

## BEN F. BRAMMELL

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## BACKGROUND

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### EDUCATION

*Ph.D., Biology* – Department of Biology, University of Kentucky. Characterization of pollutant response in teleosts with varying degrees of pollutant sensitivity.

*M.S., Biology* – Department of Biology, Tennessee Technological University. Evaluation of brook trout restoration efforts in the Great Smoky Mountains National Park.

*B.S., Biology* – Department of Biological Sciences, Eastern Kentucky University.

### PROFESSIONAL EXPERIENCE

*Professor* (2020 – present) – Department of Science and Health, Asbury University, Wilmore, KY.

*Associate Professor* (2013 – 2020) – Department of Science and Health, Asbury University, Wilmore, KY.

*Assistant Professor* (2010 – 2013) – Department of Science and Health, Asbury University, Wilmore, KY.

*Research Scientist I* (2008-2010) – Department of Civil Engineering, University of Kentucky, Lexington, KY.

*Lecturer (full time)* (2004-2008) – Department of Biology, Morehead State University, Morehead, KY.

*Research and Teaching Assistant* (2000-2004) – Department of Biology, University of KY, Lexington, KY.

*Research Assistant* (1998-2000) – Department of Biol. Sciences, Ten. Technological Univ., Cookeville, TN.

## SCHOLARLY ACTIVITIES

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### PUBLICATIONS (10 since joining Asbury, \*undergraduate coauthor)

- (15) Brewer, Sara A.\*, Rebecca R. Piche\*, Florene G. Bell\*, Angie F. Flores\*, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow\*, and **Ben F. Brammell**. 2023. The use of eDNA in detection of Northern Red (*Pseudotriton ruber*) and Spring (*Gyrinophilus porphyriticus*) Salamanders: development and validation of quantitative PCR assays with notes on phylogeographic effectiveness. *In Press*, Herpetology Notes.
- (14) **Brammell, Ben F.**, Elizabeth K. Strasko\*, Sara A. Brewer\*, Rebecca R. Piche\*, Cierla M. Sams\*, Cy L. Mott, Malinda A. Stull. 2023. Detecting fossorial salamanders using eDNA; development and validation of quantitative and end-point PCR assays for the detection of five species of *Ambystoma*. Conservation Genetics Resources 2023. <https://doi.org/10.1007/s12686-023-01322-6>
- (13) Strasko, Elizabeth K.\*, Rebecca R. Piche\*, and **Ben F. Brammell**. 2023. Development and validation of PCR primers for detecting *Ambystoma texanum* (smallmouth salamander) from eDNA samples. Tennessee Journal of Herpetology 6:4-18. <https://www.tnherpsociety.org/copy-of-template-12>
- (12) Bell, Florene F.\*, Angie F. Flores\*, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow\*, Ronald B. Sams\*, David K. Peyton, and **Ben F. Brammell**. 2022. Development and validation of qPCR assays for use in eDNA detection of southern two-lined (*Eurycea cirrigera*) and northern dusky (*Desmognathus fuscus*) salamanders. Herpetological Conservation and Biology 17(2):398-412.
- (11) Guivas, Ramon M.\* and **Ben F. Brammell**. 2020. Evaluation of biomass and filtration method on eDNA detection of fantail darters (*Etheostoma flabellare*). International Journal of Zoology 3:1-7. <https://doi.org/10.1155/2020/4731686>
- (10) Sena, Kenton L., **Ben F. Brammell**, and S. Ray Smith. 2016. Converting hayfield to switchgrass increases small mammal relative abundance. Journal of the KY Academy of Science 77(1-2):11-18.

- (9) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2013. Lack of CYP1A responsiveness in species inhabiting chronically contaminated habitats: two varieties of resistance? *Comparative Biochemistry and Physiology, Part C* 52:2317-2322.
- (8) **Brammell, Ben F.** and Shawn M. Banks. 2011. Notes on the Crayfish of Blackburn Fork Watershed, Jackson and Putnam County, Tennessee. *Journal of the TN Academy of Science* 86:105-107.
- (7) **Brammell, Ben F.** and A.W. Wigginton. 2010. Differential gene expression in zebrafish (*Danio rerio*) following exposure to gaseous diffusion plant effluent and effluent receiving stream water. *American Journal of Environmental Sciences* 6 (3): 286-294.
- (6) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2010. Differential sensitivity of CYP1A to 3,3',4',4 – tetrachlorobiphenyl and benzo(a)pyrene in two *Lepomis* species. *Comparative Biochemistry and Physiology, Part C* 152:42-50.
- (5) **Brammell, Ben F.**, Scott J. McLain, James T. Oris, David J. Price, Wesley J. Birge and Adria A. Elskus. 2010. CYP1A Expression in Caged Rainbow Trout Discriminates Among Sites with Various Degrees of Polychlorinated Biphenyl Contamination. *Archives of Environmental Contamination and Toxicology* 58:772-782.
- (4) **Brammell, Ben F.**, Ian T. Struewing\*, David M. Klarer, Scott G. Lynn. 2009. An Evaluation of the Ichthyofauna of Old Woman Creek Estuary, a Unique Aquatic Resource. *Journal of Freshwater Ecology* 24:521-527.
- (3) Craig E. Wheelock, Kai Eder, Inge Werner, Huazhang Huang, Paul D. Jones, **Benjamin F. Brammell**, Adria A. Elskus, Inge Werner, Bruce D. Hammock. 2005. Individual variability in esterase activity and CYP1A levels in Chinook salmon (*Oncorhynchus tshawytscha*) exposed to esfenvalerate and chlorpyrifos. *Aquatic Toxicology* 74:172-192.
- (2) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. Apparent lack of CYP1A response to high PCB body burdens in fish from a chronically contaminated PCB site. *Marine Environmental Research* 58:251-255.
- (1) Shepherd, Brian. S., Katherine Drennon, **Ben F. Brammell**, Adria A. Elskus. 2002. Effects of Aroclor 1254 on endocrine physiology in the channel catfish (*Ictalurus punctatus*). In Endocrine Disruptors: Mechanisms and Impacts. M. Vijayan, A. Hontel and D. Mackinlay eds. pp 63-68.

#### **NON-SCIENTIFIC WORKS**

*Jesus and the Genome: The Intersection of Christology and Biology* (Cambridge University Press, forthcoming 2024). Mike L. Peterson, Timothy Pawl, and **Ben F. Brammell**. An exploration of the intersection of evolutionary biology, as understood through modern genomics, and Christianity.

#### **GRANTS AND FUNDING** (\$56,135 since joining Asbury, Career Total=\$909,535)

- \$19,533. United States Geological Survey, 104b Grant Program. Kenton L. Sena and **Ben F. Brammell**. 2023. Evaluating the effects of ecological restoration efforts on stream health in the inner Bluegrass (through the use of eDNA metabarcoding of aquatic invertebrate communities).
- \$7,102. Great Smoky Mountains Conservation Association, Carlos C. Campbell Memorial Fellowship. **Ben Brammell**, Jarrett Johnson, and Elizabeth Strasko. 2023. Assessment of salamander distribution in the GSMNP through the use of eDNA metabarcoding with an emphasis on a reexamination of the distribution of the rare salamander, *E. junaluska*.
- \$500. Asbury University, internal research grant. **Ben Brammell**. 2022. Assessment of biodiversity in freshwater lotic Galápagos habitats (San Cristóbal) through the use of eDNA metabarcoding.
- \$500. Asbury University, internal research grant. **Ben Brammell**. 2021. Detecting fossorial salamanders using eDNA; development and validation of quantitative and end-point PCR assays for the detection of five species of Ambystomid salamanders.
- \$3,000. Lilly Fellows Program Small Grant. Dan Strait and **Ben Brammell**. 2021. Boundaries and Horizons: Engaging Faith, Science, and Humanities. Provided funds to support an on campus symposium on Faith and Science.
- \$500. Asbury University, internal research grant. **Ben Brammell**. 2019. Use of eDNA to detect salmonids and amphibian species in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon National Park.

