

Joseph M. Szewczak, Ph.D.

Professor, Humboldt State University, Department of Biological Sciences, 1 Harpst St., Arcata, CA 95521
joe@humboldt.edu

Education

- Ph.D. 1991 Brown University, Department of Biology and Medicine, Providence, Rhode Island. Comparative physiology. Thesis: Acid–base state and control of breathing in the torpid bat, *Eptesicus fuscus*; Sigma Xi award for outstanding research by a graduate student.
- B.S.E. 1980 *cum laude*. Duke University, Durham, North Carolina. Major: civil engineering with emphasis in structural theory.

Professional experience

- 2011–present **Professor**, Humboldt State University, Arcata, CA. Research interests include comparative physiology, physiological ecology i.e., the interaction of the organism and its environment, wildlife biology of bats, acoustic analysis of bat echolocation calls, acoustic analysis of bird vocalizations, preventing bat mortality at wind turbines.
- 2006–2011 **Associate Professor**, Humboldt State University, Arcata, CA. Research interests include comparative physiology, wildlife biology of bats, analysis of biological signals, automated acoustic analysis of bat echolocation calls and bird song.
- 2003–2006 **Assistant Professor**, Humboldt State University, Arcata, CA. Research interests include comparative physiology, physiological ecology i.e., the interaction of the organism and its environment, wildlife biology of bats, nonlinear analysis of biological signals, acoustic analysis of bat echolocation calls.
- 1997–2003 **Research Scientist**, University of CA White Mountain Research Station, Bishop, California. Comparative vertebrate physiology and wildlife biology of bats, extremes of mammalian metabolism, and acid–base regulation in small mammals.
- 1997–2003 **Development Engineer**, University of CA White Mountain Research Station, Bishop, California. Managed Station technical infrastructure. Designed and implemented a 19 mile wireless T1 internet link to White Mountain summit (14,246 ft) capable of withstanding extreme arctic conditions and 200+ mph winds.
- 2002–Present Field course instruction for various agencies and organizations, e.g., US Forest Service, Caltrans, state wildlife agencies, The Wildlife Society. See detailed listings below.
- 1996–Present **Adjunct Associate Professor**, San Francisco State University. Course instructed: The ecology and conservation of California bats. The course prepares personnel engaged in wildlife management roles in techniques for assessing bats, their habitats, and conservation strategies; training required for obtaining a permit to work with bats from CA Dept. of Fish and Wildlife.
- 1990–1997 **Long Term Faculty**, Deep Springs College, Deep Springs, CA. Responsible for the science curriculum for a small, academically intense liberal arts colleges that emphasizes a balanced program of academics, labor, and student self–governance.
- 1991–1997 **Director’s Fellow and Research Associate**, University of CA White Mountain Research Station. Completed and published a 6 year survey of bats of the White and Inyo Mountains. Participated in cost–share survey and monitoring projects with the Forest Service, Bureau of Land Management, and California Dept. of Fish & Game.
- 1984–1990 **Teaching Assistant**; research assistant. Brown University, Dept. of Biology and Medicine, Providence, RI. Courses assisted: introductory biology, biophysics, comparative physiology, and mammalian physiology.

Publications

Papers:

- Harris, L. S., Morrison, M. L., Szewczak, J. M., & Osborn, S. D. (2019) Assessment of the status of the Townsend's big-eared bat in California. *California Fish and Game*, 105(3), 101-119.
- Meierhofer, M.B., H.H. Wang, W.E. Grant, J.H. Young, L.H. Johnston, L.K. Wolf, J.W. Evans, B.L. Pierce, J.M. Szewczak, and M.L. Morrison (2018) Use of Box-Beam Bridges as Day Roosts by Mexican Free-tailed Bats (*Tadarida brasiliensis*) in Texas. *Southeastern Naturalist*, 17(4), pp.605-616.
- Demere, K.D., Meierhofer, M.B., Morrison, M.L., Pierce, B.L., Szewczak, J.M., Evans, J.W. and Ammerman, L.K., 2017. *Noteworthy Records for Six Species of Bats from 13 Texas Counties and the First Voucher Specimens from Sites with Pseudogymnoascus Destructans*. Texas Tech University Occasional Papers. Museum of Texas Tech University.
- Clerc, J., T.J. Weller, J.B. Schineller and J.M. Szewczak (2017) Minimally invasive collection of adipose tissue facilitates the study of eco-physiology in small-bodied mammals. *Methods in Ecology and Evolution*, 8(1):109-115.
- Long, A.M., M.R. Colón, J.L. Bosman, D.H. Robinson, H.L. Pruett, T.F. McFarland, H.A. Mathewson, J.M. Szewczak, J.C. Newman, and M.L. Morrison (2017) A before and after control–impact assessment to understand the potential impacts of highway construction noise and activity on an endangered songbird. *Ecology and Evolution*, 7(1):379-389.
- Rodhouse, T. J., Ormsbee, P. C., Irvine, K. M., Vierling, L. A., Szewczak, J. M., & Vierling, K. T. (2015) Establishing conservation baselines with dynamic distribution models for bat populations facing imminent decline. *Diversity and Distributions*, 21(12), 1401-1413.
- Kennedy, J. P., S. C. Sillett, & J. M. Szewczak (2014) Bat activity across the vertical gradient of an old-growth Sequoia sempervirens forest. *Acta Chiropterologica*, 16(1):53-63.
- Clement, M. J., T. J. Rodhouse, P. C. Ormsbee, J. M. Szewczak, and J. D. Nichols. (2014) Accounting for false-positive acoustic detections of bats using occupancy models." *Journal of Applied Ecology*. 51(5), 1460-1467.
- Arnett, E. B., Hein, C. D., Schirmacher, M. R., Huso, M. M., & Szewczak, J. M. (2013) Evaluating the effectiveness of an ultrasonic acoustic deterrent for reducing bat fatalities at wind turbines. *PLOS ONE*, 8(6), e65794.
- Rognan, C. B., Szewczak, J. M., & Morrison, M. L. (2012) Autonomous Recording of Great Gray Owls in the Sierra Nevada. *Northwestern Naturalist*, 93(2): 138–144.
- Rodhouse, T. J., P. C. Ormsbee, K. M. Irvine, L. A., J. M. Szewczak, and K. T. Vierling (2012) Assessing the status and trend of bat populations across broad geographic regions with dynamic distribution models. *Ecological Applications*, 22(4): 1098–1113.
- Tegeler, A. K., Morrison, M. L., & Szewczak, J. M. (2012) Using extended-duration audio recordings to survey avian species. *Wildlife Society Bulletin*, 36(1), 21-29.
- Szewczak, J. M. (2011) Acoustic Deterrence of Bats: a Guidance Document. A report submitted to the California Department of Transportation, Sacramento, CA. Agreement No. 43A0219.
- Arnett, E. B., C. D. Hein, M. R. Schirmacher, M. Baker, M. M. P. Huso, and J. M. Szewczak. (2011) Evaluating the effectiveness of an ultrasonic acoustic deterrent for reducing bat fatalities at wind turbines. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

