



## JESSICA KENDALL-BAR

jkb@ucsc.edu · Website: jessiekb.com · Twitter: @jmkendallbar · Instagram

*PhD Candidate, NSF Graduate Research Fellow, ARCS Fellow,  
National Geographic Explorer, and Freelance Artist*

Ecology and Evolutionary Biology, University of California Santa Cruz

### I. Educational Background

- **PhD Candidate** – Ecology & Evolutionary Biology  
University of California, Santa Cruz (2017-2022)
- **Bachelor of Arts** – Marine Science & Integrative Biology  
University of California, Berkeley (2012-2016) **GPA: 3.93**
- **Santa Monica High School**, CA (2009-12)
- **Lycée Joffre** in Montpellier, France (2009-2010)

### II. Honors, Awards, & Grants

- [NSF Graduate Research Fellow](#) (2017-2020) - \$138,000
- [Achievement Rewards for College Scientists](#) (ARCS) Fellow (2021-2022) - \$10,000
- [National Geographic Early Career Grant](#) (2020) - \$10,000
- [UC Santa Cruz President's Dissertation Year Fellowship](#) (2021-2022) - \$21,000
- [Frederic Fairfield Memorial Award at the World Marine Mammal Conference](#) (2019)
- [Sooy Graduate Research Fellow](#) (2018) - \$5,500
- [Special Research Grant \(SRG\) Committee on Research](#) (PI: D.P. Costa) (2018)\* - \$8,000
- [ONR Defense University Research Instrumentation Program](#) (PI: T.M. Williams) (2019) \*
- [Norris Center for Natural History Art Residency](#) (2018) - \$2,500
- [Monterey Shootout Underwater Photography Competition Finalist](#) (2017) - \$1,000
- [Summer Undergraduate Research Fellowship \(SURF\) Rose Hills Fellow](#) (2016) - \$5,000
- [UC Berkeley Regents' and Chancellors' Research Fellowship](#) (2016) - \$1,000
- [Charles H. Ramsden Endowed Scholarship](#) (2014, 2015, and 2016) - \$6,000
- [NOAA Ernest F. Hollings Scholar](#) (2014-2016) - \$20,000
- [UC Berkeley Regents' & Chancellors' Scholar \(class of 2012-2016\)](#) - \$10,000
- AP Scholar (2012) & Honor Roll 4.0 GPA each semester; Santa Monica High School (2012)
- Félicitations (2009-2010) honorable distinction each trimester while abroad in France

\*Written in collaboration with and awarded to principal investigator listed.

### III. Publications

1. **Kendall-Bar, Jessica M.**, Nicolas Kendall-Bar, Angus G Forbes, Gitte McDonald, Paul J Ponganis, Cassondra Williams, Markus Horning, et al. "Visualizing Life in the Deep: A Creative Pipeline for Data-Driven Animations to Facilitate Marine Mammal Research, Outreach, and Conservation." *IEEE VIS 2021* (October 24, 2021): 1-10. [https://ieevis.b-cdn.net/vis\\_2021/pdfs/a-visap-1031.pdf](https://ieevis.b-cdn.net/vis_2021/pdfs/a-visap-1031.pdf) DOI 10.1109/VISAP52981.2021.00007.
2. Beltran, Roxanne S., **Jessica M. Kendall-Bar**, Enrico Pirotta, Taiki Adachi, Yasuhiko Naito, Akinori Takahashi, Jolien Cremers, Patrick W. Robinson, Daniel E. Crocker, and

Daniel P. Costa. "Lightscapes of Fear: How Mesopredators Balance Starvation and Predation in the Open Ocean." *Science Advances* 7, no. 12 (March 1, 2021): eabd9818. <https://doi.org/10.1126/sciadv.abd9818>.

