Steven Eugene Saul, Ph.D.
Assistant Professor
Arizona State University
6073 S. Backus Mall, Mail Code 2780
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Education:

University of Miami/RSMAS, Miami, Florida
Ph.D. Degree in Marine Biology and Fisheries (December 2012)

University of Miami/RSMAS, Miami, Florida
Masters of Arts Degree in Marine Affairs and Policy (May 2006)

University of Richmond, Richmond, Virginia
Bachelor of Science Degree in Environmental Studies and Music (May 2004)

Professional Experience:

Arizona State University (March 2016 – Present)
College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus
Mesa, Arizona
Assistant Professor
Supervise and mentor a team of students (graduate and undergraduate) and post-doctoral scientists at both Arizona State University and Oxford University. Instruct undergraduate and graduate courses in ecology, fish population dynamics, and ethical resource management. Our applied research portfolio includes using agent-based models, statistical analyses, and field data collection to understanding coupled natural-human dynamics in fisheries, coral reefs, and other ecological systems using a systems-based approach. Scientific findings from research activities support policy development for resource management purposes. Collaborate with stakeholders in governmental agencies, not-for-profit organizations, and fishing communities in the United States, Indonesia, Kingdom of Tonga, and the member countries that fish for tuna across the Eastern Pacific Ocean.

Environmental Defense Fund (January 2022 – September 2023)
San Francisco, California
Complex Systems Scientist
Develop and advocate science-based, economically sound, fair, and equitable environmental solutions through building ecosystem resilience, optimizing co-benefits across complex systems, identifying strategies to build resilience to climate change across the socio-economic and food security aspects of various fisheries, and analyzing management interventions and strategies suited to fisheries in a changing climate.

Gulf of Mexico Fisheries Management Council, Science and Statistical Committee, Ecosystem Committee Voting Member (August 2021 – Present)
Tampa, Florida
Appointed Voting Member
Peer review scientific fisheries stock assessments and related scientific analyses. Recommend revisions as needed. Develop and provide policy recommendations for consideration based on the scientific assessments being considered. Policy recommendations are considered by the Gulf Council and

either rejected or ultimately adapted into law by the Gulf Council and National Marine Fisheries Service. Establish terms of reference for upcoming scientific evaluations of fish populations.

Marine Stewardship Council (January 2023 – Present)
London, United Kingdom
Peer Reviewer, Fishery Stock Assessments
Provide independent technical review of fishery stock assessments from fisheries around the world in support of Marine Stewardship Council certification of commercial fishing operations. This allows catch from such operations to be marketed as sustainable and sold for a higher price.

Nova Southeastern University (August 2013 – February 2016)
National Coral Reef Institute, Oceanographic Campus
Ft. Lauderdale, Florida
Senior Research Scientist
Supervised and mentored a team of students (graduate and undergraduate) and post-doctoral scientists in the field collection and statistical analysis of remotely sensed and ground-truthed data from remote coral reefs in tropical small island developing nations to develop two-meter resolution maps of coral reef habitat. Participated in month long research expeditions aboard the M/Y Golden Shadow in collaboration with the Living Oceans Foundation and local scientists and managers in each host nation. Collected socioeconomic data from fishing communities in small island developing countries. Assisted with logistical planning and execution of ship and small boat navigation and mooring operations on each expedition.

Key Marine Consulting, Inc. (October 2010 – Present)
Miami, Florida
Founding Partner
Evaluation, modeling and mapping of ecosystem services for non-governmental organizations, for profit companies, and government agencies. Projects include: 1) Chief scientist for the POSEIDON project (Ocean Conservancy, The Nature Conservancy, Oxford University, and in-country partners) developing agent-based modeling software to manage fisheries by representing the interactions of marine ecosystem and human behavior dynamics. Implemented with Indonesian federal government for reef fish management, Interamerican Tropical Tuna Commission to manage tuna populations in the Pacific Ocean, and for management in the U.S. West Coast groundfish fishery. 2) Development and implementation of a marine fisheries educational program for Biscayne and Everglades National Parks for first time offenders of fishing regulations and the public. 3) Evaluation and modeling of ecosystem services for Cementos Argos company and Ecoral organization, Bogota, Colombia. 4) Development of agent-based model for Sea of Cortez corvina fishery for Environmental Defense Fund.

National Marine Fisheries Service (January 2011 – August 2013)
Miami, Florida
Research Fisheries Biologist
Led and participated in population assessments for economically important coral reef fish populations in the Gulf of Mexico, South Atlantic and Caribbean regions using statistical modeling and data analysis techniques. Presented scientific results and management advice to regional scientific and management bodies. Conducted research to improve stock assessment methodologies and procedures. Collaborated with managers, scientists, fishermen, and other stakeholders to research and assess fish population dynamics.

Biscayne National Park (May 2007 – 2009)
Homestead, Florida
Fisheries Biological Technician
Developed and implemented marine fisheries educational program for first time offenders of fishing regulations and the South Florida fishing community. Assisted with development and maintenance of coral nursery.

Cooperative Institute for Marine and Atmospheric Studies, University of Miami (May 2004 to July 2007)
Miami, Florida
Fisheries Research Assistant
Interned with the National Marine Fisheries Service's Southeast Fisheries Science Center. Assisted with the preparation and analysis of fishery data for Gulf of Mexico and U.S. Caribbean stock assessments. Recovered paper records from the U.S. Caribbean local government and developed a relational database with these records which is currently used to assess and manage fish populations in the region.

