



Georgia College & State University delves into the secret lives of snakes

Humans think a snake's life is simple. They slink. They slither. They bask. They bite. But a Georgia College & State University vertebrate biologist says we don't really know much at all about what snakes do and why. Using the latest, state-of-the-art technology, Dr. Dominic DeSantis and his students are keeping an eye on these coiling creatures—where they go, what they eat and how they interact—hoping to learn their serpentine secrets. "The role of snakes, especially the large-bodied rattlesnakes and pit vipers that we study, act as apex predators in the ecosystems they exist within. They're big, and they can eat a huge diversity of prey," DeSantis said. "Rattlesnakes play a critical role, maintaining interactions between species. If we begin to lose them, I don't think anybody knows what those ecosystems devolve into." During his doctorate studies at the University of Texas at El Paso, DeSantis pioneered a technique to track snakes and monitor their behavior using accelerometers, a device that measures vibrations or changing motion. DeSantis was hired in 2020 to teach courses like vertebrate zoology and herpetology. He launched a series of case studies here, using the same technology, putting Georgia College students at the frontier of new discoveries in snake behavior. Former graduate student, Anna Tipton of Hartwell, Georgia, researched how snakes interact with roadways. Her thesis revealed

a completely-new finding: Snakes sometimes move up and down one side of a road for weeks, before deciding to cross or turn back. Graduate student, Morgan Thompson of Tucson, Arizona, is wrapping up her thesis using accelerometers to record predatory strikes and swallowing of prey by rattlesnakes in nature. Senior biology major Jack Powers of Roswell, is studying over-winter behavior in timber rattlesnakes—what DeSantis calls "a really important aspect of their ecology that's almost completely overlooked in literature." Junior biology major Danielle Bartlett of Marietta is testing rattlesnakes and pit vipers for a fungal disease that caused significant declines in snake populations in the Northeast and Midwest. Half their research is driven by hypotheses centered on behavioral ecology of snakes. The other half—what DeSantis calls "next generation natural history"—is driven by "cool emerging technologies," like accelerometers. Since the 1980s, radio telemetry was the only means of tracking snakes. That entry-level tech—basically a handheld antenna—allowed biologists to see where snakes went, point A to point B. When accelerometers came on the scene 15 years ago, they were so big they could only be used on large marine mammals, like dolphins. Now, radio telemetry is used to locate a snake every few days. Transmitters track how far each snake has moved. But accelerometers collect

other movement data like the number of times a snake eats, reproduces, constricts or strikes in self-defense. Finally, Artificial Intelligence (AI) is used to classify different behavioral states. What would take several graduate students two years to evaluate—AI can do in a matter of hours. "There's a growing trend in field biology to leverage a lot of really cool, automated classification techniques to improve the way we collect data on organisms in nature, especially small and secretive things that are hard to observe," DeSantis said. Students use radio telemetry kits, handheld antennas and receivers to find and relocate snakes. They also record observations, like whether a snake is resting or in retreat. They note habitat, body temperature and wind speed. Graduate biology student, William Tillet of Atlanta loves this interactive learning. He was the first to use accelerometers on rat snakes. Tillet discovered rat snakes spend half their time up in trees. Now, he'd like to get a Ph.D. and work with the U.S. Forest Service or Department of Natural Resources. "Being at such a great university with small class sizes allowed me to forge that relationship with professors," he said. "I don't think I'd be where I am today, if I didn't have that."



Dr. Dominic DeSantis with junior biology major Danielle Bartlett.



GCSU students/alumni well-represented among Fulbright semi-finalists

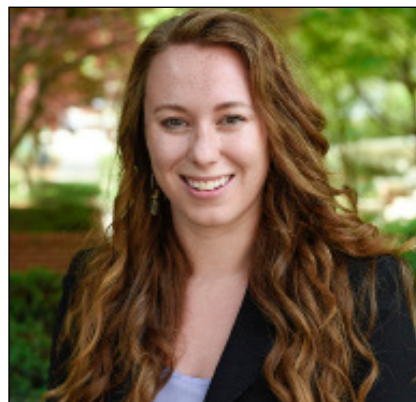
Georgia College & State University students and alumni continue experiencing success applying for one of the United States' premiere cultural exchange programs. The U.S. Department of State's Bureau of Educational and Cultural Affairs named four Georgia College students and recent alumni as semi-finalists for the Fulbright U.S. Student Program. "I am so proud of all of our Fulbright semi-finalists, and I'm especially excited to have several alumni represented," said Anna Whiteside, assistant director of the John E. Sallstrom Honors College and national scholarships coordinator. Operating in over 160 countries worldwide, the Fulbright Program is the flagship international educational exchange program sponsored by the U.S. government and is designed to increase mutual understanding between citizens of the United States and people of other countries. Recent graduate and Fulbright semi-finalist Julian Lopez Hanson, '20, applied for the scholarship program because of its focus on ambas-



Julian Lopez Hanson

sadorship and intercultural connection. Lopez is a strategist with the global consulting firm BCG BrightHouse. He believes the Fulbright program would help him develop a skillset for working with people around the world. Georgia College graduate creative writing student Kelsey Doran is a world-traveling poet

who enjoys teaching the gift of language. Helping Norwegian students in her potential host country learn English, she said, is something that would benefit them beyond her Fulbright experience. If selected as a finalist, Doran hopes to bring back tools and concepts from the Norwegian education system to use upon her return.