- \$10,000. Daniel Strait and **Ben Brammell**. 2019. Funds accompanying selection as Lilly Faculty Fellows designated for the development of a Lilly Faculty Fellow program on Asbury's campus.
- \$500. Asbury University, internal research grant. **Ben Brammell**. 2018. Use of eDNA to detect salmonids and amphibian species in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon National Park.
- \$3,000. Kentucky Academy of Science. **B. F. Brammell**. 2018. Use of environmental DNA in detection of an endangered species in remote, high elevation habitats in the Sierra Nevada.
- \$500. Asbury University, internal research grant. **Ben Brammell**. 2017. Use of environmental DNA to determine the distribution of *Rana sierrae* and *Rana muscosa* (mountain yellow legged frog species complex) along a 70 mile transect of the Pacific Crest Trail (Kings Canyon National Park, CA).
- \$5,000. Kentucky Water Resource Research Institute. David K. Peyton and **Ben F. Brammell**. 2012. Development and calibration of biomarkers in native sunfish (*Lepomis spp.*) for use in detection of endocrine active compounds.
- \$5,000. Kentucky Water Resource Research Institute. **Ben F. Brammell**. 2011. Use of gene expression in longear sunfish (*Lepomis megalotis*) and green sunfish (*Lepomis cyanellus*) as a biomarker of polychlorinated biphenyl and metal exposure.
- \$440,000. Commonwealth of Kentucky, Environmental and Public Protection Cabinet, Department of Environmental Protection, Division of Waste Management. 2010. Wigginton, A.W. and **B.F. Brammell**. Genetic markers and ecological and chemical assessment of low level environmental impact at the Paducah Gaseous Diffusion Plant, Paducah, McCracken County, Kentucky.
- \$412,000. Commonwealth of Kentucky, Environmental and Public Protection Cabinet, Department of Environmental Protection, Division of Waste Management. 2008. Wigginton, A.W. and **B.F. Brammell**. Assessment of ecological conditions compared to environmental sampling at the Paducah Gaseous Diffusion Plant with a reassessment of previous analysis.
- \$1,000. Morehead State University. 2006. Wymer, C. L., R.D. Boram, M.L. Wallace, J. O'Keefe, **B.F. Brammell**, and J.M. Whitworth. Evaluation of the understanding of foundational science concepts by pre-service elementary school teachers at Morehead State University.
- \$800. Kentucky Academy of Science. **Ben F. Brammell**. 2004. Linking chemical tolerance to reproductive fitness in fish from contaminated environments.
- \$600. Sigma Xi. **Ben F. Brammell**. 2003. Effects of Pollution Resistance on Polychlorinated Biphenyl Mediated Endocrine Disruption.

**PRESENTATIONS AT PROFESSIONAL MEETINGS** (75 presentations with 45 undergraduate coauthors since joining Asbury, 31 presentations prior to joining Asbury)

- (75) Brown, Hope A. Brown, Abigail K. Fletcher, Sara A. Brewer, Joanne Jung, Mary R. Johnson, Cierla V. McGuire, Malinda A. Stull, and **Ben F. Brammell**. 2023. Development of environmental DNA (eDNA) qPCR assays for the detection of darter species: Significance of phylogeography in assay efficacy. 108<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2023, Northern KY Univ. Highland Heights, KY. Poster.
- (74) Brewer, Sara A., Cy L. Mott, Rebecca R. Piche, Florene G. Bell, Elizabeth K. Strasko, Jarrett R. Johnson, Kenton L. Sena, Thomas A. Maigret, **Ben. F. Brammell**. 2023. eDNA detection of four-toed salamanders (*Hemidactylium scutatum*): Significance of mitochondrial evolution rates in assay development. 108<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2023, Northern KY Univ. Highland Heights, KY. Poster.
- (73) **Brammell, Ben F.**, Sara A. Brewer, Elizabeth K. Strasko, Jarrett R. Johnson and Madeline Cox. 2023. eDNA monitoring of a rare salamander: The use of eDNA in detection of *Eurycea junaluska* in the Great Smoky Mountains National Park. 108<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2023, Northern KY Univ. Highland Heights, KY. Poster.
- (72) Brewer, Sara A. Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, and **Ben F. Brammell**. 2023. The use of eDNA in detection of Northern Red (*Pseudotriton ruber*) and Spring (*Gyrinophilus porphyriticus*) Salamanders: Development and validation of quantitative PCR assays with notes on phylogeographic effectiveness. 108<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2023, Northern KY Univ. Highland Heights, KY. Poster.

- (71) Brammell, Ben F., Sara A. Brewer, Elizabeth K. Strasko, Jarrett R. Johnson and Madeline Cox. 2023. The search for a rare salamander: the use of eDNA in detection of *Eurycea junaluska* in the Great Smoky Mountains National Park. Annual meeting of the Tennessee Herpetological Society, Sept. 28-29<sup>th</sup>, 2023, Union City, TN. Poster.
- (70) Brewer, Sara A., Cy L. Mott, Rebecca R. Piche, Florene G. Bell, Elizabeth K. Strasko, Jarrett R. Johnson, Kenton L. Sena, Thomas A. Maigret, **Ben F. Brammell**. 2023. An improved assay for eDNA detection of four toed salamanders (*Hemidactylium scutatum*): significance of mitochondrial genome region in primer development. Annual meeting of the Tennessee Herpetological Society, Sept. 28-29<sup>th</sup>, 2023, Union City, TN. Poster.
- (69) Brewer, Sara A. Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, and **Ben F. Brammell**. 2023. eDNA detection of northern red (*Pseudotriton ruber*) and spring (*Gyrinophilus porphyriticus*) salamanders in eastern Kentucky streams. Kentucky Water Resources Annual Symposium, September 15, 2023, Lexington, KY. Poster.
- (68) Brewer, Sara A. Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, and **Ben F. Brammell**. 2022. eDNA detection of northern red (*Pseudotriton ruber*), spring (*Gyrinophilus porphyriticus*), and mud (*Pseudotriton ruber*) salamanders in eastern Kentucky streams. 107<sup>th</sup> Annual Kentucky Academy of Sci. Meeting, Nov. 10-12, 2022, Morehead State Univ., Morehead, KY. Poster.
- (67) Fletcher, Abigail K., Mary R. Johnson, Cierla V. McGuire, Sara A. Brewer, Joanne Jung, Malinda A. Stull, and **Ben F. Brammell**. 2022. eDNA detection of darters (Percidae: *Etheostomatinae*) in central Kentucky streams. 107<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 10-12, 2022, Morehead State Univ., Morehead, KY. Poster.
- (66) Jeffrey, Brendan C., Sara A. Brewer, Florene G. Bell, and **Ben F. Brammell**. 2022. eDNA detection of four toed salamanders (*Hemidactylium scutatum*): significance of mitochondrial genome region in primer development. 107<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 10-12, 2022, Morehead State Univ., Morehead, KY. Poster.
- (65) Brewer, Sara A. Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, and **Ben F. Brammell**. 2022. Use of eDNA in the detection of semiaquatic salamanders in eastern Kentucky streams. Meeting of the Tennessee Herpetological Society, Sept. 29-30<sup>th</sup>, 2022, Austin Peay Univ., Clarksville, TN. Poster.
- (64) Jeffrey, Brendan C., Sara A. Brewer, Florene G. Bell, and **Ben F. Brammell**. 2022. Development and validation of qPCR assays for detection of four toed salamanders (*Hemidactylium scutatum*). Meeting of the Tennessee Herpetological Society, Sept. 29-30<sup>th</sup>, 2022, Austin Peay Univ., Clarksville, TN. Poster.
- (63) Brewer, Sara A. Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, and **Ben F. Brammell**. 2022. Development and validation of qPCR assays for use in eDNA detection of four species of semiaquatic salamanders. Kentucky Water Resources Annual Symposium, September 18, 2022, Lexington, KY. Poster.
- (62) Fletcher, Abigail K., Mary R. Johnson, Cierla V. McGuire, Sara A. Brewer, Joanne Jung, Malinda A. Stull, and **Ben F. Brammell**. 2022. Development of eDNA protocols for detection of four darter (Percidae: *Etheostomatinae*) species in central Kentucky streams. Kentucky Water Resources Annual Symposium, September 18, 2022, Lexington, KY. Poster.
- (61) **Brammell, Ben F.**, Cierla M. Sams, Elizabeth K. Strasko, Rebecca R. Piche, Cy L. Mott, Malinda A. Stull. 2021. Detecting fossorial salamanders using eDNA; development and validation of quantitative and end-point PCR assays for the detection of five species of Ambystomid salamanders. 2021 Meeting of the Tennessee Herpetological Society, Dec. 6-7, 2021, Chattanooga, TN. Poster.
- (60) Strasko, Elizabeth K., Rebecca R. Piche, and **Ben F. Brammell**. 2021. Development and validation of qPCR assays for use in eDNA detection of *Ambystoma texanum* and *Ambystoma talpoideum*. 2021 Meeting of the Tennessee Herpetological Society, Dec. 6-7, 2021, Chattanooga, TN. Poster.
- (59) Piche, Rebecca R., Eliza M. Crawford, and **Ben F. Brammell**. 2021. Multiple methods of detection of semiaquatic salamanders in small lotic systems: A comparison of eDNA and leaf liter bags. 2021 Meeting of the Tennessee Herpetological Society, Dec. 6-7, 2021, Chattanooga, TN. Poster.
- (58) Piche, Rebecca R., Eliza M. Crawford, and **Ben F. Brammell**. 2021. A comparison of detection methods for semiaquatic salamanders: eDNA and leaf liter bags. 106<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 5, 2021, Virtual presentation.

