

Nikolai K. Artley

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EDUCATION

B.S.: Clemson University, Clemson SC. Major: Environmental and Natural Resources (Conservation Biology). Minor: Entomology. Expected May 2025. GPA 3.93, 126 credit hours.

PUBLICATIONS

Wooden, P., **N. Artley**, C. Silva. Volume 70, Issue 2, pp. 28 – 30. Museums in Miniature: Bringing Entomology to South Carolina Classrooms. *American Entomologist*.

PRESENTATIONS

Artley, N. Not just clutter: digitally unlocking the hidden potential of bycatch. Oral presentation. Southern Forest Health Workers Conference, Greenville, SC, 18 July 2024.

Artley, N., K. Willemssens. Sampling aquatic insects to answer ecological questions: methods and madness in a Costa Rican rainforest. Oral presentation. Clemson University Biological Sciences Undergraduate Research Symposium, Clemson, SC, 26 April 2023.

Stuart, C., **N. Artley**, M. L. Ferro. Bark-gnawing beetles (Coleoptera: Trogossitidae, *Tenebroides* spp.) of South Carolina. Poster. Entomological Society of America Annual Meeting, National Harbor, MD, 7 November 2023.

Silva, C., P. Wooden, **N. Artley**. Museums in miniature: Bringing entomology to South Carolina schools. Oral presentation. Entomological Society of America Annual Meeting, National Harbor, MD, 7 November 2023.

Wooden, P., C. Silva, **N. Artley**, M. L. Ferro. Museums in miniature: a year in review. Oral presentation. South Carolina Entomological Society meeting, 6 October 2023.

Artley, N. Photographing bycatch and putting it online: the benefits of consolidation. Oral presentation. South Carolina Entomological Society meeting, 6 October 2023.

Artley, N., C. Stuart, M. L. Ferro. *Tenebroides* (Trogossitidae) Beetles of South Carolina. Poster. 18th Annual Focus on Creative Inquiry Forum, Clemson, SC, 7 April 2023.

Morse, J., M. Bishoff, **N. Artley**, S. Dunn. Pioneering the Picture: Fauna of the Piedmont Hyporheic Zones. Poster. 18th Annual Focus on Creative Inquiry Forum, Clemson, SC, 6 April 2023.

Artley, N., A. Matthews, A. Ratay, C. Stuart, M. Caterino, M. L. Ferro. Bark-gnawing Beetles (Coleoptera: Trogossitidae, *s. lat*) of South Carolina. Poster. South Carolina Entomological Society meeting, 6 October 2022.

Artley, N., A. Matthews, A. Ratay, C. Stuart, M. Caterino, M. L. Ferro. Bark-gnawing Beetles (Coleoptera: Trogossitidae, *s. lat*) of South Carolina. Poster. 17th Annual Focus on Creative Inquiry Forum, Clemson, SC, April 2022.

CERTIFICATIONS

Society for Freshwater Sciences Certified Taxonomist, Eastern EPT. 2023. Expires May 2028.

PROFESSIONAL ACHIEVEMENTS AND MEMBERSHIPS

2023-2024 Outstanding Senior in Environmental and Natural Resources (Conservation Biology), Clemson University, 2024. Awarded to recognize excellence in academic pursuits.

2023-2024 CAFLS Outstanding Student Organization, Clemson University, 2024. Awarded to the Clemson University Entomology Club during presidency.

South Carolina Entomological Society Frances J. McAlister Outreach Award, 2023. \$500 in recognition of outreach and service to the people of South Carolina.

South Carolina Entomological Society Undergraduate Presentation Award, 2023. \$100 in recognition of outstanding presentation.

Entomological Society of America, Southeastern Branch, SysEB, student member since 2023.

Society for Freshwater Sciences, student member since 2023.

South Carolina Entomological Society, student member since 2022.

GRANTS

W. Carl Nettles, Sr. Memorial Endowed Memorial Grant Fund, Clemson University, 2023. \$300 to attend the annual meeting of the South Carolina Entomological Society and present.

Alfred Wheeler Jr. Endowment for Entomology, Clemson University, 2023. Grant prepared by P. Wooden, N. Artley, M. L. Ferro. \$4000 to support an Entomology Club trip for professional development and arthropod collecting.

EMPLOYMENT

Clemson University Arthropod Collection. Museum assistant, November 2022 – present: digitized ~800 residues from bark beetle surveys conducted by the South Carolina Forestry Commission; updated Clemson University's teaching collection of larval Ephemeroptera for currency and accuracy.

