

Douglas M. McElroy

Department of Biology
 Western Kentucky University
 1906 College Heights Boulevard 11080
 Bowling Green, KY 42101-1080

Office: 270.745.3696
 Fax: 270.745.6856
doug.mcelroy@wku.edu

PRESENT POSITIONS:

Professor and Chair, Department of Biology, Western Kentucky University 2024-
Research Interests: Impact of Interleaved Practice Teaching on Student Performance; Factors Influencing Cardiovascular Disease Outcomes; Multivariate Approaches to Documenting Student Learning; Wildlife Molecular Forensics; Morphometrics and Conservation of Desert Fishes; Genetics and Speciation in African Cichlid Fishes; Statistical Analysis of Population Genetic Data
 Research Advisor, Western Kentucky Heart and Lung/Med Center Health Research Foundation 2019-

EDUCATION:

Ph.D., M.S., Zoology, University of Maine, Orono, ME 1992, 1988
Dissertation: Genetic and developmental analysis of trophic differentiation in two Lake Malawi cichlid fishes and their hybrids
Thesis: Reproductive behavior in cichlid fishes: Evaluation of the potential for sexual selection
 B.S., Marine Science, Southampton College of Long Island University, Southampton, NY 1984

ADMINISTRATIVE PROFESSIONAL EXPERIENCE:

Associate Vice President for Academic Affairs, Western Kentucky University 2011-2019
Primary Areas of Responsibility: Strategic Planning and Effectiveness, Learning Outcomes Assessment, Academic Program Review, SACSCOC Quality Enhancement Plan Development, Class Scheduling Analytics, Space Allocation, Direct Report of the Office of Institutional Research, Office of the Registrar, Vitale Clinical Education Complex, Kentucky Museum, Student Publications, and Forensics Program, SACSCOC Accreditation Liaison
 Interim Executive Director, Suzanne Vitale Clinical Education Complex, Western Kentucky University 2012-2013
Primary Areas of Responsibility: Strategic Planning, Fiscal Restructuring and Management, Oversight and Integration of Component Clinical Programs, Community and Donor Relations
 Assistant Vice President for Academic Affairs, Western Kentucky University 2008-2011
Primary Areas of Responsibility: Unit Action Planning and Learning Outcomes Assessment, SACSCOC Quality Enhancement Plan Implementation and Assessment, Academic Program Review, Community and Civic Engagement Initiatives, Institute for Citizenship and Social Responsibility, American Democracy Project, Provost's Initiatives for Excellence and Unit Productivity Award Programs
 Assistant to the Provost, Western Kentucky University (50% release-time appointment) 2005-2008
Primary Areas of Responsibility: SACSCOC Quality Enhancement Plan Implementation, Critical Thinking Scholars Faculty Professional Development Program, Regional Stewardship Plan Development, American Democracy Project, Carnegie Elective Classification in Community Engagement
 Director, University Honors Program, Western Kentucky University (50% release-time appointment) 1998-2005
Primary Areas of Responsibility: Student Recruitment, Course/Curriculum Development and Quality Assurance, Strategic Planning, Budget Oversight, Honors Development Grants
 Assistant Director, University Honors Program, Western Kentucky University (50% release-time appointment) 1997-1998
Primary Areas of Responsibility: Student Recruitment, Honors Thesis Quality Assurance

ACADEMIC PROFESSIONAL EXPERIENCE:

Professor, Department of Biology, Western Kentucky University	2004-
Adjunct Professor, Department of Veterinary Anatomy and Physiology, University of Nairobi	2004-2008
Assistant/Associate Professor, Department of Biology, Western Kentucky University	1993-2004
Postdoctoral Research Associate, Department of Zoology, Arizona State University	1992-1993
Visiting Instructor, Department of Biology, Colby College	1991

STATEWIDE LEADERSHIP AND SERVICE:

Institutional Representative, Council on Postsecondary Education Committee on Academic Quality Development and coordination of statewide processes for academic program review	2013-2019
Institutional Representative, Council on Postsecondary Education Strategic Agenda Advisory Group Development of statewide strategic agenda, <i>Stronger by Degrees</i> , with associated metrics and targets	2010-2019
Institutional Representative, Council on Postsecondary Education College Level Learning Assessment Development and coordination of statewide processes for assessment of general education student learning outcomes	2008-2019
Institutional Representative, Council on Postsecondary Education Program Productivity Review Evaluation and submission of institutional responses regarding identified low-productivity programs	2008-2012

UNIVERSITY, COLLEGE AND DEPARTMENT LEADERSHIP AND SERVICE (SELECTED):