3. **Kendall-Bar, Jessica M.**, Alexei L. Vyssotski, Lev M. Mukhametov, Jerome M. Siegel, and O. I. Lyamin. "Eye State Asymmetry during Aquatic Unihemispheric Slow Wave Sleep in Northern Fur Seals (*Callorhinus Ursinus*)." *PLoS ONE* 14, no. 5 (2019): 1–13. <https://doi.org/10.1371/journal.pone.0217025>.
4. **Kendall-Bar, Jessica M.**, and Vikram K. 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, no. 1 (December 1, 2016): 8. <https://doi.org/10.1007/s00265-016-2233-9>.
5. **Kendall-Bar, Jessica M.**, David Weller, Holly Fearnbach, Susan Shane, Gregory S. Schorr, Erin A. Falcone, John Calambokidis, Alisa Schulman-Janiger, and Jay Barlow. "Movement and Occurrence Patterns of Short-Finned Pilot Whales (*Globicephala Macrorhynchus*) in the Eastern North Pacific." *Aquatic Mammals* 42 (August 25, 2016): 300. <https://doi.org/10.1578/AM.42.3.2016.300>.

#### Manuscripts in Preparation:

1. **Kendall-Bar, J.M.**, Mukherji, R., Lopez, C., Nichols, J., Lozano, D.L., Pitman, J.K., Holser, R.H., Beltran, R., Schalles, M., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., Williams, T.M. (2021). Sleep at sea in wild seals reveals an extreme form of natural sleep apnea. *In prep*.
2. **Kendall-Bar, J.M.**, Mukherji, R., Lopez, C., Nichols, J., Lozano, D.L., Pitman, J.K., Holser, R.H., Beltran, R., Schalles, M., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., Williams, T.M. (2021). Eavesdropping on the brain at sea: the development of a non-invasive technique to maximize the detection of weak electrophysiological signals from wild animals. *In prep*.
3. **Kendall-Bar, J.M.**, Mukherji, R., Lopez, C., Nichols, J., Lozano, D.L., Pitman, J.K., Holser, R.H., Beltran, R., Schalles, M., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., Williams, T.M. (2021). Methods for characterizing sleep in wild northern elephant seals exhibiting an extreme form of natural sleep apnea. *In prep*.

## V. Research Experience

### Marine Mammal and Neurophysiology Experience:

#### PhD Thesis Research on Comparative Neurophysiology of Marine Mammals (2017–present)

Advisors: Dan Costa (PhD) & Terrie Williams (PhD), Ecology and Evolutionary Biology, UC Santa Cruz ([costa@ucsc.edu](mailto:costa@ucsc.edu) & [tmwillia@ucsc.edu](mailto:tmwillia@ucsc.edu))

- trained and participated in four years of elephant seal field seasons at Año Nuevo State Park: including assisting with translocations, lab-based studies, and ~200 elephant seal sedation procedures for instrument deployments and recoveries
- trained and mentored 20 undergraduate volunteers assisting with lab- and field-based data collection, analysis, and data visualization
- collected tissue samples (whiskers, fur, nasal) and morphological measurements on northern elephant seals for various analyses (body composition, stable isotopes, etc.)

#### Related Presentations and Publications:

- **Peer-reviewed publication:** [IEEE VIS Arts Program \(2021\)](#).
- **Peer-reviewed publication:** [Science Advances \(2021\)](#).
- Conference presentations: IEEE VIS 2021, The International Biologging Symposium 2021, SLEEP 2020, World Marine Mammal Conference 2019 (Awarded the [Fairfield Memorial Award](#)), and ArtScientific Medical Systems Meeting 2019.

### **Electrophysiological Sleep Study in Fur Seals in Russia (Summer 2016)**

Advisor: Oleg Lyamin (PhD), Center for Sleep Research, UCLA School of Medicine ([olyamin@ucla.edu](mailto:olyamin@ucla.edu))

- studied possible proxies of unihemispheric sleep by examining the correlation between eye state and electrical (EEG) activity during sleep in the water in two fur seals
- trained a wild fur seal to perform cognitive shape discrimination tasks

*Related Presentations and Publications:*

- **Peer-reviewed publication:** [PLOS One \(2019\)](#).
- Conference Presentations: Western Society for Naturalists Meeting 2016 & 9<sup>th</sup> International Conference on Marine Mammals of the Holarctic 2016 (presented by Dr. Lyamin).

