Nicholls ’25 Earns Goldwater Scholarship

Junior hopes to pursue career in medical genetics research

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Sarah Nicholls ’25 spends a lot of her time sifting through and making sense of scientific data, so it’s safe to say she’s not easily thrown off by what she sees on a computer screen.

Unless it’s an email telling her she’s been selected for a prestigious scholarship.
Nicholls was recently chosen as one of 438 recipients of the Barry M. Goldwater Scholarship, the nation’s premier undergraduate award for science, math, engineering and technology (STEM) majors who plan to pursue a Ph.D. and have a career in research. The scholarship covers up to $7,500 toward the cost of tuition, fees, books and room and board.

She was overjoyed to receive the news, even if it took a few minutes for it to truly sink in.

“I had to read the email three times to make sure I was understanding it properly. I was absolutely thrilled and so grateful,” Nicholls says. “It’s incredibly validating to know that all the individuals involved with the Goldwater process have such high confidence in my abilities to find personal and professional success as a researcher. I’m humbled to be joining a community of well-respected scientists who have made tremendous impacts on the world.”

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Nicholls is a biochemistry, molecular and cellular biology major (who is pursuing a writing minor, as well) who is a member of Matthew MacManes’ evolutionary genomics lab. There, her work has focused on the desert adaptations of the cactus mouse, which can survive its whole life without water.

“The mechanisms by which it can do this aren’t widely understood,” Nicholls says. As a result, the lab is investigating that very situation from physiologic (functional anatomy), genomic (DNA), and transcriptomic (RNA/gene expression) standpoints.

Last year Nicholls helped a graduate student conduct a transcriptomic study on the cactus mouse kidney, presenting the research at UNH’s 2023 Undergraduate Research Conference (URC) and publishing an article in the spring 2023 issue of Inquiry, a research journal highlighting undergraduate research from current and recently graduated UNH students.

She hopes to begin her senior thesis, a transcriptomic study of the cactus mouse brain, over the summer, she says.

“I’ve always loved solving puzzles, and genomic research feels like the ultimate puzzle – genes encode all of life, yet there is so much left to uncover about how they do so,” Nicholls says.

Nicholls first fell in love with that research process as part of the UNH Research Experience and Apprenticeship Program (REAP), through which she was connected to the MacManes lab.
As part of that experience, she traveled with the lab to the International Evolution Conference.

All of that helped spark a passion that she hopes to pursue well beyond her undergraduate work. Her goal is to earn a Ph.D. in a human genetics lab, studying the genetic causes of diseases or working to create gene-based cures and treatments. Following her graduate studies, Nicholls hopes to enter the research industry, specializing in medical genetics.

“That field combines the two things I love the most about science – its use as a tool to solve mysteries about how the world works, and its ability to help people,” Nicholls says.

Nicholls is thankful for the wide-reaching support she’s received at UNH, crediting her Honors advisor Kate Gaudet for encouraging her to apply for REAP and thanking Leigh Pratt and Daphne Chevalier from the UNH Office of National Fellowships for help with her Goldwater application.

Once the shock of receiving the Goldwater scholarship wore off, Nicholls moved on to the more exciting prospect of looking ahead to what it will mean for her as she pursues her dreams as a scientist and researcher.

“I’m thankful that the monetary aspects of the award will help give me the financial flexibility to continue pursuing the work and studies that I love, but I’m really the most excited about joining the Goldwater Scholars community,” Nicholls says. “It’s a dream come true to be a part of a network of other dedicated scientists from all across the country who come together to exchange ideas, support each other’s work and form meaningful connections based on a shared passion for research.”

*Interested in pursuing a Goldwater Scholarship? Learn more about this and other opportunities available through the Office of National Fellowships.*

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