CURRICULUM VITA

Louis J. Gross
Departments of Ecology and Evolutionary Biology and Mathematics
University of Tennessee, Knoxville, TN 37996-1610
865-974-4295 (Office), 865-974-3067 (FAX)
E-mail: gross@tiem.utk.edu or gross@NIMBioS.org
Home Page: http://www.NIMBioS.org/~gross/

DATE AND PLACE OF BIRTH: January 6, 1952, Philadelphia, PA

EDUCATION:

B.S. in Mathematics with Honors, Drexel University, June 1974
Ph.D. in Applied Mathematics, Cornell University, August 1979.
Thesis: "Models of the Photosynthetic Dynamics of *Fragaria virginiana*."

EMPLOYMENT:

2008-2015, 2017-present:	The University of Tennessee, Knoxville, Director, National Institute for Mathematical and Biological Synthesis
2018-present	The University of Tennessee, Knoxville Chancellor's Professor
2015-2017:	The University of Tennessee, Knoxville, Director Emeritus, National Institute for Mathematical and Biological Synthesis
2010-present:	The University of Tennessee, Knoxville Alvin and Sally Beaman Distinguished Professor
2008-2011:	The University of Tennessee, Knoxville James R. Cox Distinguished Professor
2002-2004:	The University of Tennessee, Knoxville, Associate Head, Department of Ecology and Evolutionary Biology
1998-present:	The University of Tennessee, Knoxville, Director, The Institute for Environmental Modeling
1997-present:	The University of Tennessee, Knoxville, Professor, Departments of Ecology and Evolutionary Biology and Mathematics

1992-1997:	The University of Tennessee, Knoxville, Professor, Department of Mathematics and Graduate Program in Ecology
1985-1992:	The University of Tennessee, Knoxville, Associate Professor, Department of Mathematics and Graduate Program in Ecology
1987(Summer):	Distinguished Visitor, Mathematics Department, University of California, Davis
1986 (Summer):	Visiting Biomathematician, Botany Department, University of California, Davis
1979-1985:	The University of Tennessee, Knoxville, Assistant Professor, Department of Mathematics and Graduate Program in Ecology
1982 (Fall):	Grassland Research Institute, Berkshire, Great Britain, Visiting Researcher, Biomathematics Division. International Centre for Theoretical Physics, Trieste, Italy, Invited Lecturer for Course on Mathematical Ecology
1982-1983: (Summers)	Atmospheric Turbulence and Diffusion Lab, Oak Ridge, Tennessee. Faculty Research Participant, Forest Meteorology
1974-1979:	Cornell University, Research and Teaching Assistant, Ecology, Biometrics, Mathematics, Theoretical and Applied Mechanics
1970,1974,1975: (Summers)	Philmont Scout Ranch, Raton, New Mexico. Ranger (1970), Dispatcher (1974), Back-country Camp Director (1975)
1970-1973:	National Radio Astronomy Observatory, Charlottesville, VA. Research Assistant (cooperative education – six months each year)

PUBLICATIONS:

Books:

1. Gross, L. J. and R. M. Miura (editors). ***Some Mathematical Questions in Biology - Plant Biology.*** Vol. 18 of Lectures on Mathematics in the Life Sciences. American Mathematical Society, Providence, RI. (1986)
2. Hallam, T. G., L. J. Gross and S. A. Levin (editors). ***Mathematical Ecology: Proceedings, Trieste 1986.*** World Scientific Publishing Co., Singapore. (1988).
3. Levin, S. A., T. G. Hallam and L. J. Gross. (editors). ***Applied Mathematical Ecology.*** Springer-Verlag, Berlin. (1989).

