
CURRICULUM VITAE

Derek Skillings

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Academic Positions

Assistant Professor (present) University of North Carolina at Greensboro Philosophy Department

Lecturer (2018 - 2019) – University of Pennsylvania Philosophy Department

Lecturer (2018) – City College of New York Philosophy Department

Postdoctoral Researcher (Oct 2016 – June 2018) – University of Bordeaux/CNRS

ERC funded project (€1,454,000) on Immunity, Development and the Microbiota (IDEM):
Understanding the Continuous Construction of Biological Identity

Lecturer (2013 - 2016) – Brooklyn College Philosophy Department

Education

Ph.D. Philosophy. The Graduate Center, City University New York (2017)

Dissertation: *Aspects of Biological Explanation*

Advisor: Peter Godfrey-Smith

Committee: Massimo Pigliucci, David Papineau, Catherine Wilson, Justin Garson

Ph.D. Zoology. University of Hawai'i at Mānoa (2012)

Dissertation: *Islands, Archipelagos, and Beyond: Population Genetics and Phylogeography of Hawaiian Coral Reef Echinoderms*

Advisor: Rob Toonen

Committee: Brian Bowen, Charles Birkeland, Andy Taylor, Ron Bontekoe

M.A. Philosophy. University of Hawai'i at Mānoa (2012)

Advisor: Ron Bontekoe

B.A. Open Studies: Biology, Chemistry, Philosophy. Minnesota State University, Mankato (2006)

Areas of Specialization

Philosophy of Biology, Philosophy of Science, Environmental Philosophy, Evolutionary Biology

Areas of Competency

Philosophy – Ancient Chinese and Buddhist Philosophy, Biomedical Ethics, American Pragmatism
Biology - Conservation Biology, Marine Biology, Invertebrate Biology, Population Genetics