South Carolina Forestry Commission. Digitizer I, November 2022 – present: Sampled ~100 hemlock trees in South Carolina for the presence of the predator beetle *Laricobius nigrinis* introduced as potential biocontrol for hemlock woolly adelgid; treated ~100 hemlock trees with imidacloprid to protect against hemlock woolly adelgid.

Audubon Society, Francis Beidler Forest. Identifier, December 2023: Identified macroinvertebrates from swamp samples to genus (insects) and class/order (others) to create an updated faunal list and support the construction of a food web.

Western Carolina University, Highlands Biological Station. Teaching assistant, Taxonomy and Natural History of Southern Appalachian Mayflies, Stoneflies, and Caddisflies (Dr. John Morse), May 15 – 26 2023: Assisted 8 students in sampling lotic and lentic aquatic habitats for larval and adult EPT taxa for biomonitoring purposes; provided laboratory assistance in genus- and species-level identifications of collected material; created and proctored 20-specimen practical genus-level identification exams.

RELEVANT SKILLS

Collection techniques: passively collect insects using UV blacklights, malaise/vertical flight-intercept traps, pitfall traps, Lindgren funnels, dead-wood emergence traps, and vane traps (baited and unbaited); actively sample insects from various habitats using sweep nets, aerial nets,

aspirators, leaf litter sifters, dip nets, kick nets, beat sheets, and brass sieves; deploy and maintain camera traps.

Curatorial techniques: use a Nikon camera in a Z-stacking system (software: Helicon Remote and Helicon Focus) to take and stack photographs of specimens; create appropriate labels for collected specimens.

Ecological techniques: conduct line transects, point count surveys, and quadrat sampling for population analyses.

Forestry techniques: take DBH measurements of trees with calipers, DBH tapes, and Biltmore sticks; use topo clinometers and Haga altimeters to measure tree height; use Merritt hypsometers to measure merchantable tree height; conduct variable-area and fixed-radius sampling in a stand; determine Kraft crown classes of trees.

Laboratory techniques: clear insect specimens in potassium hydroxide (KOH) or lactic acid for slide-mounting; correctly pin/point insect specimens for identification and future study; use dichotomous keys to make accurate family-, genus-, and species-level identifications.

ACADEMIC SERVICE

Clemson University Arthropod Collection. Volunteer, 2021 – present. Maintain 13 insect traps each year to survey for longhorned beetles; give talks and tours of the museum to interested passers-by and scheduled groups; in 2021, checked 1200+ insect drawers for specimens damaged by dermestids.

Clemson University Entomology Club. President, 2023 – 2024. Coordinated and held monthly meetings of the club; planned workshops and collecting opportunities for the club and the broader student body.

Clemson University Entomology Club. Outreach Coordinator, 2022 – 2023. Coordinated and supervised community outreach events for the club.

Clemson University Insect Biology and Diversity (ENT 3010, Dr. Michael Ferro). Informal teaching assistant, Fall 2022, 2023. Assisted students with collecting, processing, and identifying specimens; aided guest speakers in the absence of the instructor.

OUTREACH

Creature Power Camp, Clemson SC (2024). 16 children, ages 6 – 8, for 2.5 hours. Led bug collecting and watching, showed live arthropods for children to observe and interact with.

South Carolina Botanical Gardens, Clemson SC (2024). 10 students, grades 1 – 3, for 6 hours. Supervised bug collecting and watching, activities on crypsis and mimicry, and a nature walk to look for insects.

Clemson University Men of Color National Summit (2024). 200+ students, middle school and high school, for 4 hours. Presented drawers of pinned insect specimens to potential students, discussed evolutionary adaptations of wings, represented the Clemson University Entomology program at a student recruitment event.

Museums in Miniature (2022 – present). Contributed to the production of 20+ Museums in Miniature to be distributed to schools across the state of South Carolina. Sorted, identified, curated, remounted, and/or collected 1000+ specimens used in the project.

Liberty Primary School, Anderson SC (2023). 100+ students, primary school, for 2.5 hours. Taught about mimicry and aposematic coloration in arthropods, directed coloring activity on mimicry, showed curated specimen displays from the Clemson University Arthropod Collection.

Anderson Institute of Technology, Anderson SC (2022). 100+ students, high school, for 3 hours. Taught about interesting and beneficial aspects of insects; displayed live insects for students to observe and interact with; showed teaching materials, including curated specimen displays, from the Clemson University Arthropod Collection.

Clemson University Tiger Prowl, Clemson SC (2022). College students. Represented the Clemson Entomology Club at the university club fair to recruit new members.

New Foundations Home for Children, Anderson SC (2022). 40+ students, elementary through high school, for 1.5 hours. Taught about behavior and beneficial aspects of spiders; displayed live spiders for students to observe; showed spiders from holdings of the Clemson University Arthropod Collection; conducted spider-related learning activities.

