V. Alex Sotola, PhD
Assistant Professor, Genetics and Bioinformatics
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Education

Texas State University, *Doctor of Philosophy*, Aquatic Resources and Integrative Biology 2020
Dissertation: Influences of historical and contemporary environmental conditions on threatened and endemic aquatic organisms

Eastern Illinois University, *Master of Science*, Biological Sciences 2016
Thesis: Genetic population structure and diversity of channel catfish in three large Midwestern Rivers

State University of New York at Plattsburgh, *Bachelor of Science*, Ecology 2012

Hudson Valley Community College, Biological Sciences 2010

Charles University, Czech Republic, Czech Language/History 2008

Research/University Positions

State University of New York at Oneonta, Assistant Professor, August 2022 – present

University of Georgia, Postdoctoral Research Associate, July 2020 – August 2022

Texas State University, Doctoral Instructional Assistant, August 2018 – June 2020

Texas State University, Doctoral Research Assistant, July 2016 – August 2018

Eastern Illinois University, M.S. Research Assistant, June 2014 – May 2016

University of Vermont, Fisheries Research Technician, September 2012 – June 2014

Vermont USGS Fish and Wildlife Research Unit, Research Technician, September 2012 – June 2014

Lake Champlain Research Institute, SUNY Plattsburgh, Research Technician, June 2011 – March 2013

Publications (* student)

Zalmat, A.S.*, **V.A. Sotola**, C.C. Nice, and N.H. Martin. 2021. Genetic structure in Louisiana Iris species reveals patterns of recent and historical admixture. *American Journal of Botany*, 108(11): 2257-2268.

Nice, C.C., J.A. Fordyce, **V.A. Sotola**, J. Crow, and P.H. Diaz. 2021. Geographic patterns of genomic variation in the threatened Salado salamander, *Eurycea chisholmensis*. *Conservation Genetics,* 22: 811–821.

Sotola, V.A., K. Sullivan, B. Littrell, N.H. Martin, D.S. Stich, and T.H. Bonner. 2021. Population-level responses of freshwater mussels to floods in a southwestern U.S.A. river estimated through mark-recapture sampling. *Freshwater Biology*, 66(2): 349-631.

Ruppel, D.S., **V.A. Sotola**, C.A. Craig, N.H. Martin, and T.H. Bonner. 2020. Assessing functions of movement in a Great Plains endemic fish. *Environmental Biology of Fishes*, 103: 795-814.

Sotola, V.A., C.A. Craig, P.J. Pfaff, J.D. Maikoetter, N.H. Martin, and T.H. Bonner. 2019. Effect of preservation on fish morphology over time: implications for morphological studies. *PLoS ONE*, 14(3): e0213915.

Sotola, V.A., D.S. Ruppel, C.C. Nice, T.H. Bonner, and N.H. Martin. 2019. Asymmetric introgression between fishes in the Red River basin of Texas is associated with variation in water quality. *Ecology and Evolution*, 9: 2083-2095.

Sotola, V.A., S.M. Miehls, L.G. Simard, and J.E. Marsden. 2018. Lateral and vertical distribution of downstream migrating juvenile sea lamprey. *Journal of Great Lakes Research*, 44(3): 491-496.

Sotola, V.A., A.W. Schrey, A.K. Ragsdale, G.W. Whitledge, L. Frankland, E.K. Bollinger, and R.E. Colombo. 2017. Genetic evidence of isolation by distance and impact of impoundments on genetic diversity of riverine Channel Catfish. *Transactions of the American Fisheries Society*, 146(6): 1204-1211.

Simard, L.G., **V.A Sotola**, S.M. Miehls, and J.E. Marsden. 2017. Assessment of PIT tag retention and post-tagging survival in metamorphosing juvenile Sea Lampreys. *Animal Biotelemetry*, 5(18): 1-7.

Maynard, G.A., T.B. Mihuc, **V.A. Sotola**, D.E. Garneau, and M.H. Malchoff. 2017. Black bass dispersal patterns following catch-and-release tournaments on Lake Champlain. *North American Journal of Fisheries Management*, 37(3): 524-535.