Publications

- 21) “Trojan Horses and Black Queens – Causal Core Explanations in Microbiome Research.” Skillings, D. *Biology & Philosophy*. (2019)
- 20) “Methodological Strategies in Microbiome Research and their Explanatory Implications.” O’Malley, M and Skillings, D. *Perspectives on Science*. (2018).
- 19) “Microbiomes and Holobionts” Skillings, D and Hooks, K. *Encyclopedia of Ecology, 2nd Edition*. (2018) Elsevier Press.
- 18) “A Coalescent Sampler Successfully Detects Biologically Meaningful Population Structure Overlooked by F-Statistics” Crandall ED, Toonen RJ, ToBo Laboratory, Skillings DJ and Selkoe KA. *Evolutionary Applications*. (2018).
- 17) “Holobionts and the Ecology of Organisms – Multi-Species Communities or Integrated Individuals?” *Biology & Philosophy*. (2016) 31(6):875-892. doi:10.1007/s10539-016-9553-z
- 16) “Mechanistic Explanation of Biological Processes” *Philosophy of Science* (2015) 82: 1139-1151.
- 15) “The DNA of Coral Reef Biodiversity: Predicting and Protecting Genetic Diversity of Reef Assemblages” Selkoe KA, Gaggiotti OE, Trembl EA, Wren JLK, Donovan MK, Andrews KA, Baums I, Bird CE, Bolick H, Bowen B, Coleman R, Craig MT, Daly-Engel TS, DiBattista JD, Eble J, Fernandez-Silva I, Franklin EC, Gaither MR, Iacchei M, Rocha LA, Skillings D, Santos SR, Timmers M, Wedding L, Williams GJ, Whitney NM, Toonen RJ. *Proc. R. Soc. B* (2016) 283: 20160354.
- 14) “An assessment of shallow and mesophotic reef brachyuran crab assemblages on the south shore of Oahu, Hawaii.” Hurley KC, Timmers MA, Godwin LS, Copus JM, Skillings DJ, Toonen RJ *Coral Reefs*. (2015) DOI: 10.1007/s00338-015-1382-z.
- 13) “Emergent Patterns of Population Genetic Structure for a Coral Reef Community” Selkoe KA, Gaggiotti OE, Andrews KA, Bernal MA, Bird CE, Bolick H, Baums I, Coleman R, Concepcion GT, Craig MT, DiBattista JD, Eble J, Fernandez-Silva I, Gaither MR, Iacchei M, Polato NR, Rivera MA, Rocha LA, Skillings DJ, Timmers M, Szabo Z, Bowen BW, Toonen RJ. *Molecular Ecology* (2014) DOI:10.1111/mec.12804.
- 12) “Comparative population structure of two edible Indo-Pacific coral reef sea cucumbers (Echinodermata: Holothuroidea)” Skillings DJ, Bird CE, Toonen RJ. *Bulletin of Marine Science* (2014) 90(1). DOI: 10.5343/bms.2013.1001.
- 11) “The Origins Of Tropical Marine Biodiversity” Bowen BW, Rocha LA, Bird CJ, Skillings DJ, Eble JA, DiBattista JD, Craig MT, Toonen RJ. *Trends in Ecology and Evolution* (2013).
- 10) “After continents divide: Comparative phylogeography of reef fishes from the Red Sea and Indian Ocean” DiBattista JD, Berumen ML, Gaither MR, Rocha LA, Eble JA, Choat JH, Craig MT, Skillings DJ, Bowen BW. *Journal of Biogeography* (2013).
- 9) “There’s no place like home: Crown-of-thorns outbreaks in the Central Pacific are regionally derived and independent events” Timmers MA, Bird CE, Skillings DJ, Smouse P, Toonen RJ. *PLoS ONE* (2012) 7(2).
- 8) “Sympatric speciation in the post “Modern Synthesis” era of evolutionary biology” Bird CE, Fernandez I, Skillings DJ, Toonen RJ. *Evolutionary Biology* (2012) 39:158-180.
- 7) “Molecular delineation of species in the coral holobiont” Stat M, Baker A, Bourne D, Correa A, Forsman Z, Huggett M, Pochon X, Skillings D, Starger C, Toonen RJ, van Oppen M, Gates R. *Advances in Marine Biology* (2012). <http://dx.doi.org/10.1016/B978-0-12-394282-1.00001-6>.

- 6) “Defining boundaries for ecosystem-based management: A multispecies case study of marine connectivity across the Hawaiian Archipelago” Toonen RJ, Andrews K, Baums I, Bird CE, Concepcion G, Daly-Engel T, Eble J, Faucci A, Gaither M, Iacchei M, Puritz J, Schultz J, Skillings DJ, Timmers M, Bowen B. *Journal of Marine Biology*. (2011) ID#460173, 13 pp.
- 5) “Gateways to Hawai‘i: genetic population structure of the tropical sea cucumber *Holothuria atra*” Skillings DJ, Bird CE, Toonen RJ. *Journal of Marine Biology*, (2011) ID# 783030, 16 pp.
- 4) “Where have all the larvae gone? Patterns of connectivity in the Hawaiian Archipelago” Toonen RJ, Bird CE, Eble J, Faucci A, Concepcion G, Andrews K, Skillings DJ, Iacchei M, Baums I, Bowen BW. in *Diving for Science. Proceedings of the American Academy of Underwater Sciences* (2010) Dauphin Island, AL: AAUS.
- 3) “It’s just a flesh wound: non-lethal sampling for conservation genetics studies” Skillings DJ, Toonen RJ. (in *Diving for Science. Proceedings of the American Academy of Underwater Sciences* (2010) Dauphin Island, AL: AAUS.
- 2) “Reconciling ecosystem-based management and focal resource conservation in the Papahānaumokuākea Marine National Monument” Kittinger JN, Skillings DJ, Carvalho KK, Reeve LLN, Hutchinson M, Cullison K, Shackeroff J, Chow M, Lemus J. *Marine Sanctuaries Conservation Series* (2009) ONMS-09-04. NOAA, Office of National Marine Sanctuaries.
- 1) “Laboratory culture of the soft-coral *Carijoa riisei*” *Journal of Young Investigators*. (2008) 15:8.

