

## Jamie McDevitt-Irwin

Postdoctoral Scholar | Marine Science Institute | University of California, Santa Barbara

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### Education

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<b>PhD</b>	<b>Stanford University, California, USA</b> Hopkins Marine Station, Department of Biology, Supervisor: Dr. Fiorenza Micheli Top-down control in marine coastal ecosystems	<b>2023</b>
<b>MSc</b>	<b>University of Victoria, British Columbia, Canada</b> Department of Biology, Supervisor: Dr. Julia Baum The unseen world of coral reefs: biodiversity of, and human impacts on, the coral microbiome	<b>2017</b>
<b>BScH-SSP</b>	<b>Queen's University, Ontario, Canada</b> Department of Biology, BScH: Bachelor of Science (Honours), SSP: specialization in biology Honours Independent Research Projects, Supervisor: Dr. Bruce Tufts	<b>2013</b>

### Academic Appointments

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Assistant Professor, School of Life Sciences, University of Hawai'i at Mānoa	starting Aug. 2025
Research Affiliate Faculty, School of Life Sciences, University of Hawai'i at Mānoa	Oct. 2024- Aug. 2025
Postdoctoral Scholar, Marine Science Institute, UC Santa Barbara Supervisor: Dr. Deron Burkepile	Sept. 2023- Present

### Peer-Reviewed Publications

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- McDevitt-Irwin JM**, Chapuis M<sup>^</sup>, Carlson R, Meekan M, Palmisciano M, Taylor BM, Tietjen KL, Tillman C, Roche R, and F Micheli. (2024) Coral reef recovery in a remote and large marine protected area is resilient to cascading trophic interactions. *Biological Conservation* 298: 110771 (<sup>^</sup> undergraduate mentee)
- Gissi E, Goodman MC, Elahi R, **McDevitt-Irwin JM**, Arnoldi NS, Arafeh-Dalmau N, Knight CJ, Olguín-Jacobson C, Palmisciano M, Tillman CM, De Leo G, and F Micheli. (2024) Sex-based species interactions matter in ecological communities. *Trends in Ecology and Evolution*
- McDevitt-Irwin JM**, McCauley DM, Brumbaugh DR, Elmer F, Ferretti F, White T, Wible J, and F Micheli. (2023) Dynamic interplay: disentangling the temporal variability of fish effects on coral recruitment. *Scientific Reports* 13: 20971
- McDevitt-Irwin JM**, McCauley DM, Brumbaugh DR, Elmer F, Ferretti F, Joyce FH, White T, Wible J, and F Micheli. (2023) Consumers decrease variability and stabilize coral reef communities during succession. *Oecologia* 202: 431-443
- Baum JK, Claar DC, Tietjen KL, Magel JMT, Maucieri DG, Cobb KM and **JM McDevitt-Irwin**. (2023) Transformation of coral communities subjected to an unprecedented heatwave is modulated by local disturbance. *Science Advances* 9: eabq5615
- Lange ID, Benkwitt CE\*, **McDevitt-Irwin JM\***, Tietjen KL\*, Taylor B, Chinkin M, Gunn RL, Palmisciano M, Steyaert M, Wilson B, East HK, Turner J, Graham NAJ and CT Perry. (2021) Wave exposure shapes reef community composition and recovery trajectories at a remote coral atoll. *Coral Reefs* 40: 1819-1829 (\* authors contributed equally)
- McDevitt-Irwin JM**, Kappel C, Harborne A, Mumby PJ, Brumbaugh D and F Micheli. (2021) Coupled beta diversity patterns of coral reef benthic groups. *Oecologia* 195: 225-234
- Hays et al. [70+ authors including **McDevitt-Irwin JM**]. (2020) A review of a decade of lessons from one of the world's largest MPAs: conservation gains and key challenges. *Marine Biology* 167: 159
- Micheli F, Carlton J, Pearse J, Selgrath J, Elahi R, Baxter C, Mach M, **McDevitt-Irwin JM**, Pearse V, Watanabe J and N Burnett. (2020) Ocean sentinels: repeat studies for tracking environmental change. *Frontiers in Ecology and the Environment* 18: 320-322

