

Stanford



David Cade

Basic Life Research Scientist

Oceans

 Curriculum Vitae available Online

Bio

BIO

For the most up to date information, check out www.davidecade.com

ACADEMIC APPOINTMENTS

- Basic Life Research Scientist, Oceans

HONORS AND AWARDS

- Anne T. and Robert M. Bass Fellowship, Stanford University (2014)
- Outstanding Achievement Award for High Impact Paper, Hopkins Marine Station (2014-2015)

PROFESSIONAL EDUCATION

- Master of Science, Oregon State University , Ocean, Earth and Atmospheric Sciences (2014)

Publications

PUBLICATIONS

- **Minke whale feeding rate limitations suggest constraints on the minimum body size for engulfment filtration feeding.** *Nature ecology & evolution*
Cade, D. E., Kahane-Rapport, S. R., Gough, W. T., Bierlich, K. C., Linsky, J. M., Calambokidis, J., Johnston, D. W., Goldbogen, J. A., Friedlaender, A. S.
2023
- **Oceanic giants dance to atmospheric rhythms: Ephemeral wind-driven resource tracking by blue whales.** *Ecology letters*
Ryan, J. P., Benoit-Bird, K. J., Oestreich, W. K., Leary, P., Smith, K. B., Waluk, C. M., Cade, D. E., Fahlbusch, J. A., Southall, B. L., Joseph, J. E., Margolina, T., Calambokidis, J., DeVogelaere, et al
2022
- **Fast and Furious: Energetic Tradeoffs and Scaling of High-Speed Foraging in Rorqual Whales** *INTEGRATIVE ORGANISMAL BIOLOGY*
Gough, W. T., Cade, D. E., Czapanskiy, M. F., Potvin, J., Fish, F. E., Kahane-Rapport, S. R., Savoca, M. S., Bierlich, K. C., Johnston, D. W., Friedlaender, A. S., Szabo, A., Bejder, L., Goldbogen, et al
2022; 4 (1): obac038
- **Blue whales increase feeding rates at fine-scale ocean features.** *Proceedings. Biological sciences*
Fahlbusch, J. A., Czapanskiy, M. F., Calambokidis, J., Cade, D. E., Abrahms, B., Hazen, E. L., Goldbogen, J. A.
2022; 289 (1981): 20221180
- **Intra-seasonal variation in feeding rates and diel foraging behaviour in a seasonally fasting mammal, the humpback whale.** *Royal Society open science*
Nichols, R. C., Cade, D. E., Kahane-Rapport, S., Goldbogen, J., Stimpert, A., Nowacek, D., Read, A. J., Johnston, D. W., Friedlaender, A.