Book Reviews

Adrian Currie’s *Rock, Bone, and Ruin: An Optimist’s Guide to the Historical Sciences*. NDPR. (2018).

Popular Press

“Life is not easily bounded” *Aeon Magazine*. (2017) <https://aeon.co/essays/what-constitutes-an-individual-organism-in-biology>

“I, holobiont. Are you and your microbes a community or a single entity.” *Aeon Magazine*. (2018) <https://aeon.co/ideas/i-holobiont-are-you-and-your-microbes-a-community-or-a-single-entity>

Papers currently in revision or in progress can be found on my website: www.derekskillings.com

Teaching Experience

Instructor

University of Pennsylvania (2018 Academic Year)

Courses: Biomedical Ethics, Logic & Formal Reasoning, Philosophy of Physics, Environ. Ethics

City College of New York (Fall 2018)

Courses: Introduction to Philosophy

Brooklyn College (2013-2016)

Courses: Scientific Revolutions, Environmental Ethics, Reasoning, Moral Issues in Business, Introduction to Philosophy

University of Hawai‘i at Mānoa (2012)

Courses: Marine Biology Thesis Capstone

Lab Instructor

University of Hawai‘i at Mānoa (2006-2007)

Labs: Marine Biology, Invertebrate Zoology

Teaching Assistant

Minnesota State University, Mankato (2005-2006)

Labs: Animal Diversity, Parasitology

Graduate Seminar

University of Hawai‘i at Mānoa (2007)

Developed and co-taught (with Andy Taylor) graduate seminar on Darwin's *On the Origin of Species*

Presentations and Invited Talks

2020

Trojan Horses and Black Queens – ‘Causal Core’ Explanations in Microbiome Research. Midsouth Philosophy of Science Conference. (Refereed paper accepted, but conference canceled due to COVID-19)

Regeneration in Microbiomes and Ecology. Woodshole MBL History of Biology Workshop. (Invited talk, canceled due to COVID-19)

Causal Reasoning across Scales in Biology. University of Lisbon. (Invited talk, canceled due to COVID-19)

Holobionts and Naturalistic Theories of Health. University of the Basque Country. (Invited talk, canceled due to COVID-19)

2019

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. University of Akron. February 2019. (invited talk)

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. University of North Carolina at Greensboro Philosophy Department. March 2019. (invited talk)

You are a Holobiont (and what this means for your health). Brooklyn Public Library, Public Philosophy Series. March 2019. (invited talk).

Regeneration in Microbiomics? w/Andrew Inkpen. Woodshole MBL History of Biology Workshop. May 2019. (invited talk)

Syntrophic Individuality – Individuals out of Interactions. Oslo, ISHPSSB July 2019.

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. University of North Carolina at Greensboro Biology Department Seminar. November 2019. (invited talk)

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. University of North Carolina at Greensboro Biology Department Seminar. November 2019. (invited talk)

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. Boston Colloquium for Philosophy of Science. November 2019. (invited talk)

2018

Can Host-microbiome Systems be Healthy? Shaping Ecosystems vs Curing Disease. The Future of Microbiome Research Workshop. Sydney. Nov 2018.

Two Pitfalls for Causal Reasoning in Biology. Philosophy of Science Association. Seattle. Nov 2018. (refereed paper)

A Framework for Individuation and Individuality in Biology. Dalhousie University. Philosophy Workshop. Halifax. July 2018 (invited talk).

The Ecology of Holobionts. Dalhousie University. Biology Seminar Series. Halifax. July 2018 (invited talk).

The Ecology of Holobionts. Canadian Philosophical Association. Montreal. June 2018.

