

NATALYA D. GALLO

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EDUCATION

Ph.D., Oceanography, Scripps Institution of Oceanography, UC San Diego, 2018

Concentration: Biological Oceanography, Community Ecology, Climate Change

Gallo, N.D. (2018) Influence of ocean deoxygenation on demersal fish communities: Lessons from upwelling margins and oxygen minimum zones. UC San Diego. 369 pp.
<https://escholarship.org/uc/item/6bb6v4z8>

M.S., Marine Biology, Scripps Institution of Oceanography, UC San Diego, 2014

Concentration: Deep-Sea Biology, Marine Biology

B.S., Ecology and Evolution, University of Maryland, College Park, 2011

Graduated with High Honors

POSTDOCTORAL TRAINING

HypOnFjordFish Postdoctoral Scholar at the University of Bergen 01.2021-Present

Research focused on examining the ecological consequences of oxygen loss in marine ecosystems using Western Norwegian Fjords as natural model systems.

NOAA QUEST Fellow at the Scripps Institution of Oceanography 11.2018-12.2020

The NOAA quantitative ecology and socioeconomics training (QUEST) Program was established to train the next generation of quantitative fisheries and ecosystem scientists. Supervised by Dr. Brice Semmens, the SIO director of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) Program. Position was affiliated with the NOAA Southwest Fisheries Science Center and the Center for Climate Change Impacts and Adaptation.

FELLOWSHIPS AND AWARDS

UCSD Chancellor's Dissertation Award for Oceanography	2019
Fisheries Society of the British Isles Travel Grant (~\$1,254)	2018
Forbes 30 Under 30 honoree for the Science List	2017
Switzer Environmental Leadership Fellowship (\$15,000)	2017
Edna B. Sussman Internship Fellowship (\$7,350)	2017
SIO Department Graduate Student Excellence Travel Award (\$500)	2017
ASLO Student Travel Grant (\$500)	2017
International Women's Fishing Association Trust (\$1,000)	2016
Center for Marine Biodiversity and Conservation Trawl Award (\$500)	2016
Mildred E. Mathias Graduate Student Research Grant (\$2,874)	2015-2016
National Science Foundation Graduate Research Fellow (GRFP) (\$138,000)	2012-2016
NSF Graduate Research Opportunities Worldwide (GROW) Fellowship Recipient (Chile) (\$8,200)	2015-2016

Michael M. Mullin Fellowship Recipient at Scripps (\$10,000)	2015
Friends of the International Center Fellowship, UCSD (\$2,000)	2015
Recipient of CMBC NSF IGERT Mini-Grant for Project “Assessing the Status of Ocean-Related Climate Change Research in the Russian Arctic” (\$5,500)	2013
Mia Tegner Fellowship Recipient at Scripps (\$4,000)	2012
NSF IGERT Fellow at the Center for Marine Biodiversity and Conservation (CMBC) in “Climate Change, Marine Ecosystems, and Society”	2012-2013
Udall Scholar for Environmental Leadership (\$5,000)	2010