Chair, Department of Biology Tenure and Promotion Committee	2021-
Co-Chair, Department of Biology Program Review/Assessment Committee	2020-
Member, WKU Financial Conflicts of Interest Committee	2017-
Member, University of Kentucky College of Medicine – Bowling Green Joint Executive Oversight Committee	2016-
Member, University of Kentucky College of Medicine – Bowling Green Campus Interview Advisory Committee	2017-2023
Chair, Ogden College Strategic Planning Committee	2019-2021
Member, WKU ACUE Effective Practice Framework Program Evaluation Team	2018-2021
Administrative Lead, WKU SACSCOC Quality Enhancement Plan Implementation	2005-2019
Academic Affairs Liaison, WKU University Senate Academic Quality Committee	2010-2019
Academic Affairs Liaison, WKU Institutional Strategic Planning and Assessment	2009-2019
Academic Affairs Liaison, WKU Academic Program Review Committee	2008-2019
<i>ex officio</i> Member, Suzanne Vitale Clinical Education Complex Board of Advisors	2013-2019
Co-Chair, WKU Registration Policies and Procedures Workgroup	2017-2018
Chief University Liaison and Academic Advisory Committee Chair, Navitas at WKU	2010-2015
Chief University Liaison, English as a Second Language International	2011-2015
Co-Chair, WKU Institutional Retention Task Force	2011-2015
Member, WKU SACSCOC Leadership Team	2010-2015
Academic Affairs Liaison, WKU Institute for Citizenship and Social Responsibility	2009-2012
Chair, WKU Provost's Initiatives for Excellence Review Committee	2008-2013
Academic Affairs Liaison, WKU General Education Review Task Force	2008-2012
Member, WKU College Readiness Working Group	2008-2010
Chair, WKU 120-Hour Degree Program Study Group	2008
Chair, WKU Outcomes Assessment Committee	2008-2009
Chair, WKU Critical Thinking Scholars Initiative	2007-2010
Coordinator, WKU American Democracy Project	2006-2010
Chair, University Honors Committee	1998-2005
Member, WKU Community Partnerships Incentive Award Program Review Committee	2008-2010
Member, WKU Regional Stewardship Plan Development Team	2006-2008
<i>ex officio</i> Member, WKU Regional Stewardship Advisory Council	2007-2012
Member, Institutional Quality Enhancement Plan Steering Committee	2003-2005
Member, Ogden College Dean's Advisory Council	2002-2004
Member, Department of Biology Scheduling and Load Committee	2001-2008

MEMBERSHIPS AND AFFILIATIONS:

Association of American Colleges and Universities
 American Association of State Colleges and Universities
 Foundation for Critical Thinking
 Kentucky Academy of Science
 Western Kentucky Heart and Lung/Med Center Health Research Foundation

MAJOR STRATEGIC AND DEVELOPMENT INITIATIVES (EXTERNAL):

WKU Reaffirmation of Accreditation Compliance Certificate, Focused Report, Response to the Report of the Reaffirmation Committee, and Monitoring Report. Responsible for C.R. 2.5 and 2.12, C.S. 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.4, 3.3.1.5, 3.3.2, and 3.5.1, and F.R. 4.1. Submission to the Southern Association of Colleges and Schools Commission on Colleges. Reaffirmed.	2012-2015
Evidence & Argument: A Quality Enhancement Plan for Western Kentucky University. D. McElroy, QEP Development Committee Chair. Submission to the Southern Association of Colleges and Schools Commission on Colleges. Approved with one recommendation.	2012-2015
WKU Fifth-Year Interim Report and QEP Impact Report. Submission to the Southern Association of Colleges and Schools Commission on Colleges. S. Gaiko and D. McElroy, SACSCOC Leadership Team Co-Chairs. Accepted with no recommendations.	2011
Learn and Serve America President's Higher Education Community Service Honor Roll. Proposal from Western Kentucky University (General Community Service and Special Focus Area). Recognized.	2008
Association of American Colleges and Universities General Education Institute. Application from Western Kentucky University. Accepted.	2008
Learn and Serve America President's Higher Education Community Service Honor Roll. Proposal from Western Kentucky University (General Community Service). Recognized with Distinction.	2007
Guide to Service Learning Colleges and Schools. Application from Western Kentucky University. Accepted.	2007
Carnegie Classification for Community Engagement. Proposal from Western Kentucky University. D. McElroy and D. George, primary authors. Awarded (Curricular Engagement and Outreach and Partnerships).	2006
Kentucky Council on Postsecondary Education Regional Stewardship Program. Infrastructure Plan for Western Kentucky University. D. George, K. Phelps and D. McElroy, primary authors. \$415,000. Approved and funded.	2006
Americorps VISTA Program (via Kentucky Campus Compact). Proposal for two VISTA volunteers to support social responsibility and regional stewardship initiatives at Western Kentucky University. \$22,000 for each of three years. Awarded.	2006
Engaging Students for Success in a Global Society: a Quality Enhancement Plan for Western Kentucky University. D. McElroy, R. Bowker and K. Laves, primary authors. Submission to the Southern Association of Colleges and Schools. Approved with no recommendations.	2005

MAJOR STRATEGIC AND DEVELOPMENT INITIATIVES (INTERNAL):

WKU Community Partnerships Incentive Award Program. Western Kentucky University Mastermind Conference. Samuel J. Hunt and D. McElroy, authors. \$12,178. Funded.	2009
Critical Thinking Scholars Initiative: a Three-Year Professional Development Program for Faculty at Western Kentucky University. \$70,000. Approved and implemented.	2007
Guidelines for Performance Appraisal, Continuance, Tenure, Promotion and Post-Tenure Review of Faculty. Department of Biology. D. McElroy, L. Alice, K. Crawford, K. Doerner and T.K. Philips, authors. Adopted and implemented.	2000
Center for Biodiversity Studies. Draft Proposal and Implementation Plan. D. McElroy and Z. Murrell, authors. Approved and established.	1997

PUBLICATIONS RELATED TO HIGHER EDUCATION LEADERSHIP (ASTERISKS INDICATE STUDENT COAUTHORS):

- Budziak, J., D. Super, T. Gross and D. McElroy. 2022. A state university's assessment of ACUE: feasible model for evaluating the impact of a faculty instruction quality program. *Teacher-Scholar* 11(1): Article 2. <https://scholars.fhsu.edu/ts/vol11/iss1/2>
- McElroy, D. and K. McElroy*. 2017. An evolutionary perspective on increasing student success, and the (partial) fallacy of first-year retention. *Teacher-Scholar* 8: 65-77. <https://scholars.fhsu.edu/ts/vol8/iss1/4>
- McElroy, D. and R. Cobb. 2010. Demonstrating growth of a student engagement culture: a multivariate approach to assessing institutional goals at a public university. *Planning and Changing* 41:18-41.

