

**L. DeEtte Walker**

***Curriculum Vitae* February 2020**

*School of Biological Sciences  
Integrated Cancer Research Center  
Georgia Institute of Technology  
315 Ferst Drive  
Atlanta, GA 30332*

Ph: 404-385-6629; fax: 404-894-2291

email: [dwalker@gatech.edu](mailto:dwalker@gatech.edu)

**Position:**

Research Scientist I

**Professional Preparation:**

B.S.Ed            May, 1986, University of Arkansas (Zoology and  
Secondary Education)

Ph.D.            August, 1998, University of Georgia  
(Genetics) Advisor: John C. Avise

**Awards and Distinctions:**

University of Georgia:

1994-98        NIH Training Grant

1999            Stoddard-Burleigh-Sutton Award for  
Excellence in Wildlife Conservation

**Honorary and Professional Societies:**

American Association for Cancer Research  
DNA Methylation Society

**Scientific Advisory Committee:**

Center for the Study of Systems Biology

**Teaching Experience:**

1986-91        Fayetteville High School, Fayetteville, Arkansas:  
Secondary science teacher

1992-93        Teaching Assistant in Biology, University of Georgia

1994            Teaching Assistant in Genetics, University of Georgia

1998            Teaching Assistant in Ornithology, University of Georgia

**Research Experience:**

I have experience in molecular biology and population genetics and used this experience to answer questions about the ecology and evolutionary biology of different organisms.

Currently I am using molecular tools in an attempt to understand the molecular biology of cancer, particularly the micro-environment of the cancerous cells. Instead of

using bulk tumor tissue that is a heterogeneous collection of cells, I use laser capture microdissection to dissect only the cells of interest (*i.e.*, only cancer cells or only stromal cells). I also maintain the tissue collections and patient history database.

### **Presented Papers:**

Ecological Society of America. Providence, RI. August 14, 1996. "MtDNA phylogeography of the monotypic freshwater turtle (*Sternotherus odoratus*)"

Third World Congress of Herpetology. Prague, Czech Republic. August 4, 1997. "Phylogeographic patterns in freshwater turtles in the southeast US based on mitochondrial DNA"

### **Invited Talks:**

University of Georgia, Department of Clinical Psychology. 27 January 2004. Is Anxiety a Functionally Desirable Trait? The Darwinian Perspective.

Purdue University, Department of Forestry and Natural Resources. West Lafayette, IN. Sept. 4, 2001. Concordance in the Phylogeography of Freshwater Turtles from the Southeastern United States.

University of South Florida and Eckerd College. St. Petersburg, FL. October 8, 1999. Concordance in the Phylogeography of Freshwater Turtles from the Southeastern United States.

Institute of Molecular Biology. Bratislava, Slovak Republic. August 21, 1997. Using molecular markers to study natural history and evolutionary biology of organisms.

Comenius University, Dept. of Natural Sciences. Bratislava, Slovak Republic. January 31, 1996. Phylogeographic patterns of organisms in the southeastern United States.

Joint Meeting of Herpetological League and the Society for the Study of Amphibians and Reptiles. Athens, GA. July 28, 1994. Phylogeography of the musk turtle (*Sternotherus minor*).

### **Publications:**

1. Walker, D., V. Burke, I. Barák, and J.C. Avise. 1995. A comparison of mtDNA restriction sites versus control region sequences in phylogeographic assessment of the musk turtle (*Sternotherus minor*). *Molecular Ecology* 4:365-373. [PubMed](#)
2. Barák, I., J. Behari, G. Olmedo, P. Guzman, D.P. Brown, E. Castro, D. Walker, J. Westpheling and P. Youngman. 1995. Structure and function of the *Bacillus* SpoIIIE protein and its localization to sites of sporulation septum assembly. *Journal of Molecular Microbiology* 19:1047-1060. [PubMed](#)
3. Walker, D., W.S. Nelson, K.A. Buhlmann and J.C. Avise. 1996. Mitochondrial DNA phylogeography and subspecies issues in the monotypic freshwater turtle *Sternotherus odoratus*. *Copeia* 1997:16-21. [pdf](#)
4. Walker, D., G. Ortí and J.C. Avise. 1998. Phylogenetic distinctiveness of a threatened aquatic turtle, *Sternotherus depressus*. *Conservation Biology* 12:639-645. [Conservation Biology](#)

