



CONTACT INFORMATION

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EDUCATION

Auburn University, Auburn, Alabama. May 2014
Ph.D. Secondary Science Education (Biology)

Informal science education and rural science: a case study of two seventh grade life science teachers

Melody Russell, Ph.D.

Middle Tennessee State University, Murfreesboro, Tennessee. December 2007
M.Sc. Biology

Analysis of coral distribution and coral symbionts in a patch reef and fringing reef in the southern Caribbean

Dennis Mullen, Ph.D.

Martin Methodist College (now University of Tennessee Southern). May 2000, 2005
B.Sc. Biology

EMPLOYMENT HISTORY

July 2021-present: Associate Professor & Program Coordinator, Biology, University of Tennessee Southern

January 2020-2021: Associate Professor, Biology, Martin Methodist College (now UT Southern)

January 2014-2020: Assistant Professor, Biology, Martin Methodist College (now UT Southern)

August 2011-May 2014: graduate teaching assistant, Concepts of Science Supervisor: Dr. David King, Auburn University

August 2011- December 2011: graduate teaching assistant, BIOL 1001 biology for non-majors. Supervisor: Matthew Kearley, Auburn University

January-May 2011: graduate teaching assistant, BIOL 1011 biology for non-majors. Supervisor: Matthew Kearley, Auburn University

August 2010: graduate teaching assistant, BIOL 1011 biology for non-majors. Supervisor: Matthew Kearley, Auburn University

August 2009-April 2010: graduate teaching assistant, BIOL 1001 biology for non-majors. Supervisor: Matthew Kearley, Auburn University

August 2008-May 2010: GK-12 Fellow (science) at Booker T. Washington H.S. Supervisor: Dr. Jack Feminella, Auburn University

January 2008-May 2008: adjunct faculty for Biology 1030. Supervisor: Dr. G. Murphy, Head of the Department of Biology, MTSU

January 2008-May 2008: adjunct faculty for Zoology 111. Supervisor: Dr. J. Murrell, Academic Dean, Martin Methodist College.

January 2007-March 2008; science teacher for Upward Bound Program. Supervisor: Wayne Hobbs, Head of Upward Bound Program, Martin Methodist College

September 2006-December 2007; graduate teaching assistant for science major's general biology laboratory. Supervisor: Dr. D. Mullen, Department of Biology, MTSU

September 2005-May 2006; graduate teaching assistant for non-major Topics in Biology Laboratory. Supervisor: Dr. K. Sadler, Department of Biology

COURSES TAUGHT

General Biology (non-majors), Microbiology, Ecology, *Invertebrate Zoology, *Vertebrate Zoology, *General Ichthyology, Botanical Diversity, Biology Seminar, Bioethics, Independent Research

*New Courses developed

PUBLICATIONS / BOOKS

Belford, S.G. 2024. Combining morphological characteristics and DNA barcoding techniques confirm sea urchins of the genus *Echinometra* (Echinodermata: Echinoidea) in marine habitat located at extreme regions of the Caribbean Sea. *Integrative and Comparative Biology*

Belford, S.G. 2023. Utilization of two DNA barcoding techniques, alongside morphological characters, confirms the presence of zoantharian morphotypes (Cnidaria: Hexacorallia: Zoantharia) along the coast of Toco, Trinidad. *Living World, Journal of Trinidad and Tobago Field Naturalists' Club* 2023:126-135.

Belford, S.G. 2022. Toco's Coral Reefs. Sangre Grande Region Tourism Newsletter.

Belford, S.G. 2021. Shallow-water species diversity of common intertidal zoantharians (Cnidaria: Hexacorallia: Zoantharia) along the northeastern coast of Trinidad, southern Caribbean. *Oceans* 2: 477-488.

Belford, S.G. 2020. Spatial abundance and colour morphotype densities of the rock-boring sea urchin (*Echinometra lucunter*) at two different habitats. *Thalassas: An International Journal of Marine Sciences* 36(1): 157-164.

Belford, S.G., Phillip, D.A.T., Rutherford, M.G., Schmidt, R.S., Duncan, E.J. 2019. Biodiversity of coral reef communities in marginal environments along the north-eastern coast of Trinidad, Southern Caribbean. *Progress in Aqua Farming and Marine Biology* 2(1): 1-23.

Folt, B., Laurencio, D., Goessling, J., Birkhead, R., Stiles, J., Stiles, S., Harris, A., **Belford, S.** 2015. One hundred two new county records for amphibians and reptiles in Alabama, USA. *Herpetological Review* 46(4): 591-594.