2022; 9 (7): 211674

- **Acoustic signalling and behaviour of Antarctic minke whales (*Balaenoptera bonaerensis*).** *Royal Society open science*
Casey, C. B., Weindorf, S., Levy, E., Linsky, J. M., Cade, D. E., Goldbogen, J. A., Nowacek, D. P., Friedlaender, A. S.
2022; 9 (7): 211557
- **Feeding characteristics and prey profitability in five herring-feeding killer whales (*Orcinus orca*) in northern Norway** *MARINE MAMMAL SCIENCE*
Matika, A. F., Jourdain, E., Cade, D. E., Karoliussen, R., Hammond, P. S.
2022
- **Scaling of maneuvering performance in baleen whales: larger whales outperform expectations.** *The Journal of experimental biology*
Segre, P. S., Gough, W. T., Roualdes, E. A., Cade, D. E., Czapanskiy, M. F., Fahlbusch, J., Kahane-Rapport, S. R., Oestreich, W. K., Bejder, L., Bierlich, K. C., Burrows, J. A., Calambokidis, J., Chenoweth, et al
2022; 225 (5)
- **Evidence for Size-Selective Predation by Antarctic Humpback Whales** *FRONTIERS IN MARINE SCIENCE*
Cade, D. E., Kahane-Rapport, S. R., Wallis, B., Goldbogen, J. A., Friedlaender, A. S.
2022; 9
- **The effect of group size on individual behavior of bubble-net feeding humpback whales in the southern Gulf of Maine** *MARINE MAMMAL SCIENCE*
Mastick, N. C., Wiley, D., Cade, D. E., Ware, C., Parks, S. E., Friedlaender, A. S.
2022
- **Baleen whale inhalation variability revealed using animal-borne video tags.** *PeerJ*
Nazario, E. C., Cade, D. E., Bierlich, K. C., Czapanskiy, M. F., Goldbogen, J. A., Kahane-Rapport, S. R., van der Hoop, J. M., San Luis, M. T., Friedlaender, A. S.
2022; 10: e13724
- **Tools for integrating inertial sensor data with video bio-loggers, including estimation of animal orientation, motion, and position** *ANIMAL BIOTELEMETRY*
Cade, D. E., Gough, W. T., Czapanskiy, M. F., Fahlbusch, J. A., Kahane-Rapport, S. R., Linsky, J. M. J., Nichols, R. C., Oestreich, W. K., Wisniewska, D. M., Friedlaender, A. S., Goldbogen, J. A.
2021; 9 (1)
- **Scaling of oscillatory kinematics and Froude efficiency in baleen whales.** *The Journal of experimental biology*
Gough, W. T., Smith, H. J., Savoca, M. S., Czapanskiy, M. F., Fish, F. E., Potvin, J., Bierlich, K. C., Cade, D. E., Clemente, J. D., Kennedy, J., Segre, P., Stanworth, A., Weir, et al
2021
- **Modelling short-term energetic costs of sonar disturbance to cetaceans using high-resolution foraging data** *JOURNAL OF APPLIED ECOLOGY*
Czapanskiy, M. F., Savoca, M. S., Gough, W. T., Segre, P. S., Wisniewska, D. M., Cade, D. E., Goldbogen, J. A.
2021
- **Predator#scale spatial analysis of intra#patch prey distribution reveals the energetic drivers of rorqual whale super#group formation** *Functional Ecology*
Cade, D. E., Seakamela, M., Findlay, K. P., Fukunaga, J., Kahane#Rapport, S. R., Warren, J. D., Calambokidis, J., Fahlbusch, J. A., Friedlaender, A. S., Hazen, E. L., Kotze, D., McCue, S., Meyer, et al
2021
- **Context-dependent variability in the predicted daily energetic costs of disturbance for blue whales.** *Conservation physiology*
Pirota, E. n., Booth, C. G., Cade, D. E., Calambokidis, J. n., Costa, D. P., Fahlbusch, J. A., Friedlaender, A. S., Goldbogen, J. A., Harwood, J. n., Hazen, E. L., New, L. n., Southall, B. L.
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- **Remoras pick where they stick on blue whales.** *The Journal of experimental biology*
Flammang, B. E., Marras, S., Anderson, E. J., Lehmkuhl, O., Mukherjee, A., Cade, D. E., Beckert, M., Nadler, J. H., Houzeaux, G., Vazquez, M., Amplo, H. E., Calambokidis, J., Friedlaender, et al
2020; 223 (Pt 20)

- **The scale of the whale: using video-tag data to evaluate sea-surface ice concentration from the perspective of individual Antarctic minke whales** *ANIMAL BIOTELEMETRY*
Linsky, J. M. J., Wilson, N., Cade, D. E., Goldbogen, J. A., Johnston, D. W., Friedlaender, A. S.
2020; 8 (1)
- **A perfectly inelastic collision: Bulk prey engulfment by baleen whales and dynamical implications for the world's largest cetaceans** *AMERICAN JOURNAL OF PHYSICS*
Potvin, J., Cade, D. E., Werth, A. J., Shadwick, R. E., Goldbogen, J. A.
2020; 88 (10): 851–63
- **Animal-Borne Metrics Enable Acoustic Detection of Blue Whale Migration.** *Current biology : CB*
Oestreich, W. K., Fahlbusch, J. A., Cade, D. E., Calambokidis, J., Margolina, T., Joseph, J., Friedlaender, A. S., McKenna, M. F., Stimpert, A. K., Southall, B. L., Goldbogen, J. A., Ryan, J. P.
2020
- **An Algorithmic Approach to Natural Behavior.** *Current biology : CB*
Hein, A. M., Altshuler, D. L., Cade, D. E., Liao, J. C., Martin, B. T., Taylor, G. K.
2020; 30 (11): R663–R675
- **Whale sharks increase swimming effort while filter feeding, but appear to maintain high foraging efficiencies.** *The Journal of experimental biology*
Cade, D. E., Levenson, J. J., Cooper, R., de la Parra, R., Webb, D. H., Dove, A. D.
2020
- **Energetic and physical limitations on the breaching performance of large whales.** *eLife*
Segre, P. S., Potvin, J., Cade, D. E., Calambokidis, J., Di Clemente, J., Fish, F. E., Friedlaender, A. S., Gough, W. T., Kahane-Rapport, S. R., Oliveira, C., Parks, S. E., Penry, G. S., Simon, et al
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- **From a calf's perspective: humpback whale nursing behavior on two US feeding grounds** *PEERJ*
Tackaberry, J. E., Cade, D. E., Goldbogen, J. A., Wiley, D. N., Friedlaender, A. S., Stimpert, A. K.
2020; 8: e8538
- **Whale sharks increase swimming effort while filter feeding, but appear to maintain high foraging efficiencies.** *The Journal of experimental biology*
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- **Behavioral responses of individual blue whales (*Balaenoptera musculus*) to mid-frequency military sonar.** *The Journal of experimental biology*
Southall, B. L., DeRuiter, S. L., Friedlaender, A., Stimpert, A. K., Goldbogen, J. A., Hazen, E., Casey, C., Fregosi, S., Cade, D. E., Allen, A. N., Harris, C. M., Schorr, G., Moretti, et al
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- **Behavioral responses of individual blue whales (*Balaenoptera musculus*) to mid-frequency military sonar** *JOURNAL OF EXPERIMENTAL BIOLOGY*
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- **Scaling of swimming performance in baleen whales.** *The Journal of experimental biology*
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2019
- **Filtration area scaling and evolution in mysticetes: trophic niche partitioning and the curious cases of sei and pygmy right whales** *BIOLOGICAL JOURNAL OF THE LINNEAN SOCIETY*
Werth, A. J., Potvin, J., Shadwick, R. E., Jensen, M. M., Cade, D. E., Goldbogen, J. A.
2018; 125 (2): 264–79
- **Determining forward speed from accelerometer jiggle in aquatic environments.** *The Journal of experimental biology*