5. Walker, D. P.E. Moler, K.A. Buhlmann and J.C. Avise. 1998. Phylogeographic uniformity in mitochondrial DNA of the snapping turtle (*Chelydra serpentina*). *Animal Conservation* 1:55-60. [Wiley Online Library](#)
6. Walker, D., P.E. Moler, K.A. Buhlmann and J.C. Avise. 1998. Phylogeographic patterns in *Kinosternon subrubrum* and *K. bairii* based on mitochondrial DNA restriction analyses. *Herpetologica* 54:174-184. [pdf](#)
7. Walker, D. and J.C. Avise. 1998. Principles of phylogeography as illustrated by freshwater and terrestrial turtles in the southeastern United States. *Annual Review of Ecology and Systematics* 29:23-58. [pdf](#)
8. Jones, A.G., C. A. Stockwell, D. Walker, and J.C. Avise. 1998. The molecular basis of a microsatellite null allele from the White Sands pupfish. *J. Heredity* 89:339-342. [J Heredity](#)
9. Avise, J.C., D. Walker and G.C. Johns. 1998. Speciation durations and Pleistocene effects on vertebrate phylogeography. *Proc. R. Soc. Lond. B.* 265:1707-1712. [PubMed](#)
10. Avise, J.C. and D. Walker. 1998. Pleistocene phylogeographic effects on avian populations and the speciation process. *Proc. R. Soc. Lond. B* 265:457-463. [PubMed](#)
11. Roman, J., D. Walker and B.W. Bowen. 1999. Genetic tools for forensic identification of snapping turtle (*Macrolemys temminckii* and *Chelydra serpentina*) products in commercial trade. *Herpetological Review* 30:218-219.
12. Avise, J.C. and D. Walker. 1999. Species realities and numbers in sexual vertebrates: Perspectives from an asexually transmitted genome. *Proc. Natl. Acad. Sci. USA* 96:992-995. [PNAS](#)
13. DeWoody, J.A., D. Walker and J.C. Avise. 2000. Genetic parentage in large half-sib clutches: theoretical estimates and empirical appraisals. *Genetics* 154:1907-1912. [PubMed](#)
14. Avise, J.C. and D. Walker. 2000. Abandon all species concepts? A response. *Conservation Genetics* 1:77-80. [Springer](#)
15. Avise, J.C., W.S. Nelson, B.W. Bowen and D. Walker. 2000. Phylogeography of colonially nesting seabirds, with special reference to global matrilineal patterns in the sooty tern (*Sterna fuscata*). *Molecular Ecology* 9: 1783-1792. [PubMed](#)
16. Jones, A.G., D. Walker, K. Lindstrom, C. Kvarnemo, and J.C. Avise. 2001. Surprising similarity of sneaking rates and genetic mating patterns in two populations of the sand goby experiencing disparate sexual selection regimes. *Molecular Ecology* 10:461-469. [PubMed](#)
17. Jones, A.G., D. Walker, C. Kvarnemo, K. Lindstrom, and J.C. Avise. 2001. How cuckoldry can decrease the opportunity for sexual selection: data and theory from a genetic parentage analysis of the sand goby *Pomatoschistus minutus*. *Proc. Natl. Acad. Sci. USA* 98:9151-9156. [PubMed](#)
18. Jones, A.G., D. Walker, and J.C. Avise. 2001. Genetic evidence for extreme polyandry and extraordinary sex-role reversal in pipefish. *Proc. R. Soc. Lond. B.* 268:2531-2535. [PubMed](#)
19. Walker, D, B. Porter and J.C. Avise. 2002. Genetic parentage assessment in the crayfish *Oreonectes placidus*, a high-fecundity invertebrate with extended maternal brood care. *Mol. Ecol.* 11:2115-2122. [PubMed](#)
20. Avise, J.C., A.G. Jones, D. Walker, J.A. DeWoody, et al. 2002. Genetic mating systems and reproductive natural histories of fishes: lessons for ecology and evolution. *Annu. Rev. of Gen* 36:19-45. [PubMed](#)