Sotola, V.A., G.A. Maynard, E.M. Hayes-Pontius, T.B. Mihuc, M.H. Malchoff, and J.E. Marsden. 2014. Precision and bias of using opercles as compared to otoliths, dorsal spines and scales to estimate ages of largemouth and smallmouth bass. *Northeastern Naturalist*, 21(4): 565-573.

Sotola, V.A. and D.E. Garneau. 2014. Survey of the Patterns of Nest Box Use Among Squirrels (*Sciuridae*) in Managed Forest Stands in Clinton County, New York. *The Open Ecology Journal*, 7: 1-8.

Maynard, G.A., T.B. Mihuc, R.E. Schultz, **V.A. Sotola**, A.J. Reyes, M.H. Malchoff, and D.E. Garneau. 2013. Use of external indicators to evaluate stress of largemouth (*Micropterus salmoides*) and smallmouth (*M. dolomieu*) bass at tournaments. *The Open Fish Science Journal*, 6: 78-86.

Publications in Preparation, Review, or Press (* student)

Harrison, M.*, **V.A. Sotola**, A. Zalmat*, K.T. Sullivan, B.M. Littrell, T.H. Bonner, N.H. Martin. A comparison of non-destructive visceral swab and tissue biopsy sampling methods for genotyping-by-sequencing population genetic studies of the endemic Texas Pigtoe (*Fusconaia askewi*). *In review at Genes*.

Marsden, J.E., B. Szydlowski*, L. Simard, **V.A. Sotola** and B. Ladago. Laboratory evaluation of lake trout egg penetration into rocky substrates. *In review at Journal of Great Lakes Research*.

Sotola, V.A., C.S. Berg*, M. Samuli, H. Chen, S.J. Mantel, P.A. Beardsley,Y.W. Yuan, A.L. Sweigart, and L. Fishman. Genomic mechanisms and consequences of genic and chromosomal postzygotic barriers between closely related monkeyflower species. *In review at Genetics.*

Martin, N.H., S.J. Taylor, K. Simmons-Fraizer*, K. Mancusi*, and **V.A. Sotola**. Causes of asymmetric introgression in plants. *In prep.*

Sotola, V.A., M. Villatoro*, A. Guzman*, A. Mottet*, M. Harrison*, and C.C. Nice. Effect of different *de novo* filtering parameters on interpretation of genotype-by-sequencing data. *In prep for Molecular Ecology Resources.*

Sotola, V.A., C.A. Craig, T.H. Bonner, & N.H. Martin. Phylogeography of North American western Gulf Slope fishes: genetic relationships reveal patterns of dispersal and vicariance. *In prep for Heredity*.

Grant Funding

Sotola, V.A., and D.S. Stich. 2024 – 2025**.** *Assessment of watermilfoils (*Myriophyllum spp.*) in the Lake Champlain Basin: population genetics and influence on native plant communities*. Lake Champlain Basin Program Research for Clean Water and Healthy Ecosystems. **$239,894 awarded**, pending final approval.

Journal Reviewer

- Review Editor for Evolutionary and Population Genetics, a specialty section of the journals:
  - *Frontiers in Ecology and Evolution*
  - *Frontiers in Genetics*
  - *Frontiers in Plant Science*
- Evolution; Molecular Ecology; Environmental Biology of Fishes; Biological Invasions; North American Journal of Fisheries Management; Diversity; Transactions of the American Fisheries Society; Royal Society Open Science

Teaching Experience

Teacher of Record

Bioinformatics (BIOL 3096/6096), SUNY Oneonta, Fall 2023 – present (odd Fall semesters)
Genetics (BIOL 2002), SUNY Oneonta, Spring 2023 – present
Modern Biology (BIOL 1000), SUNY Oneonta, Spring 2023
Quantitative Biology (BIOL 3800), SUNY Oneonta, Fall 2022 – present (even Fall semesters)

Other

Genomics Computing and Data Analysis, Co-Instructor, Texas State University, Fall 2020 - Spring 2021
Organismal Biology (BIO 1131), Instructional Assistant, Texas State University, Fall 2018 - Spring 2020
Inland Fishes of Texas Identification Course, Co-Instructor, Texas State University, Summer 2017 - 2020

Professional Presentations

Invited Seminars

2022 Maintenance of species boundaries: using hybrids to study genomics of reproductive isolation, SUNY Plattsburgh, Plattsburgh, NY

2022 Maintenance of species boundaries: using hybrids to study genomics of reproductive isolation, University of Texas at Tyler, Tyler, TX.

