. MU's maple syrup producing program, run by the College of Agriculture, Food and Natural Resources' Baskett Wildlife Research and Education Center near Ashland, allows students to make syrup. "It's not a course but more of an extracurricular learning opportunity," said **Benjamin Knapp**, program leader and an MU natural resources professor. Students can earn internship credit, he added.

[https://www.columbiainquirer.com/news/local/high-season-for-missouri-maple-syrup-makers/article\\_36a126f6-3797-11ea-af75-37a074285e60.html?utm\\_source=Email%20Newsletters&utm\\_campaign=Daily%20Edition&utm\\_medium=Email&utm\\_content=headline](https://www.columbiainquirer.com/news/local/high-season-for-missouri-maple-syrup-makers/article_36a126f6-3797-11ea-af75-37a074285e60.html?utm_source=Email%20Newsletters&utm_campaign=Daily%20Edition&utm_medium=Email&utm_content=headline)

**Nikko turns to nature to find peace with spotlight:** When it comes to a prime location to study in Columbia, **Reed Nikko** knows just the place. The Missouri senior opts for a quiet spot in Capen Park, about a five-minute drive from Mizzou Arena. "I'll bring my hammock out there and that's where I'll do my homework," the 6-foot-10, 240-pound forward said. That tradition started about two years ago when Nikko began taking energy nature courses as part of being a fisheries and wildlife major.



<https://www.columbiatribune.com/sports/20200110/nikko-turns-to-nature-to-find-peace-with-spotlight>



SNR grad student **Jacob Gaskill** teaching limnology to Rock Bridge High School students.

<https://northcentralwater.org/youth-help-answer-important-water-quality-research-questions-through-the-reservoir-observer-student-scientists-program/>



The *SNR Monthly Reader* will be distributed electronically the last working day of the month (except during breaks). Please send announcements to Cindy Greenwood, Editor ([greenwoodci@missouri.edu](mailto:greenwoodci@missouri.edu)). If you would like to unsubscribe from the *SNR Monthly Reader*, please email Cindy.