

Stanford



Barbara Block

Charles and Elizabeth Prothro Professor in Marine Sciences
Biology

Bio

ACADEMIC APPOINTMENTS

- Professor, Biology

HONORS AND AWARDS

- Rolex Award for Enterprise, Rolex (2012)
- Walter B. Cannon Award, American Physiological Society (2008)
- Pew Marine Conservation Fellow, Pew Foundation (1997)
- MacArthur Fellow, MacArthur Foundation (1996)
- Presidents Medal, Society for Experimental Biology, London (1994)
- Presidential Young Investigator Award, National Science Foundation (1989)

PROFESSIONAL EDUCATION

- B.A., University of Vermont , Zoology (1980)
- Ph.D, Duke University , Zoology (1986)

LINKS

- <https://www.stanfordblocklab.org/>; <https://www.stanfordblocklab.org/>
- My Lab Site: URL Label Link Type Action <https://www.stanfordblocklab.org/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Thermal physiology, open ocean predators, ecological physiology and tuna biology

Teaching

COURSES

2018-19

- Stanford at Sea: BIOHOPK 182H, BIOHOPK 323H, EARTHSYS 323, ESS 323 (Spr)

2017-18

- Comparative Animal Physiology: BIOHOPK 162H, BIOHOPK 262H (Win)
- Physiology: BIOHOPK 84 (Spr)

2016-17

- Stanford at Sea: BIOHOPK 182H, BIOHOPK 323H, ESS 323 (Spr)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Samantha Andrzejczek, Simon Dedman, Shaili Johri, Joanna Nassar

Publications

PUBLICATIONS

- **Biomechanical Analysis of the Slow-Twitch (Red) Muscle Force Transmission Pathways in Tunas.** *Physiological and biochemical zoology : PBZ*
Cromie Lear, M. J., Millard, M., Gleiss, A. C., Dale, J., Dimitrov, M., Peiros, E., Block, B.
; 93 (3): 185–98
- **Individual variation in residency and regional movements of reef manta rays *Mobula alfredi* in a large marine protected area** *MARINE ECOLOGY PROGRESS SERIES*
Andrzejczek, S., Chapple, T. K., Curnick, D. J., Carlisle, A. B., Castleton, M., Jacoby, D. P., Peel, L. R., Schallert, R. J., Tickler, D. M., Block, B. A.
2020; 639: 137–53
- **Shark fin trade bans and sustainable shark fisheries** *CONSERVATION LETTERS*
Ferretti, F., Jacoby, D. P., Pflieger, M. O., White, T. D., Dent, F., Micheli, F., Rosenberg, A. A., Crowder, L. B., Block, B. A.
2020
- **Abundance and distribution of the white shark in the Mediterranean Sea** *FISH AND FISHERIES*
Moro, S., Jona-Lasinio, G., Block, B., Micheli, F., De Leo, G., Serena, F., Bottaro, M., Scacco, U., Ferretti, F.
2019
- **Size-specific apparent survival rate estimates of white sharks using mark-recapture models** *CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES*
Kanive, P. E., Rotella, J. J., Jorgensen, S. J., Chapple, T. K., Hines, J. E., Anderson, S. D., Block, B. A.
2019; 76 (11): 2027–34
- **Cardiac remodeling in response to embryonic crude oil exposure involves unconventional NKX family members and innate immunity genes.** *The Journal of experimental biology*
Gardner, L. D., Peck, K. A., Goetz, G. W., Linbo, T. L., Cameron, J., Scholz, N. L., Block, B. A., Incardona, J. P.
2019
- **The importance of migratory connectivity for global ocean policy.** *Proceedings. Biological sciences*
Dunn, D. C., Harrison, A., Curtice, C., DeLand, S., Donnelly, B., Fujioka, E., Heywood, E., Kot, C. Y., Poulin, S., Whitten, M., Akesson, S., Alberini, A., Appeltans, et al
2019; 286 (1911): 20191472
- **A rapid environmental DNA method for detecting white sharks in the open ocean** *METHODS IN ECOLOGY AND EVOLUTION*
Truelove, N. K., Andruszkiewicz, E. A., Block, B. A.
2019; 10 (8): 1128–35
- **Animal-Borne Telemetry: An Integral Component of the Ocean Observing Toolkit** *FRONTIERS IN MARINE SCIENCE*
Harcourt, R., Sequeira, A. M., Zhang, X., Roquet, F., Komatsu, K., Heupel, M., McMahon, C., Whoriskey, F., Meekan, M., Carroll, G., Brodie, S., Simpfendorfer, C., Hindell, et al
2019; 6
- **Estimating Space Use of Mobile Fishes in a Large Marine Protected Area With Methodological Considerations in Acoustic Array Design** *FRONTIERS IN MARINE SCIENCE*
Carlisle, A. B., Tickler, D., Dale, J. J., Ferretti, F., Curnick, D. J., Chapple, T. K., Schallert, R. J., Castleton, M., Block, B. A.
2019; 6
- **Temperature dependent pre- and postprandial activity in Pacific bluefin tuna (*Thunnus orientalis*)** *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY*

