

## **Partnership with New River Valley Commerce Park proves invaluable research opportunity for undergraduates**

Students enrolled in two Artis College of Science and Technology courses conducted impactful undergraduate research at the New River Valley Commerce Park this year.

Department of Physics professor Rhett Herman's Geophysics class and Department of Anthropological Sciences professor Jake Fox's Archeological Field School spent several weeks at the Park, located in Pulaski County, Virginia, during the spring and summer semesters to gather data that Park administrators will use as an integral tool to assess the 1,000-acre site and attract potential tenants.

The New River Valley Commerce Park opened in 2002 and is owned by Virginia's First Regional Industrial Facility Authority (VFRIFA), which is comprised of 11 member localities: the Counties of Bland, Craig, Giles, Montgomery, Pulaski, and Roanoke; Cities of Radford and Roanoke; and Towns of Dublin, Pearisburg, and Pulaski. These localities have been critical to the advancement of the park, which acquired its first anchor, Red Sun Farms, LLC, in 2014.

"Having Radford University students use the New River Valley Commerce Park as a learning laboratory not only provides students with a unique learning environment, but the data collected helps inform development decisions of the Park," said Mary Biggs, VFRIFA Board chair. "We also believe that exposing students to the greater community will encourage them to stay here after graduation and use their knowledge and talents to help grow the greater New River Valley."

Radford University's partnership with the Park blossomed in the spring of 2017 through Herman's connection with Christy Straight, senior planner for the New River Valley Regional Commission, and VFRIFA Executive Director Danny Wilson. Together, they agreed that Herman's PHYS/GEOL 406 – Geophysics class would survey a parcel of land at the Park, mapped as Lot C.

This spring, Herman contacted Wilson and Straight again to conduct another survey. Wilson and Straight suggested a 13-acre site mapped as Lot B, which is targeted at a specific high-tech client. The Geophysics students used sophisticated geophysical methods, equipment, and software to conduct a professional site survey to assess the depth, slope, and solidity of the underlying bedrock, critical knowledge for anyone wishing to build a large structure on the lot. The methods employed included two electrical resistivity arrays, which yielded a CAT-scan-like cross section showing the electrical properties of the subsurface materials to depths approaching 20 meters. They also used a seismic array, which can detect depths to boundaries between the subsurface components. All of these methods yielded a clear picture of the subsurface showing the overlying soil, the fractured rock below that, and the solid bedrock beneath everything, all without having to drill into the ground.

“My students were excited about doing such real, applied survey work since they get to put such experience on their resumes,” Herman said. “Most undergraduates don’t get to use the expensive equipment, but our students get their hands on everything. Their final products from this work will be professional-level presentations about the methods and results of this major field survey - something tangible they will use in their job or graduate school applications.”

On several blustery Saturday mornings, Herman’s students traveled to the Park, dressed in layers and equipped with the eagerness and patience it takes to conduct such high-level research. The equipment they used, including an OhmMapper that Herman and student-researchers also use on their bi-annual study abroad trip to Alaska, helped gauge the different types of bedrock and layers of sediment and soil underground.

“How deep until we hit rock, and what kind do you think it might be?”

“Could this parcel support a building?”

“If so, what size?”

“What side could a parking lot sit on?”

“We were asking all of these questions throughout the onsite process and analyzing data back in the classroom to answer them,” Herman explained. “These are the same types of questions that potential tenants will be asking Park administrators, and with the research we conducted, both parties will be better informed.”

Months later, under the hot summer sun, three students in Radford University’s Archeological Field School excavated a well-preserved historic site at the Park.

Led by Fox, the field school is offered every few years at different locations across the region. It is a more affordable option, for many students, than traveling outside of the state to participate in a field school, which is required of all students who pursue archeology careers, Fox said.

For three weeks, the students investigated an intact brick wall on the property, described from a family nearby to have once been a barn.

“We only had one preserved wall, which was not typical of a barn. So, our goal was to determine if it was a barn or not and rule out the possibility that it was part of a house,” Fox explained.

Students first figured out a field strategy, then began excavating the site, recording context, bagging and tagging artifacts, recovering data and mapping.

“This was intensive, hands-on experience,” Fox said. “They were out on the site all day, learning and practicing the actual application of these methods.”

Fox’s students are now working on a final report to provide to Park administrators.

“It was a great opportunity for our students,” Fox said. “With this kind of field experience, we can do lots of collaboration and interdisciplinary work. We plan to do more work out there. It’s a win for everybody.”

Herman, too, agreed that the partnership with the New River Valley Commerce Park has been invaluable and will continue for years to come as both the Park and the University grow and evolve to support the New River Valley economy, and beyond.

“The VFRIFA Board of Directors values our partnership with Radford University and is excited to see it continue to grow in the coming years,” Biggs said.

#### **More about the New River Valley Commerce Park:**

*The NRV Commerce Park has received certifications as an AEP Quality Site- Large Park and as a Tier 4 Virginia Business Ready Site. With all utility infrastructure in place, an industrial access road, an approved 140-acre solar farm, and over a dozen sites to choose from, the NRV Commerce Park is development ready and can accommodate numerous new companies. In addition, the Park is immediately adjacent to the New River Valley Airport, making it an ideal location for companies that have air freight needs, corporate jets, or aircraft manufacturers. Additional information about the NRV Commerce Park can be found at [www.nrvcommercepark.com](http://www.nrvcommercepark.com).*

#### **More about Radford University:**

*Radford University is a comprehensive public university of more than 9,400 students that has received national recognition for many of its undergraduate and graduate academic programs, as well as its sustainability initiatives. Radford University serves the Commonwealth of Virginia and the nation through a wide range of academic, cultural, human service and research programs. Well known for its strong faculty/student bonds, innovative use of technology in the learning environment and vibrant student life on a beautiful 204-acre American classical campus, Radford University offers students many opportunities to get involved and succeed in and out of the classroom. The University offers 76 bachelor’s degree programs in 47 disciplines, three associate degrees, and six certificates at the undergraduate level; 27 master’s programs in 22 disciplines and six doctoral programs at the graduate level; and 13 post-baccalaureate certificates and one post-master’s certificate. A Division I member of the NCAA and Big South Athletic Conference, Radford University competes in 16 men’s and women’s varsity athletics. With over 300 clubs and organizations, Radford University offers many opportunities for student engagement, leadership development and community service. Learn more at [www.radford.edu](http://www.radford.edu).*