Grants Awarded: *External While at ASU*

Gordon and Betty Moore Foundation and The Ocean Conservancy. Project Title: The POSEIDON model for ocean fisheries. Amount Funded: $556,344. Project Dates: January 1, 2021 to February 28, 2024. Role: PI.

The Oceans Conservancy. January 2018 to December 2020. Pioneering a new era of fishery management: the POSEIDON model of ocean fisheries. $231,206 (Note: value in Sponsored Activity Report not up-to-date). Role: PI, Percent Effort: 100%.

Gulf of Mexico Research Initiative. January 2016 through December 2018. Avoiding Surprises: understanding the impact of the Deepwater Horizon oil spill on the decision making behaviors of fishers and how this affects the assessment and management of commercially important fish species in the Gulf of Mexico using an agent-based model. $967,226. Role: PI. Percent Effort: 100%.

NOAA Fisheries, Southeast Fisheries Science Center (via Cooperative Institute of Marine and Atmospheric Science, University of Miami). Fantasy and folly in fisheries-dependent length sampling: a review of Trip Interview Program (TIP) sampling protocols and its effect on stock assessment. August 2016 through July 2020. $137,122. Role: Co-PI, Percent Effort: 100%

Internal While at ASU

College of Integrative Sciences and Arts Summer Research Award. $5,000. Role: PI, Percent Effort: 100%. (Summers 2017, 2018, 2019, and 2020).

Prior to ASU

NOAA Coral Reef Conservation Grant (awarded to Key Marine Consulting, Inc.). January 2014 to June 2015. The Catch and Release Program: Achieving Fisheries Management Through Education in South Florida. $30,000. Role: PI, Percent Effort: 100%.

NOAA Coral Reef Conservation Grant (awarded to Key Marine Consulting, Inc.). July 2012 to December 2013. The Catch and Release Program: Achieving Fisheries Management Through Education. $21,000. Role: PI, Percent Effort: 100%.

Joint NMFS/Sea Grant Population Dynamics Fellowship. June 2008 to May 2011. The Development and Use of an Agent-based Model to Evaluate the Effect of Effort Redistribution Due to Fleet Heterogeneity and Policy Implementation on Estimating a Standardized Catch per Unit Effort Index of Abundance. $115,500. Role: PI, Percent Effort: 100%.

NOAA Coral Reef Conservation Grant (awarded to Key Marine Consulting, Inc.). October 2010 to March 2012. Biscayne National Park Fisheries Education Class. $26,000. Role: PI, Percent Effort: 100%.

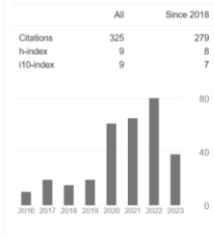
National Park Foundation Impact Grant (awarded to Biscayne National Park). February 2011. Biscayne and Everglades National Parks Fisheries Education Class. $10,000. Role: PI, Percent Effort: 100%.

International Light Tackle Tournament Association Scholarship. October 2009. The Development and Use of an Agent-based Model to Evaluate the Effect of Effort Redistribution Due to Fleet Heterogeneity and Policy Implementation on Estimating a Standardized Catch per Unit Effort Index of Abundance. $2,500. Role: PI, Percent Effort: 100%.

Gulf and Caribbean Fisheries Institute: Best Student Presentation Award. November 2005. A categorical approach to modeling catch at age for various sectors of the gray triggerfish (Balistes apriscus) fishery in the Gulf of Mexico. $1,500. Role: PI, Percent Effort: 100%.

Publications
Peer Reviewed:

h-index = 9



While at ASU

Wibisono, E., D. Dimarchopoulou, **S. Saul,** P. Carvalho, A. Nugraha, P.J. Mous, and A.T. Humphries. *Accepted.* Combining CPUE and SPR indicators to assess the Indonesian deep-slope demersal fisheries. *Fisheries Research* (**First author co-advisee**) Journal Impact Factor = 1.903.

Madsen, J.K., Ekawaty, R., Ananthanarayanan, A., Bailey, R., Carrella, E., Dorsett, C., Drexler, M., Mous, P., Muawanah, U., and **S. Saul.** 2023. Understanding Fisher Behavior: the case of snapper fishers in Indonesia. *Marine Resource Economics* 38(1): 85-100. (**First author is my co-advised postdoc**; author order alphabetical after first two; Journal Impact Factor = 1.851). https://doi.org/10.1086/722725

Lu, X., **S. Saul**, and C. Jenkins. 2022. Statistical methods for predicting spatial abundance of reef fish species. *Ecological Informatics* 69: 101624. (**First author is my student**; Journal Impact Factor = 3.142). https://doi.org/10.1016/j.ecoinf.2022.101624

Woodyard, M., B.A. Polidoro, C.W. Matson, R.A. McManamay, **S. Saul**, K.E. Carpenter, T.K. Collier, R. Di Giulio, R.D. Grubs, J.P. Incardona, C. Linardich, J.A. Moore, I.C. Romero, D. Schlenk, and K. Strongin. 2022. A comprehensive petrochemical vulnerability index for marine fishes in the Gulf of Mexico. *Science of the Total Environment* 821: 152892. (**First author is my advisee**; Journal Impact Factor = 7.963). https://doi.org/10.1016/j.scitotenv.2021.152892

Strongin, K.R., A. Lancaster, B. Polidoro, A. Aguilar-Perera, P. González Diaz, J. González-Méndez, L. McKinney, H. Espinosa, P. Daniel Pech, D. Cobián Rojas, **S. Saul**, and S. Perera Valderrama. 2022. A proposal framework for tri-national agreement on biological conservation in the Gulf of Mexico Large Marine Ecosystem. *Marine Policy* 139: 105041. (**First author is my student**; co-authors are content

contributors listed alphabetically; Journal Impact Factor = 3.228). https://doi.org/10.1016/j.marpol.2022.105041