Russell, M.L., **Belford, S.**, Crowe, L., Laurencio, D. 2015. Love our coral reefs: Teaching 6-14 year-olds about environmental stewardship and coral reefs using modeling materials found in most cupboards. *Green Teacher* 107: 29-32.

Belford, S.G., Chadwick, N.E., Khalaf, M.A. 2013. Measuring body size in small marine fishes: a comparison of three non-intrusive methods. *Fisheries and Aquaculture Journal* FAJ-71: 1-8.

Belford, S.G., Phillip, D.A.T. 2012. Intertidal distribution patterns of Zoanthids compared to their Scleractinian counterparts in the southern Caribbean. *International Journal of Oceanography & Marine Ecological System* 1 (3): 67-75.

Belford, S., Phillip, D. 2011. Rapid assessment of a coral reef community in a marginal habitat in the southern Caribbean: A simple way to know what's out there. *Asian Journal of Biological Sciences* 4(7): 520-531.

PRESENTATIONS (*student presenters)

Rhett Lyles* and Stanton G. Belford. 2024 (poster). 85th Association of Southeastern Biologists conference. Genetic analysis of a pantropical sea urchin at the southeastern edge of a Caribbean population. Chattanooga, Tennessee. March 20-23, 2024.

Hannah Oliver* and Stanton G. Belford. 2024 (poster). 85th Association of Southeastern Biologists conference. Using barcoding to identify shallow-water zooxanthellate zoantharians (Cnidaria: Hexacorallia) along the north-eastern coast of Toco, Trinidad. Chattanooga, Tennessee. March 20-23, 2024.

Rebecka Roddy* and Stanton G. Belford. 2024 (poster). 85th Association of Southeastern Biologists conference. Combining molecular analyses with morphology to identify zoantharians located at Toco, Trinidad, southernmost region of the Caribbean Sea. Chattanooga, Tennessee. March 20-23, 2024.

Stanton G. Belford. 2024. (talk). Society for Integrative and Comparative Biology Annual Meeting. Combining molecular analyses with reef surveys: Monitoring benthic components on reefs located at Toco, Trinidad, southernmost region of the Caribbean Sea. Seattle, Washington. January 2-6, 2024.

Stanton G. Belford. 2023. (panel discussion). Blue Table Talk: Blue Economy. Black in Marine Science Week. Norfolk, VA. November 28, 2023.

Rebecka Roddy* and Stanton G. Belford. 2023 (poster). 133rd Tennessee Academy of Science. Combining molecular analyses with morphology to identify zoantharians at Toco, Trinidad, southernmost region of the Caribbean Sea. Memphis, Tennessee. November 18, 2023.

Stanton G. Belford. 2023. (virtual panel discussion). Stories of black joy and excellence in marine science. Hawai'i Pacific University. November 17, 2023.

Stanton G. Belford. 2023. (virtual talk). POSea 2023. Combining molecular analyses with reef monitoring to add knowledge about benthic components on reefs located at Toco, Trinidad, southernmost region of the Caribbean Sea. October 28-29, 2023.

Stanton G. Belford. 2023. (virtual talk). Environmental Fridays. Marine Biology of reefs in Toco, Trinidad. Season V, Episode 3. September 29, 2023.

Angel Pool* and Stanton G. Belford. 2023 (poster). 84th Association of Southeastern Biologists conference. Molecular analyses and benthic distribution of shallow-water zooxanthellate zoantharians (Cnidaria: Hexacorallia) and their symbionts Symbiodiniaceae along the north-eastern coast of Toco, Trinidad. Winston-Salem, North Carolina. March 23-26, 2023.

Hayden Galloway*, Chloe Cummins*, Shanna Hanes, and Stanton Belford. 2022 (poster). 132nd Tennessee Academy of Science. Report on distribution and size abundance of the Saddleback crayfish *Faxonius durelli* (Malacostraca: Decapoda: Cambaridae) located Giles County, Tennessee. Nashville, Tennessee. November 18, 2022.

Stanton G Belford and Chloe Cummins*. 2022 (poster) 132nd Tennessee Academy of Science. Towards the phylogenetic identification of zoantharians (Cnidaria: Hexacorallia: Zoantharia) found on reefs along the north-eastern coast of Toco, Trinidad. Nashville, Tennessee. November 18, 2022.