21. Jones, A.G., G.I. Moore, C. Kvarnemo, D. Walker, and J.C. Avise. 2003. Sympatric speciation as a consequence of male pregnancy in seahorses. *Proc. Natl. Acad. Sci. USA* 100:6598-6603. [PubMed](#)
22. Avise, J.C., A.J. Power and D. Walker. 2004. Genetic sex determination, gender identification, and pseudohermaphroditism in the Knobbed whelk, *Busycon carica* (Mollusca; Melongenidae) *Proc. Roy. Soc. Lond. B* 271:641-646. [PubMed](#)
23. Walker, L.D., A.J. Power and J.C. Avise. 2004. Sex-linked markers facilitate genetic parentage analyses in knobbed whelk broods. *J. Heredity* 96:108-113. [Oxford Journals](#)
24. Menendez, L., D. Walker, L.V. Matyunina, E.B. Dickerson, N.J. Bowen, N. Polavarapu, B.B. Benigno, and J.F. McDonald. 2007. Identification of candidate methylation-responsive genes in ovarian cancer. *Mol. Cancer* 2007, 6:10. [PubMed](#)
25. Walker, D, A.J. Power, M. Sweeney-Reeves, and J.C. Avise. 2007. Multiple paternity and female sperm usage along egg-case strings of the knobbed whelk, *Busycon carica* (Mollusca; Melongenidae). *Marine Biology* 151: 53-61. [Springer](#)
26. Menendez, L., D. Walker, L.V. Matyunina, K.A. Totten, B.B. Benigno and J.F. McDonald. 2008. Epigenetic changes within the promoter region of the *HLA-G* gene in ovarian tumors. *Mol. Cancer* 2008 7:43. [PubMed](#)
27. Guan, W., M. Zhou, C.Y. Hampton, B.B. Benigno, L.D. Walker, A. Gray, J.F. McDonald and F.M. Fernandez. 2009. Ovarian cancer detection from metabolomic liquid chromatography/mass spectrometry data by support vector machines. *BMC Bioinformatics* 2009, 10:259. [PubMed](#)
28. Bowen, N.J., L.D. Walker, L.V. Matyunina, S. Logani, K.A. Totten, B.B. Benigno, and J.F. McDonald. 2009. Gene expression profiling supports the hypothesis that human ovarian surface epithelia are multipotent and capable of serving as ovarian cancer initiating cells. *BMC Medical Genomics*, 2:71. [PubMed](#)
29. Liu, Ying, Y. Chen, A. Momin, R. Shaner, E. Wang, N.J. Bowen, L.V. Matyunina, L.D. Walker, J.F. McDonald, M.C. Sullards, and A.H. Merrill, Jr. 2010. Elevation of sulfatides in ovarian cancer: An integrated genomic and lipidomic analysis including tissue-imaging mass spectrometry. *Molecular Cancer* 9:186. [PubMed](#)
30. Zhou, M., W. Guan, L.D. Walker, R. Mezencev, B.B. Benigno, A. Gray, F.M. Fernandez, and J.F. McDonald. 2010. Rapid mass spectrometric metabolic profiling of blood sera detects ovarian cancer with high accuracy. *Cancer Epidemiology, Biomarkers and Prevention* 19:2262-227. [PubMed](#)
31. Shahab, S.W., L.V. Matyunina, R. Mezencev, L.D. Walker, N.J. Bowen, B.B. Benigno, and J.F. McDonald. 2011. Evidence for the complexity of microRNA-mediated regulation in ovarian cancer: A systems approach. *PLoS One* 6(7): e22508. [PubMed](#)
32. Lili, L.N., Walker, L.D., Matyunina, L. V., Bowen, N.J., and J.F. McDonald. 2011. Comparative gene expression profiling of ovarian cancer and stromal cells suggests the existence of functionally significant variability in tumor microenvironments. *Clinical and Experimental Metastasis* 28(2):212
33. Shahab, S.W., L.V. Matyunina, V.K. Mittal, L. Wang, C.G. Hill, L.D. Walker, and J.F. McDonald. 2012. MicroRNAs indirectly regulate other microRNAs in ovarian cancer cells. *British J Med and Med Res.* 2:172-194. [pdf](#)
34. Shahab, S., L.V. Matyunina, C.G. Hill, L. Wang, R. Mezencev, L.D. Walker, and J.F. McDonald. 2012. The effects of microRNA transfections on global patterns of gene expression in ovarian cancer cells are functionally coordinated. *BMC Med Genomics* 5:33. [PubMed](#)