ORAL PRESENTATIONS RELATED TO HIGHER EDUCATION LEADERSHIP (ASTERISKS INDICATE PRESENTERS):

- Collins, S.*, D. McElroy*, and J. Steenbergen*. 2018. Using Platinum Analytics to reconceive the schedule at multiple scales: a study in self-similarity, patience, and pressure. AASCU Academic Affairs Summer Meeting, Bellevue, WA.
- Brown, D.*, T. Cheever, C. Elam, D. McElroy, M. Dobbs, and C. Griffith. 2018. Private-public partnerships: our very early experience opening the first four-year regional campus in Kentucky. Association of American Medical Colleges Group on Regional Medical Campuses Spring Meeting, Washington, DC.
- McElroy, D.*, and K. McElroy. 2017. An evolutionary perspective on increasing student success, and the (partial) fallacy of first-year retention. AASCU Academic Affairs Summer Meeting, Baltimore, MD.
- McElroy, D.*, J. Steenbergen*, and G. Emslie. 2016. Rarefaction and melt curves: objective approaches to identifying and managing Platinum Analytics watchlist courses. Ad Astra User's Conference, Kansas City, MO.
- Wilson, S.S.*, M.B. Kerby*, and D. McElroy. 2016. Implementing and assessing a Quality Enhancement Plan. IUPUI Assessment Institute, Indianapolis, IN.
- McElroy, D*. 2015. Applying critical thinking to academic strategic planning and leadership. 35th International Conference on Critical Thinking, Berkeley, CA.
- Helbig, T.* and D. McElroy*. 2012. Applying advanced data analytics to retention and student success. AASCU Academic Affairs Summer Meeting, San Francisco, CA.
- Burch, B.*, Dale, M.*, B. Cobb*, and D. McElroy*. 2010. Funding high-impact practices through a performance-based tuition-revenue model. AAC&U Annual Meeting, Washington, DC.
- Markham, P., D. McElroy*, J. Miller, D. George and B. Burch. 2009. Assessing community/public engagement at a public institution. Commission on Colleges Annual Meeting, Southern Association of Colleges and Schools, Atlanta, GA.
- McElroy, D.* and B. Cobb. 2009. Demonstrating statistically significant growth of a student engagement culture at WKU. AASCU American Democracy Project Annual Meeting, Baltimore, MD.
- Burch, B.*, Dale, M.*, B. Cobb, and D. McElroy*. 2009. Institutionalizing civic engagement through a performance-based tuition-revenue model. AASCU American Democracy Project Annual Meeting, Baltimore, MD.
- McElroy, D.*, J. Lewis*, A. Davis, and B. Burch*. 2008. Endemism and inertia vs. innovation: cautionary tales in civic engagement. AASCU American Democracy Project Annual Meeting, Snowbird, UT.
- Bruni, J.*, D. McElroy* and B. Burch*. 2008. Addressing the learning and scholarly dimensions of civic engagement. AASCU American Democracy Project Annual Meeting, Snowbird, UT.
- McElroy, D. and B. Burch*. 2007. Civic engagement and student learning: moving from involvement to impact. AASCU American Democracy Project Annual Meeting, Philadelphia, PA.
- Bruni, J.*, D. George* and D. McElroy*. 2007. The Engagement Research Fund Program. Western Kentucky University Engaging the Spirit Conference, Bowling Green, KY.
- McElroy, D. 2006. Linking NSSE, WKUSES and other acronyms in a multivariate assessment of WKU's QEP student learning outcomes. Kentucky Council on Postsecondary Education Faculty Development Conference, Lexington, KY.
- McElroy, D. 2005. Shaping QEP implementation for your students: a deconstructionist model for building program expectations around engagement. Western Kentucky University Engaging the Spirit Conference, Bowling Green, KY.
- McElroy, D. 2005. Neither Scylla nor Charybdis: exploring a common understanding of QEP goals and expectations. Western Kentucky University Engaging the Spirit Conference, Bowling Green, KY.

DISCIPLINARY PUBLICATIONS (ASTERISKS INDICATE STUDENT CO-AUTHORS):

- McElroy, D., M. Towery*, S. Molina-Lopez*, R. Eastham*, S.G. Alexander*, and N.J. Mountjoy. 2024. Incidence rates and outcomes of nodular and superficial spreading melanoma along the rural-urban continuum in Kentucky, and their relationship to provider care access. *Southern Medical Journal* 117(5): 235-240. <https://doi.org/10.14423/SMJ.000000000001681>