### **Sleep Deprivation Research in Humans with UC Berkeley's Sleep and Neuroimaging Lab: Undergraduate Research Apprenticeship Program (URAP) (2015-2016)**

Advisor: Matthew Walker (PhD) Center for Human Sleep Science UC Berkeley ([mpwalker@berkeley.edu](mailto:mpwalker@berkeley.edu))

- collected neurophysiological data from EEG, EKG, and MRI to analyze the effects of sleep deprivation on pain sensation in humans

### **Pilot Whale Photo Identification Project NOAA Hollings Internship (summer 2015)**

Advisor: Jay Barlow (PhD) NOAA Southwest Fisheries Science Center ([jay.barlow@noaa.gov](mailto:jay.barlow@noaa.gov))

- created a photo-identification catalog and located matches between seasonal sightings
- conducted biweekly marine mammal surveys in the field

*Related presentations and publications:*

- **Peer-reviewed publication:** [Aquatic Mammals \(Aug 2016\)](#).
- Conference Presentation: Society for Integrative & Comparative Biology 2016

### **Other Marine Biology Research**

- **Chemical Oceanography Cruises aboard RV Oceanus, RV Point Sur, and RV New Horizon (August 2016, October 2012, and January 2013)**

Advisor: James Bishop (PhD), Professor of Marine Science at UC Berkeley; [jkbishop@berkeley.edu](mailto:jkbishop@berkeley.edu)

- **Moray Eel Behavior Independent Project in Moorea, French Polynesia (Fall 2014)**

Professor: Jonathon Stillman (PhD), Professor of Marine Biology at San Francisco State University; [jstillman@berkeley.edu](mailto:jstillman@berkeley.edu) Working paper: [University of California Berkeley Archives \(2014\)](#).

- **Arthropod Sexual Selection Research Experience for Undergraduates (REU) (2014)**

Advisor: Vikram Iyengar (PhD), Associate Professor of Biology at Villanova University;

[vikram.iyengar@villanova.edu](mailto:vikram.iyengar@villanova.edu) **Peer-reviewed publication:** [Behavioral Ecology and Sociobiology \(2016\)](#).

- **Cephalopod Behavior Research (URAP) (2013-2015)**

Advisor: Roy Caldwell (PhD), Professor of Integrative Biology at UC Berkeley; [rlcaldwell@berkeley.edu](mailto:rlcaldwell@berkeley.edu)

- **Deep-Sea Wood Fall Experiment Research (2013-2014)**

Advisor: Jenna Judge (PhD) Lindberg Lab at UC Berkeley

- **Madagascar Marine Protected Area Assessment (URAP) (Spring 2013)**  
Advisor: Merrill Baker (PhD), Assistant Professor of Environmental Studies at UC Berkeley
- **Alaska Summer Research Academy Internship (Summer 2011)**
- **Teach and Test Ocean Water Quality Testing Program (2009-2012)**

## IV. Teaching Experience

### 1. Instructor and Course Developer: Data Visualization Collective (ART 199/299 – 2021)

Supervising professor: Jennifer Parker (MFA); Director UCSC OpenLab ([parker1@ucsc.edu](mailto:parker1@ucsc.edu))

- a. Designed course, lecture materials, and assignments incorporating art, science, & technology
- b. Course topics included Art & Design, Coding, and Scientific Methods and covered programs: Adobe Photoshop, Illustrator, After Effects, Autodesk Maya, Python, R, & Javascript (D3)
- c. Final projects ranged from 2D/3D scientific animations to interactive data visualization dashboards. See projects here: <https://www.jessiekb.com/data-visualization-collective>

### 2. Teaching Assistant (TA) for Marine Mammals (BIOE 129L – Spring 2019)

Supervising professor: Dan Costa (PhD) ([jkbishop@berkeley.edu](mailto:jkbishop@berkeley.edu)); UC Berkeley

- a. Designed and led lab sections including active and field-based learning techniques
- b. Presented short lectures on class material preceding lab activities
- c. Provided extensive writing feedback for the “Disciplinary Communication” course which emphasizes scientific writing and critical thinking skills

### 3. Exceptionally appointed Graduate Student Instructor (GSI) (Oceans C82 – Fall 2015-16)

Supervising professor: Jim Bishop (PhD) ([jkbishop@berkeley.edu](mailto:jkbishop@berkeley.edu)); UC Berkeley

- a. Redesigned course in 2013: created course website and restructured assignments and lectures.
- b. Section Leader: presented hour-long lessons, one guest lecture for the 300 students in our class, held review sessions, and created exams and assignments (2015: 1 section- 30 students, 2016: 3 sections- 100 students total).