PUBLICATIONS AND POLICY BRIEFS

- Dobush, B.-J., **Gallo, N.D.**, Guerra, M., Guilloux, B., Holland, E., Levin, L.A., Seabrook, S. 2020. Current perceptions of the ocean-climate nexus: An analysis of submissions to the UNFCCC ocean and climate change dialogue. DOSI: <https://www.dosi-project.org/publications/>
- Gallo, N.D.**, Hardy, K., Wegner, N.C., Nicoll, A., Yang, H., Levin, L.A. (2020) Characterizing deepwater oxygen variability and seafloor community responses using a novel autonomous lander. *Biogeosciences* 17, 3943-3960.
- Gallo, N.D.**, Beckwith, M., Wei, C.-L., Levin, L.A., Kuhnz, L., Barry, J.P. (2020) Dissolved oxygen and temperature best predict deep-sea fish community structure in the Gulf of California with climate change implications. *Marine Ecology Progress Series* 637, 159-180.
- Garcon, V.C., Karstensen, J., Palacz, A., Telszewski, M., Aparco Lara, T., Breitbart, D., Chavez, F., Coelho, P., Cornejo, M., Dos Santo, C., Fiedler, B., **Gallo, N.D.**, Gregoire, M., et al. (2019) Multidisciplinary observing in the world ocean’s oxygen minimum zone regions: from climate to fish – the VOICE initiative. *Frontiers in Marine Science* 6, Article 722.
- Gallo, N.D.**, Drenkard, E., Thompson, A., Weber, E.D., Wilson-Vandenberg, D., McClatchie, S., Koslow, J.A., Semmens, B.X. (2019) Bridging from monitoring to solutions-based thinking: Lessons from CalCOFI for understanding and adapting to marine climate change impacts. *Frontiers in Marine Science* 6, Article 695, 21 pp.
- Gattuso, J.-P., Magnan, A.K., **Gallo, N.D.**, Herr, D., Rochette, J., Vallejo, L., Williamson, P. (2019) Opportunities for increasing ocean action in climate strategies. IDDRI, Policy Brief No. 02/19.
- Levin, L.A., **Gallo, N.D.** (2019) The significance of ocean deoxygenation for continental margin benthic and demersal biota. pg. 341-361. In: Ocean deoxygenation: everyone’s problem. Causes, impacts, consequences, and solutions. IUCN, Eds. Laffoley, D., Baxter, J.M. 588 pp.
- Gallo, N.D.** (2018) Influence of ocean deoxygenation on demersal fish communities: Lessons from upwelling margins and oxygen minimum zones. UC San Diego. 369 pp. <https://escholarship.org/uc/item/6bb6v4z8>
- Gallo, N.D.**, Levin, L.A., Beckwith, M., Barry, J.P. (2018) Home sweet suboxic home: Remarkable hypoxia tolerance in two demersal fish species in the Gulf of California. *Ecology* 100(3), e02539.
- Gerringer, M., Andrews, A., Huss, G., Nagashima, K., Popp, B., **Gallo, N.**, Linley, T., Clark, M., Jamieson, A., Drazen, J. (2018) Life history of abyssal and hadal fishes from otolith growth zones and oxygen isotopic compositions. *Deep-Sea Research I* 132, 37-50.
- Gallo, N.D.**, Victor, D.G., Levin, L.A. (2017) Evaluating Ocean Commitments Under the Paris Agreement. *Nature Climate Change* 7, 833-838.
- Januchowski-Hartley, S., Selkoe, K., **Gallo, N.**, Bird, C., Hogan, J. (2017) Knowledge sharing about deep-sea ecosystems to inform conservation and research decisions. *FACETS* 2, 984-997.
- Gallo, N.D.**, Levin, L.A. (2016) Fish ecology and evolution in the world’s oxygen minimum zones and implications of ocean deoxygenation. *Advances in Marine Biology* 74, 117-198.
- Cicin-Sain, B., Barbiere, J., Terashima, H., Turley, C., Bille, R., Herr, D., Virdin, J., Kurz, M., Suarez, J.M.D., Balgos, M., Lindoso, V., Isensee, K., Vegh, T., Maekawa, M., Hughes, E., Haag, F., Kleverlaan, E., Wright, G., McLeod, K.B., Donoghue, M., Long, W.L., Young, C.D., Levin, L.,

- Gallo, N.**, Muir, M., et al. (2016) Towards a strategic action roadmap on oceans and climate: 2016 to 2021. Washington DC: Global Ocean Forum. pp 1-94.
- Levin, L.A., Mengerink, K., Gjerde, K.M., Rowden, A.A., Van Dover, C.L., Clark, M.R., Ramirez-Llodra, E., Currie, B., Smith, C.R., Sato, K.N., **Gallo, N.D.**, Sweetman, A.K., Lily, H., Armstrong, C.W., Brider, J. (2016) Defining “serious harm” to the marine environment in the context of deep-seabed mining. *Marine Policy* 74, 245-259.
- Eddebbar, Y.A., **Gallo, N.D.**, Linsmayer, L.B., (2015) The oceans and the UN Framework Convention on Climate Change. *ASLO Bulletin* 24(3), 69-72.
- Gallo, N.D.**, Cameron, J., Hardy, K., Fryer, P., Bartlett, D.H., Levin, L.A. (2015) Submersible- and lander-observed community patterns in the Mariana and New Britain trenches: Influence of productivity and depth on epibenthic and scavenging communities. *Deep-Sea Research I* 99, 119-133.
- Lehnert, E.M., Mouchka, M.E., Burriesci, M.S., **Gallo, N.D.**, Pringle, J.R. (2014) Extensive differences in gene expression between symbiotic and aposymbiotic cnidarians. *G3: Genes, Genomes, Genetics* 4, 277-295.
- Gallo, N.D.**, Certner, R.H., Parikh, N., Cho, H., Gibbons, A., Kim, C., Liu, T., Miller, H., Throwe, T., Wooten, M., Vanko, D.A., Sellner, K.G. (2014) Efficacy of *Microcystis aeruginosa* removal in deionized and brackish water. *Proceedings for the 15th International Conference on Harmful Algae*.
- Gallo, N.D.**, Jeffery, W.R., (2012) Evolution of space dependent growth in the teleost *Astyanax mexicanus*. *PLoS ONE* 7(8), e41443.