- Herzer, N.*, D. Nguyen, F.G. Young, A. Singh, S. Mittal, and D. McElroy. 2024. Dermatological reactions associated with personal protective equipment (PPE) use during the COVID-19 pandemic. in Rajendram, R., V.R Preedy, V.B. Patel, and C.R. Martin (eds.), COVID-19 Management in the Brain and Body. Academic Press. in press.
- Joyce, M., N.J. Mountjoy, J.A. Johnson*, J.T. Newman*, D. Bandy*, N. Atalla*, A. Singh, and D. McElroy. 2022. From trial to practice: incidence and severity of COVID-19 vaccine side effects in a medically at-risk and vaccine-hesitant community. BMC Public Health 22:2351. <https://doi.org/10.1186/s12889-022-14824-z>
- Nguyen, D., F.G. Young, D. McElroy, and A. Singh. 2022. Personal protective equipment and adverse dermatological reactions among healthcare workers: survey observations from the COVID-19 pandemic. Medicine 101(9): e29003. <https://doi.org/10.1097%2FMD.0000000000029003>
- Singh, A., M. Akbar, D. McElroy, M. McCurdy, F. Young, J. Thomas, C. Nguyen, and K.S. Pfirman. 2021. The electrocardiographic manifestations and derangements of 2019 novel coronavirus disease (COVID-19). Indian Pacing and Electrophysiology Journal. 21(3): 156-161. <https://doi.org/10.1016/j.ipej.2021.02.005>
- Smith, M.C., R. Pham, S. Mittal, D. McElroy, and A. Singh. 2021. Challenges in managing ST elevation myocardial infarction during COVID-19 pandemic. World Journal of Cardiology 13(4): 76-81. <https://dx.doi.org/10.4330/wjc.v13.i4.76>
- Singh, A., N. Mountjoy, D. McElroy, S. Mittal, B. Al Hemyari, N. Coffey*, K. Miller*, and K. Gaines. 2021. Patient perspectives with telehealth visits in cardiology: An online patient survey following the rapid switch due to COVID-19. JMIR Cardio. 5(1): e25074. <https://doi.org/10.2196/25074>
- Singh, A., N. Mountjoy, D. McElroy, N. Coffey*, and S. Mittal. 2020. Patient satisfaction with telehealth in cardiology: lessons and cautions from the response to COVID-19 restrictions. European Heart Journal Supplements 22(N): N136.
- Sheth, P.* , H.F. Kazimuddin, D. McElroy, and A. Singh. 2020. Outcomes for patients receiving cardiopulmonary resuscitation during novel coronavirus outbreak in the United States. Circulation 142(Suppl. 4): A111. https://doi.org/10.1161/circ.142.suppl_4.111
- Haider, S., A. Tatari, C.E. Galloway, M.T. Amjad, D.M. McElroy, O. Nwanguma, E. Darnell, B. Emery, A. Singh, and J. Dowe. 2020. Multi-variable analysis of echocardiographic variables in patients prior to and after gastric sleeve surgery. JACC 75 (11 Supplement 1): 1651. <https://www.jacc.org/doi/abs/10.1016/S0735-1097%2820%2932278-6>
- Haider, S., A. Doshi, A. Tatari, D.M. McElroy, E. Wallace, M. Joyce, N. Bennett, M. Kazimuddin, M.S. Akbar, M. Abdul-Waheed, and A. Singh. 2019. Impact of fluoroscopy dose utilized during coronary angiography on major adverse cardiac events. J. Invasive Cardiology 31(11).
- Kimwele, C.N., B.K. Karisa*, M. Stokes, J.O. Junga, O. Hanotte, R.A. Skilton and D. McElroy. 2012. DNA species surveillance: monitoring bushmeat poaching and trading in Kenya using partial cytochrome b gene. African J. Biotechnology 11: 14276-14286. <https://doi.org/10.5897/AJB11.2813>
- Marcus, J.M., T.M. Hughes, D. McElroy, and R.E. Wyatt. 2010. Engaging first year undergraduates in hands-on research experiences: the Upper Green River Barcode of Life Project. Journal of College Science Teaching 39:39-45.
- Marcus, J.M., D.D. Bell*, A.N. Bryant*, E.C. Burden*, M.E. Carter*, T.J. Cataldo*, K.R. Clark*, H.E. Compton*, L.S. DeJarnette*, V.B. Faulkner*, R.W. Gregory*, J.R. Hall*, L.N. Houchin*, M.E. Hudson*, P.F. Jenkins*, J.M. Jordan*, B.K. Logan*, N.R. Long*, H.F. Maupin*, S.R. McIntyre*, J.K. Mitchell*, J.K. Mobley*, A.N. Nehus*, B.N. Potts*, C.R. Read*, K.N. Slinker*, C.E. Thompson*, T.M. Hughes, D. McElroy, and R.E. Wyatt. 2009. The Upper Green River Barcode of Life Project. Journal of the Kentucky Academy of Science. 70: 75-83. <https://doi.org/10.3101/1098-7096-70.1.75>
- Doerner, K.C., W. Braden*, J. Cork*, T. Cunningham*, A. Rice*, B.J. Furman and D.M. McElroy. 2005. Population genetics of resurgence: white-tailed deer in Kentucky. J. Wildlife Mgmt. 69: 345-355. [https://doi.org/10.2193/0022-541X\(2005\)069%3C0345:PGORWD%3E2.0.CO;2](https://doi.org/10.2193/0022-541X(2005)069%3C0345:PGORWD%3E2.0.CO;2)
- Garner, L.M.*, C. Anderson*, D. McElroy and J. Bilotta. 2003. Differences in spectral sensitivity of ERG b- and d-waves in three African cichlid fish species. Investigative Ophthalmology and Visual Science 44: 4169.
- Douglas, M.E., M.R. Douglas, J.M. Lynch and D.M. McElroy. 2001. Use of geometric morphometrics to differentiate *Gila* (Cyprinidae) within the upper Colorado River basin. Copeia 2001: 390-401. [https://doi.org/10.1643/0045-8511\(2001\)001\[0389:UOGMTD\]2.0.CO;2](https://doi.org/10.1643/0045-8511(2001)001[0389:UOGMTD]2.0.CO;2)
- Hoyt, R.D., D. McElroy and D. Stiles. 2001. Spatio-temporal assessment of stream fish communities adjacent to an agricultural best-management practices operation. pp. 101-114 in Chester, E.W. and A.F. Scott (eds.), Proceedings of the Ninth Symposium on the Natural History of the Lower Tennessee and Cumberland River Valleys. Center for Field Biology, Austin Peay State University, Clarksville, TN.