- (57) Strasko, Elizabeth K., Rebecca R. Piche, and **Ben F. Brammell**. 2021. Development and validation of qPCR assays for use in eDNA detection of *Ambystoma texanum*, *Ambystoma talpoideum*, and *Notophthalmus viridescens*. Annual Kentucky Academy of Science Meeting, Nov. 5, 2021, Virtual presentation.
- (56) Piche, Rebecca R. and **Ben F. Brammell**. 2021. Comparison of leaf litter bag and environmental DNA in detection of salamanders in Maywoods Environmental and Educational Laboratory. Kentucky Water Resources Annual Symposium, September 13, 2021, Lexington, KY. Poster.
- (55) Sams, Cierla M. Elizabeth K. Strasko, Rebecca R. Piche, Cy L. Mott, Malinda A. Stull, and **Ben F. Brammell**. 2021. Development and validation of qPCR assays for use in eDNA detection of *Ambystoma* species. Kentucky Water Resources Annual Symposium, September 13, 2021, Lexington, KY. Poster.
- (54) Day, Faith H., Rebecca R. Piche, and **Ben F. Brammell**. Effects of predation hazard on habitat selection of fathead minnows (*Pimephales promelas*). 106<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 6, 2020, Virtual presentation.
- (53) Bell, Florene G., Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, David K. Peyton and **Ben F. Brammell**. 2019. Seasonal detection of four salamander species using eDNA in eastern Kentucky streams. 105<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 1-2, 2019, Berea, KY. Poster.
- (52) Beery, Elle, S., Marvin S. Ruffner, and **Ben F. Brammell**. 2019. Development of eDNA detection tools for queen snakes (*Regina septemvittata*) and northern water snakes (*Nerodia sipedon*) in central Kentucky. 105<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 1-2, 2019, Berea, KY. Poster.
- (51) Peyton, David K., Bell, Florene G., and Ben F. Brammell. 2019. Verification of eDNA salamander detection using cloned amplicons. 105<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 1-2, 2019, Berea, KY. Poster.
- (50) Bell, Florene G., Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow and **Ben F. Brammell**. 2019. Use of eDNA to detect multiple salamander species in eastern Kentucky streams. Kentucky Water Resources Annual Symposium, March 25, 2019, Lexington, KY. Poster.
- (49) Guivas, Ramon A. Kyle T. Laufenburger and **Ben F. Brammell**. 2019. Evaluation of biomass and filtration method on eDNA detection of fantail darters (*Etheostoma flabellare*). Kentucky Water Resources Annual Symposium, March 25, 2019, Lexington, KY. Poster.
- (48) **Ben F. Brammell**, Sumathi Sankaran-Walters, Kayceline Deguzman, Chi Jing Leow, and Michael C. McGrann. 2018. Use of eDNA in a wilderness setting to detect multiple species of conservation interest. SEKI Science Symposium, Nov. 14-15, 2018, Three Rivers, CA. Poster.
- (47) Bell, Florene G., Angie F. Flores, Kenton L. Sena, Thomas Maigret, Chi Jing Leow and **Ben F. Brammell**. 2018. Use of eDNA to detect multiple salamander species in eastern Kentucky streams. 104<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 2-3, 2018, Bowling Green, KY. Poster.
- (46) Guivas, Ramon A. Kyle T. Laufenburger and **Ben F. Brammell**. 2018. Evaluation of biomass and filtration method on eDNA detection of fantail darters (*Etheostoma flabellare*). 104<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 2-3, 2018, Bowling Green, KY. Poster.
- (43) Leow, Chi Jing, Michael C. McGrann, Sumathi Sankaran-Walters, Christopher C. Pauley, Ronald B. Sams, Cierla V. McGuire, Malinda A. Stull, and **Ben F. Brammell**. 2018. Use of eDNA to detect salmonids and amphibian species in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon National Park, CA. 104<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 2-3, 2018, Bowling Green, KY. Poster.
- (42) Nesselroade, Andrew W., Sams, Ronnie B., Cierla V. McGuire, Malinda A. Stull and **Ben F. Brammell**. 2018. Seasonal fluctuations in salamander eDNA in central KY streams. Kentucky Water Resources Annual Symposium, March 19, 2018, Lexington, KY. Poster.
- (41) Guivas, Ramon A., Kyle T. Laufenburger, Mary R. Johnson, Cierla V. McGuire, Annessia L. Wood, Harold A. Brabon, Malinda A. Stull, and **Ben F. Brammell**. 2018. Relationship between fish biomass and eDNA in central Kentucky Streams. Kentucky Water Resources Annual Symposium, March 19, 2018, Lexington, KY. Poster.

- (40) Guivas, Ramon A., Kyle T. Laufenburger, Mary R. Johnson, Cierla V. McGuire, Annessia L. Wood, Harold A. Brabon, Malinda A. Stull, and **Ben F. Brammell**. 2017. Relationship between fish biomass and eDNA in central Kentucky Streams. 103<sup>rd</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2017, Murray, KY. Poster.
- (39) Nesselroade, Andrew W., David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour, Harold A. Brabon and **Ben F. Brammell**. 2017. Detection of *Percopsis omiscomaycus* (trout perch) using eDNA in eastern Kentucky streams. 103<sup>rd</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2017, Murray, KY. Poster.
- (38) Nesselroade, Andrew W., Sams, Ronnie B., Cierla V. McGuire, Malinda A. Stull and **Ben F. Brammell**. 2017. Seasonal fluctuations in salamander eDNA in central KY streams. 103<sup>rd</sup> Annual Kentucky Academy of Science Meeting, Nov. 3-4, 2017, Murray, KY. Poster.
- (37) Hughes, Mitchell, **Ben Brammell** and Andrew Wigginton. 2017. Using eDNA to Determine the Presence of the Streamside Salamander, Hellbender, and the Rainbow Darter in a Kentucky Stream. EKV Research Symposium, Oct. 27, 2017.
- (36) Nesselroade, Andrew W., Harold A. Brabon, David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour, and **Ben F. Brammell**. 2017. Use of eDNA in detection of trout perch (*Percopsis omiscomaycus*) in eastern Kentucky streams. Kentucky Water Resources Annual Symposium, March 20, 2017, Lexington, KY. Poster.
- (35) Sams, Ronnie B., Cierla V. McGuire, Andrew M. Nesselroade, Malinda A. Stull and **Ben F. Brammell**. 2017. Seasonal fluctuations in salamander eDNA in central KY streams. Kentucky Water Resources Annual Symposium, March 20, 2017, Lexington, KY. Poster.
- (34) Sams, Ronnie B., Cierla V. McGuire, Andrew M. Nesselroade, Malinda A. Stull and **Ben F. Brammell**. 2016. Seasonal variation in salamander eDNA in central KY streams. 102<sup>nd</sup> Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2016, Louisville, KY. Poster.
- (33) Pauley, Christopher C., Michael C. McGrann, Ronald B. Sams, Cierla V. McGuire, Malinda A. Stull, Brett J. Furnas, Brittany A. Joe, and **Ben F. Brammell**. 2016. Detection of species using eDNA in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon National Park, CA.. 102<sup>nd</sup> Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2016, Louisville, KY. Poster.
- (32) Bain, Ashton M., Robert L. Washburn, **Ben F. Brammell**, and Malinda A. Stull. 2016. Sequencing cytochrome b from tissue and swab collected DNA from central Kentucky salamander species. 102<sup>nd</sup> Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2016, Louisville, KY. Poster.
- (31) Brabon, Harold A., David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour, and **Ben F. Brammell**. 2016. Use of eDNA in detection of trout perch (*Percopsis omiscomaycus*) in eastern Kentucky streams. Kentucky Water Resources Annual Symposium, March 28, 2016, Lexington, KY. Poster.
- (30) Sams, Ronnie B., Cierla V. McGuire, and **Ben F. Brammell**. 2015. Seasonal fluctuations in salamander eDNA in small, central KY streams. Kentucky Water Resources Annual Symposium, March 28, 2016, Lexington, KY. Poster.
- (29) Pauley, Christopher C., Michael C. McGrann, Ronald B. Sams, Cierla V. McGuire, Malinda A. Stull, Brett J. Furnas, Brittany A. Joe, and **Ben F. Brammell**. 2015. Use of eDNA to detect multiple species in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon Nation Park, CA. 101<sup>st</sup> Annual Kentucky Academy of Science Meeting, Nov. 13-14, 2015, Highland Heights, KY. Poster.
- (28) Brabon, Harold A., David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour, and **Ben F. Brammell**. 2015. Use of eDNA in detection of trout perch (*Percopsis omiscomaycus*) in eastern Kentucky streams. 101<sup>st</sup> Annual Kentucky Academy of Science Meeting, Nov. 13-14, 2015, Highland Heights, KY. Poster.
- (27) McGuire, Cierla V., Malinda A. Stull, and **Ben F. Brammell**. 2015. Use of eDNA to detect salamander species in lentic habits in central Kentucky (Jessamine County). 101<sup>st</sup> Annual Kentucky Academy of Science Meeting, Nov. 13-14, 2015, Highland Heights, KY. Poster.
- (26) Sams, Ronnie B., Cierla V. McGuire, and **Ben F. Brammell**. 2015. Seasonal fluctuations in salamander eDNA in small, central KY streams. 101<sup>st</sup> Annual Kentucky Academy of Science Meeting, Nov. 13-14, 2015, Highland Heights, KY. Poster.