4. DeAngelis, D. L. and L. J. Gross (editors). ***Individual-Based Models and Approaches in Ecology***. Routledge, Chapman and Hall, New York (1992).
5. Whipple, C. G., M. B. Beck, C. J. Clark III, R. T. Clemen, J. A. Graham, L. J. Gross, W. Harrington, P. Howard, K. L. Jones, T. E. McKone, N. Oreskes, S. N. Pandis, L. M. Ryan, M. L. Stein and W. E. Wagner. ***Models in Environmental Regulatory Decision Making***. National Academies Press, Washington, DC. (2007).
6. Hastings, A. and L. J Gross (editors). ***Encyclopedia of Theoretical Ecology.*** University of California Press (2012).
7. Bodine, E., S. Lenhart and L. J. Gross. ***Mathematics for the Life Sciences.*** Princeton University Press (2014).
8. Haas, L., A. O. Hero III, A. Adhikari, D. Culler, D. Donoho, E. T. Ewing, L. J. Gross, N. Horton, J. Lane, A. McCallum, R. McCullough, R. Nugent, L. Rainie, R. Rutenbar, K. Tolle, T. Wiliams, A. Zieffler. ***Envisioning the Data Science Discipline: The Undergraduate Perspective: Interim Report***. National Academies Press, Washington, DC. (2017).
9. Haas, L., A. O. Hero III, A. Adhikari, D. Culler, D. Donoho, E. T. Ewing, L. J. Gross, N. Horton, J. Lane, A. McCallum, R. McCullough, R. Nugent, L. Rainie, R. Rutenbar, K. Tolle, T. Wiliams, A. Zieffler. ***Data Science for Undergraduates: Opportunities and Options***. National Academies Press, Washington, DC. (2018).

Articles and Book Chapters:

1. Gross, L. J. and B. F. Chabot. 1979. Time course of photosynthetic response to changes in incident light energy. *Plant Physiology* **63**:1033-1038.
2. Gross, L. J. 1981. On the dynamics of internal leaf carbon dioxide uptake. *Journal of Mathematical Biology* **11**:181-191.
3. Gross, L. J. 1982. Photosynthetic dynamics in varying light environments: A model and its application to whole leaf carbon gain. *Ecology* **63**:84-93.
4. Gross, L. J. 1984. On the phenotypic plasticity of leaf photosynthetic capacity". Pages 2-14 in S.A. Levin and T.G. Hallam (editors) Mathematical Ecology, Proceedings, Trieste 1982. Lecture Notes in Biomathematics, Vol. 54.
5. Gross, L. J. 1984. Reply to McCree and Loomis". *Ecology* **65**:1018-1019.
6. DeAngelis, D. L., S.M. Adams, J.E. Breck and L. J. Gross. 1984. A stochastic predation model: application to largemouth bass observations. *Ecological Modelling* **24**:25-41.
7. Hutchinson, B. A., D.R. Matt, R.T. McMillen, L. J. Gross, S.J. Tajchman, and J.M. Norman. 1986. The architecture of a deciduous forest canopy in eastern Tennessee". *Journal of Ecology* **74**:635-646.
8. Gross, L. J. 1986. Ecology: an idiosyncratic overview. Pages 3-15 in: Mathematical Ecology. (T.G. Hallam and S.A. Levin, eds.). Biomathematics, Vol. 17. Springer-Verlag, Berlin.
9. Gross, L. J. 1986. Biophysical ecology: an introduction to organism response to environment. Pages 19-36 in: Mathematical Ecology. (T.G. Hallam and S.A. Levin, eds.). Biomathematics Vol. 17. Springer-Verlag, Berlin.
10. Gross, L. J. 1986. An overview of foraging theory. Pages 37-57 in: Mathematical Ecology. (T. G. Hallam and S. A. Levin, eds.) Biomathematics Vol. 17. Springer-Verlag, Berlin.

