

JAMES FOX

Research Associate, Department of Microbiology
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EDUCATION

PhD. 2018 **Marine Biology.** University of Essex, UK.
B.Sc. 2013 **Marine Biology and Oceanography.** University of Plymouth, UK.

PROFESSIONAL APPOINTMENTS

2022-present: Research Associate. Department of Microbiology, Oregon State University, USA
2018-2022: Postdoctoral Scholar. Department of Microbiology, Oregon State University, USA
2014-2017: Graduate Teaching Assistant. Department of Biology, University of Essex, UK
2013: Research Assistant. Ecotoxicology Research and Innovation Centre, University of Plymouth, UK
2011-2012: Research Assistant. Department of Aquaculture and Fisheries, ÇOMU, Turkey

PUBLICATIONS

Stephens, B. M., **Fox, J.**, Liu, L., Halsey, K. H., and Carlson, C. A. 2023. Bacterial production, biomass and community composition influenced by amino acids at the subarctic Pacific's Ocean Station Papa. *Elementa: Science of the Anthropocene*

Amaral, V.J., Lam, P.J., Marchal, O., Roca-Marti, M., **Fox, J.** and Nelson, N.B. 2022. Particle cycling rates near Station P as estimated from the inversion of POC concentration data. *Elementa: Science of the Anthropocene*

Fox, J., Kramer, S.J., Graff, J. R., Behrenfeld, M.J., Boss, E., Tilstone, G. and Halsey, K.H. 2022. An absorption-based approach to improved estimates of phytoplankton biomass and net primary production. *Limnology and Oceanography: Letters*

Baetge, N., Behrenfeld, M.J., **Fox, J.**, Halsey, K.H., Mojica, D.A., Novoa, A., Stephens, B. and Carlson, C.A. 2021. The Seasonal Flux and Fate of Dissolved Organic Carbon through the Food Web in the Western North Atlantic. *Frontiers in Microbiology*.
<https://dx.doi.org/10.3389%2Ffmicb.2021.669883>

Siegel *et al.* 2021. Overview of the EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Northeast Pacific Field Deployment. *Elementa: Science of the Anthropocene*.
<https://doi.org/10.1525/elementa.2020.00107>

Penta, W.B., **Fox, J.** and Halsey, K.H. 2021. Rapid photoacclimation during episodic deep mixing augments the biological carbon pump. *Limnology and Oceanography*.
<https://doi.org/10.1002/lno.11728>

Yang, B., **Fox, J.**, Behrenfeld, M.J., Boss, E., Haëntjens, N., Halsey, K.H., Emerson, S. and Doney, S. 2021. In-situ estimates of net primary production and the ratio of net community

production to net primary production in the North Atlantic Ocean with Argo profiling floats. *Biogeosciences*. <https://doi.org/10.1029/2020JG006116>

Fox, J., Behrenfeld, M.J., Haëntjens, N., Chase, A., Kramer, S.J., Boss, E., Karp-Boss, L., Fisher, N.L., Penta, W.B., Westberry, T.K. and Halsey, K.H. (2020). Phytoplankton Growth and Productivity in the Western North Atlantic: Observations of Regional Variability from the NAAMES Field Campaigns. *Frontiers in Marine Science* 7:24. doi: 10.3389/fmars.2020.00024

Boyle, D., **Fox, J.**, Akerman, J.M., Sloman, K.A., Henry, T.B. and Handy, R.D., 2014. Minimal effects of waterborne exposure to single-walled carbon nanotubes on behaviour and physiology of juvenile rainbow trout (*Oncorhynchus mykiss*). *Aquatic toxicology*, 146, pp.154-164. <https://doi.org/10.1016/j.aquatox.2013.11.006>

MANUSCRIPTS (IN PRESS, IN REVIEW)

McNair, H., Meyer, M., Lerch, S., Maas A. E., Stephens, B., **Fox, J.**, et al. *in review*. Quantitative analysis of food web dynamics in a low export ecosystem. *Global Biogeochemical Cycles*. doi.org/10.1101/2023.03.17.532807

