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Grad Student & Professor featured in GS Foundation Annual Report

November 19, 2014

These stories can be found in the [Georgia Southern University Foundation 2014 Annual Report](#)



ASTRONOMICAL INVESTMENT

Ryan Fortenberry, Ph.D., Assistant Professor of Physical Chemistry and W. James Morgan ('13) M.S. in Applied Physical Science Student

Vision, imagination, inspiration. The quest for answers in this unknown, searching for clues about the Universe's composition takes patience, powerful equipment and minds trained for the challenge. After just 14 months, Georgia Southern University Assistant Professor of Physical Chemistry Ryan Fortenberry, Ph.D., has discovered more than just noble gases among intergalactic stars, but a high-level, high-performing University that has unique students with unique experiences to share. "I have found an inspired student body here at Georgia Southern," says Fortenberry. "I believe that everything I do

as a research scientist, whether I'm conducting research or writing grants or presenting papers at conferences, should do to show people that Georgia Southern is an excellent University. We're not some 'fill-in-the-blank' plan. If you didn't get into UGA (University of Georgia) or Georgia Tech, I feel it's my responsibility to let everyone know that as if those were the talented students we have right here in Statesboro."

One of those students is W. James Morgan ('13), a former chemistry major at Georgia Southern who is now enrolled in the Master of Science in Applied Physical Science program with an emphasis in pharmaceutical science. During Morgan's

pursuit of his undergraduate degree, he worked alongside Dr. Fortenberry to research interstellar molecules with regards to astronomy and astrochemistry, or, as Fortenberry describes it, "the search for what molecules exist in space." Fortenberry says much of what he and his students do is examine what environments occur throughout the Universe and how they react with regards to what we see and experience here on earth. Simply put, Fortenberry says what he does is "use computers to simulate the way that molecules interact with light and space."

Fortenberry equates it to a single crime. He says if a criminal breaks into a house and there are fingerprints left behind, then that's a great clue to help law enforcement solve that crime. But if you don't have anything to compare the fingerprints to then it doesn't do you a lot of good. "My research is working on trying to generate these astronomical fingerprints through spectra," says Fortenberry. "James was able to do this in relation to the collision of argon cations with hydrogen atoms." Their joint effort produced a paper that was accepted for publication by the prestigious journal *Spectrochimica Acta Part A*, along with another student, sophomore Riley Travis, who has started work on the project the beginning of June. They finished their research in mid-July and the paper was accepted in August. "In just three months we went from an idea with only the students and resources here at Georgia Southern to publication of our findings," says Fortenberry. "I really feel like we were able to contribute to the larger body of science. I was ecstatic."

Fortenberry admits he's been blessed to have some of the brightest young people working on "this stuff with me." Fifty percent of the research in the last year has come from students, says Fortenberry. He's been able to train James, who

is now a trained Riley Travis. Fortenberry says he's been blessed to have some of the brightest young people working on "this stuff with me." Fifty percent of the research in the last year has come from students, says Fortenberry. He's been able to train James, who is now a trained Riley Travis. Fortenberry says he's been blessed to have some of the brightest young people working on "this stuff with me." Fifty percent of the research in the last year has come from students, says Fortenberry. He's been able to train James, who is now a trained Riley Travis.

W. James Morgan and Ryan Fortenberry, PhD

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