

# JESSICA KENDALL-BAR

Postdoctoral Fellow - Scripps Institution of Oceanography & San Diego Supercomputer Center  
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## I. EMPLOYMENT

**2022-present Independent Postdoctoral Fellowships - UC San Diego** (San Diego Supercomputer Center)

**Scripps Postdoctoral Fellow** (Jun 2022-Jan 2023; Jan 2025-present) – Scripps Institution of Oceanography  
Electrophysiology for conservation and translational medicine (*Dr. Paul J. Ponganis*)

**Schmidt AI in Science Postdoctoral Fellow** (Feb 2023-Dec 2024) – San Diego Supercomputer Center  
AI for comparative medicine and ecophysiology (*Drs. Paul J. Ponganis & Ilkay Altintas [AI co-mentor]*)

## I. EDUCATION

**2017-2022 PhD – University of California, Santa Cruz** (Ecology & Evolutionary Biology)  
Sleeping while diving: tools to detect, analyze, and visualize sleep in wild seals  
Advisors: *Drs. Daniel P. Costa & Terrie M. Williams*

**2012-2016 BA – University of California, Berkeley** (Marine Science & Integrative Biology, Honors)  
Eye state asymmetry during unihemispheric slow wave sleep in northern fur seals  
Advisors: *Drs. Jim Bishop & Oleg I. Lyamin*

## II. PUBLICATIONS

### Peer reviewed publications

\*Mentored students

- [2025]** L Hawkes & **JM Kendall-Bar**. A deep dive into oxygen sensing. *Science*. DOI: 10.1126/science.adw1936
- [2024]** DP Costa, RR Holser, TR Keates, T Adachi, RS Beltran, CD Champagne, R Condit, DE Crocker, AB Favilla, MA Fowler, JP Gallo-Reynoso, C Goestch, KT Goetz, JL Hassrick, LA Hückstädt, **JM Kendall-Bar**, SS Kienle, CE Kuhn, JL Maresh, SA Maxwell, BI McDonald, EA McHuron, PA Morris, Y Naito, LJ Pallin, SH Peterson, PW Robinson, SE Simmons, A Takahashi, N Teuschel, MS Tift, Y Tremblay, S Villegas-Amtmann, K Yoda. Two decades of three-dimensional northern elephant seal movement data. *Nature Scientific Data*. DOI: 10.1038/s41597-024-04084-4
- [2024]** **JM Kendall-Bar**, I Nealey, I Costello, C Lowrie, KH Nguyen\*, PJ Ponganis, MW Beck, I Altintas. EcoViz: co-designed environmental data visualizations to communicate ecosystem impacts, inform management, and envision solutions. *IEEE VIS 2024*. DOI: 10.1109/Viz4Climate-Sustainability64680.2024.00007 (IEEE VIS 2024 acceptance rate: 22.3%)
- [2024]** RS Beltran, AM Kilpatrick, S Picardi, B Abrahms, G Barrile, W Oestreich, JA Smith, M Czapanskiy, A Favilla, R Reisinger, **JM Kendall-Bar**, A Payne, M Savoca, D Palance, S Andrzejaczek, D Shen, T Adachi, D Costa, N Storm, C Hale, P Robinson. Maximizing biological insights from instruments attached to animals. *Trends in Ecology & Evolution*. (Pre-print EcoEvoRxiv DOI: 10.32942/X2TK66)
- [2024]** A Szabo, L Bejder, H Warick, M van Aswegen, AS Friedlaender, J Goldbogen, **JM Kendall-Bar**, EM Leunissen, M Angot, WT Gough. Solitary humpback whales manufacture bubble-nets as tools to increase prey intake. *Royal Society of Open Science*. 11(240328). DOI: 10.1098/rsos.240328
- [2024]** PP Ponganis, C Williams, **JM Kendall-Bar**. Blood Oxygen Transport and Depletion in Diving Emperor Penguins. *Journal of Experimental Biology*. 227(6). DOI: 10.1242/jeb.246832
- [2023]** **JM Kendall-Bar**. Lessons from sleep in the deep: Records of seal sleep at sea reveal extreme sleep duration flexibility. *Science*. 382(6672). DOI: 10.1126/science.adl4885

8. [2023] **JM Kendall-Bar**, TM Williams, R Mukherji\*, DA Lozano\*, JK Pitman, RR Holser, T Keates, RS Beltran, PW Robinson, DE Crocker, T Adachi, OI Lyamin, AL Vyssotski, & DP Costa. Brain activity of diving seals reveals short sleep cycles at depth. *Science*. 380(6642). DOI: 10.1126/science.adf0566
9. [2022] **JM Kendall-Bar**, R Mukherji\*, J Nichols\*, C Lopez\*, DA Lozano\*, JK Pitman, RR Holser, RS Beltran, M Schalles, CL Field, SP Johnson, AL Vyssotski, DP Costa & TM Williams. Eavesdropping on the brain at sea: development of a surface-mounted system to detect weak electrophysiological signals from wild animals. *Animal Biotelemetry* 10(16). DOI: 10.1186/s40317-022-00287-x
10. [2021] **JM Kendall-Bar**, NX Kendall-Bar, AG Forbes, G McDonald, PJ Ponganis, C Williams, M Horning, A Hindle, H Klinck, RS Beltran, AS Friedlaender, D Wiley, DP Costa, & TM Williams. Visualizing Life in the Deep: a creative pipeline for data-driven animations to facilitate marine mammal research, outreach, and conservation. *IEEE VIS*. DOI: 10.1109/VISAP52981.2021.00007 (IEEE VIS 2021 acceptance rate: 25%)
11. [2021] RS Beltran, **JM Kendall-Bar**, E Pirotta, T Adachi, Y Naito, A Takahashi, J Cremers, PW Robinson, DE Crocker, and DP Costa. Lightscares of Fear: How Mesopredators Balance Starvation and Predation in the Open Ocean. *Science Advances* 7(12). DOI: 10.1126/sciadv.abd9818
12. [2019] **JM Kendall-Bar**, AL Vyssotski, LM Mukhametov, JM Siegel, and OI Lyamin. Eye State Asymmetry during Aquatic Unihemispheric Slow Wave Sleep in Northern Fur Seals (*Callorhinus Ursinus*). *PLoS ONE* 14(5): 1–13. DOI: 10.1371/journal.pone.0217025
13. [2017] **JM Kendall-Bar** & VK Iyengar. Sexual Selection by the Seashore: The Roles of Body Size and Weaponry in Mate Choice and Competition in the Maritime Earwig (*Anisolabis Maritima*). *Behavioral Ecology and Sociobiology* 71(1). DOI: 10.1007/s00265-016-2233-9
14. [2016] **JM Kendall-Bar**, D Weller, H Fearnbach, S Shane, GS Schorr, EA Falcone, J Calambokidis, A Schulman-Janiger, and J Barlow. Movement and Occurrence Patterns of Short-Finned Pilot Whales (*Globicephala macrorhynchus*) in the Eastern North Pacific. *Aquatic Mammals* 42(300): 300-305. DOI: 10.1578/AM.42.3.2016.300