Ainsworth, C.H, E.P. Chassignet, D. French-McCay, C.J. Beegle-Krause, I. Berenshtein, J. Englehardt, T. Fiddaman, H. Huang, M. Huettel, D. Justic, V.H. Korafalu, Y. Liu, C. Mauritzen, S. Murawski, S. Morey, T. Özgökmen, C.B. Paris, J. Ruzicka, **S. Saul**, J. Sheperd, S. Socolofsky, H. Solo Gabriele, T. Sutton, R.H. Weisberg, C. Wilson, L. Zheng, and Y. Zheng. 2021. Ten years of modeling the Deepwater Horizon oil spill. *Ecological Modelling and Software* 142: 105070 (Journal Impact Factor = 4.552). https://doi.org/10.1016/j.envsoft.2021.105070

Saul, S., E. Brooks, and D. Die. 2020. How fisher behavior affects stock assessment: insights from an agent-based modeling approach. *Canadian Journal of Fisheries and Aquatic Sciences* 77(11): 1749-1757. (Journal Impact Factor = 2.631). https://doi.org/10.1139/cjfas-2019-0025

Strongin, K., C. Linardich, B. Polidoro**, S. Saul**, G. Ralph, and K. Carpenter. 2020. Translating globally threatened species information into regional guidance for the Gulf of Mexico. *Global Ecology and Conservation* 23: e01010. (Journal Impact Factor = 2.751). **First author advisee**. https://doi.org/10.1016/j.gecco.2020.e01010

Burgess, M.G., M. Drexler, R.L. Axtell, R.M. Bailey, J.R. Watson, A. Ananthanaryanan, R. Cabral, E. Carrella, M. Clemence, C. Costello, C. Dorsett, S.D. Gaines, E.S. Klein, P. Koralus, G. Leonard, S.A. Levin, L.R. Little, J. Lynham, J. Koed Madsen, A. Merkl, B. Owashi, S.L. Scott, **S. Saul**, I.E. van Putten, and S. Wilcox. 2020. Opportunities for agent-based modeling in human dimensions of fisheries. *Fish and Fisheries* 21: 570-587. **Authors in alphabetical order after first five; contributed 20% to publication effort.** (Journal Impact Factor = 6.655). https://doi.org/10.1111/faf.12447

Carrella, E., **S. Saul**, M.G. Burgess, R.B. Cabrall, M. Drexler, K. Marshall, R.M. Bailey, C. Dorsett, and J.K. Madsen. 2020. Simple adaptive rules describe fishing behavior better than perfect rationality in the U.S. West Coast groundfish fishery. *Ecological Economics* 169: 106449. **First author co-advisee; contributed equally as first author.** (Journal Impact Factor = 4.281). https://doi.org/10.1016/j.ecolecon.2019.106449

Purkis, S., A.C.R. Gleason, C.R. Purkis, A.C. Dempsey, P. Renaud, M. Faisal, **S. Saul**, and J.M. Kerr. 2019. High-resolution habitat and bathymetry maps for 65,000 km^2 of Earth's remotest coral reefs – the Living Oceans Foundation Global Reef Expedition. *Coral Reefs* 38(3): 467-488. **contributed 25% to publication effort.** (Journal Impact Factor = 3.095). https://doi.org/10.1007/s00338-019-01802-y

Saul, S. and C. Capielo. 2019. Catch and release: the effectiveness of an educational class on anglers caught with fishing citations. *Fisheries* 44(2): 59-72. (Journal Impact Factor = 3.000). https://doi.org/10.1002/fsh.10178

Bailey, R., E. Carrella, R.L. Axtell, M.G. Burgess, R.B. Cabral, M. Drexler, C. Dorsett, J.K. Madsen, A. Merkl, and **S. Saul**. 2019. A computational approach to managing coupled human-environmental systems: the POSEIDON model of ocean fisheries. *Sustainability Science*, 14: 259-275. **Author order alphabetical after first two authors; contributed 20% to publication effort**). (Journal Impact Factor = 3.855). https://doi.org/10.1007/s11625-018-0579-9

Saul, S. and D. Die. 2016. Modeling the decision-making behavior of fishers in the reef fish fishery on the West Coast of Florida. *Human Dimensions of Wildlife* 21(6):

567-586. (Journal Impact Factor = 2.771). https://doi.org/10.1080/10871209.2016.1198853

Prior to ASU

Saul, S. and S. Purkis. 2015. Semi-automated object-based classification of coral reef habitat using discrete choice models. *Remote Sensing* 7: 5894-15916. (Journal Impact Factor = 3.406). https://doi.org/10.3390/rs71215810

Saul, S., D. Die., J.F. Walter III, D.F. Naar, and B.T. Donahue. 2013. Modeling the spatial distribution of commercially important reef fish on the West Florida Shelf. *Fisheries Research* 143: 12-20. (Journal Impact Factor = 1.874). https://doi.org/10.1016/j.fishres.2013.01.002

Saul, S., D. Die, E.N. Brooks, and K. Burns. 2012. An individual-based model of ontogenetic migration in reef fish using a biased random walk. *Transactions of the American Fisheries Society* 141: 1439-1452. (Journal Impact Factor = 1.502). https://doi.org/10.1080/00028487.2012.697091

Peer Reviewed Book Chapters

Saul, S. and S. J. Pittman. 2017. Human ecology at sea: modeling and mapping human-seascape interactions. *In:* Seascape Ecology: Taking Landscape Ecology Into the Sea. West Sussex, United Kingdom: Wiley and Sons. (Peer reviewed book). pp. 391-427. ISBN: 978-1-119-08443-3.