11. Gross, L. J. 1986. Photosynthetic dynamics and plant adaptation to environmental variability. Pages 135-170 in: L. J. Gross and R. M. Miura (eds.). Some Mathematical Questions in Biology - Plant Biology. American Mathematical Society, Providence, RI.
12. Sirotkin, K., W.S. Riggsby, and L. J. Gross. 1986. Probability of generating particular variants using different mutagenesis techniques. *Journal of Theoretical Biology* **123**: 275-279. Appendix to Advantage to mutagenesis techniques generating populations containing the complete spectrum of single codon changes, K. Sirotkin.
13. Gross, L. J. 1988. A stochastic model of grass growth under grazing. Pages 177-185 in: L. M. Ricciardi (ed.), Biomathematics and Related Computational Problems. Reidel, Amsterdam.
14. M. U. F. Kirschbaum, L. J. Gross, and R. W. Pearcy. 1988. Observed and modelled stomatal responses to dynamic light environments in the shade plant *Alocasia macrorrhiza*. *Plant, Cell and Environment* **11**:111-121.
15. Gross, L. J. 1989. Plant physiological ecology: a theoretician's perspective. Pages 11-24 in: J. Roughgarden, R. M. May and S. A. Levin (eds.), Perspectives in Ecological Theory. Princeton University Press, Princeton, NJ.
16. Gross, L. J. 1989. Mathematical models in plant biology: an overview". In: S. A. Levin, T. G. Hallam and L. J. Gross (eds.), Applied Mathematical Ecology. Springer-Verlag, Berlin.
17. Gross, L. J. 1989. Mathematical modeling in plant biology: implications of physiological approaches for resource management. In C. Castillo-Chavez, S. A. Levin and C. Shoemaker (eds.), Mathematical Approaches to Problems in Resource Management and Epidemiology. Lecture Notes in Biomathematics **81**:32-48. Springer-Verlag, Berlin.
18. Clark, M. E. and L. J. Gross. 1990. Periodic solutions to nonautonomous difference equations. *Mathematical Biosciences* **102**:105-119.
19. Gross, L. J., M. U. F. Kirschbaum, and R. W. Pearcy. 1991. A dynamic model of photosynthesis in varying light taking account of stomatal conductance, C3-cycle intermediates, photorespiration, and Rubisco activation. *Plant, Cell and Environment* **14**:881-893.
20. Kindlmann, P., A. F. G. Dixon, and L. J. Gross. 1992. The relationship between individual and population growth rates in multicellular organisms. *Journal of Theoretical Biology* **157**:535-542.
21. Gross, L. J. 1994. Limitations of reductionist approaches in ecological modeling: model evaluation, model complexity and environmental policy. Pages 509-518 in: Wildlife Toxicology and Population Modeling: Integrated Studies of Agroecosystems, R. J. Kendall and T. E. Lacher, (editors). Lewis Publishers and CRC Press, Boca Raton, FL.
22. Gross, L. J. 1994. Quantitative training for life-science students. *BioScience* **44**:59.
23. Pearcy, R. W., R. L. Chazdon, L. J. Gross and K. A. Mott. 1994. Photosynthetic utilization of sunflecks, a temporally patchy resource on a time scale of seconds to minutes. Pages 175-208 in: Exploitation of Environmental Heterogeneity by Plants: Ecophysiological Processes Above- and Below Ground, M. M. Caldwell and R. W. Pearcy (eds.). Academic Press, San Diego.
24. Gross, L. J. 1997. Individual-based ecological models for spatially-explicit investigation and computational ecology. *Life Sciences Educational Computing* **7**:10-12.
25. Pearcy, R. W., L. J. Gross and D. He. 1997. An improved dynamic model of photosynthesis for estimation of carbon gain in sunfleck light regimes. *Plant, Cell and Environment* **20**: 411-424.
26. Luh, H.-K., C. Abbott, M. Berry, E. J. Comiskey, J. Dempsey, and L. J. Gross. 1997.