- Gleiss, A. C., Dale, J. J., Klinger, D. H., Estess, E. E., Gardner, L. D., Machado, B., Norton, A. G., Farwell, C., Block, B. A.
2019; 231: 131–39
- **Direct measurement of swimming and diving kinematics of giant Atlantic bluefin tuna (*Thunnus thynnus*)** *ROYAL SOCIETY OPEN SCIENCE*
Gleiss, A. C., Schallert, R. J., Dale, J. J., Wilson, S. G., Block, B. A.
2019; 6 (5): 190203
 - **Cryptic habitat use of white sharks in kelp forest revealed by animal-borne video.** *Biology letters*
Jewell, O. J., Gleiss, A. C., Jorgensen, S. J., Andrzejczek, S., Moxley, J. H., Beatty, S. J., Wikelski, M., Block, B. A., Chapple, T. K.
2019; 15 (4): 20190085
 - **Killer whales redistribute white shark foraging pressure on seals** *SCIENTIFIC REPORTS*
Jorgensen, S. J., Anderson, S., Ferretti, F., Tietz, J. R., Chapple, T., Kanive, P., Bradley, R. W., Moxley, J. H., Block, B. A.
2019; 9
 - **Killer whales redistribute white shark foraging pressure on seals.** *Scientific reports*
Jorgensen, S. J., Anderson, S., Ferretti, F., Tietz, J. R., Chapple, T., Kanive, P., Bradley, R. W., Moxley, J. H., Block, B. A.
2019; 9 (1): 6153
 - **Cryptic habitat use of white sharks in kelp forest revealed by animal-borne video** *BIOLOGY LETTERS*
Jewell, O. D., Gleiss, A. C., Jorgensen, S. J., Andrzejczek, S., Moxley, J. H., Beatty, S. J., Wikelski, M., Block, B. A., Chapple, T. K.
2019; 15 (4)
 - **Estimating Natural Mortality of Atlantic Bluefin Tuna Using Acoustic Telemetry** *SCIENTIFIC REPORTS*
Block, B. A., Whitlock, R., Schallert, R. J., Wilson, S., Stokesbury, M. W., Castleton, M., Boustany, A.
2019; 9
 - **Estimating Natural Mortality of Atlantic Bluefin Tuna Using Acoustic Telemetry.** *Scientific reports*
Block, B. A., Whitlock, R., Schallert, R. J., Wilson, S., Stokesbury, M. J., Castleton, M., Boustany, A.
2019; 9 (1): 4918
 - **Predicted hotspots of overlap between highly migratory fishes and industrial fishing fleets in the northeast Pacific.** *Science advances*