8. Claar DC, **McDevitt-Irwin JM**, Garren M, Vega Thurber R, Gates R and JK Baum. (2020) Concordant shifts in the diversity and structure of Symbiodiniaceae and bacterial communities subjected to chronic anthropogenic disturbance. *Molecular Ecology* 29: 2477-2491
7. Robinson JPW, **McDevitt-Irwin JM**, Dajka J, Hadi-Hammou J, Howlett S, Graba-Landry A, Hoey AS, Nash KL, Wilson SK and NAJ Graham. (2019) Habitat and fishing control grazing potential on coral reefs. *Functional Ecology* 34: 240-251
6. **McDevitt-Irwin JM**, Garren M, Vega-Thurber R, McMinds R and JK Baum. (2019) Variable interaction outcomes of local disturbance and El Niño-induced heat stress on coral microbiome alpha and beta diversity. *Coral Reefs* 38: 331-345
5. Claar DC, Szostek L<sup>^</sup>, **McDevitt-Irwin JM**, Schanze J and JK Baum. (2018) Global patterns and impacts of El Niño events on coral reefs: a meta-analysis. *PLoS ONE* 13: e0190957 (<sup>^</sup> undergraduate mentee)
4. Thompson LR et al. and **The Earth Microbiome Project Consortium**. (2017) A communal catalog reveals Earth's multiscale microbial diversity. *Nature* 551: 457-463
3. **McDevitt-Irwin JM**, Garren M, Baum JK and R Vega-Thurber. (2017) Responses of coral-associated bacterial communities to local and global stressors. *Frontiers in Marine Science* 4: 262
2. **McDevitt-Irwin JM**, Iacarella JC and JK Baum. (2016) Reassessing the nursery role of seagrass habitats from temperate to tropical regions: a meta-analysis. *Marine Ecology Progress Series* 557: 133-143
1. **McDevitt-Irwin JM**, Fuller SD, Grant CG and JK Baum. (2015) Missing the safety net: Evidence for inconsistent and insufficient management of at-risk marine fishes in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* 72: 1596-1608.

### **Manuscripts In Review\***

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\*Full drafts available upon request

Gissi E, **McDevitt-Irwin JM**, Kaschner K, Kesner-Reyes K, Hazen EL, Santoleri R, and F Micheli. Identifying climate refugia through analysis of functional diversity. *In review at Global Change Biology*

Chapuis M<sup>^</sup>, **McDevitt-Irwin JM**, Palmisciano M, Elahi R, Detrait A, Gorum O, Vogel C, Chui E, Haupt A, and F Micheli. Recent changes in mussel beds following mass mortality of a keystone marine predator. *In review at Marine Ecology Progress Series* (<sup>^</sup> undergraduate mentee)

### **Research Grants**

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- **NCEAS LTER Synthesis Working Group: Consumer Absence Generates Ecological Dissimilarity (CAGED):** A cross-ecosystem synthesis exploring the consequences of consumer loss on community variability (co-PI with Dr. Kelly Speare and Dr. Sally Koerner) (2024-2026, \$86,148)
- **Mo'orea Coral Reef LTER Working Group:** Long-term dynamics of macroalgal communities on coral reefs in Mo'orea (co-author with Noam Altman-Kurosaki, Adelaide Dahl, Lauren Enright, Jordan Gallagher, Julianna Renzi, Callie Stephenson, Madeleine Ward and Dr. Shalanda Grier) (2024-2025, \$2,956)
- Myers Oceanographic & Marine Biology Trust Grant (2021, \$2,600)
- Women Divers Hall of Fame Marine Conservation Scholarship (2019-2020, \$2,000)
- Lerner-Gray Grant in Marine Conservation (2015, \$2,000)
- Sigma Xi Grant-In-Aid of Research (2015, \$600)

### **Fellowships and Awards**

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| • National Sciences and Engineering Research Council of Canada (NSERC) Banting Postdoctoral Fellowship | 2024 ( <i>Declined</i> ) | \$140,000 |
| • NSERC Alexander Graham Bell Canada Graduate Scholarship  | 2017 ( <i>Declined</i> ) | \$105,000 |
| • NSERC Postgraduate Scholarship   | 2017-2020                | \$63,000  |
| • NSERC Canada Graduate Scholarship- Master's Program,   | 2015-2016                | \$17,500  |
| • University of Victoria Bob Wright Graduate Scholarship   | 2016-2017                | \$12,500  |