- Szewczak, J.M. (2011) A call in the night. *United States Fish and Wildlife Service Endangered Species Bulletin*. 3: 42–43.
- Tegeler–Amones, A.K., M.L. Morrison, J.M. Szewczak, and C. Stermer (2010) Assessing point count sampling in montane Meadows. *California Fish and Game*. 96(3): 201–212.
- Arnett, E.B., M. Baker, M.M.P. Huso, and J.M. Szewczak (2010) Evaluating the effectiveness of an ultrasonic acoustic deterrent for reducing bat fatalities at wind facilities. An investigative report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.
- Redgwell, R.D., J.M. Szewczak, G. Jones, and S. Parsons (2009) Classification of Echolocation Calls from 14 Species of Bat by Support Vector Machines and Ensembles of Neural Networks. *Algorithms*. 2: 907–924.
- Rognan, C.B., J.M. Szewczak, and M.L. Morrison (2009) Vocal individuality of great gray owls in the Sierra Nevada. *Journal of Wildlife Management*. 73(5): 755–760.
- Szewczak, J.M., and E.B. Arnett (2008) Field Test Results of a Potential Acoustic Deterrent to Reduce Bat Mortality from Wind Turbines. An investigative report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.
- Szewczak, J.M., and E.B. Arnett (2007) Acoustic Monitoring of Bats, in *Methods and Metrics for Studying Impacts of Wind Energy Development on Nocturnal Species (Birds and Bats)*, T.H. Kunz, ed. National Wind Coordinating Committee (NWCC). *Journal of Wildlife Management*. 71(8): 2449–2486.
- Wood, W.F., and J.M. Szewczak (2007) Volatile compounds in the pelage of the Mexican free-tailed bat, *Tadarida brasiliensis mexicana*. *Biochemical Systematics and Ecology*. 35(9): 566–568.
- Szewczak, J.M., and E.B. Arnett (2006) Preliminary Field Test Results of an Acoustic Deterrent with the Potential to Reduce Bat Mortality from Wind Turbines. An investigative report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.
- Szewczak, J.M., and E.B. Arnett (2006) Ultrasound emissions from wind turbines as a potential attractant to bats: a preliminary investigation. An investigative report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.
- Ormsbee, P.C., J.M. Zinck, J.M. Szewczak, L. Patrick, and A.H. Hart (2006) Benefits of a standardized sampling frame: an update on the “Bat Grid.” *Bat Research News* 47:4.
- Szewczak, J.M. (2005) *Review: The Indiana Bat, Biology and Management of an Endangered Species*. Bat Conservation International, Austin, TX, 253 pp. *Journal of Mammalogy*. 86(1): 212.
- Huey, K.A., J.M. Szewczak, and F.L. Powell (2003) Dopaminergic mechanisms of neural plasticity in respiratory control: Transgenic approaches. *Respiration Physiology and Neurobiology*. 135: 133–44.
- Szewczak, J.M. and F.L. Powell (2003) Open-flow plethysmography with pressure-decay compensation. *Respiration Physiology & Neurobiology*. 134:57–67.
- Hammond, K.A., J.M. Szewczak and E. Król (2001) Effects of altitude and temperature on organ phenotypic plasticity along an altitudinal gradient. *Journal of Experimental Biology*. 204(11):1991–2000.
- Szewczak, J.M., S.M. Szewczak, M.L. Morrison, and L. Hall (1998) Bats of the White-Inyo Range. *Great Basin Naturalist*. 58(1):66–75.
- Sullivan, S.G. and J.M. Szewczak (1998) Apneic oxygen uptake in the torpid pocket mouse, *Perognathus parvus*. *Physiological Zoology*. 71(6):624–632.
- Mathieu-Costello, O., P.J. Agey, L. Wu, J.M. Szewczak, and R.E. MacMillen (1998). Increased fiber capillarization in flight muscle of finch at altitude. *Respiration physiology*, 111(2), 189-199.

Hepple, R.T., P.J. Agey, L. Hazelwood, J.M. Szewczak, R.E. MacMillen and O. Mathieu–Costello (1998) Increased capillarity in hindlimb muscle of birds living at altitude. *Journal of Applied Physiology*. 85(5):1871–1876.

Szewczak, J.M. (1997) Matching gas exchange in the bat from flight to torpor. in: *Comparative Aspects of the Control of Arterial Blood Gases: Ventilatory and Cardiovascular Perspectives*. *American Zoologist*. 37:92–100.

Manning, S.J., Cashore, B.L. & Szewczak, J.M. (1996) Pocket gophers damage saltcedar (*Tamarix ramosissima*) roots. *Great Basin Naturalist*. 56: 183–185.

Mathieu–Costello, O., P.J. Agey and J.M. Szewczak (1994) Capillary–fiber geometry in one of the smallest bats, *Pipistrellus hesperus*. *Respiration Physiology*. 95:155–169.

Szewczak, J.M. and D.C. Jackson (1992) Apneic Oxygen uptake in the torpid bat, *Eptesicus fuscus*. *Journal of Experimental Biology*. 173:217–229.

Szewczak, J.M. and D.C. Jackson (1992) Acid–base state and intermittent breathing in the torpid bat, *Eptesicus fuscus*. *Respiration Physiology*. 88:205–215.

Szewczak, J.M. and D.C. Jackson (1992) Ventilatory response to hypoxia and hypercapnia in the torpid bat, *Eptesicus fuscus*. *Respiration Physiology* 88:217–232.

Mathieu–Costello, O., J.M. Szewczak, R. B. Logemann, and P. J. Agey (1991) Geometry of blood–tissue exchange in bat flight muscle compared with bat hindlimb and rat soleus muscle. *Am. J. Physiol.* 262: R955–R965.

Maginniss, L.A., J.M. Szewczak, C.M. Troup (1987) Effects of methyl isocyanate inhalation on the oxygen binding properties of guinea pig blood. *Environ. Health Perspectives*. 72:35–38.

Books:

Szewczak, J.M., and M.L. Morrison (2020) Use of Bioacoustics Monitoring Systems in Wildlife Research, in *The Wildlife Techniques Manual*, 8th Edition, N.J. Silvy [Ed.], Johns Hopkins University Press. (*Forthcoming*.)

Parsons, S., and J.M. Szewczak (2009) Detecting, Recording, and Analyzing the Vocalizations of Bats, in *Ecological and Behavioral Methods for the Study of Bats*, 2nd Edition, T.H. Kunz, ed. Johns Hopkins University Press (920 pp.).