White, T. D., Ferretti, F., Kroodsma, D. A., Hazen, E. L., Carlisle, A. B., Scales, K. L., Bograd, S. J., Block, B. A.
2019; 5 (3): eaau3761
 - **Predicted hotspots of overlap between highly migratory fishes and industrial fishing fleets in the northeast Pacific** *SCIENCE ADVANCES*
White, T. D., Ferretti, F., Kroodsma, D. A., Hazen, E. L., Carlisle, A. B., Scales, K. L., Bograd, S. J., Block, B. A.
2019; 5 (3)
 - **Population connectivity of pelagic megafauna in the Cuba-Mexico-United States triangle** *SCIENTIFIC REPORTS*
Rooker, J. R., Dance, M. A., Wells, R., Ajemian, M. J., Block, B. A., Castleton, M. R., Drymon, J., Falterman, B. J., Franks, J. S., Hammerschlag, N., Hendon, J. M., Hoffmayer, E. R., Kraus, et al
2019; 9
 - **Population connectivity of pelagic megafauna in the Cuba-Mexico-United States triangle.** *Scientific reports*
Rooker, J. R., Dance, M. A., Wells, R. J., Ajemian, M. J., Block, B. A., Castleton, M. R., Drymon, J. M., Falterman, B. J., Franks, J. S., Hammerschlag, N., Hendon, J. M., Hoffmayer, E. R., Kraus, et al
2019; 9 (1): 1663
 - **Temperature dependent pre- and postprandial activity in Pacific bluefin tuna (*Thunnus orientalis*).** *Comparative biochemistry and physiology. Part A, Molecular & integrative physiology*
Gleiss, A. C., Dale, J. J., Klinger, D. H., Estess, E. E., Gardner, L. D., Machado, B., Norton, A. G., Farwell, C., Block, B. A.
2019
 - **Global spatial risk assessment of sharks under the footprint of fisheries.** *Nature*
Queiroz, N., Humphries, N. E., Couto, A., Vedor, M., da Costa, I., Sequeira, A. M., Mucientes, G., Santos, A. M., Abascal, F. J., Abercrombie, D. L., Abrantes, K., Acuña-Marrero, D., Afonso, et al
2019
 - **Phylotranscriptomic insights into the diversification of endothermic *Thunnus* tunas.** *Molecular biology and evolution*
Ciezarek, A., Osborne, O., Shipley, O. N., Brooks, E. J., Tracey, S., McAllister, J., Gardner, L., Sternberg, M. J., Block, B., Savolainen, V.