From Integrated Individuals to Multi-Species Communities: Identifying the Spectrum of Holobiont Interactions and Why it Matters. IV Bordeaux-San Sebastian Workshop on Philosophy of Biology, Medicine and Cognitive Science. San-Sebastian. May 2018 (invited talk).

From Integrated Individuals to Multi-Species Communities: Identifying the Spectrum of Holobiont Interactions and Why it Matters. Roscoff Biological Station. March 2018 (invited talk).

The Philosophy of Holobionts. 1st International Foresight Workshop on Marine Holobionts – Concepts and Challenges. Roscoff Biological Station. March 2018 (invited talk).

From Integrated Individuals to Multi-Species Communities: Identifying the Spectrum of Holobiont Interactions and Why it Matters. Pennsylvania State University. Microbiome Research Center. February 2018 (invited talk).

(Micro)environmental Ethics – Holobionts, Pluralism, and the Breakdown of the Individual/Community Distinction. New College of Florida. Sarasota. February 2018 (invited talk).

From Integrated Individuals to Multi-Species Communities: Identifying the Spectrum of Holobiont Interactions and Why it Matters. The Reef Microbiome Workshop. McGill University's Bellairs Research Station, Barbados. Jan 2018 (invited talk).

2017

Biological Individuality. 3rd Bordeaux-San Sebastian Workshop on Philosophy of Biology. Bidart..

Holobionts and Individuality. Interdisciplinary Workshop on Holobionts. Bordeaux.

A Framework for Individuation and Individuality in Biology. University of Geneva (invited talk).

Lineage Integration and Units of Selection. Australian National University (invited talk).

What are Holobionts? - A Case Study for Hard Problems about Biological Individuality. Can Biological Practice Inform Metaphysics Workshop. Cologne (invited talk).

The Evolution of Host-Microbiome Systems. Immunoconcept Seminar. Bordeaux.

Causal Reasoning in Biology. 2nd Bordeaux-San Sebastian Workshop on Philosophy of Biology. Bordeaux.

Making Sense of Lineage Integration and Discordance in Host-Microbe Symbioses. Discordance in the Age of Species Workshop. University of Utah.

2016

Immunity, Development, and the Microbiota. Philosophy of Science Association. (poster).

Holobionts and the Ecology of Organisms. City College, Biology Department (invited talk).

2015

Holobionts and the Ecology of Organisms. 2015 PBDB Workshop (invited talk).

Complexity, Organization and Life in the Philosophy of Sir Kenelm Digby. International Society for the History, Philosophy and Social Studies of Biology.

Ways to be Robust. International Society for the History, Philosophy and Social Studies of Biology.

2014

Mechanistic Explanation of Biological Processes. Philosophy of Science Association.

2013

A Process Focused Approach to the Species Problem. International Society for the History, Philosophy and Social Studies of Biology.

2011

Gateways to Hawaii—Genetic Population Structure of the Tropical Sea Cucumber *Holothuria atra*. Pacific Science Inter-Congress.

2010

Gateways to Hawaii—Genetic Population Structure of the Tropical Sea Cucumber *Holothuria atra*. Western Society of Naturalists Annual Meeting

Gateways to Hawaii—Genetic Population Structure of the Tropical Sea Cucumber *Holothuria atra*. Evolution Annual Meeting.

2009

Using the Sea Cucumber *Holothuria atra* to test Hawaii Connectivity Hypotheses. Pacific Science Interconference (Invited talk and poster).

Using the Sea Cucumber *Holothuria atra* to test Hawaii Connectivity Hypotheses. International Biogeography Conference (poster).

2008

Using Population Genetics for Marine Conservation – The Story of the Teatfish and the Lollyfish. Minnesota State University, Mankato (invited talk).

Two Sea Cucumbers (*Holothuria atra* and *Holothuria whitmaei*) show links between Hawaii and Johnston Atoll. 2008 Hawaii Conservation Conference (invited talk).