Stanton Belford. 2022 (poster). 15th International Coral Reef Symposium. Island biodiversity and phylogeny on coral reef communities in the wake of ecological risks associated with port development in a developing country. Bremen, Germany, July 6-8, 2022.

Chloe E. Cummins*, Samantha Kilian*, S.G. Belford. 2022 (poster) 84th Association of Southeastern Biologists conference. Morphological and molecular analyses of zoantharians located at the southernmost region of the Caribbean Sea. Little Rock, Arkansas. March 30-April 1, 2022.

Briley E. Bain*, S.G. Belford, Shanna Hanes. 2022 (poster) 84th Association of Southeastern Biologists conference. Symbiodiniaceae diversity of zooxanthellate zoantharians at the southern edge of the Caribbean Sea. Little Rock, Arkansas. March 30-April 1, 2022.

Briley E. Bain*, Chloe E. Cummins*, S.G. Belford, Doug Dorer, and Shanna Hanes. 2021 (poster) 131th Tennessee Academy of Science conference. Molecular analysis of zoantharians located at the southernmost region of the Caribbean Sea. Tennessee Technological University, Cookeville, Tennessee. November 6, 2021.

Stanton G. Belford. 2021. (poster) 131th Tennessee Academy of Science conference. Molecular identification of zoantharians (Cnidaria: Hexacorallia: Zoantharia) from Trinidad, southern Caribbean. Tennessee Technological University, Cookeville, Tennessee. November 6, 2021.

Stanton Belford. 2021. CADASE administrative session 2021 National Association of Research in Science Teaching Annual Conference (poster). Collegiate student perspectives on coastal environment conservation. Virtual conference April 7-10, 2021.

Rainey Tyler*, Samantha Kilian, Stanton Belford. 2021. 83rd Association of Southeastern Biologist Conference (poster). Morphological and molecular identification of the Saddle Crayfish: *Faxonius durrelli* (Decapoda: Cambaridae) along streams throughout Giles County, Tennessee. Virtual conference March 24-27, 2021.

Stanton Belford. 2021. (poster) 83rd Association of Southeastern Biologist Conference. Coastal biodiversity and phylogeny on coral reef communities along the northeastern coast of Trinidad: a race to share scientific knowledge in the wake of ecological risks associated with benthic destruction resulting from a proposed port development. Virtual conference March 24-27, 2021.

Samantha Kilian*, Stanton G. Belford. 2020 (poster) 130th Tennessee Academy of Science Conference. Molecular identification of three freshwater crayfish species at streams in Giles County, Tennessee. Austin Peay State University, Clarksville, TN. November 21 2020.

Stanton Belford. 2020. 14th International Coral Reef Symposium (ICRS 2020-poster). Island biodiversity and phylogeny on coral reef communities in the wake of ecological risks associated with port development in a developing country. July 6-8, 2020. Bremen, Germany (Abstract accepted).

Samantha Davenport*, Madison Yurewitch* Stanton Belford. 2019. 82nd Association of Southeastern Biologists (ASB) Conference (poster) Morphology and comparative survey of the crayfish *Faxonius* sp. At streams in Giles County, Tennessee. Memphis, Tennessee. April 3-6, 2019.

Stanton Belford. 2019. (lightening talk) 82nd Association of Southeastern Biologists. Adding knowledge of molecular phylogenetic relationships of the rock-boring sea urchin *Echinometra lucunter*. Memphis, Tennessee. April 3-6, 2019.

Aleighta Carroll*, Stanton G. Belford. 2018 (poster) 128th Tennessee Academy of Science Conference. Comparing undergraduate biology majors' outlook on science to that of undergraduate non-majors. Austin Peay State University, Clarksville, TN. November 17th 2018.

2018 National Ocean Exploration Forum (talk). MIT Media lab, Cambridge, Massachusetts. November 8-10

Stanton G. Belford, Association of Southeastern Biologists (poster) 2018, Zoantharian abundance in benthic communities within the vicinity of human activities along the north eastern coast of Trinidad, West Indies. Myrtle Beach, SC. March 28-31, 2018.

Stanton G. Belford, 127th Tennessee Academy of Science Conference (poster) Sharing shared shelf science sea life in the classroom. University of Tennessee-Martin, Martin, TN. November 17th 2017

Stanton G. Belford, CalliAnna McDonald*, Madeline Woods*, Douglas Dorer, 127th Tennessee Academy of Science Conference (poster). Benthic communities at a tropical reef in the southern Caribbean after tropical storm Brett. University of Tennessee-Martin, Martin, TN.). November 17th 2017

Council of Independent Colleges, Consortium on Digital Resources for Teaching and Research National Workshop. Presented with Richard Madden (Library Director), Washington D.C. September 8-10, 2016 (Talk).