2018

- **The political biogeography of migratory marine predators** *NATURE ECOLOGY & EVOLUTION*
Harrison, A., Costa, D. P., Winship, A. J., Benson, S. R., Bograd, S. J., Antolos, M., Carlisle, A. B., Dewar, H., Dutton, P. H., Jorgensen, S. J., Kohin, S., Mate, B. R., Robinson, et al
2018; 2 (10): 1571–78
- **Response to Comment on "Tracking the global footprint of fisheries"** *SCIENCE*
Kroodsma, D. A., Mayorga, J., Hochberg, T., Miller, N. A., Boerder, K., Ferretti, F., Wilson, A., Bergman, B., White, T. D., Block, B. A., Woods, P., Sullivan, B., Costello, et al
2018; 361 (6404)
- **Shark baselines and the conservation role of remote coral reef ecosystems** *SCIENCE ADVANCES*
Ferretti, F., Curnick, D., Liu, K., Romanov, E. V., Block, B. A.
2018; 4 (3): eaaq0333
- **Tracking the global footprint of fisheries** *SCIENCE*
Kroodsma, D. A., Mayorga, J., Hochberg, T., Miller, N. A., Boerder, K., Ferretti, F., Wilson, A., Bergman, B., White, T. D., Block, B. A., Woods, P., Sullivan, B., Costello, et al
2018; 359 (6378): 904–7
- **Movements and dive behavior of juvenile California sea lions from Ano Nuevo Island** *MARINE MAMMAL SCIENCE*
McHuron, E. A., Block, B. A., Costa, D. P.
2018; 34 (1): 238–49
- **Comparison of Mitochondrial Reactive Oxygen Species Production of Ectothermic and Endothermic Fish Muscle** *FRONTIERS IN PHYSIOLOGY*
Wiens, L., Banh, S., Sotiri, E., Jastroch, M., Block, B. A., Brand, M. D., Treberg, J. R.
2017; 8: 704
- **Oceanographic drivers of the vertical distribution of a highly migratory, endothermic shark** *SCIENTIFIC REPORTS*
Coffey, D. M., Carlisle, A. B., Hazen, E. L., Block, B. A.
2017; 7: 10434
- **Ocean Observations Using Tagged Animals** *OCEANOGRAPHY*
Roquet, F., Boehme, L., Block, B., Charrassin, J., Costa, D., Guinet, C., Harcourt, R. G., Hindell, M. A., Huckstadt, L. A., McMahon, C. R., Woodward, B., Fedak, M. A.
2017; 30 (2): 139
- **Biomonitoring of marine vertebrates in Monterey Bay using eDNA metabarcoding** *PLOS ONE*
Andruszkiewicz, E. A., Starks, H. A., Chavez, F. P., Sassoubre, L. M., Block, B. A., Boehm, A. B.
2017; 12 (4)
- **Assessing the effectiveness of a large marine protected area for reef shark conservation** *BIOLOGICAL CONSERVATION*
White, T. D., Carlisle, A. B., Kroodsma, D. A., Block, B. A., Casagrandi, R., De Leo, G. A., Gatto, M., Michell, F., McCauley, D. J.
2017; 207: 64-71
- **Bioenergetics of captive yellowfin tuna (*Thunnus albacares*)** *AQUACULTURE*
Estess, E. E., Klinger, D. H., Coffey, D. M., Gleiss, A. C., Rowbotham, I., Seitz, A. C., Rodriguez, L., Norton, A., Block, B., Farwell, C.
2017; 468: 71-79
- **A Novel Cardiotoxic Mechanism for a Pervasive Global Pollutant** *SCIENTIFIC REPORTS*
Brette, F., Shiels, H. A., Galli, G. L., Cros, C., Incardona, J. P., Scholz, N. L., Block, B. A.
2017; 7
- **Influence of temperature and oxygen on the distribution of blue marlin (*Makaira nigricans*) in the Central Pacific** *FISHERIES OCEANOGRAPHY*
Carlisle, A. B., Kochevar, R. E., Arostegui, M. C., Ganong, J. E., Castleton, M., Schratwieser, J., Block, B. A.
2017; 26 (1): 34-48
- **Hydraulic control of tuna fins: A role for the lymphatic system in vertebrate locomotion.** *Science (New York, N.Y.)*
Pavlov, V., Rosental, B., Hansen, N. F., Beers, J. M., Parish, G., Rowbotham, I., Block, B. A.
2017; 357 (6348): 310–14