### 4. Undergraduate Student Instructor (UGSI) Invertebrate Zoology (IB103LF – Spring 2016)

Supervising professor: Jenna Judge (PhD) ([jennajudge@berkeley.edu](mailto:jennajudge@berkeley.edu)); UC Berkeley

- a. Assisted with lab sections (15 students each) by collecting invertebrates, presenting lessons, and leading labs. Helped lead review sessions, lead class field trips, and create exams and assignments.

## VI. Presentations and Invited Talks

Refereed conference presentations:

### 1. IEEE Visualization Conference (October 2021):

**Kendall-Bar, J.M.**, Nicolas Kendall-Bar, Angus G Forbes, Gitte McDonald, Paul J Ponganis, Cassondra Williams, Markus Horning, et al. “Visualizing Life in the Deep: A Creative Pipeline for Data-Driven Animations to Facilitate Marine Mammal Research, Outreach, and Conservation.” IEEE VIS 2021 (October 24, 2021): 10.

### 2. International Biologging Symposium (October 2021):

**Kendall-Bar, J.M.**, Mukherji, R., Lopez, C., Nichols, J., Lozano, D.L., Pitman, J.K., Holser, R.H., Beltran, R., Schalles, M., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., Williams, T.M. (2021). Sleeping while diving: the first recordings of marine mammal sleep in the wild. *The 7<sup>th</sup> International Biologging Symposium* October 2021. \*Awarded the Organizers Favorite Award for innovative engineering and science communication – \$250.

### 3. American Academy of Sleep Medicine Virtual SLEEP 2020 (August 2020):

**Kendall-Bar, J.M.**, Pitman, J.K., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., Williams, T.M. (2020). Sleeping while Diving: First Non-Invasive Recording of Sleep in Freely Swimming Marine Mammals. *34<sup>th</sup> Meeting of the Associated Professional Sleep Societies, LLC: Sleep 2020: August 2020.*

### 4. World Marine Mammal Conference in Barcelona, Spain (December 2019):

**Kendall-Bar, J.M.**, McKnight, J.C., Pitman, J.K., Mulsow, J., Hückstädt, L.A., Field, C.L., Johnson, S.P., Vyssotski, A.L., Costa, D.P., and Williams, T.M. (2019). Sleeping beneath the surface: developing novel, non-invasive methods to investigate sleep in wild marine mammals. *World Marine Mammal Conference: December 2019.* \*Awarded the [Frederic Fairfield Memorial Award](#) for innovative research by students pioneering techniques or research tools to study marine mammals – \$1,000.

#### 5. **ArtScientific Medical Systems Meeting in Amsterdam, the Netherlands (May 2019):**

**Kendall-Bar, J.M.,** McKnight, J.C., Pitman, J.K., Hückstädt, L.A., Field, C.L., Johnson, S.P., Costa, D.P., and Williams, T.M. (2019) Novel, non-invasive methods for neurophysiological monitoring during rest behavior in phocid seals. *Artinis Medical Systems NIRS Symposium: ArtScientific May 2019.*

#### 6. **Western Society of Naturalists Meeting (November 2016):**

**Kendall-Bar, J.M.,** Mukhametov, L.M., Siegel, J.M., Lyamin, O.I. (2016). Sleeping with one eye open: Using eye state as a proxy for unihemispheric sleep in northern fur seals. *Western Society of Naturalists in Monterey, California* November 2016.

