Microscopic Focus

You may know about junior All-American Sarah Henry's amazing accomplishments in the pool. But what you may not know about her and her academic pursuits makes her story all the more impressive.

Courtesy: Texas A&M Athletics

Aggie swimming star Sarah Henry explores new horizons in the field of high energy physics research

by Dini Susanto ’15
12th Man Productions

It's not the little things.

It's the microscopic things, so tiny it's almost nonexistent and too easy to miss.

A thought, an atom, a tenth of a second—the smallest things make big things happen. All it took was one small notion, one spark of curiosity, for Aggie junior All-American swimmer Sarah Henry to shatter the conception of limitations, to strive to get as close to infinity as she could with an equally perpetual sense of determination.

"Just the idea that we are so small compared to the entire scope of the universe is crazy," said Henry, recalling her budding fascination with astronomy back in junior high, which eventually led to her current interest in physics.

Seizing a chance to delve into the unknown, Henry joined a team of Texas A&M University researchers studying particle physics at the high-energy frontier, in search of new particles.

"What really interested me was that we really don't understand physics at all, and the more we're learning, the more we learn that we don't understand," she said, chuckling at the irony. "There's just a lot out there waiting to be discovered."

“I’m not looking for a Nobel Prize. I’m not looking for any recognition in the field. I just want to..."
As an undergraduate member of the Texas A&M Collider Physics Group, Henry analyzes data collected from an energy particle accelerator at the Fermi National Accelerator Laboratory (Fermilab) to evaluate the distribution of smashed particles.

"How can we understand the universe when we don't even understand the fundamentals? For us to understand the bigger picture, [we] have to understand the building blocks—and the building blocks of life are particles and atoms."

Sarah Henry

Despite any amount of enthusiasm, challenges are inevitable; inversely, despite hitting a wall with her work this past summer, her zeal was unstoppable.

The errors, the confusion and the bumps in the road, according to Henry, are all part of what she loves about research.

"My professors would tell me that's what research is about—if we knew what we're doing, it wouldn't be called 'research,'" said Henry, who had no research experience prior to her involvement with the Collider Physics Group. She works closely with Texas A&M physics and astronomy professor Dr. David Toback, who she accredits as her mentor after taking her under his wing.

"What I've learned through swimming is if you're putting the work in and you're not getting the results that you want, they're going to come, because you've done the work and you're there," Henry added. "Sometimes you just don't put it all together at the time that you want."

And put in the work she has.

Henry has written her name all over the Aggie Swimming record book, while in the meantime taking home a pair of SEC Championships last spring in the 500-yard and 1,650-yard freestyle. At NCAA's, the product of Garner, N.C. finished second in the 1,650, sixth in the 400-yard individual medley and ninth in the 500 free. Just those performances alone contributed 39 points to Texas A&M's school-record tying fourth place finish.

Though Henry plans to pursue her studies and enroll in a graduate program, she has decided to continue training with Texas A&M women's swimming head coach Steve Bultman for another year following her graduation in 2015—just in time for the 2016 Olympics.

"Every swimmer's dream is to have that one year where you just give 110 percent into swimming, because you always wonder, 'what would happen if I had a good night's sleep and I wasn't up doing homework every night?'"

After reaching finals at the 2012 U.S. Olympic Team Trials and seeing success at the World University Games and U.S. Open Championships last year, Henry hopes that more focused training with Bultman, a two-time appointee for the U.S. Olympic Staff, will pave her way to Rio.

If not, the universe still awaits.

"I'm not looking for a Nobel Prize. I'm not looking for any recognition in the field," Henry said. "I just want to understand as much as I possibly can in my lifetime about why things are the way they are."

No matter which road she's on, it's always the same drive that will take her to her destination.

"It's important to just be invested in everything that you do and know that you've made progress and that you will get a result eventually."

To learn more about Texas A&M's Department of Physics and Astronomy, click here.
Texas A&M Women’s Swimming

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