- (25) Johnson, Mary R., Annessia L. Wood, Cierla V. McGuire, Harold A. Brabon, Malinda A. Stull, Ashton M. Bain, and **Ben F. Brammell**. 2015. Use of eDNA to detect darter species in central Kentucky streams. Kentucky Water Resources Annual Symposium, March 9, 2015, Lexington, KY. Poster.
- (24) Sams, Ronald B., Christopher C. Pauley, Mary R. Johnson, Malinda A. Stull, Andrew J. Wigginton, and **B.F. Brammell**. 2015. Use of eDNA in hellbender (*Cryptobranchus alleganiensis*) detection. Kentucky Water Resources Annual Symposium, March 9, 2015, Lexington, KY. Poster.
- (23) Johnson, Mary R., Cierla V. McGuire, Annessia L. Wood, Harold A. Brabon, Malinda A. Stull, and **Ben F. Brammell**. 2014. Development of eDNA protocols for detection of four darter species in central Kentucky streams. 100<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 15, 2014, Lexington, KY. Poster.
- (22) Pauley, Christopher C., Ronald B. Sams, Mary R. Johnson, Cierla V. McGuire, Malinda A. Stull, Andrew J. Wigginton, and **B.F. Brammell**. 2014. Development of an eDNA protocol for detection of hellbenders (*Cryptobranchus alleganiensis*) in central Kentucky streams. 100<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 15, 2014, Lexington, KY. Poster.
- (21) Adams, Ben M. and **Ben F. Brammell**. 2014. Effects of atrazine on the chemical alarm cue response in longear sunfish (*Lepomis megalottis*). Kentucky Water Resources Annual Symposium, March 10, 2014, Lexington, KY. Poster.
- (20) Adams, Ben M. and Ben F. Brammell. 2013. Effects of atrazine on the chemical alarm cue response in longear sunfish (*Lepomis megalottis*). 99<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 9, 2013, Morehead State University, Morehead, KY. Poster.
- (19) Burr, Samantha J., Joshua M. Lusk, **Ben F. Brammell**, and David K. Peyton. 2013. Use of eDNA to detect non-native species in small lentic systems. 99<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 9, 2013, Morehead State University, Morehead, KY. Poster.
- (18) Johnson, Matthew D., **Ben F. Brammell**, David K. Peyton, Ben M. Adams, and Andrew J. Wigginton. 2013. Gene expression in sunfish as a biomarker of contaminant exposure. Kentucky Water Resources Annual Symposium, March 18, 2013, Lexington, KY. Poster.
- (17) Adams, Ben M., Demetria M. Todd, and **Ben F. Brammell**. 2013. Effects of atrazine on the chemical alarm cue response in centrarchid species. Kentucky Water Resources Annual Symposium, March 18, 2013, Lexington, KY. Poster.
- (16) Adams, Ben M., Demetria M. Todd, and **Ben F. Brammell**. 2012. Effects of atrazine on the chemical alarm cue response in centrarchid species. Annual Kentucky Academy of Science Meeting, Oct. 19-20, 2012, Eastern Kentucky University, Richmond, KY. Poster.
- (15) Cox, Jordan, A., Graham H. Howell, and **Ben F. Brammell**. 2012. The Fishes of Hickman and Jessamine Creek Watershed. Annual Kentucky Academy of Science Meeting, Oct. 19-20, 2012, Eastern Kentucky University, Richmond, KY. Poster.
- (14) Johnson, Matthew D., **Ben F. Brammell**, David K. Peyton, Ben M. Adams, and Andrew J. Wigginton. 2012. Gene expression in sunfish as a biomarker of contaminant exposure. Annual Kentucky Academy of Science Meeting, Oct. 19-20, 2012, Eastern Kentucky University, Richmond, KY. Poster.
- (13) Kirtland, Marina D., Meredith Eckstein, David K. Peyton, **Ben F. Brammell**, Andrew J. Wigginton, and Scott G. Lynn. Gene expression in native sunfish as a biomarker of contaminant exposure. Annual Kentucky Academy of Science Meeting, Oct. 19-20, 2012, Eastern Kentucky University, Richmond, KY. Poster.
- (12) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, Scott G. Lynn, and Andrew J. Wigginton. 2011. Use of gene expression in caged zebrafish (*Danio rerio*) and native sunfish (*Lepomis*) as a biomarker of contaminant exposure. 97<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2011, Murray State University, Murray, KY. Poster.
- (11) Todd, Demetria M. and **Brammell, Ben F.** 2011. Chemical alarm cue response in two centrarchid species exhibiting varying degrees of piscivory. Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2011, Murray State University, Murray, KY. Poster.
- (10) Engler, Matt W. and **Ben F. Brammell**. 2011. A survey of the crayfish of the Hickman and Jessamine Creek watersheds. Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2011, Murray State University, Murray, KY. Poster.

- (9) Howell, Graham H. and **Ben F. Brammell**. 2011. The Fishes of the Jessamine Creek Watershed. Annual Kentucky Academy of Science Meeting, Nov. 4-5, 2011, Murray State University, Murray, KY. Poster.
- (8) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, Scott G. Lynn, and Andrew J. Wigginton. 2011. Gene expression in caged zebrafish (*Danio rerio*) and native sunfish (*Lepomis*) as biomarkers of contaminant exposure. Annual Meeting of North American SETAC, Nov. 13-17, 2011, Boston, Massachusetts. Poster.
- (7) Wigginton, Andrew J., Rodney Umbstead, John Walker, and **Ben F. Brammell**. 2011. Benthic Macroinvertebrate Metrics Correlated with Heptageniid Mayfly Whole Body Metal Concentrations in a Stream Near a Uranium Enrichment Plant. Annual Meeting of North American SETAC, Nov. 13-17, 2011, Boston, Massachusetts. Poster.
- (6) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. Differential gene expression in zebrafish and native sunfish following exposure to gaseous diffusion plant effluent. Kentucky Water Resources Annual Symposium, March 21, 2011, Lexington, KY. Poster.
- (5) Andrew J. Wigginton, Li Yinglei, **Ben F. Brammell**, and Arne C. Bathke. 2011. Long term monitoring and evaluation of pollutant levels at a gaseous diffusion plant. Kentucky Water Resources Annual Symposium, March 21, 2011, Lexington, KY. Poster.
- (4) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2010. Differential gene expression as a biomarker of contaminant exposure. 96<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 12-13, 2010, Western Kentucky University, Bowling Green, KY. Poster.
- (3) Walker, John, **B.F. Brammell** and A.J. Wigginton. 2010. A Comparison of Aquatic Benthic Macroinvertebrate communities found in a stream near the Paducah Gaseous Diffusion Plant (PGDP) in western Kentucky. 96<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 12-13, 2010, Western Kentucky University, Bowling Green, KY. Poster.
- (2) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2010. Differential gene expression as a biomarker of contaminant exposure. 96<sup>th</sup> Annual Meeting of North American SETAC, Nov. 7-10, 2010, Portland, Oregon. Poster.
- (1) Wigginton, A.J. and **B.F. Brammell**. 2010. Use of aquatic macroinvertebrate ecological surveys in assessing impact at the Paducah Gaseous Diffusion Plant: 20 years ago and today 96<sup>th</sup> Annual Meeting of North American SETAC, Nov. 7-10, 2010, Portland, Oregon. Poster.