Submissions Under Review

Saul, S., E. Carrella, F. Satria, L. Sadiyah, D. S. Efendi, R. Ekawaty. *Revise and Resubmit.* Recovering Indonesian deep-water demersal export fisheries: a data limited model ensemble approach. *Proceedings of the National Academy of Sciences of the United States of America* (Journal Impact Factor = 11.2).

Strongin, K.R., **S. Saul**, and B. Polidoro. *Revised and Resubmit.* Food-web modeling using comprehensive estimates of biomass for marine biodiversity across the northern Gulf of Mexico. *Food Webs.* (**First author is my advisee**; Journal Impact Factor = 3.188).

Carrella, E., J. Powers, **S. Saul**, R. M. Bailey, N. Payette, K. A. Vert-pre, A. Ananthanarayanan, M. Drexler, C. Dorsett, and J. K. Madsen. *Under Review*. Rejection sampling and agent-based models for data limited fisheries. *Frontiers in Marine Science.* (**First author is my post-doc co-advisee**; Journal Impact Factor = 3.7).

Powers, B. R., K. A. Vert-pre, J. Lopez, N. Payette, R. Bailey, M. Drexler, E. Carrella, and **S. Saul**. *Under Review.* Modeling fish aggregating device drift in a high current mixing area: Eastern Pacific Ocean. *Progress in Oceanography*. (**First two authors are my post-doc advisees**; Journal Impact Factor = 4.1).

Anderson, B.N., H. Bowlby, **S. Saul**, Y. Kang, N. Hammerschlag, L. J. Natanson, and J. Sulikowski. *Under Review*. First insights into the diving behavior and vertical habitat use of young porbeagle sharks in the Northwest Atlantic with implications for bycatch reduction strategies. Marine Ecology Progress Series. (**First author is my co-advisee**; Journal Impact Factor = 2.915).

Collins, J. R., R. E. Boenish, M. R. Cape, C. R. Benitez-Nelson, S. C. Doney, R. Fujita, S. D. Gaines, R. L. Gruby, D. Jin, H. H. Kim, K. M. Kleisner, G. Mariani, L. A. Moore, A.J. Pershing, D. N. Radar, J. Roman, G. K. Saba, J. N. Sanchirico, **S. Saul**,

M. S. Savoca, and A. Waller. *Under Review.* The potential of marine biota to sequester blue carbon. Current evidence and research needs. *Global Biogeochemical Cycles.*

Theses and Conference Proceedings

Burgess, M.G., M. Drexler, R.L. Axtell, R.M. Bailey, J.R. Watson, A. Ananthanaryanan, R. Cabral, E. Carrella, M. Clemence, C. Costello, C. Dorsett, S.D. Gaines, E.S. Klein, P. Koralus G. Leonard, S.A. Levin, L.R. Little, J. Lynham, J. Koed Madsen, A. Merkl, B. Owashi, S.L. Scott, **S. Saul**, I.E. van Putten, and S. Wilcox. 2018. Opportunities for agent-based modeling in fisheries social science. *SocArXiv*. November 15. https://osf.io/preprints/socarxiv/gzhm5/

Saul, S. 2012. An individual-based model to evaluate the effect of fisher behavior on reef fish catch per unit effort. Ph.D. Dissertation. Department of Marine Biology and Fisheries, Rosenstiel School. University of Miami, Coral Gables, Florida. 336 pp. https://scholarship.miami.edu/esploro/outputs/doctoral/An-Individual-based-Model-to-Evaluate-the/991031447332402976

Saul, S., S.C. Turner, D. Die, and A. Livergood. 2008. Comparison of growth between cohorts of juvenile bluefin tuna (*Thunnus thynnus*). *ICCAT Collective Volume of Scientific Papers* SCRS/2008/168. https://www.iccat.int/Documents/Meetings/Docs/SCRS/SCRS-08-168_Saul%20et%20al.pdf

Saul, S. and D. Die. 2006. Using an agent-based, object-oriented model to test the performance of catch per unit of effort as an estimator of fish abundance in small-scale, multispecies fisheries. *Proceedings of the Gulf and Caribbean Fisheries Institute* 59: 267-274.

Saul, S. 2006. A holistic assessment of the biological, cultural and political state of the yellowtail snapper and Caribbean spiny lobster fisheries in the U.S. Virgin Islands. Master of Arts Internship Report, Department of Marine Affairs and Policy, Rosenstiel School, University of Miami, Coral Gables, Florida. 75pp.

Saul, S. and G.W. Ingram. 2005. A categorical approach to modeling catch at age for various sectors of the gray triggerfish (Balistes apriscus) fishery in the Gulf of Mexico. *Proceedings of the Gulf and Caribbean Fisheries Institute* 58: 207-216.

Technical Reports

Saul, S., G. Carroll, Harlisa, A. Halim, and L. Litsinger. 2023. Data-limited stock assessments to increase the sustainability and climate resilience of the snapper-grouper fishery in North Maluku, Indonesia. *Environmental Defense Fund*. Prepared for Wildlife Conservation Society and Kreditanstalt für Wiederaufbau Bankengruppe.

Saul, S. and P. Mous. 2019. Technical Memo on the Status of Snapper and Grouper Stocks in WPP 713 and Rebuilding Projections. The Ocean Conservancy, Washington D.C. (*Developed at the request of the Indonesian Federal Government to inform fisheries management decisions*).