#### 7. **9th International Conference on the Marine Mammals of the Holarctic; Astrakhan, Russia (November 2016) (presented by Dr. Oleg Lyamin):**

**Kendall-Bar, J.M.,** Mukhametov, L.M., Siegel, J.M., Lyamin, O.I. (2016). Association between eye state and unihemispheric sleep and waking in the fur seal while in water. *9th International Conference on "Marine Mammals of the Holarctic", Astrakhan, Russia, October 2016.*

#### 8. **Society for Integrative and Comparative Biology (January 2016):**

**Kendall-Bar, J. M.,** Weller, D., Fearnbach, H., Shane, S., Schorr, S., Falcone, E., Calambokidis, J., Schulman-Janiger, A., & Barlow, J. P. (2016). Using photo-identification data to investigate movement and occurrence patterns of short-finned pilot whales (*Globicephala macrorhynchus*) in the eastern north pacific. *Integrative & Comparative Biology*, 56, E109-E109.

#### 9. **Society for Integrative and Comparative Biology (January 2015):**

**Kendall-Bar, J. M.,** & Iyengar, V. K. (2015). Sexual selection by the seashore: Mate choice and competition in the maritime earwig. *Integrative & Comparative Biology*, 55, E283-E283.

#### Invited academic seminars:

- **Qualifying Defense:** UC Santa Cruz Ecology & Evolutionary Biology (January 2020)
- **University of Michigan** – Mechanical Engineering Department (January 2020)
- **The Marine Mammal Center** in Sausalito, CA (September 2019)
- **National Marine Mammal Foundation** in San Diego, CA (July 2019)
- **Science and Education Symposium at NOAA Headquarters** in DC (2015)
- **UC Berkeley Biogeomorphology of Tropical Islands Class Symposium** (2014)
- **Friday Harbor Laboratories REU Symposium** in Friday Harbor, WA (August 2014)

#### Invited public talks:

- **[Seymour Marine Discovery Center Labside Chat with Jessica Kendall-Bar](#)** (Feb 2021)
- **Public talk at the Santa Cruz Museum of Art & History** (November 2019)  
“The Science Behind the Story of *Looking for Marla: Sex in Nature*”
- **SF Exploratorium Carbon Networks Workshop-** Communicating Carbon Science (April 2015): [Ocean’s Biological Carbon Pump Animation](#) at the Bay Observatory.
- **SF Exploratorium After Dark Series:** “Everything Matters: Tales from the Periodic Table” (March 2017) [“How Poop Sinks: The Importance of Feces in the Open Ocean”](#)

#### Guest Lectures

- “Marine Mammal Sleep” Marine Mammals Course at UC Berkeley (Fall 2021)
- “Art & Science Communication” Science Communication Program UCSC (Fall 2021)
- “Art & Science Communication” California College for the Arts (Fall 2021)
- “Art & Science Communication” Baylor University (Fall 2021)
- “Art & Science Communication” Moss Landing Marine Labs (Fall 2021)
- “Metazoan Diversity” Oceans C82 Course at UC Berkeley annually in October 2020, 2019, 2018, 2017, 2016, and 2015

#### Science Communication Workshops

#### Art for Science Communication Education & Outreach (2017-present)

- **Online Learning Portal:** <https://www.jessiekb.com/artforsciomm>

- **Past workshops:**
  - **Art for Science Communication Workshop**  
UC Santa Cruz: January 31, 2020 & UC Santa Barbara: February 18<sup>th</sup>, 2020
  - **Introduction to Animation in PowerPoint**  
UC Santa Cruz: November 2020 & San Francisco State University: March 2021
  - **Introduction to Animation & Data Visualization in Adobe After Effects**  
UC Santa Cruz: November 2020
  - **Introduction to Animation & Data Visualization in Autodesk Maya**  
UC Santa Cruz: November 2020

## VII. Science Communication & Data Visualization

### Science Communication Strategy

#### Graduate Student Research (GSR) Assistantship (May 2019-present)

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

- Large-scale graphics art deliverables presented at:
  - **42<sup>nd</sup> US Coral Reef Task Force Meeting** in Palau (August 2019)
  - **A high-level dialogue event: Resilient Atoll Nations in Productive Oceans** (September 2019) convened by the Asian Development Bank in the Maldives with ministers of key Pacific Islands (Fiji, Kiribati, Maldives, Marshall Islands)