- Seyoum, S., M.D. Tringali, T.M. Bert, D. McElroy and R. Stokes. 2000. Analysis of genetic population structure in red drum, *Sciaenops ocellatus*, based on mtDNA control region sequences. *Fishery Bull.* 98: 127-138.
- Bilotta, J., J. Cassidy*, D. McElroy, I. Kornfield and E.C. Davis*. 2000. Spectral sensitivity of the ERG b- and d-waves of an African cichlid species. *Investigative Ophthalmology and Visual Science* 42: S440.
- McElroy, D. 1999. Evolutionary biology: overview. pp. 195-202 in Knight, J. (ed.), *Encyclopedia of Genetics: Basics and Applications*. Salem Press, Pasadena, CA.
- Stuck, J.* and D. McElroy. 1999. Genetic counseling. pp. 239-244 in Knight, J. (ed.), *Encyclopedia of Genetics: Basics and Applications*. Salem Press, Pasadena, CA.
- Davis, C.D., L. Brooks*, C. Calisi*, B.J. Bennett* and D.M. McElroy. 1998. Beneficial effect of selenium supplementation during murine infection with *Trypanosoma cruzi*. *J. Parasit.* 84: 1274-1277. <https://doi.org/10.2307/3284689>
- McElroy, D.M., J.A. Shoemaker* and M.E. Douglas. 1997. Discriminating *Gila robusta* and *Gila cypha*: risk assessment and the Endangered Species Act. *Ecol. Appl.* 7: 958-967. [https://doi.org/10.1890/1051-0761\(1997\)007\[0958:DGRAGC\]2.0.CO;2](https://doi.org/10.1890/1051-0761(1997)007[0958:DGRAGC]2.0.CO;2)
- Ore, S.G.*, D.M. McElroy and R.D. Hoyt. 1997. Acute low pH impairs chemoreception and feeding performance in larval fathead minnows (*Pimephales promelas*). *Mar. Fresh. Behav. Physiol.* 30: 1-17. <https://doi.org/10.1080/10236249709379012>
- McElroy, D.M. and M.E. Douglas. 1995. Patterns of morphological variation among endangered populations of *Gila robusta* and *G. cypha* (Teleostei: Cyprinidae) in the upper Colorado River basin. *Copeia* 1995: 636-649. <https://doi.org/10.2307/1446760>
- McElroy, D.M. and I. Kornfield. 1993. Novel jaw morphology in hybrids between *Pseudotropheus zebra* and *Labeotropheus fuelleborni* (Teleostei: Cichlidae) from Lake Malawi, Africa. *Copeia* 1993: 933-945. <https://doi.org/10.2307/1447071>
- Dunnigan, B.* , D.M. McElroy and M.E. Douglas. 1993. Sexual dimorphism and morphological variation in *Cichlasoma minckleyi* from Cuatro Ciénegas basin, Mexico. *Proc. Des. Fish. Council XXV*: 45-46.
- McElroy, D., P. Moran, E. Bermingham and I. Kornfield. 1992. REAP: an integrated environment for the manipulation and phylogenetic analysis of restriction data. *J. Hered.* 83: 157-158. <https://doi.org/10.1093/oxfordjournals.jhered.a111180>
- McElroy, D.M., I. Kornfield and J. Everett*. 1991. Coloration in African cichlids: diversity and its constraints in Lake Malawi endemics. *Neth. J. Zool.* 41: 250-268. <https://doi.org/10.1163/156854291X00180>
- McElroy, D., P. Moran, E. Bermingham and I. Kornfield. 1991. REAP: The Restriction Enzyme Analysis Package. Version 4.0. Department of Zoology, University of Maine. 40 pp. + diskette.
- McElroy, D.M. and I. Kornfield. 1990. Sexual selection, reproductive behavior, and speciation in the mbuna species flock of Lake Malawi (Pisces: Cichlidae). *Envir. Biol. Fishes* 28: 273-284.
- Kornfield, I., S.M. Bogdanowicz and D.M. McElroy. 1987. Inheritance of adenosine deaminase in Malawi cichlids. *Iso. Bull.* 20:10.
- Shiroya, T., D. McElroy and B.M. Sutherland. 1984. An action spectrum for photoreactivating enzyme in sea urchin eggs. *Photochem. Photobiol.* 40: 749-751. <https://doi.org/10.1111/j.1751-1097.1984.tb04647.x>

DISCIPLINARY ORAL AND POSTER PRESENTATIONS (ASTERISKS INDICATE PRESENTERS):

- Mountjoy, J.J., S. Huskey, and D. McElroy. 2023. Integrating the African cichlid into your lab and lecture curriculum: an ideal model organism for general biology lecture & lab. Pearson Biology Leadership Conference, Charlotte, NC.
- Nguyen, D., F.G. Young, D. McElroy, and A. Singh. 2022. Personal protective equipment and adverse dermatological reactions among healthcare workers: survey observations from the COVID-19 pandemic. American College of Osteopathic Internists, Baltimore, MD.
- Johnson, J.* , J.T. Newman, D. Bandy, D. McElroy, N. Mountjoy, A. Singh, and M. Joyce. 2022. Incidence and severity of COVID-19 vaccine side effects in a medically at-risk and vaccine-hesitant community. Western Kentucky Heart and Lung/Med Center Health Research Symposium, Bowling Green, KY.
- McElroy, D.* 2021. Fundamental and Powerful Concepts as an organizing principle in teaching a high-enrollment, general education biology course. 41st International Conference on Critical Thinking, Virtual.
- Crosser, B.* , D. Brown, H. Do, T. Wiersen, A. Chambers, D. Passer, D. Davis, O. Nwanguma, N. Danapai, S. O'Keeffe, and D. McElroy. 2021. Assessing pressure ulcer staging abilities and subjective comfort level among healthcare professionals. General Surgery Symposium, Bowling Green, KY.
- McElroy, D.* 2020. Interleaved practice, F&P concepts, and student success in a high-enrollment, general education biology course. AAC&U Transforming STEM Education Conference, Virtual.