Bruckner A.W., A.C. Dempsey, G. Coward, **S. Saul**, E.M. Rauer, and A. Heemsoth. 2016. Global Reef Expedition: Lau Province, Fiji, Final Report. Khaled bin Sultan Living Oceans Foundation, Annapolis, MD. 113p. ISBN: 978-0-9975451-0-4. https://www.livingoceansfoundation.org/publication/global-reef-expedition-final-report-lau-province-fiji/

Linton, B., **S. Saul**, C. Porch, N. Cummings, and J.C. Tetzlaff. 2013. Gulf of Mexico Red Snapper Stock Assessment Report. Southeast Data Assessment and Review, SEDAR31. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/sedar-31

Saul, S. and J. Walter. 2012. Using a censored regression modeling approach to standardize red snapper catch per unit effort using recreational fishery data affected by a bag limit. Southeast Data Assessment and Review, SEDAR 31-DW33 and NMFS Sustainable Fisheries Division Contribution Number SFD-2012-020. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s31dw33-using-censored-regression-modeling-approach-standardize-red-snapper-catch-unit-effort-using

Bryan, M. and **S. Saul.** 2012. Recreational indices for cobia and Spanish mackerel in the Gulf of Mexico. Southeast Data Assessment and Review, SEDAR28-DW22. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s28dw22-recreational-indices-cobia-and-spanish-mackerel-gulf-mexico

Saul, S. and J. Isely. 2011. Gulf of Mexico Gray Triggerfish Update Assessment Report. Southeast Data Assessment and Review, SEDAR09-Update. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/2011-update-sedar-09-gulf-mexico-gray-triggerfish

Saul, S. 2006. Length frequency analysis of the Gulf of Mexico recreational red grouper fishery. Southeast Data Assessment and Review, SEDAR12-DW12 and Sustainable Fisheries Division Contribution Number SFD-2006-35. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s12dw12-length-frequency-analysis-gulf-mexico-recreational-red-grouper-fishery

Saul, S. 2006. Quantitative historical analysis of the United States and Cuban Gulf of Mexico red grouper commercial fishery. Southeast Data Assessment and Review, SEDAR12-DW11 and Sustainable Fisheries Division Contribution Number SFD-2006-34. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s12dw11-quantitative-historical-analysis-united-states-and-cuban-gulf-mexico-red-grouper-commercial

Nowlis, J.S. and **S. Saul.** 2005. Aggregated production model for the Gulf of Mexico gray triggerfish (*Balistes capriscus*) stock. Southeast Data Assessment and Review, SEDAR9-AW08 and Sustainable Fisheries Division Contribution Number SFD-2005-32. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9aw08-aggregated-production-model-gulf-mexico-gray-triggerfish-balistes-capriscus-stock

Saul, S. 2005. Length frequency analysis and catch at age estimations for commercially landed gray triggerfish (*Balistes capriscus*) from the Gulf of Mexico. Southeast Data Assessment and Review, SEDAR9-DW11 and Sustainable Fisheries Division Contribution Number SFD-2005-20. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw11-length-frequency-analysis-and-calculated-catch-age-estimations-commercially-landed-gray

Saul, S. 2005. Estimated gray triggerfish (*Balistes capriscus*) landings from the Gulf of Mexico headboat fishery. Southeast Data Assessment and Review, SEDAR9-DW12 and Sustainable Fisheries Division Contribution Number SFD-2005-21. Gulf of Mexico

Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw12-estimated-gray-triggerfish-balistes-capriscus-landings-gulf-mexico-headboat-fishery

Saul, S. 2005. Estimated gray triggerfish (*Balistes capriscus*) commercial landings and price information for the Gulf of Mexico fishery. Southeast Data Assessment and Review, SEDAR9-DW13 and Sustainable Fisheries Division Contribution Number SFD-2005-22. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw13-estimated-gray-triggerfish-balistes-capriscus-commercial-landings-and-price-information-gulf

Saul, S. 2005. Estimated gray triggerfish (*Balistes capriscus*) recreational landings for the state of Texas. Southeast Data Assessment and Review, SEDAR9-DW14 and Sustainable Fisheries Division Contribution Number SFD-2005-23. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw14-estimated-gray-triggerfish-balistes-capriscus-recreational-landings-state-texas

Saul, S. and P. Phares. 2005. Estimated gray triggerfish (*Balistes capriscus*) landings from the Marine Recreational Fishery Statistics Survey (MRFSS) in the Gulf of Mexico. Southeast Data Assessment and Review SEDAR9-DW15 and Sustainable Fisheries Division Contribution Number SFD-2005-24. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw15-estimated-gray-triggerfish-balistes-capriscus-landings-marine-recreational-fishery-statistics

Saul, S. 2005. Length frequency analysis for the gray triggerfish (*Balistes capriscus*) recreational fishery in the Gulf of Mexico. Southeast Data Assessment and Review SEDAR9-DW16 and Sustainable Fisheries Division Contribution Number SFD-2005-25. Gulf of Mexico Fisheries Management Council: Tampa, Florida, United States. http://sedarweb.org/s9dw16-length-frequency-analysis-gray-triggerfish-balistes-capriscus-recreational-fishery-gulf

Chormanski, S.D., D. Die, and **S. Saul.** 2005. Length frequency analysis of Caribbean Spiny Lobster (*Panulirus argus*) sampled by the Puerto Rico Commercial Trip Interview Program (1980 – 2003). Southeast Data Assessment and Review SEDAR8-RW02 and Sustainable Fisheries Division Contribution Number SFD-2005-013. Caribbean Fisheries Management Council: San Juan, Puerto Rico, United States. http://sedarweb.org/sedar-8-rw-02-length-frequency-analysis-caribbean-spiny-lobster-panulirus-argus-sampled-puerto-rico