### Non-peer reviewed publications

15. [2022] **JM Kendall-Bar**. Sleeping while diving: Tools to detect, analyze, and visualize sleep in wild seals (Accession No. 29215006). [Doctoral dissertation, University of California, Santa Cruz]. ProQuest Dissertations Publishing.
16. [2024] \*MA Sorenson, \*MQ Song, \*T Basic, \*YW Rajput, \*TR Tarif, **JM Kendall-Bar**, I Altintas. Seal Sleep Capstone. In Data Science & Engineering Master of Advanced Study (DSE MAS) [Capstone Projects, University of California, San Diego Library Digital Collections]. DOI: 10.6075/J0R49QZ9

### Patents pending

17. [2023] **JM Kendall-Bar**, T Williams, P Guerrero, E Slattery, DP Costa. Method and system for the non-invasive recording of marine mammal sleep in the wild. US Patent App. 17/959, 146.

### In review

18. [Submitted to *BioScience*] **JM Kendall-Bar**, AR Payne, MF Czapanskiy, N Fox, J Leivesley, M Alksne, B French, A Malivert, G O'Leary, A Biswas, I Nealey, RH Parkinson, C Lowrie, I Perez, E Miller, I Costello, T Sainburg, D Rissolo, L Severance, \*R Mukherji, F Montealegre-Mora, \*KH Nguyen, CC Tusell, W Oestreich, \*M Sorenson, S Gurvich, J Walker, AN Kellum, T Berger-Wolf, I Altintas, S Sandin, N Lecomte. Challenges and solutions for ecologists adopting AI. *EcoEvoRxiv* DOI: 10.32942/X2FK8J
19. [Submitted to *Animal Biotelemetry*] AR Payne, CM Hale, **JM Kendall-Bar**, RS Beltran. Minimum reporting standards can promote animal welfare. *EcoEvoRxiv* DOI: 10.32942/X29K7X
20. [Submitted to the *Association for Computing Machinery; CHI Interactivity 2025*] \*S Ghosh, **JM Kendall-Bar**, C Lowrie, I Costello, W Gislason, M Godje, CB Lesser, J McVeigh-Schultz, K Isbister. Diving with seals: collaborative virtual reality exploration of northern elephant seal dive paths and physiology.

### III. AWARDS & GRANTS

#### 1. *Fellowships*

2025-present	Scripps Institutional Postdoctoral Fellowship
2023-2024	Schmidt Artificial Intelligence in Science Postdoctoral Fellowship
2017-2020	NSF Graduate Research Fellow
2021-2022	Achievement Rewards for College Scientists Fellowship
2021-2022	UC Santa Cruz President's Dissertation Year Fellowship
2014-2016	NOAA Ernest F. Hollings Scholar
2014-2016	Charles H. Ramsden Endowed Scholarship
2012-2016	UC Berkeley Regents' & Chancellors' Scholar

#### 2. *Grants*

##### A. *Funded projects:*

2024-2025	Schmidt Sciences AI Collaboration Grant – EcoViz+AI Workshop 2024
2023-2024	UC Santa Cruz Center for Coastal Climate Resilience Visualization Grant (Co-PI)

##### B. *Small grants (<\$50K)*

2023-2024	UC San Diego Scripps Institution of Oceanography Climate Data Visualization
2020-2022	National Geographic Early Career Grant

##### C. *Written with and awarded to the principal investigator listed:*

2022-2023	Burroughs Wellcome Fund Data Visualization Grant (PI: E Check Hayden)
2019-2020	ONR Defense University Research Instrumentation Program (PI: TM Williams)

#### 3. *Awards*

2023	<u>AAAS SciLifeLab Essay Prize – Category Winner: Ecology and Environment</u> <i>Essay published in Science November 2023; awarded during Nobel Prize week in Stockholm, SE.</i>
2022	<u>National Academies &amp; Eric &amp; Wendy Schmidt Award- Excellence in Science Communication</u> <i>Top prize winner – graduate research scientist; awarded at National Academies in Washington, DC.</i>
2022	<u>Laurel Clark Sea to Space Physiology Research Grant- Women Divers Hall of Fame</u>
2022	<u>UC Santa Cruz Grad Slam 2<sup>nd</sup> Place</u>
2019	<u>Fairfield Memorial Award - World Marine Mammal Conference 2019</u>
2018	<u>Sooy Graduate Research Fellow</u>
2018	<u>Special Research Grant Committee on Research</u> (PI: DP Costa)
2018	<u>Norris Center for Natural History Art Residency</u>
2017	<u>Monterey Shootout Underwater Photography Finalist</u>
2016	<u>Summer Undergraduate Research Fellowship Rose Hills Fellow</u>
2016	<u>UC Berkeley Regents' and Chancellors' Research Fellowship</u>