Szewczak, J.M. (2004) Advanced analysis techniques for identifying bat species. Brigham, R. Mark; Kalko, Elisabeth K.V.; Jones, Gareth; Parsons, Stuart; Limpens, Herman J.G.A. [Eds]. *Bat echolocation research: tools, techniques and analysis*. Bat Conservation International, Austin. 121–22.

Szewczak, J.M. (1994) Bats of the White Mountain Region. in: *The Crooked Creek Guidebook*. C. H. Hall, Jr. and B. Widawski, *editors*. University of California.

R.W. Hansen, K.H. Switak and J.M. Szewczak (1994) The black toad, *Bufo exsul*. in: *Life on the Edge: a Guide to California's Endangered Natural Resources*. C. G. Thelander, *editor in chief*. BioSystems Books.

Abstracts:

A.L. Chung-MacCoubrey, S.D. Osborn, J. M. Szewczak, and C.N. Walker (2020) Finding initial incursions of Pd and understanding potential impacts: NPS contributions to detecting, evaluating, and managing for WNS in northern California. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 4–7, 2020.

Horan, H.D., J.M. Higley, B.A. Clucas, and J.M. Szewczak (2020) Identifying northern spotted owl individuals using vocalizations from autonomous acoustic recorders. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 4–7, 2020.

- Szewczak, J.M. (2020) Notes from the field: recent lessons in bat acoustic monitoring and further suggestions to up your game. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 4–7, 2020.
- Walker, C.N., A.L. Chung-MacCoubrey, and J. M. Szewczak (2020) The first suspected case of white-nose syndrome in California: a pilot study monitoring Yuma and little brown myotis colonies. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 4–7, 2020.
- Jackson, B.K, S.L. Stock, L.S. Harris, J.M. Szewczak, L.N. Schofield, and M.A. Desrosiers (2019) Riparian Birds and Bats Rely on Food Chains That Begin in Rivers. The Wildlife Society Joint Annual Conference, Reno, NV, October 2, 2019.
- L.S. Harris, M.L. Morrison, J.M. Szewczak, and S.D. Osborn (2019) Assessment of the status of the Townsend's big-eared bat in California. The Western Section of The Wildlife Society Annual Conference, Fish Camp, CA, February 4–8, 2019.
- A. Armstrong, and J.M. Szewczak (2019) Basal Hollow Roost Selection by the Townsend's Big-eared Bat and Other Bats on the North Coast of California. The Western Section of The Wildlife Society Annual Conference, Fish Camp, CA, February 4–8, 2019.
- S. Salganek, T.J. Weller, and J.M. Szewczak (2019) Roost Selection in a Hoary Bat (*Lasiurus cinereus*) Migratory Stopover Location in Northern California. The Western Section of The Wildlife Society Annual Conference, Fish Camp, CA, February 4–8, 2019.
- Jackson, B.K, L.S. Harris, L.N. Schofield, S.L. Stock, and J.M. Szewczak (2017) Trophic position and reliance on aquatic production of bats along two rivers in Yosemite National Park. North American Symposium for Bat Research, Knoxville, TN, October 18–21, 2017.
- Szewczak, J.M. (2017) Progress and Limitations of Bat Acoustic Species Classification. Western bat Working Group Meeting, Fort Collins, CO, April 11–14, 2017.
- Meierhofer, M.B., K.D. Demere, M.L. Morrison, B.L. Pierce, J.M. Szewczak, and J. Evans (2017) Baseline Data on Wintering Bats and Hibernacula in Texas. Western Bat Working Group, Fort Collins, CO, April 11–14, 2017.
- Szewczak, J.M. (2017) Using Sequential Data Analysis to Assess the Performance and Limitations of Acoustic Species Classifications. Second International Echolocation Symposium, Tucson, AZ, March 25–April 1, 2017.
- Meierhofer, M.B., M.L. Morrison, B.L. Pierce, J.M. Szewczak, and J. Evans (2016) Baseline Data on Wintering Bats and Hibernacula in Texas. Texas Chapter of the Wildlife Society, February 12–14, 2016.
- Szewczak, J.M., J.D. Chenger, and J.D. Tyburec (2016) More Reference Recordings Decreases, Rather than Increases, Acoustic Classification Performance of *Myotis sodalis* and *M. lucifugus*. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.
- Harris, L.S., M.L. Morrison, J.M. Szewczak, A. Long, and S. Osborn. (2016) Townsend's Big-eared Bat in California: A Snapshot of Statewide Distribution. North American Symposium for Bat Research, San Antonio, TX, October 12–15, 2016.
- Meierhofer, M.B., J. Evans, B.L. Pierce, J.M. Szewczak, and M.L. Morrison (2016) Gathering Baseline Data on Wintering Bats and Roosts in Texas. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.
- Tyburec, J.D., J.D. Chenger, and J.M. Szewczak (2016) Improving Bat Survey Efficiency and Occupancy Results by Using Simultaneous Capture and Acoustic Methods. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.