*Prior to Asbury*

- (31) **Brammell, Ben F.** and Andrew J. Wigginton. 2010. Physiological alterations in Daphnia (*Daphnia pulex*) and Zebrafish (*Danio rerio*) following exposure to effluent and effluent containing stream water from a gaseous diffusion plant. Kentucky Water Resources Annual Symposium, March 23, 2010, Lexington, KY. Poster.
- (30) **Brammell, Ben F.** and Andrew J. Wigginton. 2009. Physiological alterations in Daphnia (*Daphnia pulex*) and Zebrafish (*Danio rerio*) following exposure to effluent and effluent containing stream water from a gaseous diffusion plant. 95<sup>th</sup> Annual Meeting of North American SETAC, Nov. 19-23, 2009, New Orleans, Louisiana. Poster.
- (29) Wigginton, Andrew, Danny Branham, Alissa Carlton, and **Ben Brammell**. 2009. Heavy metal accumulation in Heptageniid mayflies near a gaseous diffusion plant near Paducah, Kentucky. 95<sup>th</sup> Annual Meeting of North American SETAC, Nov. 19-23, 2009, New Orleans, Louisiana. Poster.
- (28) **Brammell, Ben F.** and Adria A. Elskus. 2009. Linking chemical tolerance to reproductive fitness: initial results of *in vitro* experiments examining pollutant effects in teleost primary cell culture. Kentucky Water Resources Annual Symposium, March 2, 2009, Lexington, KY. Poster.
- (27) **Brammell, Ben F.** and Adria A. Elskus. 2008. Linking chemical tolerance to reproductive fitness: initial results of *in vitro* experiments examining pollutant effects in teleost primary cell culture. 94<sup>th</sup> Annual Kentucky Academy of Science Meeting, Oct. 31 - Nov. 1, 2008, University of Kentucky, Lexington, KY. Poster.



- (26) **Brammell, Ben F.**, Eleana M. Harmel-Laws, and Adria A. Elskus. 2007. Effects of Polybrominated Diphenyl Ethers on Fish Physiology and Development. Annual Meeting of the North Atlantic Chapter SETAC, June 15, 2007, Bristol, RI. Platform.
- (25) **Brammell, Ben F.**, Stephen McCormick, Amy Moeckel, Eleana M. Harmel-Laws, and Adria A. Elskus. 2006. Effects of Polybrominated Diphenyl Ethers on Fish Physiology and Development. 92<sup>nd</sup> Annual Kentucky Academy of Science Meeting, Nov. 9-11, 2006, Morehead, KY. Poster.
- (24) **Brammell, Ben F.** CYP1A Expression in *Lepomis* Species Following PCB and PAH Exposure. 2005. 91<sup>st</sup> Annual Kentucky Academy of Science Meeting, Nov. 10-12, 2005, Eastern Kentucky University, Richmond, KY. Poster.
- (23) **Brammell, Ben F.**, Eleana M. Harmel, John A. Hitron, Xabier Arzuaga, David J. Price, Wesley J. Birge, and Adria A. Elskus, 2005. CYP1A Expression in *Lepomis* Species Following PCB and PAH Exposure. Kentucky Water Resources Annual Symposium, March 3, 2005, Lexington, KY. Poster.
- (22) **Brammell, Ben F.**, Eleana M. Harmel, John A. Hitron, Xabier Arzuaga, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. CYP1A Expression in *Lepomis* Species Following PCB and PAH Exposure. Fourth SETAC World Congress, Nov. 13-18, 2004, Portland, Oregon. Poster.
- (21) **Brammell, Ben F.**, Eleana M. Harmel, John A. Hitron, Xabier Arzuaga, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. CYP1A Expression in *Lepomis* Species Following PCB and PAH Exposure. 90<sup>th</sup> Annual Kentucky Academy of Science Meeting, Nov. 4-6, 2004, Murray, KY. Poster.
- (20) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. Pollutant response in species inhabiting chronically contaminated habitats. Annual Meeting of Ohio Valley Chapter SETAC, May 14, 2004, Columbus, OH. Platform.
- (19) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. Pollutant response in species inhabiting chronically contaminated habitats. Center for Ecology, Evolution, and Biology Research Symposium, University of KY, Lexington, KY, May 14, 2004, Lexington, KY. Platform.
- (18) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2004. Pollutant response in species inhabiting chronically contaminated habitats: two varieties of resistance? Kentucky Water Resources Annual Symposium, Feb. 19, 2004, Lexington, KY. Platform.
- (17) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2003. Pollutant response in species inhabiting chronically contaminated habitats: two varieties of resistance? Annual Meeting of North American SETAC, Nov. 8-13, 2003, Austin, Texas. Poster.
- (16) Wigginton, Andrew J., **Ben F. Brammell**, Joeseeph R. Shaw, and Wesly J. Birge. 2003. Variation in the toxicity of cadmium between four crayfish species in two genera. Annual Meeting of North American SETAC, Nov. 9-14, 2003, Austin, Texas. Poster.
- (15) Wigginton, Andrew J., **Ben F. Brammell**, Joeseeph R. Shaw, and Wesly J. Birge. 2003. Variation in the toxicity of cadmium between four crayfish species in two genera. 89<sup>th</sup> Annual Meeting of Kentucky Academy of Science, Nov. 6-8, 2003, Bowling Green, Kentucky. Poster.
- (14) **Brammell, Ben F.**, David J. Price, Wesley J. Birge, Adria A. Elskus. 2003. Lack of CYP1A response to high PCB body burdens in fish from a chronically contaminated PCB site: evidence of acquired resistance? Annual Meeting of KAS, Nov. 6-8, 2003, Bowling Green, Kentucky. Poster.
- (13) **Brammell, Ben F.**, J. Scott McClain, James T. Oris, David J. Price, Wesly J. Birge, and Adria A. Elskus. 2003. Use of caged rainbow trout and field collected fish as biomonitoring tools for evaluating the effectiveness of a PCB remediation project. 12<sup>th</sup> International Pollutant Response in Marine Organisms Symposium (PRIMO), May 9-13, 2003, Safety Harbor, FL. Poster.
- (12) **Brammell, Ben F.**, J. Scott McClain, James T. Oris, and Adria A. Elskus. 2003. Use of rainbow trout as a biomonitor for evaluating the effectiveness of a PCB remediation project. Kentucky Water Resources Annual Symposium, Feb. 20, 2003, Lexington, KY. Platform.
- (11) **Brammell, Ben F.**, David J. Price, Xabier Arzuaga, Wesley J. Birge, and Adria Elskus. 2003. CYP1A expression in longear sunfish as a biomarker of PCB exposure. Kentucky Water Resources Annual Symposium, Feb. 20, 2003, Lexington, KY. Platform.
- (10) Wigginton, Andrew J., **Ben F. Brammell**, Joeseeph R. Shaw, and Wesly J. Birge. 2003. Variation in the toxicity of cadmium between two related crayfish species. Kentucky Water Resources Annual Symposium, Feb. 20, 2003, Lexington, KY. Poster.

- (9) **Brammell, Ben F.**, David J. Price, Xabier Arzuaga, Wesley J. Birge, and Adria Elskus. 2002. CYP1A expression in longear sunfish as a biomarker of PCB exposure. Annual Meeting of North American Society of Environmental Toxicology and Chemistry (SETAC), Nov. 16-20,2002, Salt Lake City, Utah. Poster.
- (8) **Brammell, Ben F.**, J. Scott McClain, James T. Oris, and Adria A. Elskus. 2002. Use of rainbow trout as a biomonitor for evaluating the effectiveness of a PCB remediation project. Annual Meeting of North American SETAC, Nov. 16-20,2002, Salt Lake City, Utah. Poster.
- (7) Wigginton, Andrew J., **Ben F. Brammell**, Joseph R. Shaw, and Wesly J. Birge. 2002. Variation in the toxicity of cadmium between two related crayfish species. Annual Meeting of North American SETAC, Nov. 16-20,2002, Salt Lake City, Utah. Poster.
- (6) Shepherd, Brian S., Katherine D. Drennon, **Ben F. Brammell** and Adria A. Elskus. 2002. Effects of Arochlor 1254 on endocrine physiology in the channel catfish (*Ictalurus punctatus*). International Congress on the Biology of Fishes (ICBF), July 21-26, 2002, VanCouver, British Columbia. Platform.
- (5) Drennon, Katherine D., **Ben F. Brammell**, Adria Elskus and Brian S. Shepherd. 2002. Environmental stressors and plasma growth hormone (GH) levels in the channel catfish (*Ictalurus punctatus*). Annual Meeting of Ohio Valley Conference SETAC Chapter, May 16-17, 2002, University of Louisville, Louisville, KY. Poster.
- (4) **Brammell, Ben F.** and S. Bradford Cook. 2000. An assessment of brook trout restoration efforts in the Great Smoky Mountains National Park. Department of Biological Sciences, Tennessee Technological University, Cookeville, TN. Departmental Seminar.
- (3) **Brammell, Ben F.** and S. Bradford Cook. 2000. Assessment of brook trout restoration efforts in two Great Smoky Mountains National Park streams. East Coast Trout Workshop, June 6-8, 2000, Frostburg, Maryland. Platform.
- (2) **Brammell, Ben F.** and S. Bradford Cook. 2000. Assessment of brook trout restoration efforts in two Great Smoky Mountains National Park streams. Annual Meeting of Tennessee Chapter of the American Fisheries Society Meeting, March 29-31, 2000, Fall Creek Falls State Park, Tennessee. Platform.
- (1) **Brammell, Ben F.** and S. Bradford Cook. 2000. Assessment of brook trout restoration efforts in two Great Smoky Mountains National Park streams. Annual Meeting of Southern Division of the American Fisheries Society, Feb. 3-6, 2000, Savannah, Georgia. Platform.