Parallelization in a spatially-explicit individual-based model (I) - Spatial data Interpolation. *Computers and Geosciences* **23**: 293-304.
27. Abbott, C. A., M. W. Berry, E. J. Comiskey, L. J. Gross and H.-K. Luh. 1997. Computational models of white-tailed deer in the Florida Everglades. *IEEE Computational Science and Engineering* **4**:60-72.
28. DeAngelis, D. L., L. J. Gross, M. A. Huston, W. F. Wolff, D. M. Fleming, E. J. Comiskey, and S. M. Sylvester. 1998. Landscape modeling for Everglades ecosystem restoration". *Ecosystems* **1**:64-75.
29. Mellott, L. E., M. W. Berry, E. J. Comiskey and L. J. Gross. 1999. The design and implementation of an individual-based predator-prey model for a distributed computing environment. *Simulation Practice and Theory* **7**:47-70.
30. Gaff, H., D. L. DeAngelis, L. J. Gross, R. Salinas and M. Shorrosh. 2000. A dynamic landscape model for fish in the Everglades and its application to restoration". *Ecological Modelling* **127**:33-52.
31. DeAngelis, D. L., L. J. Gross, W. F. Wolff, D. M. Fleming, M. P. Nott and E. J. Comiskey. 2000. Individual-based models on the landscape: applications to the Everglades". P. 199-211 in J. Sanderson and L. D. Harris (eds.), Landscape Ecology: A Top-Down Approach. Lewis Publishers, Boca Raton, FL.
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33. Gross, L. J. 2000. Education for a biocomplex future. *Science* **288**:807.
34. Gross, L. J. and D. L. DeAngelis. 2002. Multimodeling: new approaches for linking ecological models. In: Predicting Species Occurrences: Issues of Scale and Accuracy, (Scott, J. M., P. J. Heglund, M. Morrison, M. Raphael, J. Haufler, B. Wall, eds.). Island Press, Covello, CA.
35. Duke-Sylvester, S. and L. J. Gross. 2002. Integrating spatial data into an agent-based modeling system: ideas and lessons from the development of the Across Trophic Level System Simulation (ATLSS). Chapter 11 in: Integrating Geographic Information Systems and Agent-Based Modeling Techniques for Stimulating Social and Ecological Processes, (R. Gimblett, ed.), Oxford University Press, Oxford.
36. Okubo, A. and L. J. Gross. 2002. Animal movements in home range. Chapter 8 in: Diffusion and Ecological Problems (A. Okubo and S. A. Levin, eds.). Springer-Verlag, NY.
37. Comiskey, E. J., O. L. Bass, Jr., L. J. Gross, R. T. McBride, and R. Salinas. 2002. Panthers and forests in South Florida: an ecological perspective. *Conservation Ecology* **6**(1**)**:18. [online] URL: http://www.consecol.org/vol6/iss1/art18
38. DeAngelis, D. L., S. Bellmund, W. M. Mooij, M. P. Nott, E. J. Comiskey, L. J. Gross, M. A. Huston and W. F. Wolff. 2002. Modeling Ecosystem and Population Dynamics on the South Florida Hydroscape. P. 239-258 in: The Everglades, Florida Bay, and Coral Reefs of the Florida Keys: An Ecosystem Sourcebook, (J. W. Porter and K. G. Porter, eds.). CRC Press, Boca Raton, FL.
39. Gustafson, E., J. Nestler, L. J. Gross, K. Reynolds, D. Yaussy, T. Maxwell, V. Dale. 2002. Evolving Approaches and Technologies to Enhance the Role of Ecological Modeling in Decision-Making. In: Ecological Modeling for Resource Management, (V. Dale, ed.). Springer-Verlag, NY.
40. Ewing, H., K. Hogan, F. Keesing, H. Bugmann, A. Berkowitz, L. Gross, J. Oris, and J.

Wright. 2003. The role of modeling in undergraduate education". Chapter 22, P. 413-427 in: Models in Ecosystem Science, (C. D. Canham, J. J. Cole, and W. K. Lauenroth, eds.) Proceedings of the IX Cary Conference. Princeton University Press, Princeton, NJ.
41. DeAngelis, D. L., L. J. Gross, E. J. Comiskey, W. M. Mooij, M. P. Nott and S. Bellmund. 2003. The Use of Models for a Multiscaled Ecological Monitoring System". Chapter 6 (P. 167-188) in: D. Busch and J. Trexler, eds. Ecological Monitoring of Ecoregional Initiatives: Interdisciplinary Approaches for Determining Status and Trends of Ecosystems. Island Press, Washington, DC.
42. Brewer, C. A. and L. J. Gross. 2003. Training ecologists to think with uncertainty in mind. *Ecology* **84**:1412-1414.
43. Rock, J. H., B. Beckage and L. J. Gross. 2004. Population recovery following differential harvesting of *Allium triococcum Ait.* in the southern Appalachians. *Biological Conservation* **116**: 227-234.
44. Gaff, H., J. Chick, J. Trexler, D. L. DeAngelis, L. J. Gross, and R. Salinas. 2004. Evaluation of and insights from ALFISH: a spatially-explicit, landscape-level simulation of fish populations in the Everglades. *Hydrobiologia* **520**: 73-86.
45. Gross, L. J. 2004. Interdisciplinarity and the undergraduate biology curriculum: finding a balance. *Cell Biology Education* **3**:85-87.
46. Wang, D., E. Carr, M. Palmer, M. W. Berry, and L. J. Gross. 2005. A Grid Service Module for Natural Resource Managers. *IEEE Internet Computing* **9**:35-41.
47. Immanuel, A., M. W. Berry, L. J. Gross, M. Palmer, and D. Wang. 2005. A parallel implementation of ALFISH: simulating hydrological compartmentalization effects on fish dynamics in the Florida Everglades. *Simulation Modelling Practice and Theory* **13**:55-76.
48. Wang, D., E. Carr, L. J. Gross, and M. W. Berry. 2005. Toward ecosystem modeling on computing grids. *Computing in Science and Engineering* **7**:44-52.
49. Salinas, R. A., S. Lenhart and L. J. Gross. 2005. Control of a metapopulation harvesting model for black bears. *Natural Resource Modeling* **18**:307-321.
50. Beckage, B., L. J. Gross and W. J. Platt. 2006. Responses of pine savannas to disturbance and long-term climate change. *Applied Vegetation Science* **9:**75-82.
51. Beckage, B. and L. J. Gross. 2006. Overyielding and species diversity: what should we expect? *New Phytologist* **172**: 140-148.
52. Wang, D., M. W. Berry and L. J. Gross. 2006. On parallelization of a spatially-explicit structured ecological model for integrated ecosystem simulation. *International Journal of High Performance Computing Applications* **20**:571-581.
53. Wang, D., M. W. Berry, N. Buchanan and L.J. Gross. 2006. A GIS-enabled distributed simulation framework for high performance ecosystem modeling. Proceedings of ESRI International User Conference, August 7-11. http://gis.esri.com/library/userconf/proc06/papers/papers/pap_1272.pdf .
54. Wang, D., M. W. Berry and L. J. Gross. 2008. A Parallel Structured Ecological Model for High End Shared Memory Computers. Proceedings of IWOMP 2005/2006, *Lecture Notes in Computer Science* 4315:107-118. Springer-Verlag, Berlin.
55. Wang, D., E. A. Carr, M. W. Berry and L. J. Gross. 2006. A Parallel Fish Landscape Model for Ecosystem Modeling on a Computing Grid. *Simulation Journal: Transactions of The Society of Simulation and Modeling International* **83**:451-466.
56. Whittle, A. J., S. Lenhart and L. J. Gross. 2007. Optimal control for management of an invasive plant species". *Mathematical Biosciences and Engineering* **4**:101-112.