### IV. TEACHING

#### Course Design & Instruction

2023	Instructor & Course Designer	Coursera (Available free online; host: UC Santa Cruz) Coursera MOOC: Data-Driven Animation for Science Communication (>3,000 learners) Course Link: <a href="https://coursera.org/learn/data-driven-animation">https://coursera.org/learn/data-driven-animation</a>
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2023	<b>Instructor &amp; Course Designer</b> <i>SCIC110/210: Data-Driven Animation for Science Communication</i>	<b>UC Online (UC-wide; host: UC Santa Cruz)</b>
2022	<b>Instructor &amp; Course Designer</b> <i>SCIP395-33_SU22: Data-Driven Animation for Science Communication</i>	<b>CSU Monterey Bay (Science Illustration Program)</b>
2022	<b>Instructor &amp; Course Designer</b> <i>Visualizing Life in the Deep: data-driven animation using animal-borne sensors at sea</i>	<b>Pixar University</b>
2021	<b>Instructor &amp; Course Designer</b> <i>Art 199/299: <u>Data Visualization Collective</u></i>	<b>UC Santa Cruz</b>
2019	<b>Teaching Assistant</b> <i>BIOE 129L: Marine Mammals.</i>	<b>UC Santa Cruz</b> <i>Instructor: Dan Costa</i>
2014-16	<b>Teaching Assistant &amp; Course Designer</b> <i>Oceans C82</i>	<b>UC Berkeley</b> <i>Instructor: Jim Bishop</i>
2016	<b>Teaching Assistant &amp; Collector</b> <i>IB103LF: Invertebrate Zoology Instructor</i>	<b>UC Berkeley</b> <i>Instructor: Jenna Judge</i>

## V. CONFERENCE PRESENTATIONS

### Refereed conference presentations:

2024	<b>IEEE Visualization Conference (West Palm Beach, FL - USA)</b> <i>EcoViz: co-designed environmental data visualizations to communicate ecosystem impacts, inform management, and envision solutions.</i>
2024	<b>8<sup>th</sup> International Biologging Symposium (Tokyo, Japan)</b> <i>Immersive 3D biologging visualizations facilitate analysis, collaboration, and communication</i>
2023	<b>American Physiological Summit (Long Beach, CA - USA)</b> <i>Sleeping while diving: seals at sea drift in and out of sleep at depth (<u>Abstract</u>)</i>
2022	<b>Society for Marine Mammalogy (West Palm Beach, FL - USA)</b> <i>Sleeping while diving: the first recordings of marine mammal sleep in the wild</i>
2021	<b>IEEE Visualization Conference (New Orleans, LA - USA)</b> <i>Visualizing Life in the Deep: A Creative Pipeline for Data-Driven Animations to Facilitate Marine Mammal Research, Outreach, and Conservation</i>
2021	<b>7<sup>th</sup> International Biologging Symposium (Oahu, HI - USA)</b> <i>Sleeping while diving: the first recordings of marine mammal sleep in the wild.</i> <i>*Award for presentation that provided the greatest leap forward in bio-logging &amp; science communication.</i>
2020	<b>American Academy of Sleep Medicine – SLEEP 2020 (USA)</b> <i>Sleeping while Diving: Non-Invasive Sleep Recordings in Wild Marine Mammals.</i>
2019	<b>World Marine Mammal Conference (Barcelona, Spain)</b> <i>Sleeping beneath the surface: developing novel, non-invasive methods to investigate sleep in wild marine mammals. *Awarded <u>the Frederic Fairfield Memorial Award</u> for innovative research by students pioneering techniques or research tools to study marine mammals - \$1,000.</i>
2019	<b>ArtScientific Medical Systems (Egmond aan Zee, Netherlands)</b> <i>Novel, non-invasive methods for neurophysiological monitoring during rest behavior in phocid seals.</i>
2016	<b>Western Society of Naturalists (Monterey, CA - USA)</b> <i>Novel, non-invasive methods for neurophysiological monitoring during rest behavior in phocid seals.</i>
2016	<b>9th International Conference on the Marine Mammals of the Holarctic (Moscow, Russia)</b> <i>Association between eye state and unihemispheric sleep and waking in the fur seal while in water.</i>

- 2016 Society for Integrative and Comparative Biology (Portland, OR - USA)**  
*Using photo-identification data to investigate movement and occurrence patterns of short-finned pilot whales (Globicephala macrorhynchus) in the eastern north pacific.*
- 2015 Society for Integrative and Comparative Biology (West Palm Beach, FL - USA)**  
*Sexual selection by the seashore: Mate choice and competition in the maritime earwig. Integrative & Comparative Biology.*

## **VI. MENTORING**

### **DEI & Education Training Experience**

- 2024 Lead PI & Organizer for International EcoViz+AI Workshop** – Led and organized a conference to create educational materials that democratize AI in Ecology sponsored by Schmidt Sciences
- 2023 EduCare & Schmidt Futures** – Training for Safeguarding Young People for International Schools
- 2023 UC San Diego Teaching & Learning Commons: Assessment 101 & 102** – Education assessment for sustainable courses that close opportunity gaps and align with program learning outcomes
- 2023 UC San Diego** – Training for Gender Recognition: Transgender, Nonbinary, and Intersex Awareness
- 2022 Scripps Polar Center** – Sexual Assault and Harassment Polar Town Hall
- 2022 UC Santa Cruz Pedagogy Course** – Course for Pedagogy Community for Collaboration and Creation
- 2021 Building a Better Fieldwork Future** – Training for Combatting Sexual Harassment in Field Settings

