**MICHAEL D. FOX**

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**EDUCATION**

2018 **Scripps Institution of Oceanography** (SIO), University of California San Diego

Ph.D. in Marine Biology

Advisor: Dr. Jennifer Smith

2013 **Moss Landing Marine Laboratories** (MLML)

M.S. in Marine Science

Advisor: Dr. Michael Graham

2008 **University of San Diego**, B.S. in Marine Science

**PROFESSIONAL APPOINTMENTS**

2018 – Pres. Interdisciplinary Postdoctoral Scholar, Geology & Geophysics and Biology

**Woods Hole Oceanographic Institution** (WHOI)

Advisors: Drs. Anne Cohen and Simon Thorrold

**PUBLICATIONS**

22. Johnson, M.D., **Fox, M.D.**, Kelly, E.L.A., Zgliczynski, B.J., Sandin, S.A., Smith, J.E. 2020.

Ecophysiology of coral reef primary producers across an upwelling gradient in the tropical

central Pacific. *PlosOne* *(Accepted)*

21. **Fox, M.D**., Elliot-Smith, E., Smith, J.E., Newsome, S.D. 2019. Trophic plasticity in a

common reef-building coral: Insights from δ13C analysis of amino acids. *Functional*

*Ecology* 33: 2203-2214.

**\*Featured on the journal’s blog: *The Functional Ecologist***

20. Carter, A.C., Edwards, C.B., **Fox, M.D**., Amir, C., Johnson, M.D., Lewis, L.S., Sandin, S.A., Smith, J.E. 2019. Spatial and temporal dynamics of the corallimorph, *Rhodactis howesii*, at Palmyra Atoll. *Coral Reefs* 38: 1267-1279.

19.Zgliczynski, B.J., Williams, G.J., Hamilton, S.L., Cordner, E.G., **Fox, M.D**., Eyaud, Y., Michener, R.H., Kaufman, L.S., Sandin, S.A. 2019. Foraging consistency of coral reef fishes across environmental gradients in the central Pacific. *Oecologia* 191:433-445*.*

18. **Fox, M.D**., Carter, A.L., Edwards, C.B., Takeshita, Y., Johnson, M.D., Petrovic, V., Amir, C., Sala, E., Sandin, S.A., Smith, J.E. 2019. Limited coral mortality following acute thermal stress and widespread bleaching on Palmyra Atoll, central Pacific. *Coral Reefs* 38:

701-712.

17. Miller, S.D., Zgliczynski, B.J., **Fox, M.D**., Kaufman, L.S., Michener, R.H., Sandin, S.A., Hamilton, S.L. 2019. Niche width expansion of coral reef fishes along a primary production gradient in the remote central Pacific. *Marine Ecology Progress Series* 625:127–143*.*

16.Radice, V.Z., Brett, M.T., Fry, B., **Fox, M.D**.,Hoegh-Guldberg, O., Dove, S.G. 2019.

Evaluating coral trophic strategies using fatty acid composition and indices. *Plos One*

14(9): e0222327.

15. Wegley-Kelly, L., Haas, A.F., Nelson, C.E., Naliboff, D., Calhoun, A., Carlson, C.A.,

Edwards, R.A., **Fox, M.D**., et al. 2019. Diel population and functional synchrony of

microbial communities on coral reefs. *Nature Communications* 10, 1691*.*

14. Radice, V.Z., Hoegh-Guldberg, O., Fry, B., **Fox. M.D**., Dove, S.G. 2019. Coral isotopic compositions across the reef slope: Indicators of upwelling in a remote atoll system. *Functional Ecology* 33:1120-134*.*

13. **Fox, M.D**., Williams, G.J., Johnson, M.D., Radice, V.Z., Zgliczynski, B.J., Kelly, E.L.A., Rohwer, F., Sandin, S.A., Smith, J.E. 2018. Gradients in primary production predict the trophic strategies of mixotrophic corals at multiple spatial scales. *Current Biology* 28:1-9*.*

**\*Highlighted Article with commentary**

Wiedenmann and D’Angelo 2019. Symbiosis: High-carb diet of reef corals as seen from space.