See products associated with this work, along with collaborations with other scientists, below:

#### Maps and data visualization

- **Million Dollar Reefs of O’ahu.** Map by Jessica Kendall-Bar & Chris Lowrie Reguero, B.G., Storlazzi, C.D., Gibbs, A.E. et al. The value of US coral reefs for flood risk reduction. Nat Sustain (2021). <https://doi.org/10.1038/s41893-021-00706-6>
  - [UCSC News Story](#)
  - [Honolulu Star Advertiser News Story](#)
- **Million Dollar Reefs of Florida.** Map by Jessica Kendall-Bar & Chris Lowrie Reguero, B.G., Storlazzi, C.D., Gibbs, A.E. et al. The value of US coral reefs for flood risk reduction. Nat Sustain (2021). <https://doi.org/10.1038/s41893-021-00706-6>
- **Million Dollar Reefs of Puerto Rico.** Map by Jessica Kendall-Bar & Chris Lowrie Reguero, B.G., Storlazzi, C.D., Gibbs, A.E. et al. The value of US coral reefs for flood risk reduction. Nat Sustain (2021). <https://doi.org/10.1038/s41893-021-00706-6>
- See more [maps and data visualizations](#).

#### Website Design

- **Coastal Resilience Lab Website: [coastalresilience.ucsc.edu](http://coastalresilience.ucsc.edu)**
- **Data Visualization Portal (in progress)**  
User experience and user interface design by Jessica Kendall-Bar (CSS & javascript).  
Web development and data management by Chris Lowrie.

#### Infographics

- **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 118 (11) e2012493118;  
<https://doi.org/10.1073/pnas.2012493118>

- [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 (Feb 2020) & Año Nuevo State Park Visitor's Center
- [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 (Aug 2019)
  - Santa Cruz Museum of Art & History: The Norris Center Science & Art Showcase
  - A high-level dialogue event: Resilient Atoll Nations (Sept 2019)
- [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](#)

- [USGS Report Summary: Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction.](#) Design and layout by Jessica Kendall-Bar.  
USGS Report: Storlazzi, C.D., Reguero, B.G., Cole, A.D., Lowe, E., Shope, J.B., Gibbs, A.E., Nickel, B.A., McCall, R.T., van Dongeren, A.R., Beck, M.W., 2019, 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
- [The Social and Economic Benefits of Coral Reef Restoration in Florida.](#)  
Design and layout by Jessica Kendall-Bar; Maps by Jessica Kendall-Bar and Chris Lowrie. 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
- [The Social and Economic Benefits of Coral Reef Restoration in Puerto Rico.](#)  
Design and layout by Jessica Kendall-Bar; Maps by Jessica Kendall-Bar and Chris Lowrie. 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
- [Hurricane Damage to Coral Reefs in 2017 Increases Future Flood Risk in Puerto Rico and Florida.](#) Design and layout by Jessica Kendall-Bar; Maps by Jessica Kendall-Bar and Chris Lowrie. 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
- [Future Flooding Impacts from Projected Coral Reef Degradation in Florida.](#) Design and layout by Jessica Kendall-Bar; Maps by Jessica Kendall-Bar and Chris Lowrie. Rigorously valuing the impact of projected coral reef degradation on coastal hazard risk in Florida. U.S. Geological Survey Open-File Report 2021-1055

### [Videos and animations](#)

#### [Communicating flood protection benefits of coral reefs & mangroves \(2019-present\)](#)

- [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.
- [UCSC News: Introduction to the Coastal Resilience Lab & Approach.](#)  
Video Editing & Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck
- [UCSC News: Value of US Reefs for Flood Risk Reduction.](#)  
Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck
- [Flood Protection Benefits of Mangroves](#)  
Animation by Jessica Kendall-Bar. Scientific advisor: Michael Beck.