Mid-Atlantic Association of Science Teachers Meeting (Gatlinburg, TN.) September 22-24, 2016 (Poster) "Incorporating Informal Science Education to determine students' perception of the marine environment."

Markeyta Bledsoe & Stanton Belford. (Poster) Distribution of sea urchin density and community structure in different habitats along the northeastern coast of Trinidad. Tennessee Academy of Science (TAS) Annual Meeting Saturday November 19, 2016 in Clarksville, Tennessee.

Brad, C. & Belford, S. (poster) Poster titled "Distribution and density of the rock-boring sea urchin (*Echinometra lucunta lucunta*) along the northeastern coast of Trinidad, West Indies. Tennessee Academy of Science (TAS) Annual Meeting Friday November 20, 2015 in Murfreesboro, Tennessee.

Belford, S., & Russell, M. 2015 (Oral Presentation: Stand Alone Paper) Rural Science Education: Promoting environmental awareness through informal science education. National Association for Research in Science Teaching (NARST), Chicago, IL. April 11-14.

Belford, S., & Russell, M. 2014. (Oral Presentation) Informal science education and rural science: A look at a seventh grade life science classroom in the southern US. Southeastern Association for Science Teacher Education (SASTE) Savanna, GA. September 26.

Belford, S., & Russell, M. 2013 (poster) Utilizing informal science education to promote awareness throughout local coastal communities. Dr. Gregory P. Domin Graduate Research Conference, Columbus State University, Columbus, GA. October 24, 2013.

Laurencio, D., L. Crowe, S. Belford, and M. Russell. 2013 (talk). Exploring Alternative Field Placements: Preservice Science Teachers and the Informal Science Setting. A NanoBio Science

Partnership for the Alabama Black Belt Region First Annual MSP Conference on Science Teaching and Learning, Tuskegee, AL. August 17, 2013.

Post Graduate Forum 2012/2013 (talk). “Liming next to Toco’s Reefs, No drinks allowed.” (talk) University of Trinidad and Tobago, O’Meara Campus. August 15, 2013.

June 6, 2013. Invited speaker for a teachers’ workshop at the Destination Malawi 2013 Program, Lumbadzi Primary School, Lilongwe, Malawi.

Southeastern Association for Science Teacher Education. “Achieving ecojustice through science education.” University of Georgia, October 2011.

Symbiofest (talk). “Clowning my way through life: effects of mutualism on the dynamics of clownfish symbiosis.” University of Georgia. April 2010.

Southeastern Ecology and Evolution Conference (talk). “Effects of mutualism on population dynamics in anemonefish symbiosis.” Georgia Institute of Technology. March 2010.

Benthic Ecology Meeting (poster). “Effects of mutualism on population dynamics in anemonefish symbiosis.” UNC-Willmington. March 2010.

MTSU Scholars Day 2008 (poster). Monitoring the distribution of coral “reef-builders” growing in harsh environmental conditions. Murfreesboro, Tennessee. April 2008.

Southeastern Ecology and Evolution Conference (SEEC) (talk). “Analysis of coral distribution and coral symbionts in two reef “systems” in the southern Caribbean.” Florida State University, Tallahassee, Florida. March 2008.

MTSU Scholars Day 2007 (poster). Baseline coral density data: a simple way to know what’s out there. Murfreesboro, Tennessee. April 2007.

SELECTED WORKSHOPS ATTENDED

2024 Ocean Decade. Barcelona, Spain. April 10-12, 2024.

Black in Marine Science Week. Norfolk, VA. November 26-December 2, 2023.

Diverse Ocean science Community through Collaboration (DOOC) program. California State University, Monterey Bay (CSUMB). August 1-5, 2022.