Graff et al. *in revision*. Reconciliation of total particulate organic carbon and nitrogen measurements determined using contrasting methods in the North Pacific Ocean. *Elementa: Science of the Anthropocene*

TECHNICAL REPORTS/MEMORANDUMS

Cetinić et al. 2021. EXPORTS Measurements and Protocols for the NE Pacific Campaign. NASA/TM-20205007358

FUNDING HISTORY (AWARDED AND PENDING)

Summary (\$506,280 in support including \$431,280 as Principal Investigator)

Active Grant Funding

Project Title: Global assessment of climate driven trends in marine primary productivity (**funded**)

Source of Support: National Aeronautics and Space Administration

Total Award Period Covered: 02/01/2021 – 01/31/2024

Total Award Amount: \$421,280

Principal Investigator: James Fox (OSU)

Co-Investigators: Gregory Silsbe (University of Maryland), Toby Westberry (OSU) and Kimberly Halsey (OSU)

Project Title: Expanding a new toxic harmful algal bloom monitoring strategy to multiple Oregon lakes (**funded**)

Source of Support: Oregon State University – College of Science Internal

Total Award Period Covered: 06/01/2022-06/01/2023

Total Award Amount: \$75,000

Principal Investigator(s): Kimberly Halsey (OSU)

Co-Investigators: James Fox (OSU), Duo Jiang (OSU), Daniel Sobota (DEQ), Brandin Hilbrandt (City of Salem), David Donahue (Eugene Water and Electric Board)

Project Title: Assessing the impact of seaweed supplementation on enteric methane production in rangeland cattle (**funded**)

Source of Support: Oregon Sea Grant

Total Award Period Covered: 10/01/2023-09/30/2024

Total Award Amount: \$10,000

Principal Investigator(s): James Fox (OSU)

Co-Investigators: Juliana Ranches (OSU EOARC), David Bohnert (OSU EOARC)

Project Title: Surf & Turf: Assessing Greenhouse Gases Fluxes and the Effects of Seaweed Supplementation to Beef Cattle on Enteric Methane Production on Northern Great Basin Rangelands. (**pending**)

Source of Support: USDA NIFA

Total Award Amount: \$999,636

Principal Investigator(s): Juliana Ranches (OSU EOARC), James Fox (OSU), Rory O'Connor (OSU/USDA)

Project Title: Unlocking the full potential of seaweed as a sustainable and multi-functional commodity (**pending**)

Source of Support: Oregon State University - College of Agricultural Science

Total Award Amount: \$100,000

Principal Investigator(s): James Fox (OSU)

Co-Investigators: Juliana Ranches (OSU EOARC), Ford Evans (OSU), Lloyd Nackly (OSU), Jung Kwon

TEACHING

2014-2017: University of Essex – Colchester, UK

BS112 Marine Ecology: Undergraduate level course. Co-lead in laboratory sessions, supervised field work, and graded assignments.

BS113 Animal Evolution, Ecology and Behaviour: Undergraduate level course. Moderate in class discussion, led field work, and graded assignments.

BS114 Marine Biology Field Skills: Undergraduate level. Co-lead in laboratory sessions, field work, and graded assignments. Spent one week as an instructor on an off-campus field trip where I assisted with lectures and helped coordinate group debates.

BS231 Computational Data Analysis: R for Life Sciences: Undergraduate level. Laboratory teaching assistant.

BS709 Data Analysis and Visualization: Postgraduate level. Instructor for practical workshops providing technical expertise and feedback on the use of R for statistical computing and graphics output.