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- Cade, D. E., Barr, K. R., Calambokidis, J. n., Friedlaender, A. S., Goldbogen, J. A.
2018; 221 (Pt 2)
- **Determining forward speed from accelerometer jiggle in aquatic environments** *JOURNAL OF EXPERIMENTAL BIOLOGY*
Cade, D. E., Barr, K. R., Calambokidis, J., Friedlaender, A. S., Goldbogen, J. A.
2018; 221 (2)
 - **Context-dependent lateralized feeding strategies in blue whales** *CURRENT BIOLOGY*
Friedlaender, A. S., Herbert-Read, J. E., Hazen, E. L., Cade, D. E., Calambokidis, J., Southall, B. L., Stimpert, A. K., Goldbogen, J. A.
2017; 27 (22): R1206–R1208
 - **How Baleen Whales Feed: The Biomechanics of Engulfment and Filtration.** *Annual review of marine science*
Goldbogen, J. A., Cade, D. E., Calambokidis, J., Friedlaender, A. S., Potvin, J., Segre, P. S., Werth, A. J.
2017; 9: 367-386
 - **Humpback whale "super-groups" - A novel low-latitude feeding behaviour of Southern Hemisphere humpback whales (Megaptera novaeangliae) in the Benguela Upwelling System.** *PloS one*
Findlay, K. P., Seakamela, S. M., Meÿer, M. A., Kirkman, S. P., Barendse, J., Cade, D. E., Hurwitz, D., Kennedy, A. S., Kotze, P. G., McCue, S. A., Thornton, M., Vargas-Fonseca, O. A., Wilke, et al
2017; 12 (3)
 - **Hydrodynamic properties of fin whale flippers predict maximum rolling performance.** *journal of experimental biology*
Segre, P. S., Cade, D. E., Fish, F. E., Potvin, J., Allen, A. N., Calambokidis, J., Friedlaender, A. S., Goldbogen, J. A.
2016; 219: 3315-3320
 - **Kinematic Diversity in Rorqual Whale Feeding Mechanisms** *CURRENT BIOLOGY*
Cade, D. E., Friedlaender, A. S., Calambokidis, J., Goldbogen, J. A.
2016; 26 (19): 2617-2624
 - **Insights into the Underwater Behavior, Species Interactions, and Biomechanics of Baleen Whales using Suction-Cup Attached Video and Inertial Sensors**
Goldbogen, J., Cade, D., Calambokidis, J., Stimpert, A., Friedlaender, A.
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 - **Depths, migration rates and environmental associations of acoustic scattering layers in the Gulf of California** *DEEP-SEA RESEARCH PART I-OCEANOGRAPHIC RESEARCH PAPERS*
Cade, D. E., Benoit-Bird, K. J.
2015; 102: 78-89
 - **An automatic and quantitative approach to the detection and tracking of acoustic scattering layers** *LIMNOLOGY AND OCEANOGRAPHY-METHODS*
Cade, D. E., Benoit-Bird, K. J.
2014; 12: 742-756