2022 Using bioinformatics to assess reproductive isolation, SUNY Oneonta, Oneonta, NY.

2022 Genomic signatures of reproductive isolation between closely related species of *Mimulus*, EDGE Seminar Series, University of Georgia, Athens, GA.

2022 Genomics of reproductive isolation between closely related taxa: using hybrids to study species boundaries, Norwich University, Northfield, VT.

2022 Genomics of reproductive isolation: influence of mating barriers on species boundaries, Clemson University, Clemson, SC.

2022 Genomics of reproductive isolation: using hybridization dynamics to study species barriers, Missouri University of Science and Technology, Rolla, MO.

2020 Predicting patterns of genetic structure based on regional geological and local abiotic dynamics, EDGE Seminar Series, University of Georgia, Athens, GA.

2016 Morphometrics as a potential descriptor of hybridization between two chub species. Aquatic Biology Society, Texas State University, San Marcos, TX.

Guest Lectures

2022 GWAS: Genome-wide Association Studies, BI 102 Principles of Biology II, Norwich University

2015 Black bass management in North America, BIO 4812 Fisheries Ecology and Management, Eastern Illinois University

2014 Fish age estimation, WFB 161 Fisheries Biology and Management, University of Vermont

2013 Fish age estimation, ENV 480 Fisheries Management, Plattsburgh State University

Conference Presentations (Last 5 years; *Student presenter/mentee)

2021 **Sotola, V.A.,** C. Berg*, S.J. Mantel, H. Chen*, Y. Yuan, L. Fishman, and A.L. Sweigart. Genomic signatures of reproductive isolation between closely related species of *Mimulus*. Plant Center Retreat, University of Georgia, Athens, Georgia. (Poster)

2020 Reeves, C.N.*, **V.A. Sotola**, A. Zalmat, and N.H. Martin. Natural hybridization of Berberis trifoliolata and Berberis swaseyi in the Edwards Plateau. Women in Science and Engineering, Texas State University, San Marcos, Texas. (Poster)

Reeves, C.N.*, **V.A. Sotola**, A. Zalmat, and N.H. Martin. Natural hybridization of Berberis trifoliolata and Berberis swaseyi in the Edwards Plateau. Southwestern Association of Naturalists, Huntsville, Texas. (Poster)

Banks, W.A.*, J.E. Pav*, N.H. Martin, **V.A. Sotola**, and T.H. Bonner. Intermediate traits of hybridized Prairie Chub *Macrhybopsis australis* and Shoal Chub *M. hyostoma* within the Red River Basin. Texas Chapter American Fisheries Society, Waco, Texas. (Poster)

Edwards, C.R.*, S. Thiels*, C.A. Craig, N.H. Martin, **V.A. Sotola**, and T.H. Bonner. Genomic and morphological divergence within the Texas Shiner *Notropis amabilis* group throughout Central Texas drainages. Texas Chapter American Fisheries Society, Waco, Texas. (Poster)

2019 **Sotola, V.A.**, K. Sullivan, B. Littrell, N.H. Martin, D.S. Stich, and T.H. Bonner. Effect of Discharge on Mussel Population Dynamics through Mark-Recapture Sampling. National American Fisheries Society and The Wildlife Society, Reno, Nevada. (Oral Presentation)

Craig, C.A., **V.A. Sotola**, and T.H. Bonner. Standardization in Measuring and Reporting Fish Habitat Association Data: Application within Gulf Slope Drainages of Texas and Louisiana. National American Fisheries Society and The Wildlife Society, Reno, Nevada. (Oral Presentation)

Sotola, V.A., C.A. Craig, T.H. Bonner, and N.H. Martin. Identification of Historical Dispersal Patterns of Fishes into and within Gulf Slope Drainages. National American Fisheries Society and The Wildlife Society, Reno, Nevada. (Poster)

Sotola, V.A., D.S. Ruppel, C.C. Nice, T.H. Bonner, and N.H. Martin. Asymmetric introgression between fishes in the Red River basin of Texas is associated with variation in water quality. Southern Division and Texas Chapter of the American Fisheries Society, Galveston, Texas. (Oral Presentation)