*Current Biology* Dispatch, 28 R1243-R1265.

12. Silbiger, N.A, Nelson, C.A., Remple, K., Sevilla, J., Quinlan, Z., Putnam, H., **Fox, M.D**., Donahue, M. 2018. Nutrient pollution disrupts key ecosystem functions on coral reefs. *Proceedings of the Royal Society - Biology* 285: 20172718.

11. Williams, G.J., Sandin, S.A., Zgliczynski, B.J., **Fox, M.D**., Gove, J.M., Rogers, J.S., Furby, K.A., Hartman, A., Caldwell, Z.R., Price, N.N, Smith, J.E. 2018. Biophysical drivers of coral trophic depth zonation. *Marine Biology* 165: 60*.*

10. Quinlan, Z.A., Remple, K., **Fox, M.D**., Silbiger, N.J., Sevilla, J.K., Oliver, T.A., Putnam, H.M., Wegley-Kelly, L., Carlson, C.A., Donahue, M.J., Nelson, C.E. 2018. Fluorescent organic exudates of corals and algae on tropical reefs are compositionally distinct and increase with nutrient enrichment. *Limnology and Oceanography Letters* 3: 331-430.

9. Moritz, C., Ducarme, F., Sweet, M., **Fox. M.D**., Zgliczynksi, B.J., Ibrahim, N., Basheer, A., Furby, K.A., Caldwell, Z.R., Pisapia, C, Grimsditch, G, Abdulla, A. 2017. The “resort effect”: can tourist islands act as a refuge for coral reef species? *Diversity and Distributions* 23: 1301-1312.

8. **Fox, M.D.** 2016.Biomass loss reduces growth and resource translocation in giant kelp, *Macrocystis pyrifera*. *Marine Ecology Progress Series* 562: 65-77.

7. Nakajima, R., Nakatomi, N., Kurihara, H., **Fox, M.D**., Smith, J.E., Okaji, K. 2016. Crown-of-thorns starfish larvae feed on organic matter released from corals. *Diversity* 8:4.

6. Enochs, I.C., Manzello, D.P., Donham, E., Kolodziej, G., Okano, R., Johnston, L., Young, C., Iguel, J., Edwards, C., **Fox, M.D**., et. al*.* 2015. Shift from coral to macroalgal dominance on a volcanically acidified reef. *Nature Climate Change* 5: 1083-1088.

5. Foley, M.M., Martone, R.G., **Fox, M.D**., Kappel, C.V., Mease, L.A., Erickson, A.L., Halpern, B.S., Selkoe, K.A., Taylor, P., Scarborough, C. 2015. Using ecological thresholds to inform resource management: current options and future possibilities. *Frontiers in Marine Science* 2:95.

4. Adey, W., Halfar, J., Humphreys, A., Suskiewicz, M., Belanger, D., Gagnon, P., **Fox, M.D.** 2015. Subarctic rhodolith beds promote longevity of crustose coralline algal buildups and their climate archiving potential. *Palaios* 30: 281-293.

3. **Fox, M.D.\*** 2013. Resource translocation drives δ13C fractionation during recovery from disturbance in giant kelp, *Macrocystis pyrifera*. *Journal of Phycology* 49: 811-15.

**\*Nominated as a featured article by the editorial board**

2. Gray, S.C., Sears, W.T., Kolupski, M.L., Hastings, Z.C., Przyuski, N.W., **Fox, M.D**., DeGrood, A. 2012. Factors affecting land-based sedimentation in coastal bays, US Virgin Islands. *Proceedings of the 12th International Coral Reef Symposium*, Cairns, Australia, 9-13 July, 21A2.