South Carolina Botanical Gardens, Clemson SC (2022). Life in the Leaf Litter. Public event targeted towards 1st–3rd grade students, for 6 hours. Presented hands-on demonstration of sifting leaf litter for arthropods, conducted sifting activity with children, displayed macro photographs of common leaf litter arthropods, set up microscope stations to show common leaf litter arthropods.

RELEVANT COURSEWORK

Field Ecology (incl. laboratory) (BIOL 4490/4491, 4 credits, Dr. Kelly Willemsens), Clemson University, Spring 2024. Sampled streams in a secondary rainforest in Costa Rica for aquatic macroinvertebrates and riparian spiders; analyzed collected data to determine if the community of aquatic macroinvertebrates determines riparian spider diversity; conducted line transect surveys in a secondary Costa Rican rainforest in search of dart frogs.

Taxonomy of Immature Insects (incl. laboratory) (ENT 4980/4981, 2 credits, Dr. Michael Caterino and Dr. John Morse), Clemson University. Fall 2023. Collected and identified immature insects, with a focus on the Holometabola; learned the currently understood phylogenetic relationships among the orders of class Insecta; completed a collection of 53 specimens (46 taxa) identified at least to family.

Freshwater Ecology (BIOL 4430, 3 credits, Dr. Cassandra May), Clemson University. Fall 2023. Developed a broad understanding of the ecological principles underpinning inland aquatic environments; learned the general relationships between freshwater aquatic organisms and their environments.

Creative Inquiry: *Tenebroides* (Coleoptera: Trogossitidae) of SC (ENT 4960, 2 credits, Dr. Michael Ferro), Clemson University. Fall 2023. Continued work on an updated illustrated key to species of *Tenebroides* present in the Clemson University Arthropod Collection and South Carolina, using quantitative external morphological characters.

Southeastern Bumblebee Atlas, workshop, Xerces Society. 29 April 2023. Learned taxonomy and ecology of bumblebees (*Bombus* spp.), focusing on pollination and other ecosystem services; covered catch-and-release sampling methods to conduct population surveys.

WaspID Course, workshop, Pennsylvania State University. January 9 – 20 2023. Learned to identify adults of wasps to superfamily and family; covered collection methods for adult and larval wasps; learned the taxonomy and ecology of wasps, especially parasitoids.

Insect Taxonomy (incl. laboratory) (ENT 4150/4151, 3 credits, Dr. Michael Caterino), Clemson University. Spring 2023. Focused on the basics of the phylogenetic framework underlying insect classification; identified Nearctic hexapods to family with the use of existing literature; sampled a variety of habitats for adult insects; completed collection of 250 specimens (149 taxa) identified at least to family.

Creative Inquiry: *Tenebroides* (Coleoptera: Trogossitidae) of SC (ENT 4960, 2 credits, Dr. Michael Ferro), Clemson University. Spring 2023. Began an updated illustrated key to species of *Tenebroides* present in the Clemson University Arthropod Collection and South Carolina based off of Barron (1971) and Ciegler (unpublished work).

Insect Biology and Diversity (incl. laboratory) (ENT 3010/3011, 4 credits, Dr. Michael Ferro), Clemson University. Fall 2022. Focused on taxonomy of class Insecta within a broader survey of Arthropoda; sampled a variety of habitats for adult insects; completed collection of 194 specimens (100 taxa) identified at least to family; provided laboratory assistance to classmates in identifying collected material.

Creative Inquiry: Fauna of the Piedmont Hyporheic Zones (ENT 4960, 2 credits, Dr. John Morse), Clemson University. Fall 2022. Conducted literature review of faunal surveys of the hyporheic; developed and tested methods for sampling invertebrate taxa in the hyporheic zones of Piedmont streams in South Carolina; identified and photographed collected specimens.

Biomonitoring with Aquatic Insects (incl. laboratory) (ENT 4980/4981, 3 credits, Dr. John Morse), Clemson University. Spring 2022. Identified larvae of nine orders of aquatic insects in the southeastern United States of America to family (on sight), genus, and species (using dichotomous keys); conducted rapid bioassessment of a disturbed stream habitat in accordance with EPA protocols; completed collection of 146 specimens (99 taxa) identified at least to family (adults) or genus (larvae).

Creative Inquiry: Trogossitidae of SC (ENT 4960, 2 credits, Dr. Michael Ferro), Clemson University. Spring 2022. Conducted literature review of Trogossitidae; sorted approximately 300 specimens out of bycatch from state bark beetle surveys; produced genus- and species-level state distribution maps using data from holdings in the Clemson University Arthropod Collection.