Pfaff, P.J., **V.A. Sotola**, C.A. Craig, J.D. Maikoetter, N.H. Martin, and T.H. Bonner. Effect of preservation on fish morphology over time: implications for morphological studies. Southern Division and Texas Chapter American Fisheries Society, Galveston, Texas. (Poster)

Ruppel, D.S., **V.A. Sotola**, C.A. Craig, and T.H. Bonner. Factors influencing migrations of a prairie stream fish: a case study using Macrhybopsis australis. Southern Division and Texas Chapter American Fisheries Society, Galveston, Texas. (Oral Presentation)

2018 Adame, A.*, **V.A. Sotola**, T.H. Bonner. The degradative effects of formalin preservation on DNA analysis. S.U.R.E. Program Student Presentation Conference, Texas State University, San Marcos, Texas. (Oral Presentation)

Sotola, V.A., T.H. Bonner, and N.H. Martin. Genetic analysis of the *Macrhybopsis* species complex: a perspective of their historical biogeography within Texas. Southwestern Association of Naturalists, San Marcos, Texas. (Oral Presentation)

Sotola, V.A., T.H. Bonner, and N.H. Martin. Genetic analysis reveals complex genetic structuring and historical biogeographical patterns in the *Macrhybopsis* species complex. Southern Division of the American Fisheries Society, San Juan, Puerto Rico. (Oral Presentation)

Professional Service

Students Mentored

- Katelin Mancusi and Kayla Simmons-Fraizer, Undergraduate Students, SUNY Oneonta (Spring 2023 – present)
    - Causes of asymmetric introgression in plants
- Sherwin Shirazi, Undergraduate Student, University of Georgia (Fall 2021)
    - Differences in flower size and shape variation between microhabitats of sympatric *Mimulus guttatus* and *M. nasutus*
- Melat Mekonnen, Undergraduate Student, University of Georgia (Fall 2021)
    - Quantitative Analysis of Hybrid Necrosis Traits In *Mimulus Guttatus* Plants
- Parker Helms, Undergraduate Student, University of Georgia (Spring 2021 and Fall 2021)
    - Locating Leaf Phenotype Quantitative Trait Loci in *Mimulus* Plant Species
    - Investigating the Presence of Two-Locus Duplication in Hybrids of *Mimulus Tilingii* and *Mimulus Nasutus/Guttatus*
- Christa R. Edwards and Sabrina Thiels, Master's Student, Texas State University (Fall 2019 and

Spring 2020)
    - Genomic and morphological divergence within the Texas Shiner *Notropis amabilis* group throughout Central Texas drainages
- W. Austin Banks and Jackson E. Pav, Undergraduate Students, Texas State University (Fall 2019 and Spring 2020)
    - Intermediate phenotypic traits present in hybridized Prairie *Macrhybopsis australis* and Shoal *M. hyostoma* Chub within the Red River Basin
- Alexander Adame, STEM Undergraduate Research Experience Program, Texas State University (Summer 2018)
    - The degradative effects of formalin preservation on DNA analysis

Other Mentees

- Amber Hamilton, Gwinnett County School District Middle School Teacher, Georgia Intern-Fellowships for Teachers Program Fellow (Summer 2021)
    - Worked with Ms. Hamilton in the lab and greenhouse to develop teaching materials for her classes based on our research at UGA
- University of Georgia Mentor Program (started Summer 2021; mentor.uga.edu)
    - Chloe Dela Cerna (UGA Genetics Major '23)

Memberships

- American Fisheries Society; Ecological Society of America; Botanical Society of America; Society for the Study of Evolution

Awards

- Texas Chapter American Fisheries Society Fisheries Student of the Year Award (2020)
- Texas Chapter American Fisheries Society Scholarship (2019)- $1500
- Texas State University Doctoral Merit Fellowship (2016-2017)- $9000
- Eastern Illinois Graduate School Research/Creative Activity Grant (2015)- $800
- Eastern Illinois Biological Sciences Graduate Student Association Scholar (2015)- $100
- Plattsburgh State University Outstanding Graduating Senior in Ecology (2012)
- Lake Champlain Research Institute Undergraduate Research Award (2012)
- Lake Champlain Research Institute Student Research Presentation Award (2012)