Saul, S., G. Diaz and A. Rosario. 2005. Preliminary analysis and standardized catch per unit effort indices for yellowtail snapper fishery independent data in Puerto Rico. Southeast Data Assessment and Review SEDAR8-AW02 and Sustainable Fisheries Division Contribution Number SFD-2005-012. Caribbean Fisheries Management Council: San Juan, Puerto Rico, United States. http://sedarweb.org/s8aw02-preliminary-analysis-and-standardized-catch-unit-effort-indices-yellowtail-snapper-fishery

Saul, S. and A. Rosario. 2004. Preliminary Analysis of Fishery Independent Data Collected in the U.S. Caribbean for Yellowtail Snapper (*Ocyurus chrysurus*) and Red Hind (*Epinephelus guttatus*). Southeast Data Assessment and Review SEDAR8-DW13 and Sustainable Fisheries Division Contribution Number SFD-2004-047. Caribbean Fisheries Management Council: San Juan, Puerto Rico, United States. http://sedarweb.org/s8dw13-preliminary-analysis-fishery-independent-data-collected-us-caribbean-two-commercially

Saul, S. 2004. A review of the literature and life history study of the Caribbean spiny lobster, *Panulirus argus*. Southeast Data Assessment and Review SEDAR8-DW5 and Sustainable Fisheries Division Contribution Number SFD-2004-048. Caribbean Fisheries Management Council: San Juan, Puerto Rico, United States. http://sedarweb.org/s8dw05-review-literature-and-life-history-study-caribbean-spiny-lobster-panulirus-argus

Mentees Under Advisement

Postdoctoral Scholars

Dr. Katyana Vert-Pre Kirk. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Primary Advisor. (2018 – present)

Dr. Brian Powers. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Primary Advisor. (2016 – 2019)

Dr. Ernesto Carrella. Oxford University, Oxford Martin School, Oxford, England, United Kingdom. Role: Co-Advisor. (2016 – 2022)

Dr. Jens Madsen. Oxford University, Oxford Martin School, Oxford, England, United Kingdom. Role: Co-Advisor. (2017 – 2020)

Dr. Nicolas Payette. Oxford University, Oxford Martin School, Oxford, England, United Kingdom. Role: Co-Advisor. (2017 – 2022)

Ph.D. Students

Julia Phelps. School of Mathematical and Statistical Sciences, Tempe Campus, Arizona State University. Role: Co-Advisor. (2021 – present).

Brooke Anderson. New College, West Campus, Arizona State University. Role: Co-Advisor. (2021 – present).

Kayla Burgher. Environmental Life Sciences, School of Life Sciences, Tempe Campus, Arizona State University. Role: Committee Member (2022 – present)

Rani Ekawaty. University of Bogor, Republic of Indonesia. Role: Co-Advisor (2021 – present).

Diding Efendi. University of Bogor, Republic of Indonesia. Role: Co-Advisor (2019 – 2021, Graduated 2021).

Kyle Strongin. School of Sustainability, Tempe Campus, Arizona State University. Role: Co-Advisor. (2017 – 2021, Graduated Spring 2021)

Xuetao Lu. School of Mathematical and Statistical Sciences, Tempe Campus, Arizona State University. Role: Co-Advisor. (2017 – 2020, Graduated Fall 2020)

Elle Wibisono. Coastal Institute, University of Rhode Island. Role: External committee advisor/fisheries stock assessment mentorship (2019 – 2020, Graduated Fall 2020)

Master's Students

Emily Keister. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Primary Advisor. (2019 – 2022, Graduated Spring 2022)

Megan Woodyard. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Primary Advisor. (Graduated 2019)

Jessica Ruiz. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Primary Advisor. (Graduated 2019)

Sidney Riddle. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Committee Member. (Graduated 2018)

Jessica Dwyer. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Committee Member. (Graduated 2021)

Cameron Boehme. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Committee Member. (Graduated 2019)

Undergraduate Students

Mia Ennis. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor and Senior Barrett Thesis Advisor. (2020-2022). Graduated, B.S. in 2022.

Quiarrah Mapp. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor and Senior Barrett Thesis Advisor. (2020-2022). Graduated, B.S. in 2022.

Chyna Rendon. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Committee Member. (2020-2021). Graduated, B.S. in 2021.

Nadia Taylor. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor and Senior Barrett Thesis Advisor. (2019-2020). Graduated, B.S. in 2020.

Alicia Hinterlong. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor. (2016-2018). Graduated, B.S. in 2018.

Carol Meza. College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor. (2016-2018). Graduated, B.S. in Fall 2020.

Dallin Montierth, College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor. (2016-2018). Graduated, B.S. in 2018.

Christian Mader, College of Integrative Sciences and Arts, Science and Mathematics Unit, Polytechnic Campus, Arizona State University. Role: Undergraduate Research Advisor. (2016-2018). Graduated, B.S. in 2018.

Teaching

Ecology (ABS 370), Fall 2016, Spring and Fall 2017, Spring and Fall 2018, Spring and Fall 2019, Spring and Fall 2020, Spring and Fall 2021, Spring and Fall 2022. Enrollment between 80 and 120 Students.

Special Topics (ABS 494): Fish Population Dynamics, Fall 2017 and Fall 2020. New course at Arizona State University.

Special Topics (ABS 394): Human Rights and Environmental Management, Spring 2021 and Fall 2021, Spring and Fall 2022. New course at Arizona State University.

