

## Virginia Tech Catawba Sustainability Center Funds Cooperative Research Grants

The Virginia Tech Catawba Sustainability Center (CSC) recently provided funding to University faculty to implement new projects on the Center's 378 acre farm located in the Catawba Valley. These \$5,000 grants were offered to strengthen cooperative research between Virginia Tech faculty and the CSC. From the proposals received, the CSC selected to fund five new projects.

One project will allow Professor Tom Ewing to work with a team of students to research and write a history of the first three decades of Catawba Sanatorium started in 1909. This research will contribute to Dr. Ewing's book that will emphasize how the regional location, natural environment, and trends in health policy in the early twentieth century converged to position Catawba at the forefront of the medical treatment of tuberculosis -- and how knowing this history can inform the research, engagement, and education priorities of CSC.



Another project proposed by Dan Swafford, Project Associate with State 4-H Office, will work to explore the possibilities of the use of hobby drones in agriculture by flying over crop plots at CSC to evaluate their conditions such as soil health, growth, pest and disease damage, and identification of plant stress due to environmental factors. Mr. Swafford will also involve local high school students, 4-H Agents, and High School Agriculture Education teachers into his project in order to give them "hands-on" exposure to this emerging technology.

Dr. Cully Hession, Professor of Biological Systems Engineers, was funded for two separate projects at CSC. The first will build off of his Stream Lab that is already on site at CSC. The Stream Lab constantly monitors Catawba Creek, and transmits water quality data readings to the main Blacksburg Campus every 15 minutes for 24 hours a day. Dr. Hession will add a camera to the monitoring station that will submit photos at the same rate data is transmitted. He will also construct a weather station at CSC that will inform water quality monitoring activities, and will also be invaluable for ongoing efforts related to agroforestry and wetland creation at CSC. Dr. Hession will also create education modules that will focus on data collected from Catawba Creek for use in classes at Virginia Tech as well as Roanoke College. Dr. Hession's second project will use UAV-based LiDAR system on a drone to develop detailed digital maps (topography and vegetation structure) of CSC for use in ongoing and future research, outreach, and education activities. Anyone working with CSC currently, or in the future, will have access to the maps for various geospatial applications, visualizations, and/or class projects.





For the fifth and final proposal, Dr. John Munsell with Forest Resources and Environmental Conservation at Virginia Tech will introduce a non-timber forest product plot at CSC that will involve the cultivation medicinal and edible plants, as well as mushrooms. Dr. Munsell will cultivate shiitake and maitake mushrooms on hardwood logs, as well as test the establishment of goldenseal and ramps on soil with and without amendments under a forest canopy. All production and test sites will be used for education and outreach programs.

The CSC will receive final reports from each of the recipients of the cooperative research grants at the project's conclusion to determine the project's impact at CSC, as well as their effect on outreach and engagement with the region, county, and Catawba Community.