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Alumna Puts Gardner-Webb Science Degree to Work

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Office of University
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GWU Provided Foundation for Carrie Long's ('11) Doctoral Research

BOILING SPRINGS, N.C.—Workers often encounter a host of chemicals while exploring mining, hydraulic fracturing and other occupational sites across the country. In the historically mining-rich state of West Virginia, Gardner-Webb alumna Carrie Long is studying the impacts of some of those substances on the human immune system, in hopes of discovering information that will lead to health improvements for workers in a variety of professional fields.

Long, a Ph.D. candidate at West Virginia University (Morgantown, W.Va.), is performing research in labs connected to both WVU and the neighboring Centers for Disease Control's (CDC) National Institute for Occupational Safety and Health facility. "Our lab looks at chemicals likely to be used or currently in use in a workplace setting and we determine if exposure to these substances impacts the immune system and, if so, how and why," Long explained. "The opportunity to be involved in research that impacts workers in a positive way at such a storied institution has been a true blessing that would not have been possible without my undergraduate experience at Gardner-Webb."

Already fueled at an early age with a passion for science by her parents' careers as physicians, Long studied biology at Gardner-Webb. "I got into the major, every professor was knowledgeable and caring, and I loved it," she shared. "All of my professors had their own research experiences that I could learn from, which gave me realistic expectations for my own Ph.D. studies."

After graduating from Gardner-Webb in 2011, Long directly entered a doctorate program at WVU, where her parents had both previously completed medical residencies. The University's history of collaboration with the CDC offers her a chance to learn from professors and government scientists, both of whom comprise her Ph.D. committee. With plans to complete her doctorate program in 2016, she is now considering a postdoctoral fellowship or medical school.

"If I do the traditional postdoc then I would be getting back into microbial pathogenesis, which is the topic on which I did my honors thesis at Gardner-Webb," she said. "I want to apply the immunology skills and expertise that I have gained during my graduate career to the field of bacterial or viral infection and pathogenesis."

In addition to advancing her own education in West Virginia, Long has noted a stronger emphasis on science, technology, engineering and math (STEM) programs for students in the state than what she remembers being offered as a child growing up in a small town in western North Carolina. She believes more resources are needed to show students the array of opportunities, like her own, that science offers.

“As a scientist, I am constantly reminded of the complexity and beauty of God’s creation,” Long expounded. “At the end of the day, no matter how intricate and elegant the experiment you have designed and performed, the subject you study is infinitely more complex. This is humbling, yet empowering. For me, the feelings of discovery and reward are unmatched in any other pursuit.”

Located in Boiling Springs, N.C., Gardner-Webb University offers a comprehensive academic experience that introduces students to the diverse world of ideas and to the people who think them, preparing them for professional success and for productive citizenship.