Service

Guest Editor, *Fishes* special issue on coral reef fish (2023 to present).

Topic Editor, Journal Editorial Team, *Sustainability* (2020 to present).

Peer Review Journal and Book Reviewer: *ICES Journal of Marine Science, Journal of Environmental and Resource Economics*, the books *Seascape Ecology* and *Past, Present, and Future: Mediterranean Cold-water Corals.*

Weekly Departmental Research Colloquium Series Coordinator (2017 to 2023)

Organized special session on modelling: Marine Socio-Ecological Systems Conference: navigating global change in the marine environment. Yokohama, Japan, 25-29 May 2020.

Organized special session on agent-based modeling: International Institute for Fisheries Economics and Trade Conference, Seattle Washington, July 2018.

Hiring committees: Spring 2019 (Applied Biology Lecturer Position 12717), Spring 2020 (Quantitative Ecologist Position 15192); Spring 2023 (Pre-Veterinarian and Immunology Position 107117)

Chair – hiring committee, academic year 2021-2022 (Pre-Vet Position 17056)

Faculty Meeting Rapporteur (Academic year 2016-2017)

Collaboration with ASU STEM Preparatory Junior High School After School Lego and Robotics Team to develop fisheries project for Statewide competition (Fall Semester 2016)

Statistical Programming Skills:

R
Java
SAS
MATLAB
Stock Synthesis 3 (and other stock assessment software)
ArcGIS

Language Skills: Spanish Fluency, oral, reading, and writing

Affiliations: American Fisheries Society, International Institute of Fisheries Economics and Trade

Certifications: PADI Rescue Diver, AAUS, NOAA, NPS Scientific Diver Certifications
FAA Private Pilots License

Awards: Collegewide Researcher of the Year Award, College of Integrative Arts and Sciences, Arizona State University, Academic Year 2019-2020.

Mentee Awards: Xuetao Lu, Ph.D. Student in School of Mathematical and Statistical Sciences, 2018 Dennis Young Graduate and Early Scholar Statistics Award.

Jessica Ruiz, Master's Student, Tony Gonzales Travel Scholarship to attend the AGIC Geospatial Education and Training.

Xuetao Lu, Ph.D. Student in School of Mathematical and Statistical Sciences, Travel Scholarship to attend the 2018 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

Jessica Ruiz, Master's Student, Travel Scholarship to attend the 2018 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

Jessica Ruiz, Master's Student, 2018 Academic Year Outstanding Undergraduate Research Award, Science and Mathematics Unit, Polytechnic Campus, ASU.

Invited Presentations:

Saul, S. 2023. Incorporating Socioeconomic Data into Stock Assessments and its Effect on Status Criteria Determination. Gulf of Mexico Fisheries Management Council Science and Statistical Committee Meeting, Tampa, Florida, U.S. 7 – 9 March, 2023.

***Saul, S.** and K. Vert-Pre. 2019. Are Agent-Based Approaches the Future of Fishery Management? The Poseidon Model & ABMs as Assessment Tools. Center for the Advancement of Population Assessment Methodology, Next Generation Stock Assessment Model Workshop. University of Wellington, Wellington, New Zealand, 4-8 November 2019.

***Saul, S.** 2018. Agent-based approaches to modeling fisheries management. Centre of Excellence Fisheries Modelling Workshop. Jointly sponsored by The Ocean Conservancy, The Nature Conservancy, and The Indonesian Ministry of Fisheries, Bali, Indonesia, July 30-31.

Presentations:
(oral unless otherwise stated as a poster;
† indicates my student or postdoc is presenter;
** indicates while at ASU)*

***Saul, S.** 2021. Evaluating the status of Indonesian deepwater snapper and grouper fishery stocks using a model ensemble approach. World Fisheries Congress. Adelaide, Australia, September 20-24.

***Saul, S.** 2019. Progress towards an agent-based model that explores the effects of the Deepwater Horizon Oil Spill on fish and fishers in the Gulf of Mexico. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 4-8.

*Lu, X. and **S. Saul.** 2019. A Bayesian hierarchical model for spatial analysis of reef habitat data of the Gulf of Mexico. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 4-8.

***Saul, S.** 2018. Sustaining ocean life: understanding the behavior of fishers for resource management. Science and Mathematics Colloquium Series at the Polytechnic Campus, August 29, 2018.

***Saul, S.** 2018. Quantifying and Comparing Fisher Decision-making Strategies Before and After the Deepwater Horizon Oil Spill. International Institute for Fisheries Economics and Trade, Biannual Meeting. Seattle, Washington, July 17-20.

***Saul, S.** 2018. Questionnaires, discrete choice models, and agent-based models of fisher behavior: what can we learn from each? International Institute for Fisheries Economics and Trade, Biannual Meeting. Seattle, Washington, July 17-20.

*†Powers, B. and **S. Saul**. 2018. Simulating fish migration trails in the Gulf of Mexico using a biased random path in continuous space. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

*†Lu, X., and **S. Saul**. 2018. Statistical methods for spatial analysis of reef fish abundance of the Gulf of Mexico. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

*†Ruiz, J., and **S. Saul**. 2018. Spatial distribution of coral reef species based off of habitat characteristics. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

***Saul, S.** 2018. Quantifying and Comparing Fisher Decision-making Strategies Before and After the Deepwater Horizon Oil Spill. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, Louisiana, February 5-8.

***Saul, S.** 2017. An agent-based model of fisher behavior and fish population dynamics in the Gulf of Mexico - how does fisher behavior affect stock assessment? Advances in Marine Ecosystem Modelling Research, Plymouth, United Kingdom. July 2 – 6, 2017.