1. Dikou, A., Ackerman, C., Banks, C., Dempsey, A., **Fox, M.D**., *et al.* 2009. Ecological assessment to detect imminent change, Admiral Cockburn Land and Sea National Park, Turks and Caicos Islands. *Marine Ecology* 30: 425-436.

***Book Chapters***

Graham, M.H., **Fox, M.D**., and Hamilton, S.L. 2016. Macrophyte productivity and the provisioning of energy and habitat to nearshore systems. In*: Marine Macrophytes as Foundation Species* (ed. Olafsson, E.), Science Publisher/CRC Press, Boca Raton, FL. ISBN 978-1-498-72324-4, pp. 131-160.

***In Review or Revision***

Calhoun, S. Haas, A., Takeshita, Y. Johnson, M.D., **Fox, M.D**., Kelly, E.L.A., Mueller, B., Price, N., Vermeji, M.J.A., Kelly, L.W., Nelson, C.E., Rohwer, F.L., Smith, J.E. Exploring the occurrence of and explanations for nighttime dissolved oxygen spikes across coral reef environments. *In revision at PeerJ.*

**Fox, M.D.,** Nelson, C.E., Oliver, T.A., \*Quinlan, Z.A, Remple, K., \*Glanz, J., Smith, J.E., Putnam, H.M. Differential resistance and acclimatization of two coral species to chronic nutrient enrichment reflect life history traits. *To be submitted to Functional Ecology in January 2020.*

\**Mentored undergraduate students*

**HONORS & AWARDS**

2018 *Institutional* *Postdoctoral Scholarship*, WHOI

2018 *Seal of Excellence,* Marie Skłodowska-Curie Fellowship, European Union

2017 *Achievement Award for College Scientists,* ARCS Foundation

2016 *Best Student Paper, honorable mention,* International Coral Reef Symposium

2013 *Nancy Foster Scholarship,* NOAA(1 of 3 awarded nationally)

2011 *Best Student Paper, honorable mention*, Western Society of Naturalists

2008 *Outstanding Undergraduate Research Award*, University of San Diego

2007 *Best Student Research*, School for Field Studies

**RESEARCH FUNDING** [$573,804 awarded to date]

2020 NSF Biological Oceanography ($616,484 *pending*)

2020 Arthur Vining Davis Foundation ($365,662 *pending*)

***Major awards***

2019 – 2020 *Catalyst Program* for coral reef robotics, WHOI $75,000

**Co-PI** with A. Cohen, G. Zhang, Y. Girdhar, and J. Bellingham

2018 – Pres. *Postdoctoral Scholarship*, WHOI $89,250

2017 *Ralph Lewin Fellowship in Marine Biology,* SIO $31,000

2013 – 2017 *Nancy Foster Scholarship*, NOAA $188,000

2013 *STAR Fellowship,* EPA[declined to accept Nancy Foster] $126,000

2013 *Scripps Fellowship*, Scripps Institution of Oceanography, [declined] $25,000