### **Mentees**

<b>2023-</b>	<b>Kevin Nguyen</b>	UCSD Computer Science – Advanced Visualization Intern
<b>2020-</b>	<b>Ritika Mukherji</b>	Rhodes Scholar 2022
<b>2023-24</b>	<b>Lazurite Hagey</b>	High School Animation and Advanced Visualization Intern
<b>2023-24</b>	<b>Michael Sorenson</b>	UCSD MAS Data Science & Engineering Mentee
<b>2023-24</b>	<b>Tarik Basic</b>	UCSD MAS Data Science & Engineering Mentee
<b>2023-24</b>	<b>Melody Song</b>	UCSD MAS Data Science & Engineering Mentee
<b>2023-24</b>	<b>Tarek Tarif</b>	UCSD MAS Data Science & Engineering Mentee
<b>2023-24</b>	<b>Yousuf Rajput</b>	UCSD MAS Data Science & Engineering Mentee
<b>2019-23</b>	<b>Daniel Lozano</b>	UCSC CAMINO Intern & RMI Scholar
<b>2020-23</b>	<b>Catherine Lopez</b>	Scripps Institute Technician
<b>2020-22</b>	<b>Jordan Nichols</b>	UCSC Neuroscience
<b>2022</b>	<b>Cara Munro</b>	UCSC Ecology & Evolutionary Biology
<b>2021</b>	<b>Christina To</b>	UCSC Biology
<b>2021</b>	<b>Avalon Conklin</b>	UCSC Ecology & Evolutionary Biology
<b>2021</b>	<b>Jacqueline Toscano</b>	UCSC Ecology & Evolutionary Biology
<b>2021</b>	<b>Haoran (Sara) Li</b>	High School Science Internship Program (SIP) Intern
<b>2021</b>	<b>Jatin Das</b>	High School Science Internship Program (SIP) Intern
<b>2021</b>	<b>Radha Srinivasan</b>	High School Science Internship Program (SIP) Intern

### **Mentorship Programs**

- 2023 Schmidt & Rhodes Trust RISE Residential Summit Capstone Advisor; Oxford, UK**  
*100 international high school Rise Global Winner mentees*
- 2022 Expanding Your Horizons; 6<sup>th</sup>-10<sup>th</sup> grade interactive science conference**  
*60 local high school students*
- 2021 High School Science Internship Program (SIP); virtual summer internship**  
*3 high school SIP interns from across the U.S.*
- 2017-22 UC Santa Cruz Ecology & Evolutionary Biology Peer-to-Peer Mentorship Program**  
*Peer-to-peer mentorship for UCSC grad students*

## **XII. SERVICE & COMMUNITIES of PRACTICE**

### **University Service**

- 2024-** Reviewer for UC San Diego AI in Science Postdoctoral Fellowship
- 2018-19** Member of UC Santa Cruz EEB Faculty Search Graduate Student Committee
- 2017-22** Mentor for UC Santa Cruz Peer-to-Peer Mentorship Program

### **Grant Reviews**

- 2024-** Reviewer for National Science Foundation
- 2024-** Reviewer for University of Strasbourg
- 2024-** Reviewer for ClimateChangeAI
- 2022-** Reviewer for National Geographic Society

### **Journal & Conference Reviews**

- 2024-** Reviewer for Journal of Animal Biotelemetry
- 2024-** eScience Program Committee – Generative AI and FAIR Principles in Science Communication
- 2024-** Reviewer for Physiology & Behavior Journal
- 2023-** Reviewer for International Bio-logging Society
- 2016-** Reviewer for Aquatic Mammals Journal

### **Memberships**

- 2023-** American Physiological Society
- 2021-** IEEE - Institute of Electrical and Electronics Engineers
- 2021-** International Biologging Society
- 2020-** American Academy of Sleep Medicine
- 2019-** Society for Marine Mammalogy
- 2016-** Western Society of Naturalists
- 2015-** Society for Integrative and Comparative Biology

### **Communities of Practice**

- 2024-** Lead PI & Organizer for International EcoViz+AI Workshop sponsored by Schmidt Sciences
- 2024** BioBlend Workshop: AI for Multimodal Environmental Data sponsored by Schmidt Sciences
- 2024-** Member of International Biologging Society's Data Standardization Working Group

## **VIII. RESEARCH EXPERIENCE**

- 2022-present** **Postdoctoral Research on Comparative Physiology of Diving Animals**  
*Advisor: Paul Ponganis, UC San Diego; Artificial Intelligence Co-Mentor: Ilkay Altintas*
- 2017-2022** **PhD Thesis Research on Comparative Neurophysiology of Marine Mammals**  
*Advisors: Dan Costa & Terrie Williams, UC Santa Cruz*
- 2015-2016** **Electrophysiological sleep study of northern fur seals in Russia**  
*Advisor: Oleg Lyamin, UCLA Center for Sleep Research*
- 2015-2016** **Sleep deprivation research - Undergraduate Research Apprenticeship Program**  
*Advisor: Matthew Walker, Center for Human Sleep UC Berkeley*
- 2015-2016** **Pilot Whale Photo Identification Project NOAA Hollings Internship**  
*Advisor: Jay Barlow, NOAA Southwest Fisheries Science Center*

- 2016, '12, '13 Chemical Oceanography Cruises aboard RV Oceanus, Point Sur, & New Horizon**  
*Advisor: Jim Bishop, UC Berkeley*
- 2014-2015 Behavior and den fidelity in moray eels - Moorea, French Polynesia**  
*Advisor: Jonathon Stillman, UC Berkeley*
- 2014-2015 Sexual selection in arthropods – Research Experience for Undergraduates (REU)**  
*Advisor: Vikram Iyengar, Villanova University / University of Washington*
- 2013-2015 Cephalopod behavior - Undergraduate Research Apprenticeship Program (URAP)**  
*Advisor: Roy Caldwell, UC Berkeley*
- 2013-2014 Deep-sea wood falls - Undergraduate Research Apprenticeship Program (URAP)**  
*Advisor: Jenna Judge, UC Berkeley*
- 2013-2014 Madagascar Marine Protected Areas - Undergraduate Research Apprenticeship Program (URAP)**  
*Advisor: Mez Baker-Médard, UC Berkeley*
- 2009-2012 Teach and test ocean water quality testing program**  
*Advisor: Benjamin Kay, Santa Monica High School*