• NSERC CGS - Michael Smith Foreign Study Supplement	2015-2016	\$6,000
• University of Victoria (UVic) Graduate Award	2017	\$2,550
• UVic W. Gordon Fields Memorial Fellowship	2016-2017	\$1,067
• UVic President's Research Scholarship	2015-2016	\$4,000
• UVic Graduate Award	2016	\$2,643
• UVic Randy Baker Memorial Scholarship	2015	\$300
• UVic Graduate Award	2015	\$1,800
• Queen's University Excellence Scholarship	2009-2010	\$2,500

## **Teaching & Mentoring**

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### *Undergraduate Courses*

- Guest Lecture: Introduction to Marine Ecosystems (June 2022 & 2023)
  - Middlebury College (Monterey Campus) with Dr. Meghan McKenna
  - Took ~15 undergraduate students out into the intertidal in Big Sur to describe my experimental design and findings
- Guest Lecture: Frontiers in Marine Biology (April 2021)
  - Stanford University with Dr. Stuart Thompson
  - Virtual course over Zoom
  - Gave a guest lecture on my PhD research and led breakout room discussions
- Teaching Assistant: Ecology (2020)
  - Stanford University with Dr. Kabir Peay and Dr. Jesse Miller, 23 students
  - Virtual course over Zoom
  - Taught a 1-hour section each week, held weekly office hours, graded weekly quizzes, pre-labs and post-labs, and taught students R programming
- Teaching Assistant: Research in Ecology and Evolution (2018)
  - Stanford University with Dr. Jes Coyle, 11 students
  - Wrote and graded problem sets, held weekly office hours, graded writing assignments and taught students R programming
- Teaching Assistant: Marine Population Ecology and Dynamics (2016)
  - Bamfield Marine Sciences Centre Fall Program with Dr. Chris Neufeld: 24 students
  - Wrote and graded problem sets, held office hours, marked and graded writing assignments, gave a 1.5-hour guest lecture on my MSc research, taught the students population matrix models and how to perform their own in R, took the students out on field expeditions driving a 20ft vessel
  - Worked with undergraduate students in the rocky intertidal: collecting organisms, surveys, and conducting lab experiments
- Lab Instructor: Evolution and Biodiversity (2016)
  - University of Victoria, 20 students
  - Taught weekly sections, held weekly office hours, graded writing assignments
- Lab Instructor: General Biology II (2015)
  - University of Victoria, 48 students
  - Taught weekly sections, held weekly office hours, graded writing assignments

### *Mentoring*

- Micaela Chapuis (Stanford Research Assistant, August 2022-August 2023)
- Ann Gobei-Bacaylan (CSUMB REU Internship, June-August 2022)
- Gwendolyn Donehue (Stanford Reefs Internship, June-August 2022)
- Micaela Chapuis (Stanford Undergraduate Honours Thesis, April 2021-June 2022)
- Sophia Haase Cox (Stanford BSURP Internship, June-August 2021)
- Micaela Chapuis (Stanford BSURP Internship, June-August 2020)
- Alexandra Brainerd (Stanford HMS Internship, July-August 2019)
- Mathangi Janakiraman (MITACS Research Assistant, May-Aug 2016)
- Hayley Davies (UVic Volunteer, Sept 2015-Aug 2016)
- Lisa Szostek (UVic Directed Studies, Jan-July 2015)

## Training

- Preparing Future Professors (Stanford University, Winter 2022)
  - Shadowed a professor at West Valley College: attended department faculty meetings, taught a guest lecture, helped create course content
  - Attended a weekly practicum discussing academic jobs in higher education
- Biology in Solidarity Workshops (Stanford University, Winter & Spring Quarter 2021)
  - Series of workshops for TAs in the biology department: Systematic racism in biology, Sexual and Gender Harassment
- Science and Engineering Course Design (Stanford University, Winter Quarter 2021)
  - Graduate course on applying research on science and engineering education to create an effective syllabus and course materials for the chosen course. I designed the course: Research in Ecology and Evolution
- Inclusive and Effective Teaching (Stanford Graduate Summer Institute, Fall Quarter 2020)
  - Immersive week-long course highlighting tools and strategies to promote inclusive and effective student engagement
- TA Training in Biology (Stanford University, Winter Quarter 2018)
  - Graduate course on learning techniques and pedagogy and applying these to our concurrent TAships
- Software Carpentry Instructor Course (Stanford University, 2017)

## R Workshops

- Instructor & Course Developer: Santa Catalina High School (November 2018): Created and taught a coding workflow (RMarkdown and GitHub) workshop for Grade 10 students.
- Instructor & Course Developer: Stanford University Surf N Turf Conference (October 2018): Created and taught a ggplot2 workshop for Stanford University Graduate students.