- Pfirman, K.*, M. Akbar, D. McElroy, M. McCurdy, F. Young, C. Nguyen, J. Thomas, and A. Singh. 2020. Electrocardiographic manifestations and derangements of the 2019 novel coronavirus disease (COVID 19). American College of Cardiology, Kentucky Chapter, Lexington, KY.
- Coffey, N.*, D. Sanford*, K. Miller*, F. Kazimuddin, D. McElroy, N. Mountjoy, K. Pfirman, B. Al Hemyari, S. Mittal MD, J. Dawson, S. Akbar, and A. Singh. 2020. Patient experience with tele health: tale of an academic cardiology clinic in Kentucky. American College of Cardiology, Kentucky Chapter, Lexington, KY.
- Al Hemyari, B.*, P. Jones, N. Coffey, M. Kazimuddin, N. Mountjoy, D. McElroy, and A. Singh. 2020. Healthcare providers' experience with telemedicine during COVID-19 pandemic. American College of Cardiology, Kentucky Chapter, Lexington, KY.
- Smith, M.C.*, R. Pham*, S. Mittal, P. Jones*, M. McCurdy*, H.F. Kazimuddin, D. McElroy, and A. Singh. 2020. Challenges in managing ST elevation myocardial infarction during COVID-19 pandemic. American College of Cardiology, Kentucky Chapter, Lexington, KY.
- Haider, S.*, A. Tatari, C.E. Galloway, M.T. Amjad, B. Emery, D.M. McElroy, O. Nwanguma, A. Singh, and J. Dawson Dowe. 2020. Multi-variable analysis of echocardiographic variables in patients prior to and after gastric sleeve surgery. American College of Cardiology World Congress of Cardiology, Chicago, IL.
- Pfirman, K.*, A. Singh, D. McElroy, S. Banga, M. Kazimuddin, M. Joyce, J. Stork, D. Chaney, P. Jones, and T. Donley. 2019. Periodontal disease influencing acute coronary syndrome. American College of Cardiology Kentucky Chapter, Lexington, KY.
- Haider, S., A. Doshi, A. Tatari, D.M. McElroy, E. Wallace, M. Joyce, N. Bennett, M. Kazimuddin, M.S. Akbar, M. Abdul-Waheed, and A. Singh. 2019. Impact of fluoroscopy dose utilized during coronary angiography on major adverse cardiac events. Complex Cardiac Catheter Therapeutics, Orlando, FL.
- Cohen, J.*, A. Tatari, D. McElroy, C. Morrow, M. Abdul-Waheed, M. Akbar, J. Dawson Dowe, M. Lavu, A. Singh, and M. Kazimuddin. 2017. Retrospective outcome analysis after left main coronary artery percutaneous coronary revascularization. American College of Cardiology Kentucky Chapter, Louisville, KY.
- Jones [Mountjoy], N., B. Smith, B. Sutton, C. Kimwele, D. McElroy, and M. Stokes*. 2007. Assessment of the bushmeat trade in southeastern Kenya. International conference of the Society for Conservation Biology, Port Elizabeth, South Africa.
- Jones [Mountjoy], N.*, B. Smith, B. Sutton, C. Kimwele, D. McElroy, and M. Stokes. Assessing bushmeat availability in Kenya's rural and urban markets. American Society of Mammalogists, Amherst, MA.
- Kimwele, C.N., E. Wambwa, M. Stokes and D. McElroy*. 2005. Molecular forensic identification of East African game species. Society for Integrative and Comparative Biology, San Diego, CA.
- Olson, C.*, L.M. Garner, J. Bilotta and D. McElroy*. 2004. Spectral sensitivity of ERG b- and d-waves in African cichlid fishes: comparisons with habitat, ecology and phylogeny. Society for Integrative and Comparative Biology, New Orleans, LA.
- McElroy, D.*, L.M. Garner, C. Anderson and J. Bilotta. 2003. Spectral sensitivity of ERG b- and d-waves in African cichlid fishes: early comparisons. Kentucky Academy of Sciences, Bowling Green, KY.
- Garner, L.M.*, C. Anderson, D. McElroy and J. Bilotta. 2003. Differences in spectral sensitivity of ERG b- and d-waves in three African cichlid fish species. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL.
- Doerner, K.C., W. Braden, J. Cork, T. Cunningham, A. Rice, B.J. Furman and D. McElroy*. 2002. Population genetics of resurgent white-tailed deer (*Odocoileus virginianus*) in Kentucky. Western Kentucky University Center for Biodiversity Studies, Bowling Green, KY.
- Doerner, K.C., W. Braden*, J. Cork, T. Cunningham*, A. Rice*, B.J. Furman and D. McElroy. 2001. Microsatellite DNA allele frequencies and population structure in Kentucky white-tailed deer (*Odocoileus virginianus*). Society for the Study of Evolution, Knoxville, TN.
- Cork, J.* and D. McElroy. 2001. Type I error rates in Monte Carlo randomization tests of population structure from microsatellite data. Society for the Study of Evolution, Knoxville, TN.
- Hoyt, R.D.*, D. McElroy and D. Stiles. 2001. Long-term assessment of stream fish communities adjacent to an agricultural best-management practices operation. Symp. Nat. Hist. Lower Tenn. Cumb. River Valleys, Clarksville, TN.
- McElroy, D.*, P. Reneau and I. Kornfield. 2000. Inheritance and evolution of dorsal fin coloration in Lake Malawi cichlid fishes. Society for the Study of Evolution, Bloomington, IN.
- Bilotta, J.*, J. Cassidy, D. McElroy, I. Kornfield and E.C. Davis. 2000. Spectral sensitivity of the ERG b- and d-waves of an African cichlid species. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL.
- Chandler, K.A., D.M. McElroy*, R.D. Hoyt and D. Stiles. 1998. Biomass vs. abundance measures of stream fish community structure. American Society of Ichthyologists and Herpetologists, Guelph, ON.