2011-2012: YDS Academy – Çanakkale, Turkey

English Language Teacher

STUDENTS ADVISED OR MANAGED

Oregon State University Cascades – Bend, Or

Undergraduate students

April 2021- May 2023: Emma Mcabery (Biology, Thesis Advisor)

Oregon State University – Corvallis, Or

Undergraduate students

September 2021-present: Khawater Hussein (Biology, Project Advisor)

November 2019-July 2020: Riley Butler (Biology, Project Co-Advisor)

February 2018-March 2020: Teagan Couch (Biology, Project Co-Advisor)

Graduate students:

January 2020-May 2020: Jacob Anderson (Masters student, Robotics, Project Advisor)

September 2021-present: Nathan Justus (PhD candidate, Robotics, Project Advisor)

September 2021-present: Levi Schimelfining (Masters student, Engineering, Project Advisor)

June 2022-present Aliya Jamil (PhD candidate, CEOAS, SciArt Project Advisor)

June 2022-present Vaishnavi Padaki (PhD candidate, Microbiology, SciArt Project Advisor)

Honors college committee

2021: Douglas Thompson (Biology)

2019: Emma Tornberg (Biology)

University of Essex – Colchester, UK

Undergraduate students

September 2014-March 2015: Karolis Butkas (Biology, Project Advisor)

PROFESSIONAL SERVICE

2022: Marine Carbon Dioxide Removal: Essential Science and Problem Solving for Measurement, Reporting, and Verification Workshop (participant)

2022: 5th workshop on Trait-Based Approaches to Ocean Life, Knoxville, USA (steering committee member)

- 2020:** Scientific Committee on Oceanic Research (SCOR) Working Group 156: Active Chlorophyll fluorescence for autonomous measurements of global marine primary productivity (affiliate member)
- 2019:** Bridging International Activity and Related Research into the Twilight Zone Workshop, Southampton, UK (presenter, title: “Optically-Derived Estimates of Phytoplankton Growth and Production”)
- 2018-present:** NASA EXport Processes in the Ocean from Remote Sensing project (science team, working group co-lead investigating (i) Food web ecology, and (ii) Optical proxies of biogeochemical parameters)
- 2018-2020:** NASA North Atlantic Aerosols and Marine Ecosystems Study (science team member)
- 2018-2020:** Youth Climate Action Now Corvallis program (facilitator and scientific advisor)
- 2017:** AQUAFLUO II: Chlorophyll Fluorescence in the Aquatic Sciences Workshop, Sydney, Australia (presenter, title: “Utilising Chlorophyll Fluorescence to Assess Variability in Phytoplankton Distribution and Physiology in the North-West European Shelf Seas”)
- 2017:** European Space Agency Satellite Validation International Workshop, Plymouth, UK (participant)
- 2013-2017:** NERC Shelf Sea Biogeochemistry program (science team member)

Campus and Departmental Service

- 2019-2020:** OSU Department of Microbiology Core Values Committee
- 2019-2020:** OSU Postdoctoral Association (Vice President)
- 2018-2019:** OSU Postdoctoral Association (Professional Development Coordinator)

Education and Outreach

- 2021:** Earth Day Celebration, NPS International School, Singapore, virtual event. (Invited Speaker)
- 2021:** Career Day, NPS International School, Singapore, virtual event. (Invited Speaker)
- 2021:** Voice of the Sea TV Series, Episode 2, Season 8, EXPORTS 4: The Colors of Plankton. (Featured Scientist)
- 2020:** NASA Earth Day Celebration, virtual event (Invited Speaker)
- 2020-present:** NASA at My Library Project (Attending Scientist)
- 2019-present:** Oregon Museum of Science and Industry Meet a Scientist, Portland OR (Attending Scientist)

Journal Referee

Communications Earth & Environment, Biogeosciences, Scientific Reports, Global Change Biology, Geophysical Research Letters, Deep Sea Research Part 1: Oceanographic Research Papers, Global Biogeochemical Cycles, Progress in Oceanography

Panel reviewer

National Aeronautics and Space Administration

Professional Memberships

American Society for Limnology and Oceanography, Phycological Society of America, Oregon Lakes Association