Genetic populations structure of a widely distributed tropical species of sea cucumber, *Holothuria (Halodeima) atra*. 11th International Coral Reef Symposium (poster).

Genetic Population Structure of the lollyfish and the black teatfish in Hawaii. Tester Symposium – Honolulu, Hawaii.

Research Experience

Postdoctoral Researcher (2016-2018) University of Bordeaux/CNRS

Research Assistant (2012-2013) CUNY Graduate Center

Graduate Research Assistant (2007-2012) Hawai'i Institute of Marine Biology (HIMB)

Submersible Biologist (2011) – Hawai'i Undersea Research Laboratory

Research Diver (2007-2009) - NOAA Ship Hi'ialakai Papahānaumokuākea Marine National Monument Research Expedition(s)

Awards and Honors

Travel Funds for Workshop on Reconciling and Explaining the Success of Science - \$4,000

Mellon Fellowship (2012-2016) - \$30,000 at \$6,000 per year.

CUNY Enhanced Chancellor's Fellowship (2012-2016) - \$90,000 at \$18,000 per year.

The National Academy of Sciences Grant for Travel (2011) \$1,800

University of Hawai'i at Manoa Jesse D. Kay Research Grant for Graduate Research (2010) - \$10,000

University of Hawai'i at Mānoa Arts and Sciences Student Research Award Grant (2009) - \$2,000

Pacific Science Intercongress Student Travel Grant (2009) - \$2,000

National Academy of Science Sackler Colloquia Student Travel Grant (2009) \$600

International Biogeography Society Travel Grant (2009) \$500

National Science Foundation Graduate Research Fellowship Honorable Mention (2006)

Minnesota State University, Mankato Biology Department \$1,000 Grant for Undergraduate Research (2006)

National Science Foundation Research Experience for Undergraduates Traineeship in Marine Biology and Population Genetics (2005)

Minnesota State University, Mankato Undergraduate Research Grants Two \$1,000 dollar grants for research in biology and philosophy (2005)

Minnesota State University, Mankato – Alliss Foundation Scholarship (2004-2005)

Professional Service

Journal Referee: British Journal for the Philosophy of Science, European Journal for the Philosophy of Science, Biology & Philosophy, Marine Ecology Progress Series, Journal of Marine Biology, Journal of Heredity, Bulletin of Marine Science, Conservation Genetics

Guest Editor – Special Issue on the Philosophy of Holobionts. Philosophy, Theory and Practice in Biology (forthcoming)

Workshop Organizer – The Future of Microbiome Research (Sydney, Nov 2018). Co-organized with Maureen O'Malley, Paul Griffiths and Kasia Hooks.

<http://cpc-comms.sydney.edu.au/link/id/z5b568afa83726804Pz55cc0394467fa474/page.html>

Workshop Organizer – Interdisciplinary Workshop on Holobionts, <https://www.immuconcept.org/holobiont-workshop/> (Bordeaux, Nov 2017)

Workshop Organizer - Bordeaux-Geneva Colloquium in Philosophy of Biology (Geneva, Oct 2017)

CUNY Curriculum Committee (2016)

Session Organizer - Aspects of Biological Organization. International Society for the History, Philosophy and Social Studies of Biology (2015)

Seminar Organizer - Minorities and Philosophy (MAPs) Seminar Series (2015)

CUNY Philosophy Graduate Program Admissions Committee (2015)

University of Hawaii Zoology Department Graduate Student Representative (2007-2008)

Co-organizer - Recent Advances in Conservation Genetics, a short course co-hosted by the Laboratory of Genomic Diversity and Hawaii Institute of Marine Biology - January 7-20 (2007)

Documentary Media

Hidden Hawaii. National Geographic National Parks Collection. National Geographic Channel.

Hawai'i: A Long Story Short. Nature Reel History. <https://vimeo.com/63803633>