## DIMES Network (*Diversifying and Integrating Marine Education at Stations*) (2020-2021)

- Participated in the creation of an NSF-funded grant to develop an openly available unified curriculum for undergraduate students at coastal field stations and inland campuses along the west coast of North America

## Seminar Presentations

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### Invited Seminars

1. **McDevitt-Irwin, J.** Coral reef biodiversity and resilience under global change (2024) University of California, Santa Barbara
2. **McDevitt-Irwin, J.** Coral reef biodiversity and resilience under global change (2024) University of Hawai'i at Mānoa
3. **McDevitt-Irwin, J.** Human impacts on biodiversity and resilience in coral reef ecosystems (2024) Stony Brook University

### Contributed Seminars

1. **McDevitt-Irwin, J. T.** Adam, K. Speare, R. Vega-Thurber, and D. Burkepile. (2024). Physical disturbances alter how fishing pressure and nutrient enrichment affect coral reef diversity over time. Ecological Society of America Annual Conference, Long Beach, CA
2. **McDevitt-Irwin, J.,** R. Carlson, M. Palmisciano, K. Tietjen, and F. Micheli (2022). Positive and negative effects of large fishes on coral recovery. Ecological Society of America Annual Conference. Montreal, Quebec.
3. **McDevitt-Irwin, J.,** D. McCauley and F. Micheli (2021). Excluding consumers leads to divergent coral reef benthic communities. Ecological Society of America Annual Conference. Virtual.
4. **McDevitt-Irwin, J.,** D. McCauley and F. Micheli (2021). Excluding consumers leads to less predictable coral reef benthic communities. International Coral Reef Symposium. Virtual.
5. **McDevitt-Irwin, J.,** D. McCauley and F. Micheli (2020). Excluding consumers leads to less predictable coral reef benthic communities. Species Interaction Workshop. Virtual.
6. **McDevitt-Irwin, J.,** D. McCauley and F. Micheli (2020). Excluding consumers leads to less predictable coral reef benthic communities. Western Society of Naturalists. Virtual.

7. **McDevitt-Irwin, J.,** M. Garren, R. Vega-Thurber, McMinds R and J. Baum (2017). The unseen world of coral reefs: local and global stressors on the coral microbiome. Species Interactions Workshop. Stanford, California.
8. **McDevitt-Irwin, J.,** M. Garren, R. Vega-Thurber, McMinds R and J. Baum (2017). The unseen world of coral reefs: local and global stressors on the coral microbiome. Western Society of Naturalists. Pasadena, California.
9. **McDevitt-Irwin, J.,** M. Garren, R. Vega-Thurber, McMinds R and J. Baum (2017). The unseen world of coral reefs: local and global stressors on the coral microbiome. Canadian Society for Ecology and Evolution. Victoria, British Columbia.
10. **McDevitt-Irwin, J.,** M. Garren, R. Vega-Thurber, McMinds R and J. Baum (2017). The unseen world of coral reefs: local and global stressors on the coral microbiome. Pacific Ecology and Evolution Conference. Bamfield Marine Sciences Centre, British Columbia.
11. **McDevitt-Irwin, J.** (2016). The unseen world of coral reefs: local and global stressors on the coral microbiome. Fall Program 2016 Guest Lecture. Bamfield Marine Sciences Centre, British Columbia.
12. **McDevitt-Irwin, J.,** M. Garren, R. Vega-Thurber, and J. Baum. (2016). The unseen world of coral reefs: biodiversity of, and human impacts on, the coral microbiome. 13<sup>th</sup> International Coral Reef Symposium. Honolulu, Hawaii.