35. Lili, L.N., L.V. Matyunina, L.D. Walker, B.B. Benigno, and J.F. McDonald. 2013. Molecular profiling predicts the existence of two functionally distinct classes of ovarian cancer stroma. *BioMed Res Intl.* 2013: 9 pages [PubMed](#)
36. Lili, L.N., L.V. Matyunina, L.D. Walker, S.L. Wells, B.B. Benigno, and J.F. McDonald. 2013. Molecular profiling supports the role of epithelial-to-mesenchymal transition (EMT) in ovarian cancer metastasis. *J Ovarian Res.* 6:49. [PubMed](#)
37. Lili, L.N., L.V. Matyunina, L.D. Walker, G.W. Daneker, and J.F. McDonald. 2014. Evidence for the importance of personalized molecular profiling in pancreatic cancer. *Pancreas* 43 (2):198-211. [PubMed](#)
38. Hill, C.G., L.V. Matyunina, L.D. Walker, B.B. Benigno, and J.F. McDonald. 2014. Transcriptional override: a network model of indirect responses to modulations in microRNA expression. *BMC Systems Biology* 8:36-44. [PubMed](#)
39. Zang, X., C. Jones, T. Long, M. Monge, M. Zhou, Manshui, L.D.Walker, R. Mezencev, A. Gray, J. F. McDonald, and F. Fernandez. 2014. Feasibility of detecting prostate cancer by ultra performance liquid chromatography–mass spectrometry serum metabolomics. *J Proteome Res* 13:3444-3454. [PubMed](#)
40. Muniyan, S., Y-W. Chou, T-J. Tsai, P. Thomes, S. Veeramani, B.B. Benigno, L.D. Walker, J. F. McDonald, S.A. Khan, F-F. Lin, S.M. Lele, and M-F. Lin. 2015. P66Shc longevity protein regulates the proliferation of human ovarian cancer cells. *Mol. Carcinog* 54(8):618-631. [PubMed](#)
41. Long, T.Q., L.D. Walker, R. Mezencev, C. Jones, A. Gray, F. Fernandez, J. McDonald, and B. Benigno. 2015. Spectrometric metabolic profiling of blood sera detects early stage ovarian cancer with high accuracy. *International J Gynec Cancer.* 25:1293.
42. Zhang, M., L.V. Matyunina, L.D. Walker, W. Chen, H. Xiao, B.B. Benigno, R. Wu, and J.F. McDonald. 2017. Evidence for the importance of post-transcriptional regulatory changes in ovarian cancer progression and the contribution of miRNAs. *Scientific Reports* 7:8171.
43. Lili LN, Huang AD, Zhang M, Satpathy M, Wang L, McDonald LD, Matyunina LV, McDonald JF. 2018. Time-course analysis of microRNA-induced mesenchymal-to-epithelial transition underscores the complexity of the underlying molecular processes, in press, *Cancer Lett.* 428:184-191.
44. Huang C, Clayton EA, Matyunina LV, McDonald LD, Benigno BB, Vannberg F, McDonald JF. 2018. Machine learning predicts individual cancer patient responses to therapeutic drugs with high accuracy. *Scientific Reports* 8:16444.
45. Zhang, M., Jabbari, N., Satpathy, M., Matyunina, L. V., Wang, Y., McDonald, L. D., & McDonald, J. F. 2019. Sequence diverse miRNAs converge to induce mesenchymal-to-epithelial transition in ovarian cancer cells through direct and indirect regulatory controls. *Cancer letters*, 449, 168-175. DOI: 10.1016/j.canlet.2019.05.039.