***Minor awards***

2018 *Student Fellowship,* International Society for Isotope Ecology $750

2018 *Graduate student Excellence*, SIO $1,000

2017 *ARCS Scholarship*, ARCS Foundation $7,500

2017 *Lerner-Gray Fund*, American Museum of Natural History $1,960

2017 *Lewis and Clark Exploration Fund*, American Philosophical Society $3,000

2017 *Research and Travel Award,* SIO $1,000

2017 *Graduate student Excellence*, SIO $1,000

2016 *Research and Travel Award,* Grad. Student Association, UCSD $300

2016 *Graduate Student Excellence*, SIO $1,000

2015 *Research and Travel Award,* Grad. Student Association, UCSD $500

2012 *Hoshaw Travel Award*, Phycological Society of America $900

2012 *John H. Martin Scholarship*, Moss Landing Marine Labs $3,000

2012 *COAST Research Award*, California State Universities $3,000

2011 *Kevin Gurr Scholarship*, AAUS $1,500

2011 *Zale Parry Scholarship,* Academy of Underwater Arts & Sciences $3,000

2011 *Meyers Grant*, Myers Oceanographic and Marine Biology Trust $1,000

2011 *Research and Travel Grant*, David and Lucile Packard Foundation $1,000

2011 *Excellence in Marine Science Award,* Underwater Society of America $500

2010 *California Diving & Aquatic Studies Scholarship*, CEN CAL $1,000

2007 *Summer Undergraduate Research Grant*, University of San Diego $6,644

**POSITIONS HELD**

2017 – Pres. Scientific Advisor, California Seaweed Co.

2013 – 2018 Graduate Student Researcher, Scripps Institution of Oceanography

2012 – 2013 Consultant for green algal aquaculture, Vascular Health Services

2011 – 2013 Aquaculture technician, Monterey Bay Seaweeds

2010 – 2013 Contract diver, US Naval Postgraduate School and NOAA

2009 – 2013 Research intern, Center for Ocean Solutions, Stanford University

2012 Aquaculture Consultant, Bio Architecture Labs

**INVITED TALKS**

2020 University of Rhode Island, Graduate School of Oceanography

2020 WHOI Biology Department

2020 WHOI Marine Chemistry and Geochemistry Department

2019 Moss Landing Marine Laboratories

2019 Center for Stable Isotopes, University of New Mexico

2019 NOAA National Marine Sanctuaries Webinar Series

2018 Smithsonian Marine Station, Ft. Pierce, FL

2017 University of New Mexico

2017 San Diego State University

2017 UC San Diego

2016 Palmyra Atoll Research Consortium

2015 Maldives National University

**CONFERENCE CONTRIBUTIONS** (oral presentations unless otherwise noted)

2020International Coral Reef Symposium, Bremen, Germany

\**Session Chair, oral presentation and co-author of 8 additional abstracts*

2019 American Geophysical Union, San Francisco, CA

*\*Invited talk (session: Development and application of coral proxies for ocean change)*

*\*Co-author of an invited talk (session: Multiple isotope patterns within organic compounds: determining the biogeochemical and environmental drivers)*