- Harris, L.S., M.L. Morrison, J.M. Szewczak, A. Long, and S. Osborn. (2015) Statewide Assessment of Townsend's Big-eared Bat in California: a Collaborative Effort for a Candidate Species. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.
- Brokaw, A., and J.M. Szewczak (2015) Yuma Myotis Social Calls Attract Bats to Artificial Roost. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.
- Morrison, M.L., J.M. Szewczak, L.S. Harris, J. Light, and O. Takano. (2015) Roost-Site Selection and Movements of the Townsend's Big-Eared Bat. North American Symposium for Bat Research, Monterey, CA, October 28–31, 2015.
- Brokaw, A., and J.M. Szewczak (2014) Assessing the Use of Social Calls to Attracts Bats to Artificial Roost Sites. Raptors of the Northwest Symposium. Pasco, WA, February 5-7, 2014.
- Byrnes, R., J.M. Szewczak, and J.J. Keane (2014) Assessing Bioacoustic Techniques for Inventory and Monitoring of Forest Owls in the central Sierra Nevada, California. The Western Section of The Wildlife Society Annual Conference, Reno, NV, January 28–31, 2014.
- Szewczak, J.M. (2013) SonoBat expert system for bat echolocation call analysis and species identification. Southeastern Bat Diversity Network Meeting and Colloquium. Pikeville, TN, February 14–15, 2013.
- Szewczak, J.M. (2013) A Field Test of Two Acoustic Classification Systems to Discriminate Indiana Bats. Northeast Bat Working Group, Albany, NY, January 9–11, 2013.
- Rodhouse, T. J., P. C. Ormsbee, K. M. Irvine, L. A. Vierling, J. M. Szewczak, and K. T. Vierling (2012) Annual turnover in bat occupancy patterns: predictions from life history theory and implications for conservation and monitoring. Ecological Society of America, Portland, OR, August 5–12, 2012.
- Szewczak, J.M. (2012) Overlapping call characteristics of Myotis. Northeast Bat Working Group, Carlisle, PA, January 11–13, 2012.
- Szewczak, J.M. (2011) SonoBat automated bat classification. North American Symposium for Bat Research, Toronto, Ontario, October 25–29, 2011.
- Arnett, E. B., M. R. Schirmacher, C. D. Hein, M. M. P. Huso, and J. M. Szewczak (2011) Evaluating the effectiveness of an ultrasonic acoustic deterrent for reducing bat fatalities at wind turbines. North American Symposium for Bat Research, Toronto, Ontario, October 25–29, 2011.
- Using acoustic broadcasts to deter bats from wind turbines and exclude them from bridges and other structures. Bats and Wind Energy Cooperative. Las Vegas, NV. April 6–8, 2011.
- Szewczak, J.M., and E. B. Arnett (2011) Using acoustic broadcasts to deter bats from wind turbines and exclude them from bridges and other structures. The Western Section of The Wildlife Society Annual Conference, Riverside, CA, February 8–11, 2011.
- Kennedy, J.P., and J.M. Szewczak (2010) Bat activity across the vertical gradient of an old-growth redwood forest. North American Symposium for Bat Research, Denver, CO, October 27–30, 2010.
- G. Reyes, and J.M. Szewczak (2010) The behavioral function of social calls in the migratory hoary bat *Lasiurus cinereus*. North American Symposium for Bat Research, Denver, CO, October 27–30, 2010.
- Szewczak, J.M. (2009) Descending a trophic level— an account of vampire bat feeding. North American Symposium for Bat Research, Portland, OR, November 4–7, 2009.
- J.M. Szewczak (2009) The potential for acoustic broadcasts to exclude bats from bridges and other structures. Statewide Tri-Agency Biologist Training and Workshop and Road Ecology Meeting. Walnut Creek, CA, February 24–26, 2009
- J.M. Szewczak (2009) Automated survey and monitoring of bird and bat populations. Statewide Tri-Agency Biologist Training and Workshop and Road Ecology Meeting. Walnut Creek, CA, February 24–26, 2009

- Szewczak, J.M.(2008) Automated Acoustic Monitoring of Bat and Bird Populations. Partners in Environmental Technology Symposium, Washington, D.C., December 2–4, 2008.
- Szewczak, J.M. and E. B. Arnett (2008) The Potential for Acoustic Broadcasts to Deter Bats from Approaching Wind Turbines. North American Symposium for Bat Research, Scranton, PA, October 22–25, 2008.
- J.M. Szewczak (2008) Automated monitoring and assessment of bat and bird populations on military lands. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 6–8, 2008.
- J.M. Szewczak (2008) Further testing of an acoustic deterrent to reduce bat mortality from wind turbines. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 6–8, 2008.
- Tegeler–Amones, A., J.M. Szewczak, H. Mathewson, M.L. Morrison, and C. Stermer (2008) Assessing Monitoring Techniques for Bird Populations in Sierra Nevada Montane Meadows. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 6–8, 2008.
- Szewczak, J.M.(2008) Lab and field tests of acoustic deterrents. Bats and Wind Energy Cooperative Workshop, Austin, TX, January 8–10, 2008.
- Szewczak, J.M.(2007) Automated Monitoring and Assessment of Bat and Bird Populations. Partners in Environmental Technology Symposium, Washington, D.C., December 3–5, 2007.
- J.M. Szewczak (2007) Training bats to avoid wind turbines using an acoustic deterrent. XIV International Bat Research Conference, Merida, Mexico, August 19–20, 2007.
- Corcoran, A.J., and J.M. Szewczak (2007) Automated Acoustic Identification of Nine Bat Species of the Eastern United States. XIV International Bat Research Conference, Merida, Mexico, August 19–20, 2007.
- Szewczak, J.M. and E. B. Arnett (2007) An acoustic deterrent with the potential to reduce bat mortality from wind turbines. The Western Section of The Wildlife Society Annual Conference, Monterey, CA, January 31–february 2, 2007.
- Szewczak, J.M.(2006) Developing an automated system for monitoring and assessing bat populations. Partners in Environmental Technology Symposium, Washington, D.C., November 28–30, 2006.
- Szewczak, J.M. and E.B. Arnett (2006) Evaluation of Acoustic Deterrents to Reduce Bat Fatality at Wind Facilities. National Wind Coordinating Committee Wildlife Workgroup, San Antonio, TX, November 14–16, 2006.
- Szewczak, J.M. and E.B. Arnett (2006) An Acoustic Deterrent with the Potential to Reduce Bat Mortality from Wind Turbines. North American Symposium for Bat Research, Wilmington, NC, October 18–21, 2006.
- Corcoran, A. J. and J.M. Szewczak (2006) Fully Automated Identification of Three Bat Species: *Lasiurus borealis*, *Nycticeius humeralis*, and *Pipistrellus subflavus* Using Full–Spectrum Acoustic Data. North American Symposium for Bat Research, Wilmington, NC, October 18–21, 2006.
- Freeman, K.A. and J.M. Szewczak (2006) Opportunistic Videography of Maternity Roosting Behaviors of a Colony of Townsend’s Big–Eared Bat (*Corynorhinus townsendii*). North American Symposium for Bat Research, Wilmington, NC, October 18–21, 2006.
- Szewczak, J.M.(2005) Progress toward an automated system for monitoring and assessing bat populations. Partners in Environmental Technology Symposium, Washington, D.C., November 29–December 1, 2005.
- Szewczak, J.M. and E.B. Arnett (2005) Do wind turbines generate ultrasound that may attract bats? North American Symposium for Bat Research, Sacramento, CA. October 19–23, 2005.
- Berry, R. D. and J.M. Szewczak (2005) A field recording technique to passively collect and time tag echolocation calls from free flying bats Western Bat Working Group Biennial Meeting, Portland, OR. March 30–April 2, 2005.