**PUBLISHED GENBANK SEQUENCES** (30, all since joining Asbury)

- (30) Sara A. Brewer, Rebecca R. Piche, Florene G. Bell, Angie F. Flores, Kenton L. Sena, Thomas A. Maigret, Chi Jing Leow, Jung, Joanne, and **Ben F. Brammell**. 2023. *Pseudotriton ruber ruber* cytochrome b, partial cds, 861 BP, GB Accession # OQ376719
- (29) Strasko, Elizabeth K., Jarrett R. Johnson, and **Ben F. Brammell**. 2022. *Ambystoma tigrinum* cytochrome b, partial cds, 778 BP, Submission #OM289825
- (28) Strasko, Elizabeth K., Jarrett R. Johnson, and **Ben F. Brammell**. 2022. *Ambystoma tigrinum* cytochrome b, partial cds, 782 BP, Submission #OM289824
- (27) Strasko, Elizabeth K., Jarrett R. Johnson, Rebecca R. Piche, and **Ben F. Brammell**. 2022. *Ambystoma texanum* cytochrome b, partial cds, 746 BP, Accession # OM236537
- (26) **Brammell, Ben F.**, Elizabeth K. Strasko, and Rebecca R. Piche. 2021. *Ambystoma barbouri* cytochrome b, partial cds, 935 BP, Accession # OL456142
- (25) Strasko, Elizabeth K., Rebecca R. Piche, Jarrett R. Johnson, and **Ben F. Brammell**. 2021. *Ambystoma tigrinum* cytochrome b (cytb), partial cds, 769 BP, Accession # OL456143
- (24) Sams, Cierla M., Robert Washburn, Rebecca R. Piche, Elizabeth K. Strasko, and **Ben F. Brammell**. 2021. *Ambystoma barbouri* cytochrome b, partial cds, 337 BP, Accession #OK040169
- (23) Piche, Rebecca R., Elizabeth K. Strasko, Cy L. Mott, and **Ben F. Brammell**. 2021. *Notophthalmus viridescens* cytochrome b (cytb), partial cds, 272 BP, Accession # MZ962319
- (22) Strasko, Elizabeth K., Rebecca R. Piche, Mary E. Johnson, and **Ben F. Brammell**. 2021. *Ambystoma tigrinum* cytochrome b (cytb), partial cds, 770 BP, Accession # MZ962317
- (21) Strasko, Elizabeth, K., Rebecca R. Piche, Cy L. Mott, and **Ben F. Brammell**. 2021. *Ambystoma jeffersonianum* cytochrome b (cytb), partial cds, 749 BP, Accession # MZ962318

- (20) McGuire, Cierla V., Ronald B. Sams, Malinda A. Stull, and **Ben F. Brammell**. 2021. *Ambystoma maculatum* cytochrome b (cytb), partial cds, 411 BP, Accession # MZ485477
- (19) Bell, Florene G., Angie F. Flores, Chi Jing Leow, Kenton L. Sena, Thomas A. Maigret, and **Ben F. Brammell**. 2021. *Desmognathus fuscus* cytochrome b (cytb), partial cds, 633 BP, Accession # MZ485476
- (18) Bell, Florene G., Angie F. Flores, Chi Jing Leow, Kenton L. Sena, Thomas A. Maigret, and **Ben F. Brammell**. 2021. *Eurycea cirrigera* cytochrome b (cytb), partial cds, 380 BP, Accession # MZ485475
- (17) Bell, Florene G., Angie F. Flores, Chi Jing Leow, Kenton L. Sena, Thomas A. Maigret, and **Ben F. Brammell**. 2021. *Gyrinophilus porphyriticus* cytochrome b (cytb), partial cds, 363 BP, Accession # MZ507696
- (16) Bell, Florene G., Angie F. Flores, Chi Jing Leow, Bret D. Kuss, and **Ben F. Brammell**. 2021. *Pseudotriton montanus* cytochrome b (cytb), partial cds, 839 BP, Accession # MZ507697
- (15) **Brammell, Ben F.** and Ramon A. Guivas. 2021. *Desmognathus monticola* cytochrome b (cytb), partial cds, 364 BP, Accession # MZ418126
- (14) **Brammell, Ben F.**, Mary R. Johnson, Ronald B. Sams, Cierla V. McGuire. 2015. *Etheostoma caeruleum* cytochrome b (cytb) partial cds. Accession # KT880220.
- (13) **Brammell, Ben F.**, Mary R. Johnson, Cierla V. McGuire, and Ronald B. Sams. 2015. *Etheostoma flabellare* cytochrome b (cytb) partial cds. Accession # KT880219.
- (12) **Brammell, Ben F.**, Mary R. Johnson, Ronald B. Sams, Christopher C. Pauley, and Cierla V. McGuire. 2015. *Etheostoma blennioides* cytochrome b (cytb) partial cds. Accession # KT880218.
- (11) **Brammell, Ben F.**, Mary R. Johnson, Christopher C. Pauley, Cierla V. McGuire, and Ronald B. Sams. 2015. *Percina caprodes* cytochrome b (cytb) partial cds. Accession # KT880217.
- (10) **Brammell, Ben F.**, Mary R. Johnson, Cierla V. McGuire, Harold A. Brabon, and Ronald B. Sams. 2015. *Aplodinotus grunniens* cytochrome b (cytb) partial cds. Accession # KT880216.
- (9) **Brammell, Ben F.**, Harold A. Brabon, and David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour. 2015. *Percopsis omiscomaycus* cytochrome b (cytb) partial cds. Accession # KT873717.1
- (8) McGuire, Cierla V., **Brammell, Ben F.**, Ronald B. Sams, and Malinda A. Stull. 2015. *Eurycea lucifuga* cytochrome b (cytb) partial cds. Accession # KT873718.
- (7) McGuire, Cierla V. **Brammell, Ben F.**, Ronald B. Sams, and Malinda A. Stull. 2015. *Ambystoma opacum* cytochrome b (cytb) partial cds. Accession # KT780868.
- (6) **Brammell, Ben F.**, Cierla V. McGuire, Ronald B. Sams, and Malinda A. Stull. 2015. *Ambystoma jeffersonianum* cytochrome b (cytb) partial cds. Accession # KT780869.
- (5) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. *Lepomis cyanellus* metallothionein (MT) mRNA. Accession # JF497772.
- (4) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. *Lepomis cyanellus* glutathione S-transferase (GST) mRNA. Accession # JF497773.
- (3) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. *Lepomis megalotis* glutathione S-transferase (GST) mRNA. Accession # JF497774.
- (2) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. *Lepomis megalotis* metallothionein (MT) mRNA. Accession # JF497775.
- (1) **Brammell, Ben F.**, David K. Peyton, Kelly R. Barnett, Joshua C. Ferrell, and Andrew J. Wigginton. 2011. *Lepomis cyanellus* cytochrome P4501A (CYP1A) mRNA. Accession # JF497776.

## AWARDS AND FELLOWSHIPS

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**2019–2021 Lilly Faculty Fellow**, \$5,000. Selected with colleague Daniel Strait as members of the first cohort of the Lilly Faculty Fellows program.

**2019 Faculty Scholar**, Asbury University, Awarded annually to faculty for a record of high scholarly productivity, two awarded in 2019.

**2017 Joe and Caroline Butler Distinguished Service Award**, \$500, awarded annually to department faculty member for outstanding service.

**2004 SETAC Travel Award**, \$500. Merit based award that provides travel funds to the annual SETAC national meeting.

**2003 Ohio Valley Chapter SETAC Travel Award.** Merit based award that provides travel funds to the annual SETAC national meeting.