#### [3D Animation & Data Visualization of Marine Mammal Behavior \(2019-present\)](#)

Developing software tools to visualize complex underwater behaviors alongside cutting-edge physiology research. [Teaser video for 4-part animation series:](#)

- [Lightscapes of Fear: Skinny seals trade safety for sustenance.](#)  
**Accompanied co-authored manuscript in Science Advances (March 2021)**  
Visualization of foraging trips across the Pacific Ocean and simultaneous physiological shifts in body condition that received over 100,000 views.  
[The Conversation Article: “Risk versus reward on the high seas – skinny elephant seals trade safety for sustenance.”](#) Written by Roxanne Beltran & Jessica Kendall-Bar.  
Animation, map data visualization, and graphics by Jessica Kendall-Bar.  
Beltran, R. S., **Kendall-Bar, J. M.**, Pirotta, E., Adachi, T., Naito, Y., Takahashi, A., ... & Costa, D. P. (2021). *Lightscapes of fear: How mesopredators balance starvation and predation in the open ocean.* *Science advances*, 7(12), eabd9818.
- [Humpback Alliance: 3D Animation of Cooperative Benthic Foraging Behavior](#)  
**Commissioned by Dr. David Wiley, National Marine Sanctuary Foundation (March 2020-)**  
3D visualizations of inertial motion sensing data and foraging behavior.
- [Sounds of Fear: 3D Animation of the Fear Response of Northern Elephant Seals](#)  
**Commissioned by Dr. Gitte McDonald, Moss Landing Marine Laboratories (March 2021-)**  
3D visualizations of inertial motion sensing data and sonification of heart rate data.
- [Paradox of Fear: 3D Animation of Anthropogenic Disturbance to Narwhals.](#)  
**Commissioned by Dr. Terrie Williams, UC Santa Cruz (March 2021)**  
3D visualizations of inertial motion sensing data and sonification of heart rate data.

## VIII. Freelance Animation, Design, and Illustration

### Freelance Animation

#### Clients and Projects:

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

### Illustrated Children's Books

1. [Looking for Marla](#)  
Medina, P., **J. Kendall-Bar (illustrator)**, A. Ford, and K. Ross. *Looking for Marla*.  
Publisher: UC Santa Cruz, 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 (March 2021), What Makes Us Human (Exhibit Oct 2020), LGBTQ+ Story Time in the Park with Trans Families, Boys & Girls Club, & Santa Cruz Public Libraries (Oct 2019), Queer Trans Mixer (October 2019), Capitola Art & Wine (Sept 2019), SF Zine Fest (Sept 2019), LA Tiny Tech Zines (Sept 2019), Pajaro Valley Pride (Aug 2019), Walnut Ave Family & Women's Center (Jul 2019), Norris Center Alumni Event (Apr 2019), & Ales for Whales (Apr 2019)
2. [The Castor Oil Rig Tales](#)  
Partenheimer, S., and **J. Kendall-Bar (illustrator)**. *The Castor Oil Rig Tales*.  
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.



## Graphic Design

### Large-scale exhibit design

- [“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 (Fall 2021-present).
- [“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.
- [“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 (Feb 2020) & Año Nuevo State Park Visitor's Center
- [“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 (Aug 2019)
  - Santa Cruz Museum of Art & History: The Norris Center Science & Art Showcase
  - A high-level dialogue event: Resilient Atoll Nations (Sept 2019)

### Gallery shows

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

- **Forbes Art Gallery** (January 2020) Solo Show; Unitarian Universalist Church of Santa Monica.
- **Capitola Art & Wine Festival, Santa Cruz, CA** (September 2019)
- **Burning Man, Black Rock City, NV** (August 2019) with India Block Arts  
“Morphoscope” featuring [Selkie Dreams Animation](#) in “Morphoscope”
- **The Rose Room, Venice Beach, CA** (July 2019) Life Beneath the Waves; Surfrider LA Fundraiser
- **Humble Sea, Santa Cruz, CA** (April 2018 & 2019) Ales for Whales; CA Ocean Alliance Fundraiser.
- **Monterey Bay National Marine Sanctuary Exploration Center** (July 2018) Solo Show; First Friday.
- **Ocean Dream Fair, Santa Cruz, CA** (April 2018) Art show with Ventana Surfboards.