Kelsey Doran

Did you know?

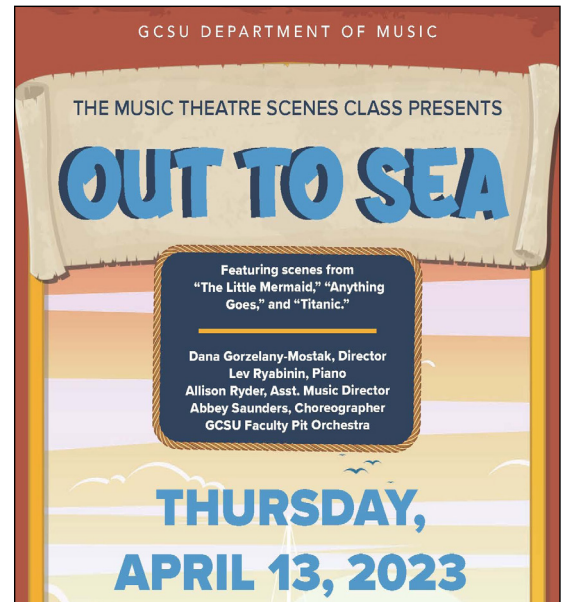
Two Georgia College & State University educators have been selected to attend the Governor's Teaching Fellows (GTF) Summer Symposium—a selective program that helps teachers increase their knowledge of new technologies and innovative instruction for the classroom. The two fellows are Dr. Suzanna Roman-Oliver, assistant professor of secondary education, and Dr. Omolola Akinola Ologunorisa, lecturer in geography. They will join about a dozen other educators statewide for an intensive five days of learning at the University of Georgia (UGA) May 15 to 19. The Governor's Teaching Fellows Program was established in 1995 by former Georgia Governor Zell Miller to give higher-education faculty more opportunities to develop important teaching skills. GTF is designed to bring professors up-to-speed, so Georgia students are taught tech-savvy skills and can compete for jobs in an ever-changing, global job market.

Upcoming GCSU concerts include music theatre, music therapy and ensembles

Don't miss Thursday's Music Theatre Scenes class concert in Max Noah Recital Hall at Georgia College & State University (GCSU). It begins at 7:30 p.m. with great songs based on the theme, "Out to Sea." The show is directed by Dr. Dana Gorzelany-Mostak with a cast of 13 student performers and the department of music's faculty pit orchestra. Poignant and comical tunes will be showcased from favorite shows like "The Little Mermaid," "Anything Goes" and "Titanic." This concert will also be livestreamed at www.facebook.com/GCMusicDepartment. On Tuesday, April 18, eight performance groups of Creative Expressions will assemble for a live music presentation of their favorite songs at 6 p.m. in New City Church, 224 E. Walton Street,

Milledgeville. "The Great Adventure!" concert represents the forward momentum society seeks during the post-COVID-19 pandemic period. Songs like Cindi Lauper's "True Colors," Aretha Franklin's "Rose is Still a Rose," Bob Marley and The Wailers' "Three Little Birds," Katrina and The Waves' "Walking on Sunshine" and so many others will put you in a positive mood. Music Therapy students and adults with disabilities from Milledgeville's Life Enrichment Center collaborated to create this program. On Monday, April 24, the GCSU Spring 2023 Chamber Ensembles Recital will be at 7:30 p.m. in Max Noah Recital Hall. Come enjoy a diverse mix of classical, jazz and avant-garde chamber music featuring the GCSU String Quartet, Low

Brass Ensemble, Jazz Combo, Geecee Saxophone Quartet, Eclectet Saxophone Quartet, Imposter Trio and Saxophone Choir. The Georgia premiere of "Rainbowfish" by Ian T. Jones for saxophone, percussion and piano will be performed by Imposter Trio. On Thursday, April 27, "Sound Sculptures XIII: The World Around Us" will be at 7:30 p.m. in Max Noah Recital Hall. This concert features newly-composed, electronic compositions by Georgia College students that reference the world around us, using nature and city life themes. For concerts, a \$5 donation is encouraged. All proceeds benefit music scholarships or the GCSU Department of Music through GCSU Foundation, Inc.



What's going on in Bobcat Territory?

Visit frontpage.gcsu.edu/events

Tuesday

Wednesday

Thursday

Friday

Saturday

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5-6:30 p.m. Artist talk by William Boling on "The Possibility of Printed Matter as Art Practice in the Age of AI" in A&S 2-72.

6:30 p.m. Rural Changemakers lecture in Peabody Auditorium with Catherine Coleman Flowers, a 2020 MacArthur genius fellow. Flowers is internationally recognized for her work on environmental issues.

7:30 p.m. Senior recital with music student and percussionist Jacob Hammock in Max Noah Recital Hall.

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7:30 p.m. Senior recital with music student and saxophonist Mary Read in Max Noah Recital Hall.

13

7:30 p.m. Music Theatre Scenes class presents its annual concert, "Out to Sea," in Russell Auditorium.

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Noon-4 p.m. GCSU Softball doubleheader vs. North Georgia at Peeler Complex. 1-5 p.m. ArtHealthy Festival on Front Campus.