



COLLEGE OF AGRICULTURE AND LIFE SCIENCES
SCHOOL OF PLANT AND
ENVIRONMENTAL SCIENCES
VIRGINIA TECH.

E-NEWS



Announcements/News:

Important Upcoming Dates:

Faculty Meeting—April 9, 3:00-4:15 pm

Zoom Link: <https://virginiatech.zoom.us/j/97740997903>

Staff Meeting—2nd Monday of the month, 12:00 pm -1:00 pm via Zoom (see email)

Donut Tuesday—TBA, 8:30 am at 311 Latham

Graduate Student Lunch with Director -TBA, 12:00 pm-1:00 pm at 311 Latham

SPES Social—TBA, 4:00 pm - 6:30 pm via Zoom (see email)

HORTICULTURE CLUB SPRING PLANT SALE ONLINE

springplantsaleatvt.company.site

ORDER DATES

March 22-April 5

PICK UP DATES

APRIL 22, 23, 24



Faculty Spotlight:



John Fike, Professor. John is actively engaged with industry through board memberships - Association for Temperate Agroforestry; Virginia Forage and Grassland Council - and as president of the S1084 hemp multi-state working group. His research efforts continue with forages, agroforestry and hemp production and these are largely bound to the work of his students. He currently has 4 PHD students and an OMALS MS student working across these diverse research arenas. Sanjok Poudel, from Nepal, is supported in part by a SARE graduate student grant and is conducting research on traditional and silvopastoral production systems. Sanjok is measuring animal behavioral and stress responses for 1) cattle on toxic and non-toxic fescue, 2) cattle supplemented with "anti toxin" feed ingredients, and 3) for sheep managed in open pastures or silvopastures. His will be one of only a few studies investigating the relationship between cortisol levels and consumption of toxic fescue, and he is taking the novel approach of measuring the cortisol in hair. This is more reflective of long-term stress and less variable than plasma cortisol. His novel use of thermographic imagery is showing that cattle grazing non-toxic novel fescue or fed tannins (which bind toxins) have uniformly greater ear and fetlock temperatures, indicating better blood circulation with these treatments. Aleks Halili, a Pratt Senior Scholarship awardee, assisted Sanjok with these studies during summer 2020. Swarup Podder, from Bangladesh, is supported on a John Lee Pratt scholarship and is researching hemp production for grain, forage and fiber. These efforts include comparison of till vs no-till systems, seed protectants and coatings, seeding rate effects, and variety evaluation (as part of the S1084 efforts). When evaluated as a potential forage crop, initial data suggest hemp biomass has rather high protein concentrations - comparable to alfalfa - but it remains to be seen how suitable the crop (or its byproducts from processing) will be for use as a feed resource for livestock. Future work for Swarup, in collaboration with Song Li and Sanaz Shafian, will test the use of drones to evaluate hemp development. Thomas Cowan, also a Pratt Senior Scholarship awardee, assisted Swarup with some of these research efforts, and with significant help from Lacey Stanford and Aleks Halili, Thomas also managed and collected data from a large-scale national essential oil hemp trial led by Oregon State University. Kristine Ely, also a Pratt scholarship recipient, is just beginning her work exploring the value of hemp grain in horse diets. This may have particular promise as an anti-inflammatory functional food given the high levels of alpha- and gamma linolenic acids. Pabitra Aryal is working to develop new production techniques for ramps, a spring ephemeral leek native to the Appalachian region. Ramps were culturally significant to indigenous peoples and settlers with ties to the region and have potential medicinal value. However, they are subject to overharvest from wild populations and some subspecies are threatened. Ramps could lend themselves well to forest farming practices where they are grown intentionally under a forest canopy. Working with ramps has proven challenging as the seeds have two types of dormancy and the short growing window (about 3 months in spring) limits opportunity for study. In addition, Pabitra is working to improve existing site suitability models to expand the opportunity and potential success for ramps grown under forest farming management. OMALS student Lindsey Barbini is "commuting" from Alabama. Lindsey is interested in silvopastures and the producers who use silvopasture management. She currently is recruiting silvopasture practitioners from Alabama and surrounding states to develop a set of case studies on why and how these producers use silvopasture management. Other silvopasture work at the early stages is SARE-funded research with Leonie Jabobs (APSC) looking at bird production, behavior and health in silvopasture systems for poultry. In addition to these efforts, John has participated in a multi-state research effort in growing hemp for cannabinoids, and he is on the front end of work with colleagues developing standards and practices for agrophotovoltaic systems installed on pastures.