FELLOWSHIPS AND AWARDS

- 2021:** OSU professional development award. Oregon State University, USA.
- 2020:** OSU Postdoctoral Excellence Award. Oregon State University, USA.
- 2019:** OCB Travel Stipend for BIARRITZ Workshop. Southampton, UK.
- 2019:** OMSI Science Communication Fellowship. Portland, USA.
- 2017:** University of Essex Travel Award. ASLO Aquatic Sciences Meeting in Granada, Spain.
- 2013:** Graduate Research Bursary to work on the European Union-funded MARINA project “Managing Risks of Nanoparticles”. Plymouth University, UK.
- 2013:** Dean’s List of Excellence, Plymouth University, UK.
- 2011** Erasmus Mundus Scholarship. European Union.

FIELD EXPERIENCE

- 2018:** RV Roger Revelle, North Pacific. August-September. NASA EXPORTS field program
- 2015:** RRS Discovery, Celtic Sea. April-May. NERC Shelf Sea Biogeochemistry program
- 2015:** RV Cefas Endeavour, North Sea. August. CEFAS International Bottom Trawl Survey
- 2014:** RV Cefas Endeavour, North Sea. August. CEFAS International Bottom Trawl Survey
- 2014:** RRS James Cook. Celtic Sea. July. NERC Shelf Sea Biogeochemistry program

PRESENTATIONS (FIRST AUTHOR ONLY)

Fox. 2023. Unlocking the full potential of seaweed as a sustainable and multi-functional commodity. OSU College Of Agricultural Science Strategic Advantage Ignite Session. Corvallis, OR. Oral presentation.

Fox. 2023. Micro to macro: The role of algae in a changing world. Deschutes Public Library seminar series. Redmond, OR. Oral presentation.

Fox. 2023. Micro to macro: The role of algae in a changing world. Deschutes Public Library seminar series. Bend, OR. Oral presentation.

Fox et al. 2021. Linking Remotely-Detectable Optical Signals, Photic Layer Plankton Properties, and Export Flux. NASA EXPORTS annual science meeting. Oral presentation.

Fox et al. 2021. Alternative approaches to estimating phytoplankton biomass and primary production. NASA Ocean Ecology Group. NASA Goddard Space Flight Center, USA. Oral presentation.

Fox et al. 2020. Linking photic layer plankton properties to carbon flux in the ocean's twilight zone. ASLO Ocean Sciences Meeting. San Diego, USA. Oral presentation.

Fox et al. 2019. Optically-Derived Estimates of Phytoplankton Growth and Production. BIARRITZ Twilight Zone workshop. Southampton, UK. Oral presentation. Poster presentation and flash talk

Fox et al. 2019. Net Primary Production and Phytoplankton Physiology at Station Papa: linking remotely-detectable optical signals, photic-layer plankton properties and export flux as part of the First Steps project. NASA EXPORTS annual science meeting. VA, USA. Poster presentation and flash talk

Fox et al. 2017. Utilising Chlorophyll Fluorescence to Assess Variability in Phytoplankton Distribution and Physiology in the North-West European Shelf Seas. AQUFLUO II. Sydney, Australia. Poster presentation

Fox et al. 2017. Effects of nutrient limitation on the growth and photo-physiology of phytoplankton communities in the thermally stratified North Sea. CEFAS student day. Weymouth, UK. Poster presentation

Fox et al. 2017. Variability of photosynthetic properties during a Spring Bloom in the Celtic Sea. NERC Shelf Sea Biogeochemistry AGM. Winchester, UK. Poster presentation

Fox et al. 2015. Spatial variability of phytoplankton abundance and physiology in the seasonally stratified North Sea. Essex University EPB. Essex University. Poster presentation

Fox et al. 2015. Using fast repetition rate fluorometry (FRRf) to assess the abundance and photosynthetic parameters of phytoplankton in a complex shelf sea system. ASLO Aquatic Sciences Meeting. Granada, Spain. Oral presentation