SCIENTIFIC PRESENTATIONS (2019-2020)

- Gallo, N.D.**, Wolfe, J., Beckwith, M., Swalethorpe, R., Semmens, B.X., Levin, L.A. Oxygen minimum zones impact benthic-pelagic coupling on upwelling margins with implications for demersal fisheries productivity. Oral presentation. Ocean Sciences Meeting. February 17, 2020.
- Gallo, N.D.**, Simpson, G.L., Wegner, N.C., Levin, L.A., Thompson, A., Vetter, R., Semmens, B.X. Characterizing secular trends of warming and deoxygenation in the CalCOFI time series and ecological implications for fisheries species. Oral presentation. CalCOFI Conference. December 2, 2019.
- Gallo, N.D.**, Semmens, B.X., Wegner, N.C., Vetter, R., Levin, L.A. What’s ecologically relevant when considering deoxygenation trends? Oral presentation. Eastern Pacific Ocean Conference. October 2, 2019.
- Gallo, N.D.** From Monitoring to Climate Action in EBUS: Lessons from CalCOFI. Invited presentation. Eastern Boundary Upwelling Systems Webinar. June 20, 2019.
- Gallo, N.D.** How studies of natural gradients and natural variability inform us about climate change vulnerabilities of marine ecosystems. Invited presentation for the Ecology Seminar at Scripps Institution of Oceanography. April 17, 2019.
- Gallo, N.D.**, Drenkard, E., Thompson, A., Weber, E.D., Wilson-Vandenberg, D., McClatchie, S., Koslow, J.A., Semmens, B.X. Bridging from monitoring to solutions-based thinking: Lessons from CalCOFI for understanding and adapting to marine climate change impacts. Poster presentation. Ocean Visions Conference. April 3, 2019.
- Gallo, N.D.** Ocean acidification off California: Monitoring and ecosystem implications. Oral presentation. San Diego Climate Summit. March 26, 2019.
- Gallo, N.D.** Influence of ocean deoxygenation on demersal fish communities: Lessons from upwelling margins and oxygen minimum zones. Invited seminar at CICESE, Ensenada, Mexico. February 26, 2019.
- Gallo, N.D.**, Hardy, K., Wegner, N., Yang, H., Levin, L.A. Characterizing deep-water oxygen variability in the Southern California Bight and seafloor community responses. Oral presentation. Mathias Symposium. February 8, 2019.

POLICY, MANAGEMENT AND OUTREACH PRESENTATIONS (2019-2020)

- Gallo, N.D.** Climate change and the ocean. California Naturalists Class. March 3, 2020.
- Panel participant** in Ocean Sciences Meeting Town Hall organized by COMPASS titled, “Making your science matter: Lessons for the future from twenty years of science communication and engagement.” February 19, 2020. Co-panelists: Dr. Jane Lubchenco, Dr. Dawn Wright, Dr. Francis Chan, Dr. Lauren Linsmayer, and Dr. Sarah Cooley.
- Gallo, N.D.** Climate change and the ocean: An international problem. US-China Forum. January 30, 2020. Presentation requested by Scripps director Dr. Margaret Leinen.
- Gallo, N.D.** Biological impacts of climate change. Scripps Director’s Council Meeting. January 28, 2020. Presentation requested by Scripps director Dr. Margaret Leinen.
- Gallo, N.D.**, Semmens, B.X. CalCOFI: Ecosystem monitoring to understand the effects of long-term changes in the California Current Ecosystem. Channel Islands National Marine Sanctuary Advisory Council Meeting. January 24, 2020.
- Gallo, N.D.** The importance of monitoring programs for observing climate impacts in the deep Pacific. Presentation at UNFCCC COP25 side event on “Climate Change in the Deep Pacific and Deep Blue Economies.” Moana Blue Pacific Pavilion. December 11, 2019.
- Organizer and presenter** at press conference panel at UNFCCC COP25 on “Fisheries and Climate Change: Different Windows into a Complex Problem. Co-presenters: L. Levin, E. Ferrer, M. Bettilyon, L. Ramajo. December 10, 2020.
- Panel participant** in IUCN Ocean Deoxygenation panel at UNFCCC COP25. December 9, 2020. Co-panelists: L. Levin, L. Cavole, M. Epps, S. Arico, D. Herr.
- Gallo, N.D.** Opportunities for increasing ocean action in climate strategies. Presentation at UNFCCC COP25 side event “Global ocean governance for enhancing the ambition of national commitments on oceans.” December 9, 2019.
- Gallo, N.D.**, Semmens, B.X. Tracking climate change and ecosystem impacts with CalCOFI. Presentation at the CalCOFI Stakeholder Workshop. December 4, 2019.
- Gallo, N.D.** Scientists as citizens in a time of rapid environmental change. TEDx UCSD. May 18, 2019. <https://www.youtube.com/watch?v=8bIeE95UwDk>