- **A novel application of multi-event modeling to estimate class segregation in a highly migratory oceanic vertebrate** *ECOLOGY*
Chapple, T. K., Chambert, T., Kanive, P. E., Jorgensen, S. J., Rotella, J. J., Anderson, S. D., Carlisle, A. B., Block, B. A.
2016; 97 (12): 3494-3502
- **Quantification of Environmental DNA (eDNA) Shedding and Decay Rates for Three Marine Fish** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Sassoubre, L. M., Yamahara, K. M., Gardner, L. D., Block, B. A., Boehm, A. B.
2016; 50 (19): 10456-10464
- **Quantifying overlap between the Deepwater Horizon oil spill and predicted bluefin tuna spawning habitat in the Gulf of Mexico** *SCIENTIFIC REPORTS*
Hazen, E. L., Carlisle, A. B., Wilson, S. G., Ganong, J. E., Castleton, M. R., Schallert, R. J., Stokesbury, M. J., Bograd, S. J., Block, B. A.
2016; 6
- **The effect of temperature on postprandial metabolism of yellowfin tuna (*Thunnus albacares*)** *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY*
Klinger, D. H., Dale, J. J., Gleiss, A. C., Brandt, T., Estess, E. E., Gardner, L., Machado, B., Norton, A., Rodriguez, L., Stiltner, J., Farwell, C., Block, B. A.
2016; 195: 32-38
- **Quantifying mercury isotope dynamics in captive Pacific bluefin tuna (*Thunnus orientalis*)** *ELEMENTA-SCIENCE OF THE ANTHROPOCENE*
Kwon, S., Blum, J. D., Madigan, D. J., Block, B. A., Popp, B. N.
2016; 4: 1-15
- **Quantifying overlap between the Deepwater Horizon oil spill and predicted bluefin tuna spawning habitat in the Gulf of Mexico.** *Scientific reports*
Hazen, E. L., Carlisle, A. B., Wilson, S. G., Ganong, J. E., Castleton, M. R., Schallert, R. J., Stokesbury, M. J., Bograd, S. J., Block, B. A.
2016; 6: 33824
- **Tracking the fidelity of Atlantic bluefin tuna released in Canadian waters to the Gulf of Mexico spawning grounds** *CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES*
Wilson, S. G., Jonsen, I. D., Schallert, R. J., Ganong, J. E., Castleton, M. R., Spares, A. D., Boustany, A. M., Stokesbury, M. J., Block, B. A.
2015; 72 (11): 1700-1717
- **Life in the open ocean: seasonal migration and diel diving behaviour of Southern Hemisphere porbeagle sharks (*Lamna nasus*)** *MARINE BIOLOGY*
Francis, M. P., Holdsworth, J. C., Block, B. A.
2015; 162 (11): 2305-23
- **Exposure to Deepwater Horizon weathered crude oil increases routine metabolic demand in chub mackerel, *Scomber japonicus*.** *Marine pollution bulletin*
Klinger, D. H., Dale, J. J., Machado, B. E., Incardona, J. P., Farwell, C. J., Block, B. A.
2015; 98 (1-2): 259-266
- **Direct quantification of energy intake in an apex marine predator suggests physiology is a key driver of migrations.** *Science advances*
Whitlock, R. E., Hazen, E. L., Walli, A., Farwell, C., Bograd, S. J., Foley, D. G., Castleton, M., Block, B. A.
2015; 1 (8)
- **Assessing niche width of endothermic fish from genes to ecosystem.** *Proceedings of the National Academy of Sciences of the United States of America*
Madigan, D. J., Carlisle, A. B., Gardner, L. D., Jayasundara, N., Micheli, F., Schaefer, K. M., Fuller, D. W., Block, B. A.
2015; 112 (27): 8350-8355
- **Mercury in Pacific bluefin tuna (*Thunnus orientalis*): bioaccumulation and trans-Pacific Ocean migration** *CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES*
Colman, J. A., Nogueira, J. I., Pancorbo, O. C., Batdorf, C. A., Block, B. A.
2015; 72 (7): 1015-1023
- **Hearing thresholds of swimming Pacific bluefin tuna *Thunnus orientalis*** *JOURNAL OF COMPARATIVE PHYSIOLOGY A-NEUROETHOLOGY SENSORY NEURAL AND BEHAVIORAL PHYSIOLOGY*
Dale, J. J., Gray, M. D., Popper, A. N., Rogers, P. H., Block, B. A.
2015; 201 (5): 441-454
- **Reconstructing habitat use by juvenile salmon sharks links upwelling to strandings in the California Current** *MARINE ECOLOGY PROGRESS SERIES*
Carlisle, A. B., Litvin, S. Y., Hazen, E. L., Madigan, D. J., Goldman, K. J., Lea, R. N., Block, B. A.
2015; 525: 217-228