2018 IsoEcol Meeting,Viña del Mar, Chile

2016 Western Society of Naturalists, Monterey, CA

2016 International Coral Reef Symposium, Honolulu, HI

*\*Best student paper honorable mention*

2014 Ecological Society of America Annual meeting, Sacramento, CA

2012 Western Society of Naturalists, Seaside, CA

2012 Phycological Society of America, Charleston, SC

2011 Western Society of Naturalists, Vancouver, WA

*\*Best student paper honorable mention*

**MENTORING** (3 graduate and 17 undergraduate students since 2014)

***Graduate students***

Laura Dissly *Northeastern University, Three Seas Program* 2019

Brant Chlebowski *UC San Diego, Master’s of Advanced Studies* 2016 – 2018

Breck Archer *UC San Diego, Master’s of Advanced Studies* 2015 – 2016

***Undergraduate students***

Ellen Park *WHOI Summer Student Fellow* 2019

Michael Carlson *UC San Diego* 2018

Amanda Leu *UC San Diego* 2018

Cassandra Paumard *UC San Diego* 2018

Jessica Glanz *UC Santa Cruz* 2016 – 2018

\*Currently MS student at CSU Northridge

Ellis Juhlin *UC San Diego* 2016 – 2017

\*Currently MS student at Utah State University

\***Best student poster award** at Scripps undergraduate research symposium

Spencer Breining-Aday *UC San Diego* 2016 – 2017

\*Currently field technician at California Dept. of Fish and Game

Mario Gaytan  *UC San Diego* 2016 – 2017

Alex Reich  *UC San Diego* 2016

***\****Currently field research technician National Parks Service

Ellen Williams,  *Victoria University, NZ* 2016

\*Currently MS student at Leiden University

\***Best student poster award** at Scripps undergraduate research symposium

Mikaela Ragazzao *University of San Diego* 2016

Annika Vawter *UC Santa Barbara* 2015 – 2017

Steven Deah *UC San Diego* 2014 – 2015

Mallory Rice,  *UC San Diego* 2014

\*Currently PhD student at UC Santa Barbara

Laura Grossman *Scripps College* 2014

Dane Ferrari-Esias *UC San Diego* 2014

Emily Miller *UC San Diego* 2014

**TEACHING EXPERIENCE**

2019 Guest lecturer, Coral Reef Ecology Course, Bermuda Institute of Ocean Sciences

2018 Guest lecturer, Intro to Marine Biology, UC San Diego

2018 Guest lecturer, Student Sustainability Collective, UC San Diego

2018 Guest lecturer, Phycology, Scripps Institution of Oceanography

2018 Teaching Assistant, Phycology, Scripps Institution of Oceanography

2015 Instructor, Coral Reef Monitoring Workshop, *IUCN,* Maldives

2010 – 2011Instructor (5 classes) and teaching assistant, Scientific diving, MLML

**PROFESSIONAL DEVELOPMENT**

2017 Visiting Scholar, NOAA Office of National Marine Sanctuaries, Honolulu, HI

2017 Survivor’s Guide to Stable Isotope Ecology Short Course, Sicily, Italy

2015 Light and Photosynthesis on Coral Reefs Short Course, Puerto Morelos, Mexico

2013 Ocean Conservation Leadership Practicum, Stanford University

2012 Interdisciplinary Marine Science Short Course, Stanford University

2011 Developer, Climate Change and Monterey Bay Workshop, Stanford University

2011 Ocean Policy & Marine Conservation Short Course, Stanford University

2010 Communicating science to policy makers workshop, Stanford University

2005 National Outdoor Leadership School (NOLS)

**ACADEMIC SERVICE AND COMMUNITY OUTREACH**

2019 – Pres. IUCN Coral Specialists Group

2019 – Pres. WHOI Laboratory tours for undergraduate students

2019 – Pres. Letters to a scientist program, Colonial Park Elementary School, Stoneham,MA

2019 – Pres. Classroom visits for meet a scientist day, Elementary and Middle Schools, MA

2017 Public comment review for National Marine Sanctuaries and Monuments, NOAA

2017 NOAA Get into your Sanctuary Day, Waikiki Aquarium

2017 Chasing Coral Premier, Waikiki Aquarium, NOAA

2016 – 2018 Annual Career Day, Muirlands Middle School, La Jolla, CA

2016 Founding member, Interdisciplinary Stable Isotope Forum, SIO, UCSD

2015 Meet a Scientist Day, Molokai, HI

2014 Organizer, Marine Biology Seminar Series, SIO

2012 Committee Member, Regional Water Management Plan, Monterey County, CA.

2012 Moss Landing Marine Labs tours for inner city youth

2011 – 2012 Volunteer diver, Marine Advanced Technology Education ROV contest

2010 – 2013 Student liaison, Monterey Area Research Institutions Network for Education (MARINE), Stanford University

2010 – 2013 Member, Diving Control Board, Moss Landing Marine Labs

2010 – 2011 Secretary, graduate student association, Moss Landing Marine Labs

2008 – 2009 Bay Host, Virgin Islands National Park

2008 Coral Bay Community Youth Rally, St. John, USVI

**MEDIA AND PRESS**

Featured on the Functional Ecologists blog:

<https://functionalecologists.com/2019/09/18/michael-fox-variable-diets-of-coral-reefs/>

Co-authored an article for **The Conversation** (>2500 reads):

*We tracked coral feeding habits from space to find out which reefs could be more resilient*

<https://theconversation.com/we-tracked-coral-feeding-habits-from-space-to-find-out-which-reefs-could-be-more-resilient-105107>