**2001 University of Kentucky, Graduate Student Development Award,** Merit based award presented to one graduate student in the Department of Biology annually.

**2001 University of Kentucky, Ribble Scholarship, \$2,500.** Provides stipend for research activities during the summer for graduates students in the Department of Biology.

**1997 Dean's Award Recipient, Eastern Kentucky University.** Awarded to students who have been on the Dean's list (GPA of 3.5 or greater) three times.

**1996 Eastern Kentucky University, Outstanding Junior in Biological Sciences.** Awarded annually to one student in the Department based on GPA and scholastic achievement.

**UNDERGRADUATE RESEARCH MENTORING** *(31 senior research mentees since joining Asbury, 17 student research awards at professional meetings, 5 extramural undergraduate research funded proposals)*

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**UNDERGRADUATES SENIOR RESEARCH PROJECT STUDENTS** *(31 since joining Asbury)*

Karson Fetter - 2025

Ethan Hoogerheide – 2024

Hope Brown – 2024

Sara Brewer – 2024

Abigail Fletcher – 2023

Brendan Jeffry – 2022

Rebecca Piche – 2022

Faith Day – 2021

Angie Flores – 2021

Florene Bell – 2020

Ramon Guivas – 2019

Kyle Lafenburger – 2018

Elle Berry – 2018 (co-mentored with Marvin Ruffner, Ph.D.)

Ronnie Sams – 2017

Robert Washburn – 2017

Ashton Bain – 2017

Harold Brabon – 2017

Cierla McGuire – 2016

Rebecca Blackburn – 2016

Dallas Murphy – 2016

Christopher Pauley – 2016

Annissia Wood – 2015

Mary Johnson – 2015

Trevor Smith – 2015

Samantha Burr – 2014

Matt Johnson – 2013

Jordan Cox – 2013

Ben Adams – 2013

Demetria Todd – 2012

Graham Howell – 2012

Matt Engler – 2011

**Non-Senior Research Project Students**

Joanne Jung – 2024

Elizabeth Strasko – 2021

Chi Jing Leow – 2020

Andrew Nesselroade - 2019

### **UNDERGRAD RESEARCH MENTEE STUDENT AWARDS** *(17 awards with 13 Asbury undergraduates)*

- Sara Brewer – Fall 2023, “Thoroughbred” designation (highest award), 2023 Annual KY Academy of Science Meeting, November 2023
- Hope Brown – Fall 2023, “Thoroughbred” designation (highest award), 2023 Annual KY Academy of Science Meeting, November 2023
- Sara Brewer – Fall 2023, Best Student Poster Presentation, Tennessee Herpetological Society, Annual Meeting, September 2023
- Sara Brewer – Fall 2023, Niemiller Travel Scholarship, Tennessee Herpetological Society, Annual Meeting, September 2023
- Abigail Fletcher – Fall 2022, “Thoroughbred” designation (highest award), 2022 Annual KY Academy of Science Meeting, November 2022
- Brendan Jeffry – Fall 2022, “Thoroughbred” designation (highest award), 2022 Annual KY Academy of Science Meeting, November 2022
- Sara Brewer – Fall 2022, “Thoroughbred” designation (highest award), 2022 Annual KY Academy of Science Meeting, November 2022
- Abigail Fletcher – Fall 2022, Most Outstanding Undergraduate Poster, Annual Kentucky Water Resource Research meeting, September 2022
- Elizabeth Strasko – Niemiller Travel Scholarship, Tennessee Herpetological Society, Annual Meeting, December 2021
- Rebeca Piche – Fall 2021, 2<sup>nd</sup> place Ecology undergraduate student poster, 2021 Annual KY Academy of Science meeting
- Rebecca Piche – Fall 2021, Most Outstanding Undergraduate Poster, Annual Kentucky Water Resource Research meeting
- Ramon Guivas – Fall 2018, 2<sup>nd</sup> place Ecology undergraduate student poster, 2018 Annual KY Academy of Science meeting
- Ronnie Sams – Fall 2015, 1<sup>st</sup> place Ecology and Environmental Science undergraduate student poster, 2015 Annual KY Academy of Science meeting
- Cierla McGuire – Fall 2015, 3<sup>rd</sup> place Ecology and Environmental Science undergraduate student poster, 2015 Annual KY Academy of Science meeting
- Christopher Pauley and Ronnie Sams – Fall 2014, 2<sup>nd</sup> place Ecology and Environmental Science undergraduate student poster, 2014 Annual KY Academy of Science meeting
- Ben Adams – Fall 2013, 3<sup>rd</sup> place Ecology and Environmental Science undergraduate student poster, 2013 Annual KY Academy of Science meeting
- Demetria Todd – Fall 2011, 3<sup>rd</sup> place, Ecology and Environmental Science undergraduate student poster, 2011 Annual KY Academy of Science meeting

### **UNDERGRADUATE RESEARCH STUDENT FUNDED PROPOSALS** *(Five awards, \$2,389 total)*

- \$468. Kentucky Academy of Science. Sara A. Brewer and B. F. Brammell. 2023. Development and validation of qPCR assays for three species of Plethodon salamanders.
- \$459. ECU Division of Natural Areas Grant in Aid of Research. Rebecca R. Piche and Ben F. Brammell. 2021. Comparison of leaf litter bags and environmental DNA in detection of salamanders in Maywoods Environmental and Educational Laboratory.
- \$512. Kentucky Academy of Science. Ramon A. Guivas and B. F. Brammell. 2018. Use of eDNA in multiple species fish biomass determinations in small to mid-sized lotic systems.
- \$500. Kentucky Academy of Science. Ben M. Adams and B. F. Brammell. 2012. The effects of atrazine on chemical alarm cue response in predator and prey centrarchid species.
- \$450. Kentucky Academy of Science. Matthew W. Engler and B. F. Brammell. 2011. A survey of the distribution and habitat preferences of the crayfish of Hickman and Jessamine Creek watersheds.

## **TEACHING**

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### **ASBURY UNIVERSITY** *(2010-present)*

Bio 100 – Introductory biology for non-majors

Bio 101 - Introductory biology lab for non-majors

Bio 100O - Introductory biology for non-majors (On-line)  
Bio 101O - Introductory biology lab for non-majors (On-line)  
Bio 201 – Introductory biology for majors  
Bio 221 – Ecology  
Bio 217 – Environmental Science  
Bio 272 – Principles of Plant Science  
Bio 293 – Aquatic and Wetland Biology  
Bio 352 – Physiology (first taught Spring 2015)  
Bio 352X – Physiology lab (first taught Spring 2015)  
Bio 374 – Cell and Molecular biology lab  
Bio 393 – Biogeography of the Galapagos Islands

**EASTERN KENTUCKY UNIVERSITY** (*Adjunct work, continuously from 2010 – present*)

Bio 171: Human anatomy with lab  
Bio 100: Introductory biology for non-majors

**MOREHEAD STATE UNIVERSITY** (*Lecturer, Fall 2004-Summer 2008*)

Bio 105 – Introductory biology for non-biology majors  
Bio 110 – Biology for education majors with multiple lab sections, also served as lab coordinator  
Bio 171 lab – Introductory biology lab for biology majors  
Bio 217 – Medical microbiology with multiple lab sections  
Bio 231 – Human anatomy  
Bio 232 – Human physiology

**CREATION OF TEACHING MATERIAL**

Created a total of 129 multiple choice questions for specified categories of Bloom's taxonomy of learning  
For The Economy of Nature, 6<sup>th</sup> edition (Ecology textbook) (MacMillan Higher Ed), 2014 – 2015.  
Reviewed three chapters for Biology Now (W.W. Norton and Company), a new biology textbook,  
December 2014 – February 2015.  
Created supplemental teaching material (activities, instructor's notes, misconception alerts, quizzes) for  
Chapter 7 (DNA) of Biology for a Changing World, 2<sup>nd</sup> edition (MacMillan Higher Ed), 2013.  
Reviewed nine chapters and test banks for eleven other chapters for Life: The Science of Biology, 10<sup>th</sup>  
edition (Sinauer Associates), May – December 2012.