April 1, 2021



Faculty Spotlight:



Scott Douglas, Hahn Garden Director. Scott's recent activities involve designing and permitting several enhancements in the Hahn Horticulture Garden, including the installation of three kinetic wind sculptures and an upcoming seating area in the Meadow Garden. He is also working to finalize a Master Plan for the Garden, which will provide a long-term vision for the expansion and improvement of the Garden. In the class room, his residential landscape design class works with two local homeowners each semester to develop landscape and hardscape designs for their properties. This provides his students with engaging and hands-on experiential learning opportunities.

Graduate and Undergraduate Student Awards:

Winners of the poster and oral presentation at the SPES Symposium on March 5.

Undergraduate posters:

1st place: Mary Lipford, \$250

2nd place: Keely Beard, \$200

3rd place: Rose Nelson, \$100

Graduate Posters:

1st place, Gourav Sharma, \$300

2nd place, Jacob Maris, \$250

3rd place, Joshua Mott, \$200

Graduate Talk:

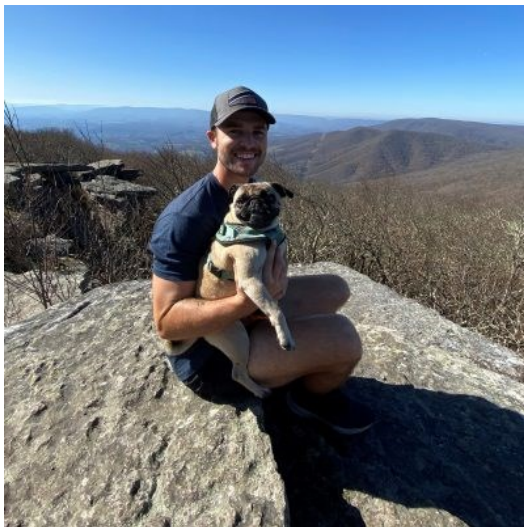
Jaclyn Fiola, \$300



Graduate Student Awards:

Gourav Sharma has won three awards:

- 1) 1st place in a short talk at TPS symposium, Feb 26th
- 2) 1st place in a poster session at SPES symposium, March 5th
- 3) 1st place in a lighting talk at Missouri University Plant research symposium, March 4th



Wykle Greene (PhD student advised by Flessner) placed 3rd in the Weed Science Society of America Annual Meeting's Graduate Student 3 Minute Thesis contest.



Cynthia Sias (PhD student advised by Flessner) won the 2021 Virginia Crop Production Association Graduate Scholarship.



Graduates:

Danyang Liu, Ph.D., Advisor: Jayesh Samtani. Danyang is currently exploring post doctoral/research positions in sustainable crop production. He earned his degree on March 5, 2021 with an early semester defense.

On-Campus Fun:

Barbara Leshyn's Floral Design class featured in the VT Daily Doodle page.





Publications:

Nerfa, L., Wilson, S.J., Reid, J.L. and Rhemtulla, J.M. 2021. Practitioner views on the determinants of tropical forest restoration longevity. *Restoration Ecology* 29: e13345. <https://doi.org/10.1111/rec.13345>.

Bardsley CA, Weller DL, Ingram DT, Chen Y, Oryang D, Rideout SL and Strawn LK (2021) Strain, Soil-Type, Irrigation Regimen, and Poultry Litter Influence *Salmonella* Survival and Die-off in Agricultural Soils. *Front. Microbiol.* 12:590303. doi: 10.3389/fmicb.2021.590303.

M. Luciana Rosso; Chao Shang; Qijian Song; Diana Escamilla; Jay Gillenwater and Bo Zhang. 2021. Development of breeder-friendly KASP markers to select low concentration of Kunitz trypsin inhibitor in soybean seeds. *Int. J. Mol. Sci.* 22, no. 5: 2675. <https://doi.org/10.3390/ijms22052675>.

Beard KM, Boling AWH, Bargmann BOR (2021) Protoplast isolation, transient transformation, and flow-cytometric analysis of reporter-gene activation in *Cannabis sativa* L. *Industrial Crops and Products* 164:113360. <https://doi.org/10.1016/j.indcrop.2021.113360>.

This work was coauthored with two VT undergrad RAs, Keely Beard (pictured left, senior, graduating 2021) and Audrey Boling (pictured right, graduated 2020).



Askew, M., Cahoon, C., York, A., Flessner, M., Langston, D., & Ferebee, J. (2021). Comparison of 2,4-D, dicamba and halauxifen-methyl alone or in combination with glyphosate for preplant weed control. *Weed Technology*, 35(1), 93-98. doi:10.1017/wet.2020.83.

Sharaf, Hazem., Thompson, Ashley A., Williams, Mark A., Peck, Gregory M., 2021. Compost applications increase bacterial community diversity in the apple rhizosphere. *Soil Science Society of America Journal*. <https://doi.org/10.1002/saj2.20251>.

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April 1, 2021