- Hoyt, R.D., D.M. McElroy* and D. Stiles. 1997. Spatial and temporal variation in stream fish communities adjacent to an agrarian enterprise. American Society of Ichthyologists and Herpetologists, Seattle, WA.
- McElroy, D.M.*, J.A. Shoemaker and M.E. Douglas. 1996. Discrimination of *Gila robusta* and *Gila cypha*: a classic 'producer's vs. consumer's risk' gambit. American Society of Ichthyologists and Herpetologists, New Orleans, LA.
- Ore, S.G., R.D. Hoyt* and D.M. McElroy. 1996. Acute low pH impacts chemoreception and feeding performance in larval fathead minnows *Pimephales promelas*. American Society of Ichthyologists and Herpetologists, New Orleans, LA.
- McElroy, D.M.* and I. Kornfield. 1994. Coloration and ecological niche complementarity in African cichlid fish communities. American Society of Ichthyologists and Herpetologists, Los Angeles, CA.
- Lynch, J.M.*, D.M. McElroy, and M.E. Douglas. 1994. 'Every picture tells a story': geometric morphometrics and variation in upper Colorado River chub. American Society of Ichthyologists and Herpetologists, Los Angeles, CA.
- McElroy, D.M.* and M.E. Douglas. 1993. Morphological variation among populations of endangered Colorado basin *Gila robusta* and *G. cypha*: are there forests amid the trees? Conservation Biology of Western Fishes. Society for Conservation Biology, Tempe, AZ. (Invited Symposium Presentation)
- McElroy, D.M.* and M.E. Douglas. 1993. Morphological variation among populations of endangered Colorado basin *Gila robusta* and *G. cypha*: are there forests amid the trees? American Society of Ichthyologists and Herpetologists, Austin, TX.
- Dunnigan, B., D.M. McElroy and M.E. Douglas*. 1993. Sexual dimorphism and morphological variation in *Cichlasoma minckleyi* from Cuatro Ciénegas basin, Mexico. Desert Fishes Council, Monterrey, MX.
- McElroy, D.M.* and I. Kornfield. 1991. Genetic control of morphology in cichlid fishes: does a little go a long way? Labroid Evolution. American Society of Ichthyologists and Herpetologists, New York, NY. (Invited Symposium Presentation)

CURRENT RESEARCH PROJECTS:

- Clinical decision analysis of factors predictive of clinically-relevant findings from echocardiography in ischemic stroke patients (w/ Alexis Smith and Med Center Health collaborators)
- Clinical decision tree analysis of chondrosarcoma cause-specific survival: a SEER database study (w/ Nicholas Herzer and Jessica Spears)
- Multivariate relationships among kinematic and pressure variables in scorpionfish feeding in the presence vs. absence of invasive competitors (w/ Tessa Carby and Dr. Steve Huskey)
- Potential use of county radon level data as a predictor of emergency department patients presenting with kidney stones (w/ Emma Huskey)

STUDENT MENTORSHIP AND SCHOLARLY COLLABORATION:

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| Chair/Member, 37 M.S. committees within the Department of Biology
42.8% (27 of 63) during the period 1996-2008
Committees chaired by 19 different faculty within the Department of Biology | 1996- |
| Chair/Member, 8 undergraduate honors thesis committees within the Department of Biology | 1995- |
| Honors Program Reader, approximately 20 additional undergraduate honors thesis committees | 1997-2005 |
| Member, 2 Ed.D. committees at Western Kentucky University | 2014-2015 |
| External Member, 1 M.Sc. committee at the University of Nairobi | 2008 |
| Coauthor, peer-reviewed papers and abstracts with 15 different WKU faculty and staff colleagues | 1997- |
| Coauthor, 18 peer-reviewed papers and abstracts that include 56 different student coauthors (47 from WKU) | 1991- |

RESEARCH GRANTS, AWARDS AND PROPOSALS (EXTERNAL):

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| National Endowment for the Humanities Division of Education Humanities Connections Program. Program in Genealogy and Genetics. A. Jennings, A. Olson, A. Langdon, D. McElroy, J. Marquardt, and J. Stewart, co-PIs. \$49,969. In review. | 2024 |
| Kentucky INBRE Course-Based Undergraduate Research Experiences (CUREs) Program. Evidence-Based Medicine Training. D. McElroy and N. Mountjoy, PD/PIs. \$84,872. Not Funded. | 2022 |
| NIH U01 Program. A multi-modal, light technology intervention to reduce alcohol use and depression, enhance quality of life and provide social support to underserved rural communities. Multi-site clinical trial. J. Teeters, WKU Lead, D. McElroy and A. Singh, Local Collaborators. \$1,792,108. Not discussed. | 2021 |