## **IX. GUEST LECTURES**

- 2025 UC Santa Cruz: Field Methods – Data visualization for data exploration**
- 2023-25 UC Santa Cruz: Queer Ecologies – Art & science: queering disciplines to foster innovation & inclusivity**
- 2023 UC San Diego: MAS Data Science and Engineering – Data science for multimodal ecological timeseries**
- 2023 UC San Diego: Perspectives on Ocean Sciences – Lessons from the deep: electrophysiology & visualization to examine biology amidst a changing climate**
- 2022 Colby College: Queer Feminist Engagements with Lab & Field Science – Art & Science for Inclusivity**
- 2021,23 UC Berkeley: Marine Mammals – Sleep, art, and science communication**
- 2021 UC Santa Cruz Science Communication Program – Art & Science Communication**
- 2021 California College of the Arts - Art & Science Communication**
- 2021 California Ocean Alliance - Art & Science Communication**
- 2021 Baylor University - Art & Science Communication**
- 2021 Moss Landing Marine Labs - Art & Science Communication**
- 2015-20 (5X) UC Berkeley Oceans C82 - Marine animals: metazoan diversity**

## **X. SEMINARS & TALKS**

### **Invited research seminars**

- 2024 European Sleep Research Society – Virtual seminar**
- 2024 EnviroChats: University of Exeter – Exeter, UK**
- 2024 BioBlend: AI for Multimodal Biodiversity Monitoring, University of Michigan – Ann Arbor, MI**
- 2024 LIN Neuroscience Plenary Lecture, University of Illinois Chicago – Chicago, IL**
- 2024 Institutional Seminar, Scripps Institution of Oceanography – San Diego, CA**
- 2024 Stanford Department of Biology – Stanford, CA**
- 2024 University of California, Santa Barbara Bren School – Santa Barbara, CA**
- 2024 University of North Carolina Wilmington – Wilmington, NC**
- 2024 UC San Diego Departments of Bioengineering & Data Science – San Diego, CA**
- 2024 Stanford Department of Oceans – Stanford, CA**
- 2023 Royal Academy of Sciences – Stockholm, Sweden**
- 2023 SciLifeLab – Solna, Sweden**
- 2023 NASA Fatigue Countermeasures Lab – Stanford, CA**
- 2023 Department of Physiology, Anatomy and Genetics (DPAG) – University of Oxford, UK**
- 2023 Hawaii Institute of Marine Biology – University of Hawaii Manoa, HI**
- 2023 Polar Center – Scripps Institution of Oceanography, CA**
- 2023 Institute of Arctic Biology – University of Alaska Fairbanks, AK**

2022	<b>Centre de Recherche en Neurosciences de Lyon</b> – Neuroscience Institute – Lyon, FRANCE
2022	<b>Washington University</b> – Systems Neuroscience – St Louis, MO
2021	<b>Sleep Ecophysiology Group</b> – La Trobe University, Melbourne, AUS
2021	<b>Max Planck Institute</b> – Research Group Avian Sleep, DE
2021	<b>Stanford University</b> – Goldbogen Lab – Monterey, CA
2021	<b>Stanford University</b> – Heller Lab – Palo Alto, CA
2020	<b>UC Santa Cruz</b> – Qualifying Defense – Santa Cruz, CA
2020	<b>University of Michigan</b> – Mechanical Engineering Department; Ann Arbor, MI
2019	<b>The Marine Mammal Center</b> – Sausalito, CA
2019	<b>National Marine Mammal Foundation</b> – San Diego, CA
2015	<b>NOAA Science and Education Symposium</b> – Washington, DC
2014	<b>UC Berkeley Bio-Geomorphology of Tropical Islands</b> – Berkeley, CA
2014	<b>Friday Harbor Laboratories</b> – Friday Harbor, WA

## **Panels, Public Talks & Workshops**

Online Learning Portal: <https://www.jessiekb.com/artforscicomm>

2024	<b>EcoViz+AI Workshop (UC San Diego)</b> – <i>Workshop on Visualization and AI for Ecology</i>
2024	<b>International Biologging Society</b> – <i>Data visualization workshop</i>
2023	<b>Smithsonian Movement of Life Quarterly Meeting</b> – <i>Data visualization workshop</i>
2023	<b>Schmidt Artificial Intelligence Conference; Toronto, Canada</b> – <i>Data visualization workshop</i>
2023	<b>RISE Residential Summit (Schmidt Futures/Rhodes Trust) Oxford, UK</b> – <i>Data visualization workshop</i>
2023	<b>Schmidt Data Visualization Panelist</b> – <i>Data visualization for science communication</i>
2023	<b><u>Salty Cinema Panelist</u></b> – <i>Expanding our oceanic vision through art &amp; science (250 attendees)</i>
2023	<b><u>UC Love Data Week</u></b> – <i>UC-wide data visualization workshop (200 attendees)</i>
2022	<b>UC Santa Cruz</b> - <i>Dissertation Public Seminar</i>
2021	<b>Seymour Marine Discovery Center:</b> <i>Labside Chat with Jessica Kendall-Bar</i>
2017-22	<b>UC Santa Cruz</b> - <i>Art &amp; Science Communication</i>
	<b>UC Santa Cruz</b> - <i>Introduction to Animation in PowerPoint</i>
	<b>UC Santa Cruz</b> - <i>Introduction to Animation &amp; 2D Data Visualization in Adobe After Effects</i>
	<b>UC Santa Cruz</b> - <i>Introduction to Animation &amp; 3D Data Visualization in Autodesk Maya</i>
2020	<b>UC Santa Barbara</b> - <i>Art &amp; Science Communication</i>
2020	<b>San Francisco State University</b> - <i>Art &amp; Science Communication</i>
2019	<b>Santa Cruz Museum of Art &amp; History</b> - <i>Sex in Nature: the science behind the story of Looking for Marla</i>
2015	<b>San Francisco Exploratorium:</b> “Everything Matters: Tales from the Periodic Table” <i><u>How Poop Sinks: The Importance of Feces in the Open Ocean</u></i>