### **Poster Presentations**

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1. **McDevitt-Irwin, J.,** Carlson, R., Palmisciano, Tietjen, K., and F. Micheli (2022). Excluding consumers during coral reef benthic succession. Stanford Biology Department Retreat, Asilomar, California, May 2022
2. **McDevitt-Irwin, J.** Taylor, B., Meekan, M., F. Micheli (2020). Density and trait mediated predator-prey interactions: sharks and coral reef fishes. Gordon Research Conference Predator-Prey Interactions. Ventura, California, January 2020
3. **McDevitt-Irwin, J.** Taylor, B., Meekan, M., F. Micheli (2020). Consequences of top-heavy food webs on the structure and function of reef fish communities. American Society of Naturalists. Asilomar, California, January 2020
4. **McDevitt-Irwin, J.** Taylor, B., Meekan, M., F. Micheli (2019). Ecological consequences of top down control on coral reefs. Marine Science Symposium, Fondation Bertarelli. London, United Kingdom, September 2019
5. **McDevitt-Irwin, J.** and F. Micheli (2018). Top down control and trophic cascades in reef community assembly. Western Society of Naturalists. Tacoma, Washington, November 2018
6. **McDevitt-Irwin, J.** and F. Micheli (2018). Trophic cascades, mesopredator release, and reef resilience. Marine Science Symposium, Fondation Bertarelli. London, United Kingdom, September 2018

### **Service and Outreach**

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#### *Academic Service*

- Graduate Student Representative, Stanford University Diving Control Board (January 2019- August 2023)
- Graduate Student Representative, Stanford Biology Department Graduate Studies Committee (Fall 2020-Fall 2021)
- Team Member, [Stanford Biology PhD Preview Program](#) (Summer 2020-Fall 2021)
  - Helped co-create and organize a 2-day workshop to leverage prospective PhD student's strengths and navigate the application process for graduate school with the aim of increasing diversity in STEM
- Team Member, Stanford Biology DEI Committee: Equity in Teaching and Undergraduate Education (Summer 2020-Summer 2021)
- Chair Assistant, Graduate Student-run Seminar Series of Hopkins Marine Station (2021)
- Graduate Student Representative, Stanford Biology Department Social Committee (Fall 2020-Fall 2021)
- Chair, Graduate Student-run Seminar Series of Hopkins Marine Station (2020)
- Chair Assistant, Graduate Student-run Seminar Series of Hopkins Marine Station (2018 & 2019)
- Executive-at-Large for the Marine Science Foundation: On the board of directors and the scientific diving committee focused on enhancing subtidal research around Vancouver Island (2015-2018)
- Canadian Society for Ecology and Evolution (CSEE) Conference Volunteer (May 2017)
- Software Carpentry Assistant (December 2016)

## *Outreach*

- Hopkins Marine Station Open House: Surfgrass Touch Tank (October 2018, October 2019)
- Stanford Pen Pals Program (2017)
- Scientific Diver at the Shaw Ocean Discovery Centre (April 2014-2017)
- World Ocean's Day, Victoria, BC: scientific diver animal collections (June 2014)
- BC Naturalist's Foundation Conference, Victoria, BC: scientific diver animal collections (May 2014)
- Saanich Inlet Snorkelling Relay, Sidney, BC: snorkelled 16km to raise funds for the Sedna expedition (an all women team snorkelling across the Arctic to raise awareness for climate change) (June 2014)
- Aquarist Intern: learning animal care, systems maintenance, organism collection and release and display upkeep at the Shaw Ocean Discovery Centre, Sidney, BC (Sept-Dec 2013)

## **Journal Reviews**

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Science, PNAS, Ecological Applications, Biological Conservation, Coral Reefs, Estuaries and Coasts, Marine Ecology Progress Series, Journal of Experimental Marine Biology and Ecology, Regional Environmental Change, Aquatic Conservation: Marine and Freshwater Ecosystems, FEMS Microbiology Ecology, Bulletin of Marine Science

## **Media Coverage**

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- [Local stressors intensify effects of unprecedented marine heatwave on corals](#). April 5, 2023. UVic News
- [Student fisheries research in BC: Jamie McDevitt-Irwin](#). December 18, 2015. AFS BC Student Subunit
- [How Canada is failing its fish](#). November 26, 2015. Hakai Magazine.
- [Endangered fish species missing the safety net](#). September 19, 2015. CBC Quirks and Quarks.
- [Canada sidesteps protection of endangered fish, study finds](#). September 17, 2015. CBC News.
- [Fishery laws failing to protect endangered species, says scientists](#). September 16, 2016. iPOLITICS.

## **Certifications**

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Software Carpentry & Data Carpentry Instructor, PADI Scientific Diver Level 1, AAUS Scientific Diver, Small Vessel Operator Proficiency, Marine Emergency Duties A3, Radio Restricted Operator Certificate-Maritime, PADI Rescue Diver, PADI Emergency Oxygen Provider, Pleasure Craft Operator Competency, Marine Basic First Aid, Wilderness First Aid Training