Kentucky Academy of Science Special Research Program. Impact of intensive treatment for periodontal disease on the incidence of recurrent acute coronary syndrome (ACS) events. D. McElroy and K. Pfirman, co-PIs. \$4,956. <u>Funded</u> .	2020
Robert Wood Johnson Foundation Evidence for Action Program. Evaluating alternatives to standard opioid treatment approaches for acute-injury and post-operative pain management. D. McElroy PI, and A. Singh and M. Joyce, co-PIs. \$316,854. Not funded.	2019
Kentucky Biomedical Infrastructure Network Course-Based Undergraduate Research Experiences Program. Virtual reality applications in biomedical sciences. D. McElroy PI, and F. Ashrafzadeh and K. Williams, Co-PIs. \$81,957. Not Funded.	2019
US EPA P3 Program (National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet). Sustainable Development of Wildlife Resources in a Rural Community in Kenya. M. Stokes and D. McElroy, co-PIs. \$21,650. <u>Funded</u> , but P3 Program cancelled by EPA.	2005
NSF EPSCoR Summer Research Program. Impact of Bushmeat Utilization on Conservation of Tropical African Game. D. McElroy and M. Stokes, co-PIs. \$23,455. Not funded.	2004
NSF EPSCoR Research Start-Up Fund Program. Functional Morphologist – Department of Biology, Western Kentucky University. D. McElroy, proposal author. \$75,000. <u>Funded</u> .	2002
NSF EPSCoR Research Enhancement Grant Program. Spectral Sensitivity and Tuning of the ERG b- and d-waves in Lake Malawi Cichlid Fishes: Associations with Coloration, Habitat and Trophic Differences among Species. D. McElroy and J. Bilotta, co-PIs. 40,738. <u>Funded</u> .	2002
NSF EPSCoR Research Enhancement Grant Program. Development of PCR-Based Standards for Identification of Kentucky White-Tailed Deer (<i>Odocoileus virginianus</i>) for Law Enforcement. D. McElroy, K.C. Doerner, B.J. Furman and D. Perkins, co-PIs. \$36,779. <u>Funded</u> .	2000
Kentucky Justice Cabinet Edward Byrne Memorial Fund Program. Developing New Alliances. L. Sudkamp, J. Warnecke, K.C. Doerner and D. McElroy, co-PIs. \$786,362. Not funded.	2003
NSF Research Infrastructure Improvement Grant Program. Science- and Technology-Based Natural Resource Management. M. Stokes, A. Meier, S. Grubbs, D. McElroy and R. Mahmood, co-PIs. \$2,800,000. Not funded.	2003
Legislative Funding Request. Resurgence of Black Bear in Kentucky: Feasibility and Genetic Monitoring of Populations. B.J. Furman, D. McElroy and K.C. Doerner, co-PIs. \$1,500,000. Not funded.	2000
National Geographic Society Grants for Research. Subterranean Biogeography: Population Structure and Environmental Vulnerability of Amblyopsid Cavefishes. D. McElroy, PI. \$26,220. Not funded.	1997
RESEARCH GRANTS, AWARDS AND PROPOSALS (INTERNAL):	
WKU Faculty-Undergraduate Student Engagement Program. Transthoracic Echocardiography (TTE) Use in Acute Ischemic Stroke (AIS) Workup. A. Smith and D. McElroy. \$3,500. <u>Funded</u> .	2023
WKU Quick Turn-Around Grant Program. Purchase of Two Health Care Utilization Project (HCUP) Databases For Clinical Research. \$2,240. <u>Funded</u> .	2022
WKU Quick Turn-Around Grant Program. Periodontal Disease Influencing Acute Coronary Syndrome Study. K. Pfirman, T. Donley, and D. McElroy, co-PIs. \$3,000. <u>Funded</u> .	2019
WKU Community Partnerships Incentive Award Program. Western Kentucky University Mastermind Conference. Samuel J. Hunt and D. McElroy, co-PIs. \$12,178. <u>Funded</u> .	2009
Western Kentucky University Faculty Scholarship Fund. \$1,000. <u>Funded</u> .	2002
Western Kentucky University Summer Research Fellowships (2). \$5,000 each. <u>Funded</u> .	1995, 1996
Western Kentucky University Academic Excellence Fund. With Z. Murrell. \$5,000. <u>Funded</u> .	1995
Western Kentucky University President's Special Grant Fund (3). \$2,750, \$1,600, \$2,229. <u>Funded</u> .	1995-1997

BIOLOGY COURSES AND LABORATORIES TAUGHT (ASTERSKS INDICATE NEW COURSES DEVELOPED):

BIOL 397	Scientific Process: Clinical Research (w/ N. Mountjoy)	2021-
BIOL 369	Patient Coordinators: Medical Center Research Internship (w/ N. Mountjoy)*	2021-
BIOL 489	Professional Aspects of Biology	2020-
BIOL 113	General Biology	2019-
BIOL 334	Animal Behavior*	2004-
BIOL 283/382	Introductory Biostatistics*	1995-
BIOL 475	Biology of Galapagos*	2012
BIOL 430/430G	Evolution: Theory and Process*	1994-2008
BIOL 483/483G	Multivariate Methods in Biology*	1994-2008
BIOL 524	Evolutionary and Ecological Genetics*	1999-2007
BIOL 475	Biology in a Social Context: Galapagos and Ecuador (w/ K.C. Doerner)*	2007
BIOL 475	Wildlife, Cultural and Economic Diversity of Kenya (w/ M. Stokes)*	2005
BIOL 327	Genetics (1 three-week module: Forensic DNA Analysis and QTL Mapping)	2003
BIOL 501	DNA Forensics for Teachers*	2002
BIOL 522	Systematics and Evolution (w/ M. Stokes and C. Rinehart)	1998
BIOL 503	Contemporary Research in Biology	1998
BIOL 501	Perspectives in Biology: Development and Evolution (w/ K. Balak)*	1997
BIOL 675	Seminar: Molecular Markers in Evolution*	1995
BIOL 398	Senior Undergraduate Seminar	1995
BIOL 115	Introduction to Biology (Non-Majors)	1994-1996
BIOL 120	Biological Concepts (Majors; includes Honors Sections)	1994-2004
BIOL 225	General Zoology Laboratory	1994-1997
BIOL 131	Human Anatomy and Physiology with Laboratory (Non-Majors)	1993-1994
Honors BIOL 175	University Experience in Biology	2006-2007