- Szewczak, J.M. (2005) Mines from a bat perspective: the physiological ecology of roosting. Bat Conservation International Bats and Mines Symposium, Reno, NV, May 3–5, 2005.
- Szewczak, J.M. (2005) Monitoring bats in a restored montane willow meadow. The Western Section of The Wildlife Society Annual Conference, Sacramento, CA, January 19–21, 2005.
- Szewczak, J.M. (2004) Advances in the acoustic monitoring of bats. American Society of Mammalogists. Arcata, CA. June 16, 2004.
- Szewczak, J.M. (2004) Bat Monitoring and Assessments. Partners in Environmental Technology Symposium, "Preserving our Critical Natural Resources." Washington, D.C., December 2, 2004.
- Weller, T.J., J.M. Szewczak, and M.M. McKenzie (2004) Acquiring representative reference calls: a comparison calls recorded on zip-line and hand release. *Bat Research News* 45(4):272.
- Szewczak, J.M. (2003) Variability of pH regulation among mammals. FASEB Experimental Biology Meeting, April 11–15, 2003, San Diego, CA.
- Szewczak, J.M. (2002) Multivariate acoustic transforms for identifying bat species. *Bat Research News*. 43(4):186–187.
- Szewczak, J.M. (2002) Phenostasis and patterns of growth: a framework from which to interpret adaptive capacity. American Physiological Society special Comparative Physiology Meeting.
- Hill, E. M., S.J. Wickler, J.M. Szewczak, H.M. Greene, and E.A. Cogger (2001) 2,3-Diphosphoglycerate in burros (*Equus asinus*) after six weeks at altitude. *American Zoologist*, 41 (6): 1471–1472.
- Szewczak, J.M. (2001) Bat torpor, hibernaculum environment, and survival. *Bat Research News*. 42(3):183.
- J.M. Szewczak (2001) Advanced analysis techniques for identifying bat species. *Bat Research News*.
- Berry, R.D. and J.M. Szewczak (2001) A Field Recording Technique to Passively Collect and Time Tag Echolocation Calls from Free Flying Bats Using a Time Expansion Bat Detector and a Digital 8 Video Camcorder. *Bat Research News*, (in press).
- Szewczak, J.M. (2000) A tethered zip-line arrangement for reliably collecting bat echolocation reference calls. *Bat Research News*, 41:142.
- Szewczak, J.M. (2000) A consistent acoustic feature to discriminate *Myotis* species. *Bat Research News*, 41:141.
- Szewczak, J.M. (2000) Periodic breathing, acid–base state, and apneic oxygen uptake in the torpid mammal. Society for Experimental Biology, Cambridge, UK, July 30–August 3, 2000.
- Szewczak, J.M. (1999) Hypoxic hypometabolism in heterothermic mammals. *American Zoologist*, v.38, n.5, 1998.:9A.
- Szewczak, J.M. (1996) A test of plasticity in ventilatory motor control. *FASEB Journal*. 10(3): 3707–3708.
- Szewczak, J.M. (1994) Fractal analysis of ventilatory control in heterothermic mammals. *The Physiologist*, 37(5): A–64.
- Millman, J. and J.M. Szewczak (1994) Nonlinear methods for the analysis of ventilatory control. *The Physiologist*, 37(5): A–64.
- Szewczak, J.M. and F.L. Powell (1992) High altitude acclimatization in the bat, *Eptesicus fuscus*. *FASEB Journal*. 6(5): A1774.
- Szewczak, J.M. (1993) The scaling of apneic oxygen uptake in small heterothermic mammals. (submitted abstract), *Experimental Biology '94*.
- Mathieu–Costello, O., P.J. Agey and J.M. Szewczak (1993) Increased capacity for O₂ flux from capillary to muscle fiber with chronic hypoxia. (submitted abstract), *Experimental Biology '94*.

Szewczak, J.M. and F.L. Powell (1992) High altitude acclimatization in the bat, *Eptesicus fuscus*. (Abstract) FASEB J6(5): A1774.

Szewczak, J.M., and D.C. Jackson (1990) Acid–base state and control of ventilation in the torpid bat, *Eptesicus fuscus*. Abstract for fall, 1990 American Physiological Society meeting.

Szewczak, J.M., Jackson, D.C. (1989) Acid–base fluctuations due to intermittent breathing in the torpid big brown bat, *Eptesicus fuscus*. *Am. Zool.* 29(4): 138A.

Maginniss, L.A., D.L. Kilgore, J.M. Szewczak (1986) Blood oxygen transport in the burrowing owl *Athene cunicularia*. (abstract) Proc. Int. Union Physiol. Sci.

Recent professional activities

Reviewer, *Acta Chiropterologica*, *American Journal of Mammalogy*, *American Journal of Physiology*, *American Midland Naturalist*, *Comparative Journal of Tropical Biology, Biochemistry and Physiology*, *Great Basin Naturalist*, *Respiration Physiology and Neurobiology*, *Ostrom Symposium Volume*, *Physiological Zoology*, *Western North American Naturalist*.

National Geographic BioBlitz, Golden Gate National Park, March 28–29, 2014. First forest canopy survey in this redwood forest.

Associate Editor, *Journal of Wildlife Management*, 2004–2006.

Industry Liaison, American Physiological Society, 2002–2005.

Proposal reviews. NSF, USDA, US Department of Defense, US Department of State, International Science and Technology Center (for funding former Soviet–block peaceful technologies to prevent proliferation of weapons technologies), and the University of California.

Member, Western and California Bat Working Groups.

Contributing committee member and author to the upcoming California Bat Conservation Plan, a Department of Fish and Game directed document to direct bat conservation and management in California for the next tow decades.

Hosted a Discovery Channel show, “Nasty by Nature,” filmed on location in Belize. This show depicted the natural history and biology of vampire bats. The premiere for the show aired on February 14, 2010.

Analysis Software and Hardware. Developer of SonoBird and SonoBat software to analyze and interpret bird and bat vocalization and currently developing automated bird and bat and bird acoustic monitoring and identification methods for the Department of Defense (SERDP), California (Caltrans), and Texas (TxDOT).

I donate my time to teach workshops in bat field methodology for The Wildlife Society, 2004 to present.

Crew Leader, 2005 Bat Blitz, Ouachita National Forest, AR, August 2005.

Wildlife Biology. Courses include “Using SonoBat for Non–invasive Bat Monitoring” for the University of California, “Biology of the Chiroptera” at Humboldt State University, and “The Ecology and Conservation of California Bats” through San Francisco State University; also acoustic monitoring workshops for Bat Conservation International and other groups in California, Oregon, Arizona, Washington, South Dakota, Montana, New Jersey, and Pennsylvania.

Performed bat distribution surveys and collected baseline data for and write section of Owens Dry Lake dust mitigation EIR. The survey also determined how bats would move into the newly created wetlands, and this has become a strategy that will be used to balance the insect populations expected to follow the flood irrigation treatment.

Advise USDA Forest Service, CA Department of Fish & Game, DoD on matters pertinent to scientific permitting and wildlife management issues.

Created and supported software used for analyzing spectrophotometric data from flower petals; in use by Scott Hodges, UCSB, for his NSF project DEB- 9726272.

Talks, symposia, and field workshops

Notes from the field: recent lessons in bat acoustic monitoring and further suggestions to up your game. The Western Section of The Wildlife Society Annual Conference, Redding, CA, February 4–7, 2020.