**SERVICE**

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**PROFESSIONAL SERVICE**

Advisory Editor, Environmental Biology of Fishes. Appointed May 2021. 4 manuscripts 2021, 3 in 2022, 5 to date in 2023.  
Amphibian Taxa Team Support Member, 2023 Kentucky State Wildlife Action Plan

**MANUSCRIPT REVIEW** (*17 manuscripts total*)

2021- Archives of Environmental Contamination and Toxicology (1 manuscript)  
2021- Environmental Biology of Fishes (1 manuscript)  
2021- Environmental Science and Pollution Research (1 manuscript)  
2020- Environmental Biology of Fishes (1 manuscript)  
2020- Ecotoxicology and Environmental Safety (1 manuscript)  
2019- Ecotoxicology and Environmental Safety (1 manuscript)  
2018- Archives of Environmental Contamination and Toxicology (1 manuscript)  
2018- Ecotoxicology and Environmental Safety (1 manuscript)  
2017- Ecotoxicology (1 manuscript)  
2017- Archives of Environmental Contamination and Toxicology (1 manuscript)  
2013-2015- Ecotoxicology and Environmental Safety (3 manuscripts)  
2013- Canadian Journal of Fisheries and Aquatic Sciences (1 manuscript)  
2011- Fisheries Science (1 manuscript)



2011- Comparative Biochemistry and Physiology (1 manuscript)  
2005 - Comparative Biochemistry and Physiology (1 manuscripts)

#### **PROFESSIONAL SOCIETY LEADERSHIP/SERVICE**

Chair of the 2023 Kentucky Academy of Science Ecology Section, Northern Kentucky University, November 3-4, 2023.  
Secretary of the 2022 Kentucky Academy of Science Ecology Section, Morehead State University, November 10-12, 2022.  
STEM Lilly Faculty Fellows Program Representative, Valparaiso University, Asbury University, appointed August 2022.  
Chair of the 2019 Kentucky Academy of Science Environmental Science Section. Berea College, November 1- 2, 2019.  
Secretary of the 2018 Kentucky Academy of Science Environmental Science Section, Western Kentucky University, November 2018.  
Chair of the 2016 Kentucky Academy of Science Ecology and Environmental Science Section, University of Louisville, November 4-5, 2016.  
Secretary of the 2015 Kentucky Academy of Science Ecology and Environmental Science Section, Northern Kentucky University, November 13-14, 2015.  
Chair of the 2005 Kentucky Academy of Science Physiology and Biochemistry Section, held in Richmond, Kentucky, November 2005.  
Chair of the 2004 Kentucky Academy of Science Physiology and Biochemistry Section, held in Murray, Kentucky, November 5-6, 2004.

#### **OUTREACH/INVITED PRESENTATIONS**

2022 - "Ichthyofauna of Central Appalachia" - Invited lecture in the "Appalachian Natural History Seminar Series," Lewis Honors College, University of Kentucky, Feb. 2, 2022.  
2021- Led electrofishing collecting trip for Bluegrass Fish Keepers Association to multiple sites in Madison County, KY, June 5, 2021.  
2021- "Thoughts on Kentucky fish" - Invited lecture, Bluegrass Fish Keepers Association, May 15, 2021.  
2017- Presented ecology lecture and activity (owl pellets) to third grade class at Hattie Warner Elementary School, Nicholasville, KY - May 8, 2017.  
2014 - Presented invited talk to Asbury University faculty at fall 2014 annual faculty retreat titled: "DNA or: How I Learned to Stop Worrying and Love Franken-Science" - August 11, 2014.  
2014 - Presented lecture on reptiles and amphibians for the children at the Lexington Hearing and Speech Center, Lexington, KY - April 29, 2014.  
2013 - Presented lecture on reptiles and amphibians to preschool children at Trinity Christian Academy, Lexington, KY - May 13, 2013.  
2013 - Presented lecture on reptiles and amphibians for the children at the Lexington Hearing and Speech Center, Lexington, KY - March 26, 2013.  
2012 - Conducted a one-day outdoor ecology laboratory at Bluegrass Christian Camp for the 120 6<sup>th</sup> grade students of the Lexington Christian Academy - October 9, 2012.  
2012 - Conducted a brief (three meetings) after school course on reptiles for elementary students at the Lexington Christian Academy - September and October 2012.  
2012 - Conducted a brief (eight meetings) summer school course on reptiles for elementary students at the Lexington Christian Academy - June and July, 2012.  
2011 - Conducted a one-day outdoor ecology laboratory at Bluegrass Christian Camp for the 120 6<sup>th</sup> grade students of the Lexington Christian Academy - October 2, 2011.

#### **JUDGING**

2023- Served as judge for undergraduate and graduate research presentations, Ecology Section, Kentucky Academy of Science meeting, November 11, 2022.  
2022- Served as judge for undergraduate and graduate research presentations, Ecology Section, Kentucky Academy of Science meeting, November 11, 2022.

- 2021- Served as judge for undergraduate and graduate research presentations, Environmental Science Section, Kentucky Academy of Science meeting, November 6, 2021.
- 2020- Served as judge for undergraduate and graduate research presentations, Environmental Science Section, Kentucky Academy of Science meeting, November 7, 2020.
- 2019 - Served as judge for undergraduate and graduate research presentations, Environmental Science Section, Kentucky Academy of Science meeting, Berea University, November 1-2, 2019.
- 2018 - Served as judge for undergraduate and graduate research presentations, Environmental Science Section, Kentucky Academy of Science meeting, Western Kentucky University, November 2-3, 2018.
- 2018 - Served as a judge evaluating science fair projects for the Southern Middle School annual science fair, January 11, 2018, Southern Middle School, Lexington, KY.
- 2017 - Served as judge for undergraduate and graduate research presentations, Ecology and Environmental Science Section, Kentucky Academy of Science meeting, Murray University, November 3-4, 2017.
- 2016 - Served as judge for undergraduate and graduate research presentations, Ecology and Environmental Science Section, Kentucky Academy of Science meeting, Univ. of Louisville, November 4-5, 2016.
- 2015 - Served as judge for undergraduate and graduate research presentations, Ecology and Environmental Science Section, KAS meeting, Northern Kentucky University, November 13-14, 2015.
- 2015 - Served as a judge evaluating science fair projects in the Animal Science Division of the Kentucky Science & Engineering Fair, March 28, 2015 at Eastern Kentucky University, Richmond, KY.
- 2015 - Served as a judge for high school science fair at Clark County High School, Jan. 27, 2015.
- 2014 - Served as judge for undergraduate research presentations, Ecology and Environmental Science Section, Kentucky Academy of Science meeting, Nov. 15, 2014, Lexington Convention Center.
- 2014 - Served as a judge evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, March 29, 2014 at Eastern Kentucky University, Richmond, KY.
- 2013 - Served as judge for undergraduate research presentations, Biochemistry and Physiology Section, at the annual Kentucky Academy of Science meeting, Nov. 9, 2013, Morehead State University.
- 2013 - Served as a “best of show judge” evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, Eastern Kentucky University, Richmond, KY, March 30, 2013.
- 2012 - Served as a judge evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, March 31, 2012 at Eastern Kentucky University, Richmond, KY
- 2010 - Served as a “best of show judge” evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, April 2, 2010, Eastern Kentucky University, Richmond, KY
- 2010 - Served a judge evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, April 3, 2010 , Eastern Kentucky University, Richmond, KY
- 2005 - Served a judge evaluating science fair projects in the Earth Science Division of the Kentucky Science & Engineering Fair, March 2004, 2005; Eastern Kentucky University, Richmond, KY
- 2004 - Served as judge evaluating middle school science fair projects, grades 6-8, February 11, 2004, Morton Middle School, Lex., KY
- 2003 - Served as judge evaluating elementary school science projects, grades 4-5, January 23, 2003, KY American Water Company Science Fair, Glendover Elementary School, Lexington, KY

#### **GRADUATE COMMITTEE SERVICE**

Jill Fisk, KY State University, Project title – Salamander diversity in Bernheim Forest, advisory role.

#### **UNIVERSITY COMMITTEE SERVICE**

Tenure and Promotion Committee (2021 – present)  
 Academic Policy and Curriculum (2018-2023)  
 Institutional Review Board (2020 – 2023)  
 Faculty Interview Committee (2016-2018)  
 Learning Resources Committee (2011-2016)

#### **OTHER COMMITTEE SERVICE**

Appalachian Math and Science (AMSP) Biology Education Committee – Met seven times between Dec. 2006 -April 2007 to develop a new standardized biology course for elementary education majors.



Ohio Valley Chapter of the Society of Environmental Toxicology and Chemistry (SETAC) Student Affairs Committee, May 2003 – August 2004.

**PROFESSIONAL MEMBERSHIPS**

Kentucky Academy of Science  
Tennessee Herpetological Society

**COLLECTING PERMITS HELD**

Kentucky Department of Fish and Wildlife Resources, Scientific and Educational Collecting Permit, Brammell #SC2311090.

Great Smoky Mountains National Park, Scientific Research and Collecting Permit, Brammell #GRSM-2023-SCI-1191

Tennessee Wildlife Resources Agency, Aquatic Collecting Permit, Brammell #6095.