Birdwatcher

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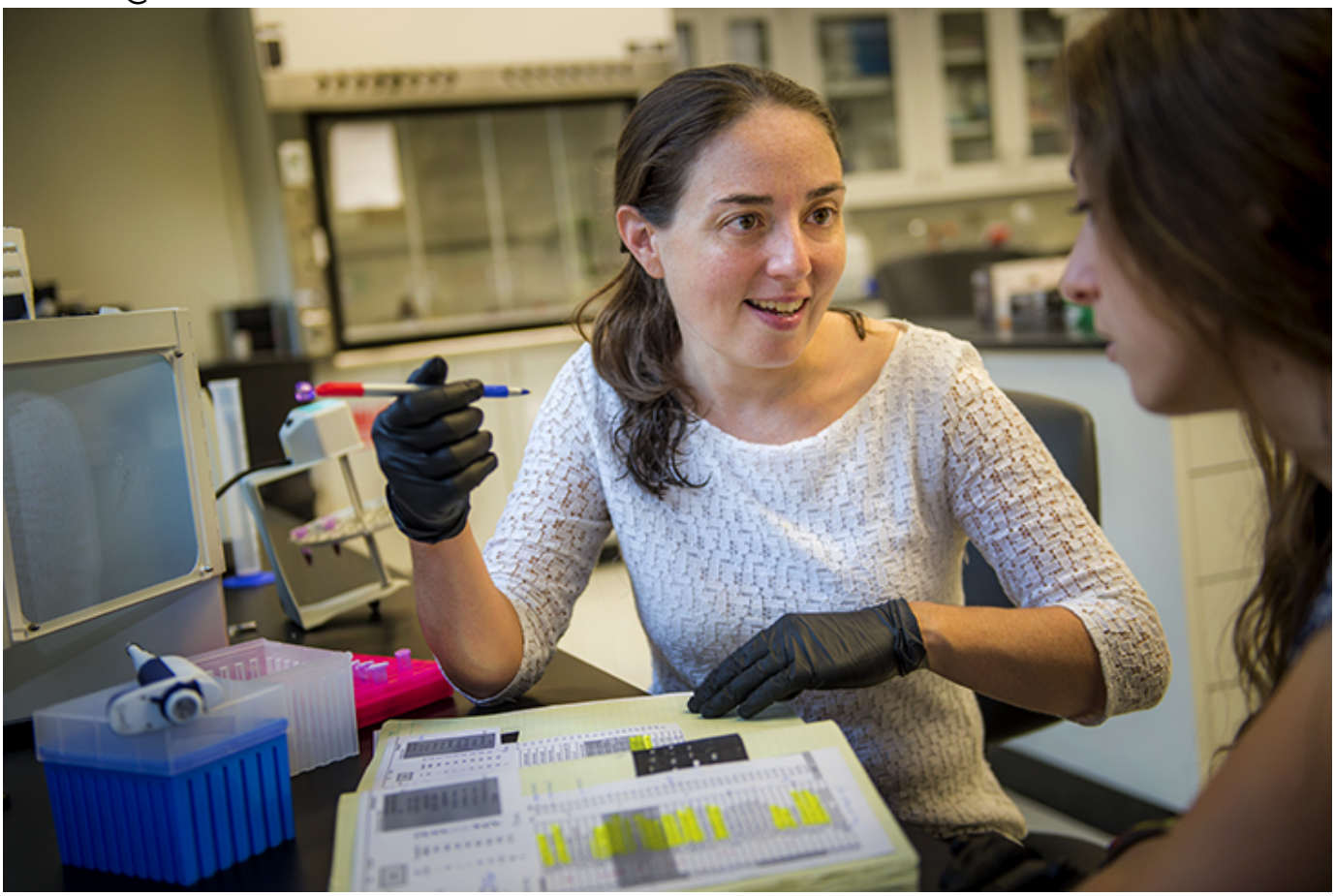

Professor Liz Derryberry has made bird watching ? and studying ? into a rewarding research career. (Photo by Paula Burch-Celentano.)

When she isn"t on the Tulane University uptown campus mentoring women in science or running her eponymous lab at the Israel Environmental Sciences Building, chances are Liz Derryberry is out in the field studying the movements and sounds of toucans, parrots and other species of birds.

She has studied everything from how baby swamp sparrows learn to memorize songs to patterns of bird diversification. Her latest research ? the origin of bird species in the rainforests of South America ? was published recently in two issues of

the respected journal *Nature*.

Derryberry, an assistant professor of ecology and evolutionary biology, was part of a team, led by Robb Brumfield and Brian Tilston Smith at Louisiana State University, that challenged the long-held theory that tropical bird speciation ? the process by which new species are formed ? is driven solely by geological and climatic changes to the landscape.

They instead found that the initial step in speciation is linked to the movements of birds across physical barriers such as mountains and rivers long after the geological origin of those barriers. An earlier study, led by Oxford University researchers, found that species living together often evolved differences before meeting instead of being forced to evolve differently to avoid competing with each other, challenging a theory that has held since Darwin"s *The Origin of Species*. Both studies were funded by initial grants from the National Science Foundation to Brumfield.

Derryberry, a recent Ken and Ruth Arnold Early Career Professor in Earth and Ecological Science, said that these two studies are indicative of “a new era of big data as well as 30-plus years of museum-based collection in the Neotropics (a rainforest-heavy area that extends from Mexico to the southernmost top of South America) allowing us to rigorously test long-held theories in evolutionary biology.”

With collaborators, including Tulane postdoctoral fellow AndrÃ©s Cuervo, Derryberry is developing a hypothesis that addresses questions about when, where and how avian species enriched the biodiversity of the tropics worldwide.

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