Techniques with SonoBat for acoustic monitoring of bats. United Kingdom National Bat Conference, University of Nottingham, Nottingham, United Kingdom. September 6, 2019.

Bat Ecology and Field Techniques Workshop. The Wildlife Society Bat Ecology and Field Techniques Workshop. Camp Roberts National Guard Post, CA. August 16–19, 2020.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Great Basin National Park, Baker, NV. July 21–28, 2019.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 20–28, 2019.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 29–August 2, 2019.

Chiropteran Occulations: Bat biology, conservation, and management, and why you should care about it. Lassen Dark Sky Festival, Lassen Volcanic National Park. August 2, 2019.

Bat biology, conservation, and management, and why you should care about it. Whiskeytown National Recreation Area, Whiskeytown, CA. June 7, 2019.

Bat Acoustics: A Practical Workshop. The Wildlife Society Field Techniques Workshop. Save Mt. Diablo Reserve, Curry Canyon Ranch, CA June 20–23, 2019.

Monitoring big walls for bats. Training workshop for climbing rangers and stewards, Yosemite National Park, June 16, 2019.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 20–28, 2019.

Riverine trophic cascades lead to riparian bats in two mid-order rivers. The Western Bat Working Group, Tulsa, OK, April 22–25, 2019.

Some Current Issues in Bat Biology and Conservation. Humboldt State University Zoology Club, Arcata, CA, November 6, 2018.

Bat Ecology and Field Techniques Workshop. The Wildlife Society Bat Ecology and Field Techniques Workshop. Arcata, CA. September 24–26, 2018.

Noninvasive acoustic monitoring of bats. United Kingdom National Bat Conference, University of Nottingham, Nottingham, United Kingdom. September 7–9, 2018.

Chiropteran Occulations: Bat biology, conservation, and management, and why you should care about it. Lassen Dark Sky Festival, Lassen Volcanic National Park. August 4, 2018.

The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Bat Field Techniques Workshop, Lava Beds National Monument, Tulelake, CA. July 29–August 4, 2018.

Noninvasive acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. Univ. of CA James San Jacinto Mountains Reserve, Idyllwild, CA June 21–24, 2018.

Bat biology, conservation, and management, and why you should care about it. Whiskeytown National Recreation Area BioBlitz, Whiskeytown, CA. June 2, 2018.

Stump the Geeks (Assessing difficult bat echolocation recordings). Join Bat Working Group Meeting, Roanoke, VA. March 27, 2018.

Noninvasive acoustic monitoring of bats. Join Bat Working Group Meeting, Roanoke, VA. March 26–29, 2018.

Field techniques for noninvasive acoustic monitoring of bats. United States Forest Service, Mi-Wuk Village, CA. March 12–13, 2018.

Trophic position and reliance on aquatic production of bats along two rivers in Yosemite National Park. North American Symposium for Bat Research, Knoxville, TN, October 18–21, 2017.

Bat Ecology and Field Techniques Workshop. The Wildlife Society Bat Ecology and Field Techniques Workshop. Midpines, CA. September 8–11, 2017.

Bats and Transportation Assessment Methods. California Department of Transportation, Sacramento, CA. August 14–16, 2017.

Progress and Limitations of Bat Acoustic Species Classification. Western bat Working Group Meeting, Fort Collins, CO, April 11–14, 2017.

Using Sequential Data Analysis to Assess the Performance and Limitations of Acoustic Species Classifications. Second International Echolocation Symposium, Tucson, AZ, March 25–April 1, 2017.

Some Current Issues in Bat Biology and Conservation. Department of Wildlife Biology, Humboldt State University, Arcata, CA, February 23, 2017.

More Reference Recordings Decreases, Rather than Increases, Acoustic Classification Performance of *Myotis sodalis* and *M. lucifugus*. Northeast Bat Working Group Meeting, Amherst, MA, January 13, 2017.

Managing bat acoustic monitoring data. USGS Northern Rocky Mountain Science Center, Bozeman, MT, January 9–10, 2017.

More Reference Recordings Decreases, Rather than Increases, Acoustic Classification Performance of *Myotis sodalis* and *M. lucifugus*. North American Symposium for Bat Research, San Antonio, TX, October 28–31, 2015.

Bat acoustic monitoring training workshop. Mojave National Preserve, CSU Desert Studies Center, Zzyzyx, CA. October 2–4, 2016.

Eastern bats survey techniques workshop. Mammoth Cave National Park, KY. August 28–September 4, 2016.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 22–29, 2016.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. August 1–5, 2016.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 21–28, 2015.

Batpouri: Bat biology, conservation, and management, and why you should care about it. Whiskeytown National Recreation Area BioBlitz, Whiskeytown, CA. May 13, 2016.

Bat acoustic data management, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Wells, ME. April 7–9, 2016.

Bat acoustic data management, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Duluth, MN. March 7–9, 2016.

Surveying Redwood Basal Hollows for Townsend's Big-Eared Bats. California Department of Forestry, Big Basin Redwoods State Park, CA. February 10, 2016.

Bat acoustic data management, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Punta Gorda, FL. February 3–5, 2016.

Surveying Redwood Basal Hollows for Townsend's Big-Eared Bats. California Department of Forestry, Mendocino, CA. December 8, 2016.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Mammoth Cave National Park, KY. September 1–17, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. California Department of Transportation, Sacramento, CA. September 8-10, 2015.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 14–17, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Montana Natural Heritage Program, Beartooth Wildlife Management Area, MT. June 15-17, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Black Hills National Forest, Rapid City, SD. June 8-10, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 21–28, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Alton, IL. March 7–9, 2015.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Mammoth Cave National Park, KY. September 10–16, 2014.

Batpourri: an update on current issues in bat biology and conservation. Humboldt State University Wildlife Department Ecology Series. September 18, 2014.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 28–August 1, 2014.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Southwestern Research Station, Portal, AZ. May 15–22, 2014.

Noninvasive acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. Yosemite National Park, CA. May 2–5, 2014.

Bat Ecology and Field Techniques Workshop. The Wildlife Society Bat Ecology and Field Techniques Workshop. California Department of Fish and Game Chimineas Ranch. May 29–June 1, 2014.

Acoustic identification of bats. Caveats and successes. Kentucky Bat Working Group Meeting. November, 13, 2013.

Noninvasive acoustic monitoring of bats using SonoBat software. Terre Haute, IN. March 31–April 2, 2014.

Bats in peril: Why it matters and what we can do. Humboldt State University Biodiversity Conference. Arcata, CA. October 5, 2013.

Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Mammoth Cave National Park, KY. September 6–9, 2013.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. August 5–9 2013.