IN THE NEWS

Bleaching alert for T&T’s coral reefs. <https://www.guardian.co.tt/news/bleaching-alert-for-tts-coral-reefs-6.2.1785602.31a77c3a26>

Integrative and Comparative Biology. [B.I.M.S. feature- Secrets of the Sea: A look at zoantharian how genetic analyses can reveal their identity – Integrative and Comparative Biology \(wordpress.com\)](#)

Shape of Life. [Stanton Belford, Associate Professor, Marine Scientist, and Founder of Marine Nostalgia | the Shape of Life | The Story of the Animal Kingdom](#)

Trinidad and Tobago Newsday. Step carefully on Toco reefs. By Anjani Ganase. 2020. [Step carefully on Toco reefs \(newsday.co.tt\)](#) Trinidad and Tobago Newsday

[Protect Toco reefs too \(newsday.co.tt\)](#). By Anjani Ganase. 2020.

Classrooms in the Sea and Swamp. [Classrooms in the Sea and Swamp \(wildtobago.blogspot.com\)](#) By wildgirl. 2020.

The Last Best Hope. By Mark Meredith. 2020. Trinidad and Tobago Guardian Newspaper. ['Grande L'Anse coral reef - Trinidad Guardian](#).

By Kristy Ramnarine. 2019. 'Grande L'Anse coral reef - Trinidad Guardian Put the Environment First. By Mark Meredith. 2019. Sunday Express Newspaper. Toco's Turning Tide. By Mark Meredith. 2019. [TOCO's+TURNING+TIDE+SERIES.pdf \(squarespace.com\)](#)

GRANTS & FELLOWSHIPS

NSF grant from Diverse Ocean science Community through Collaboration (DOOC) program: From Sea to Sand: Understanding ocean pollutants as stressors to marine biodiversity and cultural perceptions of hazards in present and future climates. Collaboration with UTS, UCLA, and U. Oregon (Awarded: \$8,000). Funded.

2020 NSF 19-585 International Research Experience for Students (IRES). Proposal: US-Trinidad island biodiversity and phylogeny on coral reef communities in the wake of ecological risks associated with port development in a developing country (\$153,605) Not Funded.

2017 NSF 12-551 International Research Experience for Students (IRES). Proposal: US-Trinidad, Transferring Informal Science Education to Students of Diverse Backgrounds Using Coral Reef Monitoring (\$224,350) Not Funded.

2013, Proposal accepted: Lerner Gray Fellowship for Marine Biology, American Museum of Natural History. "Assessment of the Cnidarian species diversity and distribution on the upper intertidal zone of a fringing reef exposed to marginal conditions."

PROFESSIONAL AFFILIATIONS

Tennessee Academy of Science executive committee member-at-large 2024-26

Black in Marine Science Board of Directors November 2023-26.

Steering Committee member (April 2015-present) for the Continental and Diasporic African in Science Education (CADASE) research Interest Group (RIG), which was originally established Oct. 2011 by the NARST executive board

National Association for Research in Science Teaching (2017-present)

Global Coral Reef Alliance (2006-present)

Gamma Beta Phi, Honors Society (1996-2000)

Phi Theta Kappa, Honors Society (1996-2005)

AWARDS/ HONORS

Tidal Wave participant of Black in Marine Science 2023-2024.

Student athlete S.O.A.R. Faculty of the month award MMC (February 2016)

2012, Outstanding International graduate student award, College of Education, Auburn University

2007, 2nd place poster, Basic and Applied Science Department, Scholars Day, Middle Tennessee State University

2007, J. Gerald Parchment Biological Field Station Scholarship, Middle Tennessee State University

2006, John A. Patten Scholarship, Middle Tennessee State University

2006, J. Gerald Parchment Biological Field Station Scholarship, Middle Tennessee State University

SKILLS/QUALIFICATIONS

June 2019-present: train undergraduate students to extract DNA, program a thermal cycler for PCR, gel-electrophoresis preparation, and visualization.

June 2015-2019: Lead faculty study abroad trip to Trinidad- A research experience for undergraduate students. Martin Methodist College

July 2011; Research assistant, diver observations at Key Largo, Florida

June 2009, 2010; International Research Experiences for Students: US-Jordan population dynamics and metabolic interactions between giant sea anemones and anemonefish on Red Sea coral reefs. Auburn University

July 2008; Research training; PCR-DGGE protocol. Supervisor: Dr. T. LaJeunesse, Department of Biological Sciences, Penn State University November 2006; Master's Research; genetic analysis of coral samples to determine symbionts in Family Symbiodiniaceae. Supervisor: Dr. T. LaJeunesse, Department of Biological Sciences, Florida International University (FIU)

December 2005-present; research assistant; provide continual data for coral distribution throughout the Toco region. Research supervisor: Dr. D. Phillip and Dr. Adesh Ramsubhag, Department of Life Sciences (UWI)