



Heather Morrison's the one -

who, as a chemistry undergraduate, has already received financial backing from the National Science Foundation and the Jeffress Memorial Trust Fund

Major: Chemistry

Hometown: Roanoke, Va.

High School: Lord Botetourt High School

JMU Highlights

Will pursue a Ph.D. in polymer science or organic chemistry; has synthesized, purified and characterized a molecule that has never been made before; has presented her work at regional and national chemistry meetings; has received financial backing from the National Science Foundation and the Jeffress Memorial Trust Fund

What's your latest research focusing on?

Basically we are trying to make molecules that traditionally have been very difficult to synthesize. We have found a way to produce these fluorinated compounds that is much shorter and more simple than previous ways. This molecule forms a part of many different compounds that are found in drugs and agricultural chemicals. If we can simplify the synthesis of this piece, we could simplify the synthesis of the whole drug or pesticide or whatever.

How has it gone so far?

We're at the very, very preliminary stages right now, and I've been able to finish one of the first stages. We have two different people working on it now, and then with the Research Experience for Undergraduates program this summer there will be lots of other kids working on it, too.

So your work has been worthwhile?

Yes, I think so. This particular molecule is sort of a model for things that are going to come later. It's not going to be used in the synthesis of drugs, but the way we made it shows that we can make things that are similar to it - and it was a cheap way to do that.

Is the nature of research here collaborative?

Definitely! You share everything. You do your own work, but you share your ideas with everybody.

What does doing research feel like?

It is really, really exciting. You think, man, this is new and nobody's ever done this before. That makes it cool.

Any idea when you were in high school that you might be doing something like this?

Not a clue. I didn't really know what research was. I didn't know what I was going to do with chemistry, just that I enjoyed it.

Do your professors really make teaching their priority?

They really do. Definitely. And all of our labs are taught by Ph.D.s, and they don't play around.

What's next for you?

I'd like to keep some measure of autonomy over what I do, so that makes me think more about teaching once I finish my doctorate. In organic lab, a sophomore class, we break up into groups of four or five and students get to work on sort of their own mini-research project for the semester. Rather than just stuff out of a book, they get to do what really hasn't been done before, with help from student peer mentors like me.

- Bill Gentry