- Noninvasive acoustic monitoring of bats using SonoBat software. Tirimbina Biological Reserve, Heredia, Costa Rica. September June 22–23, 2013.
- Noninvasive acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. The Nature Conservancy Dye Creek Preserve, Los Molinos, CA. May 2–5, 2013.
- Bat Ecology and Field Techniques Workshop. The Nature Conservancy Dye Creek Preserve, Los Molinos, CA. April 5–8, 2013.
- Factors affecting bat recording quality and results. Western Bat Working Group Biennial Meeting. Santa Fe, NM. April 1–4, 2013.
- Noninvasive acoustic monitoring of bats using SonoBat software. Pikeville, TN. February 11–13, 2013.
- Noninvasive acoustic monitoring of bats using SonoBat software. Albany, NY. January 11–12, 2013.
- Acoustic monitoring. Bat white–nose syndrome: Pathology, Epidemiology, Diagnostics, and Management. The Wildlife Society 19th Annual Conference, Portland Oregon, October 13, 2012.
- Bats and transportation– assessment methods. Training workshop for Caltrans biologists. Sacramento, CA. September 10–12, 2012.
- Bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation and Management Workshop, Mammoth Cave National Park, KY. September 6–9, 2012.
- The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. August 13–17 2012.
- The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Lava Beds National Monument, Tulelake, CA. July 12–17, 2012.
- Bat Ecology and Field Techniques Workshop. The Nature Conservancy Dye Creek Preserve, Los Molinos, CA. April 19–22, 2012.
- Bats. Sleight of wing, magic in the dark. King Range National Conservation Area & Lost Coast Interpretive Association Winter Lecture Series, March 6, 2012.
- Noninvasive acoustic monitoring of bats using SonoBat software. The Wildlife Society, Colorado Chapter. Grand Junction, CO. February 15, 2012.
- The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. August 1–15 2011.
- Noninvasive acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. Swanton Pacific Ranch, Davenport, CA. June 2–5, 2011.
- The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Tucson, AZ. May 19–24, 2011.
- Noninvasive acoustic monitoring of bats using SonoBat software. Tucson, AZ. April 15–18, 2011.
- Noninvasive acoustic monitoring of bats using SonoBat software. Gettysburg, PA. March 19–20, 2011.
- Noninvasive acoustic monitoring of bats using SonoBat software. Laurel Caverns, PA. October 4–7, 2010.
- Bats and transportation– assessment methods. Training workshop for Caltrans biologists. Sacramento, CA. September 14–16, 2010.
- The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Lava Beds National Monument, Tulelake, CA. August 5–10, 2010.

- Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 14–18, 2010. Hines, OR.
- Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 7–11, 2010. Ephrata, WA.
- A determined determination of determinate growth in mice. UC White Mountain Research Station Physiological Ecology Symposium, Bishop, CA. June 4–6, 2010.
- Physiological ecology and acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. Wildlands Conservancy Wind Wolves Preserve, Maricopa, CA. June 2–3, 2010.
- Noninvasive acoustic monitoring of bats. The Wildlife Society Field Techniques Workshop. Wildlands Conservancy Wind Wolves Preserve, Maricopa, CA. May 20–23, 2010.
- Bats and transportation— assessment methods. Training workshop for Caltrans biologists. San Bernardino, CA. August 11–13, 2009.
- Physiological ecology and acoustic monitoring of bats. The Wildlife Society Bat Ecology and Field Techniques Workshop. California Department of Fish and Game Chimineas Ranch. July 29–August 1, 2009.
- Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 22–26, 2010. Hines, OR.
- Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 15–19, 2010. Ephrata, WA.
- The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 20–24 2009.
- The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, American Museum of Natural History Southwest Research Station, Portal, AZ. May 11–16, 2009.
- An overview of tools for assessing preconstruction bat activity at proposed wind facilities. Western Bat Working Group Bats and Wind Energy Workshop, Austin, TX. April 15, 2009.
- Bats 101. Western Bat Working Group Bats and Wind Energy Workshop, Austin, TX. April 14, 2009.
- The red side of green power: wind turbines, bird, and bat mortality. Redwood Region Audubon Society, Eureka, CA. November 14, 2008.
- Chiropterophily: bats pollinate and disperse seeds. Humboldt Botanical Gardens Foundation Pollinators Symposium. November 8, 2008.
- Bats, sleight of wing magic in the dark. Miracles and concerns. CA Department of Fish and Game, Eureka, CA. September 9, 2008.
- Bat ecology and field techniques. The Wildlife Society, UC Sagehen field station, Truckee, CA. September 4–7, 2008.
- The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Lava Beds National Monument, Tulelake, CA. July 24–29, 2008.
- The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 14–18 2008.
- Bat physiological ecology and conservation. Cal Poly, San Luis Obispo, CA. April 25, 2008.
- The biology of bats. Cal Poly, San Luis Obispo, CA. April 25, 2008.

The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Mammoth Cave National Park, KY. September 11–16, 2007.

Bat ecology and field techniques. The Wildlife Society, UC Sagehen field station, Truckee, CA. September 6–9, 2007.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 16–20 2007.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 25–29, 2007. White Salmon, WA.

Flying turtles and diving bats. Donald C. Jackson Symposium, Brown University, Providence, RI. June 23, 2007.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 18–22, 2007. Prineville, OR.

The red side of green power: wind turbines, bird, and bat mortality. UC White Mountain Research Station Physiological Ecology Symposium, Bishop, CA. June 3, 2007.

Unseen and unheard: Finding bats in the night sky. East Bay Science Café, Berkeley Natural History Museums, Berkeley, CA. March, 8, 2007.

Impacts of wind energy development on nocturnal species (birds and bats). Humboldt State University Department of Wildlife, February 5, 2007.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 24–30 2006.

US Forest Service Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. Beartooth Wildlife Management Area, MT. July 10–14, 2006.

The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, American Museum of Natural History Southwest Research Station, Portal, AZ. June 22–27, 2006.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. White Salmon, WA, June 12–16, 2006.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. Redmond, OR, June 5–9, 2006..

Acoustic monitoring of bats and acoustic species discrimination. Great Swamp National Wildlife Refuge, Morristown, NJ. June, 2, 2006.

Progress in Bat Monitoring and Assessments. SERDP symposium, "Preserving our Critical Natural Resources." Washington, D.C., October 25, 2005,

Session Chair. North American Symposium for Bat Research, Sacramento, CA. 19–23 October, 2005.

Do wind turbines generate ultrasound that may attract bats? North American Symposium for Bat Research, Sacramento, CA. October 19–23, 2005.

Full-spectrum acoustic recognition of bats. The Wildlife Society Natural History and Management of Bats Symposium, Sacramento, CA. October 17–19, 2005.

The biology of bat echolocation. The Wildlife Society Natural History and Management of Bats Symposium, Sacramento, CA. October 17–19, 2005.