- **Effect of temperature acclimation on red blood cell oxygen affinity in Pacific bluefin tuna (*Thunnus orientalis*) and yellowfin tuna (*Thunnus albacares*)** *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY A-MOLECULAR & INTEGRATIVE PHYSIOLOGY*
Lilly, L. E., Bonaventura, J., Lipnick, M. S., Block, B. A.
2015; 181: 36-44
- **Electronic Tagging of Atlantic Bluefin Tuna (*Thunnus thynnus*, L.) Reveals Habitat Use and Behaviors in the Mediterranean Sea** *PLOS ONE*
Cermeno, P., Quilez-Badia, G., Ospina-Alvarez, A., Sainz-Trapaga, S., Boustany, A. M., Seitz, A. C., Tudela, S., Block, B. A.
2015; 10 (2)
- **Stable isotope analysis of vertebrae reveals ontogenetic changes in habitat in an endothermic pelagic shark** *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
Carlisle, A. B., Goldman, K. J., Litvin, S. Y., Madigan, D. J., Bigman, J. S., Swithenbank, A. M., Kline, T. C., Block, B. A.
2015; 282 (1799)
- **Integrated Management and Visualization of Animal Telemetry Observations: Serving data from a wide variety of platforms used in animal telemetry**
Moustahfid, H., Kochevar, R., Weise, M. J., Block, B., IEEE
IEEE.2015
- **Bioenergetics of captive Pacific bluefin tuna (*Thunnus orientalis*)** *AQUACULTURE*
Estess, E. E., Coffey, D. M., Shimose, T., Seitz, A. C., Rodriguez, L., Norton, A., Block, B., Farwell, C.
2014; 434: 137-144
- **Reconstructing transoceanic migration patterns of Pacific bluefin tuna using a chemical tracer toolbox** *ECOLOGY*
Madigan, D. J., Baumann, Z., Carlisle, A. B., Hoen, D. K., Popp, B. N., Dewar, H., Snodgrass, O. E., Block, B. A., Fisher, N. S.
2014; 95 (6): 1674-1683
- **Deepwater Horizon crude oil impacts the developing hearts of large predatory pelagic fish** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Incardona, J. P., Gardner, L. D., Linbo, T. L., Brown, T. L., Esbaugh, A. J., Mager, E. M., Stieglitz, J. D., French, B. L., Labenia, J. S., Laetz, C. A., Tagal, M., Sloan, C. A., Elizur, et al
2014; 111 (15): E1510-E1518
- **Crude oil impairs cardiac excitation-contraction coupling in fish**
Block, B., Brette, F., Cros, C., Incardona, J., Scholz, N.
FEDERATION AMER SOC EXP BIOL.2014
- **Predicting bycatch hotspots for endangered leatherback turtles on longlines in the Pacific Ocean** *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
Roe, J. H., Morreale, S. J., Paladino, F. V., Shillinger, G. L., Benson, S. R., Eckert, S. A., Bailey, H., Santidrian Tomillo, P., Bograd, S. J., Eguchi, T., Dutton, P. H., Seminoff, J. A., Block, et al
2014; 281 (1777)
- **Crude Oil Impairs Cardiac Excitation-Contraction Coupling in Fish** *SCIENCE*
Brette, F., Machado, B., Cros, C., Incardona, J. P., Scholz, N. L., Block, B. A.
2014; 343 (6172): 772-776
- **Crude Oil Impairs Cardiac Excitation-Contraction Coupling in Fish**
Brette, F., Cros, C., Machado, B., Incardona, J. P., Scholz, N. L., Block, B. A.
CELL PRESS.2014: 732A
- **Amino Acid Isotope Incorporation and Enrichment Factors in Pacific Bluefin Tuna, *Thunnus orientalis*** *PLOS ONE*
Bradley, C. J., Madigan, D. J., Block, B. A., Popp, B. N.
2014; 9 (1)
- **Effects of temperature acclimation on Pacific bluefin tuna (*Thunnus orientalis*) cardiac transcriptome** *AMERICAN JOURNAL OF PHYSIOLOGY-REGULATORY INTEGRATIVE AND COMPARATIVE PHYSIOLOGY*
Jayasundara, N., Gardner, L. D., Block, B. A.
2013; 305 (9): R1010-R1020
- **Quantifying energy intake in Pacific bluefin tuna (*Thunnus orientalis*) using the heat increment of feeding** *JOURNAL OF EXPERIMENTAL BIOLOGY*
Whitlock, R. E., Walli, A., Cermeno, P., Rodriguez, L. E., Farwell, C., Block, B. A.