## **XI. PRESS**

See other press coverage here: <https://www.jessiekb.com/in-the-press>

See >170 news stories related to 2023 Science paper here: <https://www.altmetric.com/details/146228395>

2025	UC San Diego Today	<u><a href="#">6 Ways UC San Diego Research is Future-Proofing the Planet</a></u>
2024	UC Santa Cruz News	<u><a href="#">Scientists collaborate on immersive technology to address climate challenges</a></u>
2024	UC San Diego Today	<u><a href="#">Scientists Combine Immersive Technology &amp; Collaboration to Address Challenges</a></u>
2023	UC Santa Cruz News	<u><a href="#">UCSC doctoral graduate wins prestigious Science &amp; SciLifeLab Prize</a></u>
2023	Science Magazine	<u><a href="#">Protostar Jessica Kendall-Bar wins the Science &amp; SciLifeLab Prize</a></u>
2023	Science & SciLifeLab	<u><a href="#">Interview with SciLifeLab Winner Jessica Kendall-Bar</a></u>
2023	UC Santa Cruz News	<u><a href="#">New open access course – data-driven animation for science communication</a></u>
2023	SDSC News	<u><a href="#">SDSC Leaders Collaborate with Schmidt AI Fellow on Data Workflow</a></u>
2023	Scripps Oceanography	<u><a href="#">Elephant seals drift off to sleep while diving far below the ocean surface</a></u>
2023	UC San Diego Today	<u><a href="#">Study Reveals Sleeping Habits of Elephant Seals at Sea</a></u>
2023	The Atlantic	<u><a href="#">Meet the World’s Most Hard-Core Nappers</a></u>
2023	The New York Times	<u><a href="#">Elephant Seals Take Power Naps During Deep Ocean Dives</a></u>



2023	The Washington Post	<a href="#"><u>Scientists crack the mystery of elephant seals' extreme sleep habits</u></a>
2023	CNN	<a href="#"><u>Elephant seals enter 'sleep spiral' during deep ocean dives</u></a>
2023	National Public Radio	<a href="#"><u>Think you're tired? Animal goes for months with only two hours of sleep</u></a>
2023	National Geographic	<a href="#"><u>2 hours of sleep a day? How this animal can survive is a mystery.</u></a>
2023	BBC	<a href="#"><u>Northern elephant seals sleep in the deep to avoid predators</u></a>
2022	UC Santa Cruz News	<a href="#"><u>Two UCSC alumni win awards for excellence in science communication</u></a>
2022	National Academies	<a href="#"><u>National Academies Announce Inaugural Recipients of Eric and Wendy Schmidt Awards for Excellence in Science Communications</u></a>
2021	UC Santa Cruz News	<a href="#"><u>Data-driven animations of marine mammals combine biology, art, &amp; computation</u></a>
2021	The Conversation	<a href="#"><u>Risk versus reward on the high seas</u></a>
2019	UC Santa Cruz News	<a href="#"><u>Dream job: Combining science and illustration</u></a>
2019	Santa Cruz Sentinel	<a href="#"><u>Looking for Marla' teaches inclusivity</u></a>
2019	UC Santa Cruz News	<a href="#"><u>Launch party for children's book 'Looking for Marla' November 15 at MAH</u></a>
2021	Seymour Center	<a href="#"><u>Labside Chat with Jessica Kendall-Bar</u></a>
2019	KSQD Radio Interview	<a href="#"><u>Interview with Ventana Surfboards and Event Santa Cruz</u></a>
2020	Salted Spirit Podcast	<a href="#"><u>Interview: An enchanted tour of the kelp forest</u></a>
2020	KSQD Santa Cruz	<a href="#"><u>Interview with Santa Cruz Naturalist Podcast</u></a>

## XII. SCIENCE COMMUNICATION & DATA VISUALIZATION

### 2019- Science Communication & Data-Driven Animations

Individual projects listed below under "Data-Driven Animations".

### 2019-23 Science Communication Strategist - Coastal Resilience Lab, UCSC

Graduate Student Research [GSR] Assistantship

*Developed visual science communication strategies for scientist Michael Beck to communicate the protective benefits of natural infrastructure such as coral reefs and mangroves.*

### Illustrated Children's Books

#### 2019 **Looking for Marla:** <https://www.jessiekb.com/looking-for-marla>

P Medina, **JM Kendall-Bar (illustrator)**, A Ford, and K Ross (translator).

*Publisher: Self-Published, 2019. ISBN 0578523922, 9780578523927*

*Looking for Marla tells the story of a clownfish in transition from fatherhood to motherhood as they explore the diverse approaches to underwater parenthood.*

**Associated Grants:** UCSC Norris Center Art & Science Residency (\$1,500), Science & Justice Research Center, and the Santa Cruz Arts Council, and Kickstarter Campaign (\$4,500)

**Outreach & Public Readings:** SF Exploratorium STARS Program (2021), What Makes Us Human (Exhibit 2020), LGBTQ+ Story Time in the Park with Trans Families, Boys & Girls Club, & Santa Cruz Public Libraries (2019), Queer Trans Mixer (2019), Capitola Art & Wine (2019), SF Zine Fest (2019), LA Tiny Tech Zines (2019), Pajaro Valley Pride (2019), Walnut Ave Family & Women's Center (2019), Norris Center Alumni Event (2019), & Ales for Whales (2019)

#### 2019 **The Castor Oil Rig Tales**

S Partenheimer and **JM Kendall-Bar (illustrator)**.