Physiological ecology and acoustic Monitoring of Bats. The Wildlife Society Bat Ecology and Field Techniques Workshop. University of California Hastings Natural Reserve, Carmel, CA. September 8–11, 2005.

The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, Barree, PA. August 8–1, 2005.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 11–16 2005.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 27– July 1, 2005, LaGrande, OR.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 20–24, 2005, Missoula, MT.

The physiological ecology of bats; acoustic monitoring of bats. May 21–23, 2005, Rapid City, SD.

Mines from a bat perspective: the physiological ecology of roosting. Bat Conservation International Bats and Mines Symposium, Reno, NV. May 3, 2005.

Ultrasonic communication in mammals. UC, Davis Road Ecology Seminar Series. February 28, 2005.

Advancing acoustic monitoring of bats. SERDP symposium, "Preserving our Critical Natural Resources." Washington, D.C., December 2, 2004,

Assessing bat populations: Challenges and progress. HSU Wildlife Department Seminar series. October 21, 2004.

Physiological ecology and acoustic monitoring of bats. The Wildlife Society Bat Ecology and Field Techniques Workshop. University of California Hastings Natural Reserve. September 17–19, 2004. Carmel, CA.

The physiological ecology of bats; acoustic monitoring of bats. Bat Conservation and Forest Management Symposium, August 26–27, 2004, Spokane, WA.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 19–24 2004.

Pacific Northwest Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 17–20, 2004. La Grande, OR.

Advances in the acoustic monitoring of bats. American Society of Mammalogists. Arcata, CA. June 16, 2004.

The biology of bat echolocation, acoustic monitoring of bats, and acoustic species discrimination. Bat Conservation International Acoustic Monitoring Workshop, American Museum of Natural History Southwest Research Station, Portal, AZ. June 2–8, 2004.

Noninvasive bat monitoring. Tahoe National Forest, South Lake Tahoe, CA. May 15–16, 2004.

The physiological ecology of bats; Bat Conservation International Acoustic monitoring of bats. Bat Conservation and Forest Management Symposium, Eugene, OR, August 26–27, 2003.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 28–August 1 2003.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 14–20 2003.

Oregon Bat Grid training workshop, Physiological ecology, echolocation and acoustic monitoring of bats. June 17–20, 2003. La Pine, OR.

Causes and Consequences of pH Variability in Vertebrates, Experimental Biology 2003, April 11–15, San Diego, California.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. August 12–16 2002.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 22–26 2002.

Mono Basin Bird Chautauqua, June 21–23, 2002, <http://www.birdchautauqua.org/chautauquadetails.htm>

Advanced analysis techniques for identifying bat species. International Bat Echolocation Symposium and Tutorial sponsored by Bat Conservation International. April 15–17, 2002 in Austin, Texas.

Bats of Eastern California. Mono Basin Bird Chautauqua, June 21–23, 2002, <http://www.monolake.org/events/chautauqua/main.htm>

Physiological ecology of bats. UC, Davis Ecology Department. September, 2001, 2002.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 16–20 2001.

Ecology and Conservation of California bats. UC WMRS Conservation Biology Symposium, 2001.

Control and Coordination of Breathing Rhythms and Mechanics Society for Experimental Biology: August, 2000, Cambridge, UK.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 24–28 2000.

What about Bats? Sierra Nevada Aquatic Research Laboratory, May, 2000.

Acid Base State in Small Mammals. Loma Linda University, December, 1999.

Acid Base State in Small Mammals. UC, Riverside, November, 1999.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 26–30 1999.

Chaos, fractals, and you. WMRS Lecture series. April, 1999.

Phenotypic and Genotypic Strategies to Chronic Hypoxia. Society for Integrative and Comparative Biologists, Denver, CO. January, 1999.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 27–31 1998.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 14–18 1997.

The Ecology and Conservation of California Bats. San Francisco State University. SFSU Field Campus. July 15–19 1996.

Professional recognition

2010 Certificate of Appreciation from the United States Forest Service *Wings across the Americas* program.

2009 recipient of the United States Forest Service *Wings across the Americas* award for outstanding achievement in bat conservation.

Graduate students

Christy Walker (current) Monitoring and radio-tracking the first Yuma and little brown myotis colonies in California with a positive detection of *Pseudogymnoascus destructans* (Pd), the fungus responsible for White Nose Syndrome.

Jason Holmes, (current) Insights from stable isotope analyses of bats.

Ashley Abitz, (current) Social communication in the chestnut-backed chickadee, *Poecile rufescens*.

Amon Armstrong, (current) Basal hollow roost selection by the Townsend's big-eared bat and other bats on the north coast of California.

Skye Salganek, (2019) Long-duration radio tracking to investigate overwintering behavioral ecology of the hoary bat, *Lasiurus cinereus*. Currently a biologist with Grand Canyon National Park.

Alyson Brokaw, (2015) Assessing the use of social calls to attract bats to artificial roosts. Ph.D. candidate, Texas A & M University.

Daniel Burrell, (2015) Patterns of nocturnal flight calling over four sites in northern California and southern Oregon. Currently a lecturer at Humboldt State University.

Jeffrey Clerc, (2015) Applications of fatty acid signatures in tree bat migration ecology. Ph.D. candidate, Texas Tech University.

Gabriel Reyes, (2015) The behavioral function of social calls in the migratory hoary bat *Lasiurus cinereus*. Biologist, USGS Western Ecological Research Center.

Ryan Byrnes, (2013) Assessing bioacoustic techniques for inventory and monitoring of forest owls in the central Sierra Nevada, California. Currently a biologist with Swaim Biological.

Kiera A. Freeman, (2012) Roosting behavior of a maternity colony of Townsend's Big-eared bat, *Corynorhinus townsendii*. Biologists, California Department of Fish and Wildlife.

Jean-Paul Kennedy, (2011) Bat activity across the vertical gradient of an old-growth redwood forest. Independent consultant.

Zachary G. Loman, (2009) Response of a North American wood warbler, the golden-cheeked warbler (*Dendroica chrysoparia*) to anthropogenic noise. Post-doctoral Fellow, University of Maine-Orono.

Amy K. Tegeler-Amones, (2008) Assessing monitoring techniques for bird populations in Sierra Nevada montane meadow and aspen communities. Accepted position at Carnegie Mellon Powdermill Avian Research Center.

Cameron B. Rognan, (2007) Bioacoustic techniques to monitor great gray owls (*Strix nebulosa*) in the Sierra Nevada. Accepted position at Cornell Lab of Ornithology, now with USDI BLM, UT.

Aaron J. Corcoran, (2007) Automated identification of nine bat species of the eastern United States using full-spectrum acoustic recordings. Earned Ph.D. at Wake Forest University, currently on NSF postdoctoral fellowship.