***Saul, S.** 2016. An agent-based model of fisher behavior and fish population dynamics in the Gulf of Mexico: how does fisher behavior affect stock assessment? International Congress on Agent Computing, George Mason University, Fairfax, Virginia, November 29-30.

***Saul, S.** 2016. An agent-based model of fisher behavior and fish population dynamics in the Gulf of Mexico: how does fisher behavior affect stock assessment? Social Simulation of Fisheries and Coastal Management, Manchester, United Kingdom, June 6-7.

***Saul, S.** 2016. The interaction of fisher behavior and fish population dynamics in the Gulf of Mexico: what can an agent-based model inform us about this relationship and its effect on stock assessment? World Fisheries Congress 2016, Busan, South Korea, May 23-27.

***Saul, S.** 2016. Reimagining fisheries management: an agent-based approach. World Fisheries Congress 2016, Busan, South Korea, May 23-27.

***Saul, S.** 2016. The interaction of fisher behavior and fish population dynamics in the Gulf of Mexico: what can an agent-based model inform us about this relationship and its effect on stock assessment? 5th National Forum on Socioeconomic Research in Coastal Systems, Center for Natural Resource Economic Policy (CNREP), New Orleans, Louisiana, 20-22 March, 2016.

***Saul, S.** 2016. Avoiding surprises: understanding the impact of the Deepwater Horizon oil spill on the decision making behaviors of fishers and how this affects the assessment and management of commercially important fish species in the Gulf of

Mexico using an agent-based model. Gulf of Mexico Oil Spill and Ecosystem Science Conference, Tampa, Florida, February 1-4. (Poster Presentation)

Saul, S. 2014. Avoiding surprises: how simulation models can be used to better balance the benefits of ecosystem services with the risks associated with their use. 8th Cement Sustainability Initiative Forum: Conserving Natures Foundations – Biodiversity and Ecosystems, Cartagena, Colombia, September 15-17.

Saul, S. and A. Heemsoth. 2014. Evaluating education seminars and fishing habits in Tonga: a pilot study. Presentation made to the Government of the Kingdom of Tonga, Nuku'alofa, Tonga, June 24.

Saul, S and S. Purkis. 2014. Using spatial models to evaluate management scenarios and the Living Oceans Foundation mapping project. United Nations Scientific Workshop on Coral Reef Resilience in Planning and Decision-support Frameworks, Phuket, Thailand, April 29-May 1.

Saul, S and S. Purkis. 2014. Remotely sensed resilience indicators or proxies: habitat/rugosity, SST anomalies, human proximity and impact. United Nations Scientific Workshop on Coral Reef Resilience in Planning and Decision-support Frameworks, Phuket, Thailand, April 29-May 1.

Saul, S and D. Die. 2012. Modeling fishing decisions with spatially explicit agent-based models. The International Institute of Fisheries Economics and Trade Biennial Conference, Dar es Salaam, Tanzania, July 24-28.

Saul, S. 2011. An individual-based model to evaluate the effect of fisher behavior on reef fish catch per unit effort. American Fisheries Society Annual Meeting, Seattle, Washington. September 1-8.

Saul, S. 2010. Modeling the spatial distribution and ontogenetic migration of commercially important reef fish on the west Florida shelf using an individual-based model. Guest Speaker at National Marine Fisheries Service Southeast Fisheries Science Center, Panama City, Florida. December 8.

Saul, S. 2010. Individual-based model to evaluate the effect of fisher behavior on estimating a standardized catch per unit effort index of abundance. Guest Speaker at Arizona State University, Tempe, AZ. December 14.

Saul, S. 2010. Modeling the Spatial Distribution of Commercially Important Reef Fish on the West Florida Shelf. American Fisheries Society Annual Meeting, Pittsburg, Pennsylvania. September 9-16.

Saul, S. 2010. An individual-based homing model of ontogenetic migration in a coral reef fish using a biased random walk. American Fisheries Society Annual Meeting, Pittsburg, Pennsylvania. September 9-16.

Saul, S. 2010. Modeling the Spatial Distribution of Commercially Important Reef Fish on the West Florida Shelf. Joint NOAA National Stock Assessment Workshop/National Habitat Assessment Workshop. St. Petersburg, FL. May 17-20 (Poster Presentation).

Saul, S. 2010. An individual-based homing model of ontogenetic migration in a coral reef fish using a biased random walk. Annual NMFS/Seagrant Fellows Workshop. NOAA Fisheries. Seattle, WA. April 14-16.

Saul, S. 2009. Modeling Spatial Autocorrelation of Commercially Important Reef Fish on the West Florida Shelf. Annual NMFS/Seagrant Fellows Workshop. NOAA Fisheries. Woods Hole, MA. April 13-15.

Saul, S. 2008. What catch locations tell you about fish densities: Estimating spatial distribution and abundance from catch per unit of effort. Guest Speaker at National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts. August 13.

Saul, S. and D. Die. 2006. Using an agent-based, object-oriented model to test the performance of catch per unit of effort as an estimator of fish abundance in small-scale, multispecies fisheries. Gulf and Caribbean Fisheries Institute Annual Meeting 59, Belize City, Belize. November 6 –10.

Saul, S. and G. W. Ingram. 2005. A categorical approach to modeling catch at age for various sectors of the gray triggerfish (*Balistes capriscus*) fishery in the Gulf of Mexico. Gulf and Caribbean Fisheries Institute Annual Meeting 58, San Andres, Colombia. November 7 –11.