Nancy Foster Scholar Spotlight for NOAA National Marine Sanctuaries

<https://sanctuaries.noaa.gov/news/mar18/the-coral-doctor-foster-scholar-michael-fox.html>

**SEAGOING EXPERIENCE (>272 days at sea)**

2020 National Geographic – Southern Line Islands, Kiribati (21 days)

2019 *R/V Grampian Frontier* (Bangor Uni.) – British Indian Ocean Territory (25 days)

2018 *S/Y Sea Dragon* (WHOI) – Phoenix Islands, Kiribati (30 days)

2017 *M/Y Palau Siren* (SIO) – Remote SW Islands of Palau (14 days)

2015 *M/Y Theia* (IUCN) – North Ari Atoll, Maldives (14 days)

2014 *R/V Hi’ialakai* (NOAA PIFSC) – Maug, Mariana Islands (10 days)

2013*M/Y Hanse Explorer* (SIO) – Southern Line Islands, Kiribati (28 days)

2013 *S/Y Alca I* (Smithsonian) – Labrador, Canada (60 days)

2009 *R/V Nathaniel B. Palmer* (USAP) –SE Weddell Sea, Antarctica (40 days)

2005 – 2012 >30 single day cruises on regional class vessels involving CTD, multicore, trawl surveys, diving, and ROV missions. Institutions: SIO, MLML, and MBARI.

**SHORE BASED FIELD EXPERIENCE**

2019 Bermuda Institute of Ocean Sciences (Expedition Leader – 10 days)

2017 Hawaiʻi Institute of Marine Biology (Expedition Leader – 14 days)

2017 Smithsonian Tropical Research Institute, Bocas del Toro, Panama (14 days)

2016 Palmyra Atoll (Expedition Leader – 28 days)

2016 Palmyra Atoll (7 days)

2017 Hawaiʻi Institute of Marine Biology (Expedition Leader – 14 days)

2015 Maui, Hawaiʻi (14 days)

2015 Palmyra Atoll (22 days)

2015 Hawaiʻi Institute of Marine Biology (70 days)

2015 Universidad Nacional Autonoma de Mexico, Puerto Morelos, Mexico (21 days)

2014 Palmyra Atoll (22 days)

2012 I-Mar Universidad de los Lagos, Puerto Montt, Chile (21 days)

2011 Wrigley Institute for Environmental Science, Catalina Island (14 days)

2009 – 2013 California kelp forests from San Diego to Santa Cruz (>250 dives)

2008 – 2009 Virgin Islands Environmental Resource Station, St. John, USVI (13 months)

2007 Virgin Islands Environmental Resource Station, St. John, USVI (30 days)

2007 School for Field Studies, Turks and Caicos Islands, (4 months)

**CERTIFICATIONS and SKILLS**

AAUS, SIO (100’) >1,000 scientific dives

NAUI Scuba Instructor

NAUI Nitrox

NAUI First aid, CPR & O2 Instructor

DAN Oxygen Administration

Drysuit and cold water diving – extensive experience in the Canadian subarctic

Small boat operations – extensive experience in coastal & offshore navigation

- 8-15 ft. zodiacs, 16-23 ft. skiffs, and 25 ft. RHIBs

Deployment and maintenance of oceanographic instruments and moorings

**PEER REVIEW**

Bul. of Marine Science · Climatic Change · Coral Reefs · Ecology · Environmental Microbiology · Global Change Biology · Journal of Animal Ecology ·Marine Ecology Progress Series· Oecologia · PeerJ · Scientific Reports · Science of the Total Environment

**PROFESSIONAL MEMBERSHIPS**

American Association for the Advancement of Science (AAAS)

American Academy of Underwater Sciences (AAUS)

American Geophysical Union

Ecological Society of America

International Society for Reef Studies

Phycological Society of America

Western Society of Naturalists