2013; 216 (21): 4109-4123

- **Cumulative human impacts on marine predators.** *Nature communications*
Maxwell, S. M., Hazen, E. L., Bograd, S. J., Halpern, B. S., Breed, G. A., Nickel, B., Teutschel, N. M., Crowder, L. B., Benson, S., Dutton, P. H., Bailey, H., Kappes, M. A., Kuhn, et al
2013; 4: 2688-?
- **Exxon Valdez to Deepwater Horizon: Comparable toxicity of both crude oils to fish early life stages** *AQUATIC TOXICOLOGY*
Incardona, J. P., Swarts, T. L., Edmunds, R. C., Linbo, T. L., Aquilina-Beck, A., Sloan, C. A., Gardner, L. D., Block, B. A., Scholz, N. L.
2013; 142: 303-316
- **Heart rate responses to temperature in free-swimming Pacific bluefin tuna (*Thunnus orientalis*)** *JOURNAL OF EXPERIMENTAL BIOLOGY*
Clark, T. D., Farwell, C. J., Rodriguez, L. E., Brandt, W. T., Block, B. A.
2013; 216 (17): 3208-3214
- **Fukushima-derived radiocesium in highly migratory Pacific predators**
Madigan, D. J., Baumann, Z., Munch, S., Popp, B. N., Block, B. A., Fisher, N. S.
AMER CHEMICAL SOC.2013
- **Influence of Ambient Temperature on Specific Dynamic Action in Bluefin Tuna** *Annual Meeting of the Society-for-Integrative-and-Comparative-Biology (SICB)*
Gleiss, A. C., WHITLOCK, R. E., Dale, J. J., Clark, T. D., Block, B. A.
OXFORD UNIV PRESS INC.2013: E289–E289
- **Predicted habitat shifts of Pacific top predators in a changing climate** *NATURE CLIMATE CHANGE*
Hazen, E. L., Jorgensen, S., Rykaczewski, R. R., Bograd, S. J., Foley, D. G., Jonsen, I. D., Shaffer, S. A., Dunne, J. P., Costa, D. P., Crowder, L. B., Block, B. A.
2013; 3 (3): 234-238
- **Archival and acoustic tags reveal the post-spawning migrations, diving behavior, and thermal habitat of hatchery-origin Sacramento River steelhead kelts (*Oncorhynchus mykiss*)** *ENVIRONMENTAL BIOLOGY OF FISHES*
Teo, S. L., Sandstrom, P. T., Chapman, E. D., Null, R. E., Brown, K., Klimley, A. P., Block, B. A.
2013; 96 (2-3): 175-187
- **Travelling light: white sharks (*Carcharodon carcharias*) rely on body lipid stores to power ocean-basin scale migration.** *Proceedings. Biological sciences / The Royal Society*
Del Raye, G., Jorgensen, S. J., Krumhansl, K., Ezcurra, J. M., Block, B. A.
2013; 280 (1766): 20130836-?
- **Cumulative human impacts on marine predators.** *Nature communications*
Maxwell, S. M., Hazen, E. L., Bograd, S. J., Halpern, B. S., Breed, G. A., Nickel, B., Teutschel, N. M., Crowder, L. B., Benson, S., Dutton, P. H., Bailey, H., Kappes, M. A., Kuhn, et al
2013; 4: 2688-?
- **Eating or Meeting? Cluster Analysis Reveals Intricacies of White Shark (*Carcharodon carcharias*) Migration and Offshore Behavior** *PLOS ONE*
Jorgensen, S. J., Arnoldi, N. S., Estess, E. E., Chapple, T. K., Rueckert, M., Anderson, S. D., Block, B. A.
2012; 7 (10)
- **Microarray gene expression profiles from mature gonad tissues of Atlantic bluefin tuna, *Thunnus thynnus* in the Gulf of Mexico** *BMC GENOMICS*
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