*Publisher: AzBukiVeri LLC, Publishing agency, 2019. ISBN 1732426562, 9781732426566.*

*The Castor Oil Rig Tales details the journey of dozens of marine creatures as they find sanctuary in an abandoned oil rig off the coast of Louisiana.*

### Large-scale exhibit design

#### 2021 **"Photos from the Field" at Seymour Marine Discovery Center**

*Graphic design and contributed photography for large-scale 22 panel, 100-foot photo exhibit displayed at Seymour Marine Discovery Center.*

- 2021 **"From Data to Art: Data Visualization Virtual 3D Gallery"**  
*6-room virtual gallery displaying final projects for 10 students from the Data Visualization Collective in Winter 2021. Exhibit & gallery website designed by Instructor Jessica Kendall-Bar.*
- 2020 **"A year in the life of Phyllis, an adult female northern elephant seal"**  
*10ft by 6ft interpretive panel for display at Seymour Marine Discovery Center & Año Nuevo Visitor's Center*

## **Web Design for Decision Support Tools and Scientific Analysis**

- 2020-25 **Coastal Resilience Explorer - Data Visualization Portal**  
Explorer URL: <https://coastalresilienceexplorer.org/>  
*User experience and user interface design (CSS & javascript).  
Web development and data management by Chris Lowrie.*
- 2019-21 **Coastal Resilience Lab Website**  
Website URL: <https://coastalresiliencelab.org>

## **Data-driven animations**

- 2023-25 **Advanced Scientific Visualizations of Coral Reef Flood Protection Benefits using Game Engines**  
*Video of Center for Coastal Climate Resilience Visualizations*  
**Scientific advisor:** Michael Beck; **Animation collaborator:** Ian Costello
- 2023-24 **Ocean Heat using Argo – Data-Driven Animation for COP28 (November 2023)**  
*Video presented at COP28: How much is the ocean heating up?*  
**Scientific advisors:** Sarah Purkey & Megan Scanderbeg, Scripps Institution of Oceanography  
**Communication Collaborators:** Lauren Wood, Rob Monroe, Chris Toombs- Scripps Communications
- 2023-24 **Indigenous Knowledge Project: Other Ways of Knowing Sea Otters and Abalone in Sitka, Alaska**  
**Scientific advisors:** Taylor White & Pete Raimondi, UC Santa Cruz; *Website*  
**Indigenous Artist Collaborators:** Sienna Reid (Xoodz!); **Funding:** North Pacific Research Board
- 2023-24 **Extreme diving physiology of emperor penguins in Antarctica**  
*Video of emperor penguin diving physiology.*  
**Scientific advisors:** Paul Ponganis, UC San Diego; **Funding:** National Science Foundation
- 2023 **Simulations of cooperative and solitary bubble-net formation in humpback whales**  
**Scientific advisors:** Andy Szabo & Lars Bejder  
**Funding:** Marine Mammal Research Program Hawaii (UH Manoa) & Alaska Whale Foundation
- 2023 **Sleep at Sea: Simulation of spatiotemporal patterns during sleep in wild northern elephant seals**  
Associated publication: **JM Kendall-Bar**, TM Williams, R Mukherji\*, DA Lozano\*, JK Pitman, RR Holser, T Keates, RS Beltran, PW Robinson, DE Crocker, T Adachi, OI Lyamin, AL Vyssotski, & DP Costa. *Brain activity of diving seals reveals short sleep cycles at depth. Science.* 380(6642), adf0566.
- 2022 **Visualizing Life in the Deep: Video trailer to document a data-driven animation pipeline to promote research, conservation, and communication**  
Associated publication: **JM Kendall-Bar**, NX Kendall-Bar, AG Forbes, G McDonald, PJ Ponganis, C Williams, M Horning, A Hindle, H Klinck, RS Beltran, AS Friedlaender, D Wiley, DP Costa, & TM Williams. Visualizing Life in the Deep: a creative pipeline for data-driven animations to facilitate marine mammal research, outreach, and conservation. **IEEE VIS.** DOI: 10.1109/VISAP52981.2021.00007
- 2021-23 **Paradox of Fear: 3D Animation of Anthropogenic Disturbance to Narwhals.**  
3D visualizations of inertial motion sensing data and sonification of heart rate data.  
**Scientific advisor:** Terrie Williams, UC Santa Cruz; **Funding:** Office of Naval Research
- 2021 **Lightscares of Fear: Skinny seals trade safety for sustenance.**  
Associated publication: Beltran, R. S., **Kendall-Bar, J. M.**, Pirootta, E., Adachi, T., Naito, Y., Takahashi, A., ...

& Costa, D. P. (2021). Lightscales of fear: How mesopredators balance starvation and predation in the open ocean. *Science advances*, 7(12), eabd9818.