### Freelance Photography & Cinematography (2013-present):

- [Surf & Underwater Photography \(2012-present\):](#)  
commissioned fine-art, commercial, and personal photography for Facebook, Jeux de Vagues (eco-friendly apparel), non-profits, & individuals
- [The Marine Mammal Center in Sausalito, California: Cinematography intern \(2013\)](#)  
created educational training videos of rescues, surgeries, feedings, necropsies, and releases at the hospital

## VIII. Press Coverage

- [UC Santa Cruz News Profile: “Dream job: Combining science and illustration”](#) (July 16, 2019)
- [Santa Cruz Sentinel: “Looking for Marla’ teaches inclusivity”](#) (November 30, 2019)
- [UC Santa Cruz News Public Affairs](#) (November 7, 2019)
- [Seymour Marine Discovery Center Labside Chat with Jessica Kendall-Bar](#) (February 12, 2021)
- [KSQD Radio interview with Ventana Surfboards and Event Santa Cruz](#) (August 30, 2019)
- [Salted Spirit Podcast Interview: An enchanted tour of the kelp forest](#) (May 15, 2020)
- [KQSD Santa Cruz Naturalist Podcast Interview](#)
- **Part 1: [How do elephant seals sleep?](#)** (Sep 7 2020)
- **Part 2: [How do elephant seals sleep?](#)** (Oct 4 2020)
- **Part 3: [Art as science communication](#)** (Jan 4 2021)

## IX. Extracurricular Volunteer Work

- **Volunteer at the Año Nuevo State Reserve (July 2017–present)**  
assisting with ongoing research efforts with the local northern elephant seal population
- **Scientific Diver for UC Santa Cruz (April 2018–2020)** assisted with ongoing subtidal research efforts and with captive dolphin research through the Marine Mammal Physiology Project
- **Art Donations for Non-Profit Conservation-Focused Organizations (Jan 2018–present)**  
original artwork donations for auctions benefiting non-profit conservation organizations such as American Academy of Underwater Sciences (AAUS) and California Ocean Alliance (COA)
- **Reviewer for Aquatic Mammals Journal (October 2016–present)**
- **Co-President of the Ocean Society of Berkeley (2012–2016)**  
leader for a research-oriented club on campus which participates in outreach programs such as the Expanding Horizons program to engage young middle school girls in science lessons
- **Scientific Diver for Instructional Support, Department of Integrative Biology UC Berkeley (Spring 2016)** collected marine invertebrates for the Invertebrate Zoology course (IB103LF)
- **President of SAMOHI's Heal the Bay Surfrider Club (2009–2012)**

## X. Qualifications

### Languages:

- Fluent in French (dual citizenship, year abroad in French high school, 5 in AP French)
- Proficient in Spanish (3 years of study)
- Basic conversational Russian (immersive research experience abroad)

### Relevant Skills:

**Diving** (>200 dives: Friday Harbor, Monterey, Catalina, Channel Islands, San Diego, Florida, & Tahiti)

- AAUS Scientific Diver with UC Santa Cruz Scientific Diving Program
- AAUS Scientific Diver Certification through the UC Berkeley Scientific Diving Program
- NAUI Nitrox, Rescue, and Master Certifications
- PADI Advanced Certification (specialties: Buoyancy, Navigation, Deep Dive, and Fish ID)

### Computer Skills:

- Scientific Computing & Programming:  
Python, R, MATLAB, LabChart, JMP, ImageJ
- Video Editing/Graphics: Adobe Creative Suite (especially After Effects, Premiere Pro, Illustrator, and Photoshop), Final Cut Pro, Autodesk Maya

**Art:** Scientific illustrations, diagrams, and animations (<http://jessiekb.com/art/>)

**Other Extracurricular Activities:** Cal Scuba (2013–16), Volunteering with the Blue Water Foundation (2013–15), Sailing at Cal Adventures and UCLA, Junior Lifeguard (2003–09), Junior Varsity Swimming (2009–12), Orchestra (2003–12), High School Soccer (2009–12), Lead Singer of Jazz Band in Montpellier, Choir (2007–12).

### Hobbies:

Biking, Diving, Sailing, Hiking, Surfing, Drawing, Painting, Woodburning, Filmmaking