LEADERSHIP

Scripps Institution of Oceanography Delegate to the following United Nations Conferences

UNFCCC Conference of the Parties (COP25) Madrid, Spain	Dec 2019
UN Oceans Conference, UN Headquarters, NY, USA	Jun 2017
UNFCCC Conference of the Parties (COP22) Marrakech, Morocco	Nov 2016
UNFCCC Conference of the Parties (COP21) Paris, France	Dec 2015
UNFCCC Bonn Climate Change Conference, Bonn, Germany	Jun 2015
UNFCCC Conference of the Parties (COP20) Lima, Peru	Dec 2014
UNFCCC Conference of the Parties (COP19) Warsaw, Poland	Nov 2013

Participant in the Early Career Ocean Professionals Working Group for the UN Decade for Ocean Science (2019-Present)

Participant in the DOSI Climate Change Working Group (2018-Present)

Co-organized graduate seminar on Oceans in the UNFCCC Spring 2015
Teachers on record: Lisa Levin and John-O Niles

Co-founder of Ocean Scientists for Informed Policy Jun 2013-2020

A group of young scientists who wants to see good science be used to make well-informed policy decisions that affect the ocean

Co-founder of the Interdisciplinary Forum for Environmental Research 2013-2016
Partnership between students at the SIO, the UCSD Humanities Center, and the Environmental Policy group at COLEF in Mexico. Biweekly seminars focused on interdisciplinary environmental issues.

Committee member and research mentor for Scripps M.S. student Ashley Nicoll (May 2019-present)

Previously served as a research mentor to the following undergraduate students at Scripps:

UCSD undergraduates:

Kaelan Prime 05/2018-07/2018 (fish dissections)

Haleigh Yang 11/2017-06/2018 (lander video analysis)

Maryanne Beckwith 09/2015-06/2017 (ROV video analysis and fish dissections)

Erin Navarro 09/2014-09/2015 (trophic analysis and fish dissections)

Savannah Johnson 11/2014-06/2015 (otolith analysis and fish dissections)

Yuzo Yanagitsuru 08/2013-05/2014 (physiological research)

NSF Scripps Undergraduate Research Fellowship Summer students (SURF REU):

Jaxine Wolfe – REU 06/2017-09/2017 (stable isotope analysis)

Aissa Yazzie – REU 06/2014-08/2014 (stable isotope analysis)

Community college student:

Justin McCarthy 03/2015- 03/2017 (gut content analysis and fish dissections)

SERVICE TO THE SCIENTIFIC COMMUNITY

Proposal reviewer for the National Science Foundation for the Marine Geology and Geophysics Program **May 2020**

Session organizer for the 2020 Ocean Sciences Meeting **Feb 2020**
Session: Benthic and Benthic-Pelagic Community Connectivity from Coastal to Deep-Ocean Environments. Co-chairs: J. Ingels, A. Netburn

Served on a grant review panel for the NOAA Office of Ocean Exploration **Nov 2019**

Session organizer for the 2019 Eastern Pacific Ocean Conference **Oct 2019**
Session: Facing the Challenges of Deoxygenation – From Physics to Fish.
Co-chair: L. Cavole

Reviewer for the following journals:

Journal of Animal Ecology

Biogeosciences

Frontiers in Marine Science

Marine Ecology Progress Series

Global Change Biology

Deep-Sea Research II

JGR-Oceans

Journal of Natural History

Fisheries Oceanography

Journal of Marine Systems

Global Environmental Change

Progress in Oceanography

CODING LANGUAGES

Extensive experience using R (7 years), minimal experience using Matlab and Python (~1 year each), currently learning Julia

LANGUAGE SKILLS

English (Fluent) Russian (Fluent) French (Basic) Spanish (Basic) Norwegian (Learning)

PREVIOUS WORK EXPERIENCE

Research Technician for Dr. John Pringle

Nov 2011-Jun 2012

Department of Genetics, Stanford University, Palo Alto, CA

Responsibilities: PCR, Quantitative PCR (RT-PCR), culturing symbiotic and aposymbiotic anemones

Research technician for Dr. William Jeffery

Jun 2011-Aug 2011

Developmental Biology, Roscoff Marine Biological Station, France

Responsibilities: immunohistochemistry, regeneration experiments, growing and maintaining ascidians