2020- **Humpback Alliance: 3D Animation of Cooperative Benthic Foraging Behavior**  
*Scientific advisor: David Wiley, National Marine Sanctuary Foundation*

2021-22 **Sounds of Fear: 3D Animation of the Fear Response of Northern Elephant Seals**  
*Scientific advisor: Gitte McDonald, Moss Landing Marine Laboratories*

2021 **UCSC News: Value of US Reefs for Flood Risk Reduction.**  
*Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck*

2020 **USGS: How Our Reefs Protect Us: Valuing the Benefits of U.S. Reefs.**  
*Cinematography & graphics by Jessica Kendall-Bar. Scientific advisors: Michael Beck & Curt Storlazzi.*

2020 **UCSC News: Introduction to the Coastal Resilience Lab & Approach.**  
*Video Editing & Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck*

2020 **Flood Protection Benefits of Mangroves**  
*Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck.*

## Maps and data visualizations

2021 **Million Dollar Reefs of O'ahu**  
*Map by Jessica Kendall-Bar & Chris Lowrie*  
**Appeared in UCSC News Story, Honolulu Star Advertiser News Story**

2021 **Million Dollar Reefs of Florida**  
*Map by Jessica Kendall-Bar & Chris Lowrie*

## Infographics

- 2021 **Cascading effects in kelp forests:** Graphical abstract published in PNAS  
Smith et al. 2021. "Behavioral Responses across a Mosaic of Ecosystem States Restructure a Sea Otter–Urchin Trophic Cascade." PNAS March 16, 2021; <https://doi.org/10.1073/pnas.2012493118>
- 2020 **A year in the life of Phyllis, an adult female northern elephant seal**  
*10ft by 6ft interpretive panel for display at Seymour Marine Discovery Center & Año Nuevo Visitor's Center*
- 2019 **\*Wave Power Project: inspiring coral reef conservation through art**  
*4ft by 3ft poster for display at 42nd US Coral Reef Task Force Meeting in Palau, Santa Cruz Museum of Art & History: The Norris Center Science & Art Showcase, High-Level Dialogue Event: Resilient Atoll Nations*
- 2021 **\*Coral Reef Flood Protection Benefits Infographic** for Reguero et al. 2021  
<https://news.ucsc.edu/2021/04/coral-reefs.html>

## Technical Reports – Graphic design & data visualization

*Design and layout by Jessica Kendall-Bar; Maps by Jessica Kendall-Bar and Chris Lowrie.*

2021 **USGS Report: Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction.**  
*Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction: U.S. Geological Survey Open-File Report 2019–1027, doi: 10.3133/ofr20191027*

2021 **The Social and Economic Benefits of Coral Reef Restoration in Florida.**  
*Rigorously valuing the coastal hazard risks reduction provided by potential coral reef restoration in Florida and Puerto Rico. U.S. Geological Survey Open-File Report 2021–1054*

- 2021 **The Social and Economic Benefits of Coral Reef Restoration in Puerto Rico.**  
Rigorously valuing the coastal hazard risks reduction provided by potential coral reef restoration in Florida and Puerto Rico. U.S. Geological Survey Open-File Report 2021-1054
- 2021 **Hurricane Damage to Coral Reefs in 2017 Increases Future Flood Risk in Puerto Rico and Florida.**  
Rigorously valuing the impact of Hurricanes Irma and Maria on coastal hazard risks in Florida and Puerto Rico. U.S. Geological Survey Open-File Report 2021-1056
- 2021 **Future Flooding Impacts from Projected Coral Reef Degradation in Florida.** Design and layout by  
Rigorously valuing the impact of projected coral reef degradation on coastal hazard risk in Florida. U.S. Geological Survey Open-File Report 2021-1055

## XIII. FINE ART

### Animation and Motion Graphics

- 2020 **Kool & the Gang Pursuit of Happiness Music Video.**  
Animation & editing by Jessica Kendall-Bar. Producer: One Foot Productions & Momma Googa Show.
- 2020 **Apollo Sound Introductory Animation; Apollo Theater** Harlem, New York.  
Animation by Jessica Kendall-Bar. Producer: One Foot Productions.  
View the animation or the full benefit show on Apollo Theater's site.
- 2019 **Selkie Dreams Watercolor Animation.** Installation featured at Burning Man 2019 - 35mm film

### Gallery exhibits

*Exhibitions of fine art including woodburnings, surfboards, paintings, & animations.*

- 2023 **Seaweed Speakeasy.** *Scripps Institution of Oceanography, UC San Diego.*
- 2023 **Salty Cinema.** *Scripps Institution of Oceanography, UC San Diego.*
- 2020 **Forbes Art Gallery, Santa Monica, CA – Solo Show; Unitarian Universalist Church of Santa Monica.**
- 2019 **Capitola Art & Wine Festival, Santa Cruz, CA - Art show with Ventana Surfboards**
- 2019 **Burning Man, Black Rock City, NV with India Block Arts - "Morphoscope" Selkie Dream Animation**
- 2019 **The Rose Room, Venice Beach, CA - Life Beneath the Waves; Surfrider LA Fundraiser**
- 2018, '19 **Humble Sea, Santa Cruz, CA - Ales for Whales; CA Ocean Alliance Fundraiser**
- 2018 **Monterey Bay National Marine Sanctuary Exploration Center - Solo Show; First Friday**
- 2018 **Ocean Dream Fair, Santa Cruz, CA - Art show with Ventana Surfboards**

## XIV. QUALIFICATIONS

### Skills & Languages

- **French** - fluent (dual citizenship, year abroad in French high school, 5 in AP French)
- **Spanish** - proficient (3 years of study)
- **Diving** (>200 dives: Friday Harbor, Monterey, Catalina, Channel Islands, San Diego, Florida, & Tahiti)
  - AAUS Scientific Diver with UC Santa Cruz Scientific Diving Program (UC Berkeley AAUS Certification)
  - NAUI Nitrox, Rescue, and Master Certifications
  - PADI Advanced Certification (specialties: Buoyancy, Navigation, Deep Dive, and Fish ID)
  - AIDA2 Freediving Certification
- **AIARE 1 Avalanche Safety Course**
- **Scientific Computing & Programming:** Python, Javascript, R, MATLAB
- **Video Editing/Graphics:** Adobe Creative Suite (especially After Effects, Premiere Pro, Illustrator, and Photoshop), Final Cut Pro, Autodesk Maya, Blender, Unreal Engine