57. Gaff, H. D. and L. J. Gross. 2007. Modeling tick-borne disease: a metapopulation model". *Bulletin of Mathematical Biology* **69**:265-288.
58. Fuller, M. M., D. Wang, L. J. Gross and M. W. Berry. 2007. Current problems and future directions in computational science for natural resource management. *Computing in Science and Engineering* **9**:40-48.
59. Joshi, H. R., L. J. Gross, S. Lenhart and R. Salinas. 2007. UBM and REU: Unique approaches at Tennessee. P. 261-265 in Proceedings of the Conference on Promoting Undergraduate Research in Mathematics (J. Gallian, ed.). American Mathematical Society, Providence, RI.
60. Ding, W., L. J. Gross, K. Langston, S. Lenhart and L. A. Real. 2007. Rabies in raccoons: optimal control for a discrete time model on a spatial grid". *Journal of Biological Dynamics* **1**:379-393.
61. Fuller, M. M., L. J. Gross, S. M. Duke-Sylvester and M. Palmer. 2008. Testing the robustness of management decisions to uncertainty: Everglades restoration scenarios. *Ecological Applications.* **18**:711-723.
62. Asano, E. L. J. Gross, S. Lenhart and L. A. Real. 2008. Optimal control of vaccine distribution in a rabies metapopulation model. *Mathematical Biosciences and Engineering* **5**:219-238.
63. Bodine, E. N, L. J. Gross and S. Lenhart. 2008. Optimal control applied to a model for species augmentation. *Mathematical Biosciences and Engineering* **5**:669-680.
64. Travis, C. B., L. J. Gross, and B. A. Johnson. 2009. Tracking the gender pay gap: a case study. *Psychology of Women Quarterly* **33**: 410-418.
65. Beckage, B., W. J. Platt and L. J. Gross. 2009. Vegetation, fire, and feedbacks: a disturbance-mediated model of savannas. *American Naturalist* **174**: 805-818.
66. Gaff, H., L. J. Gross and E. Schaefer. 2009. Results from a mathematical model for human monocytic ehrlichiosis. *Clin. Microbiol. Infect.* **15**(Suppl 2): 15–16.
67. Clayton, T., S. Duke-Sylvester, L. J. Gross, S. Lenhart and L. A. Real. 2010. Optimal control of a rabies epidemic model with a birth pulse. *Journal of Biological Dynamics* **4**:43-58.
68. Beckage, B., L. J Gross and W. J. Platt. 2011. Grass feedbacks on fire stabilize savannas. *Ecological Modelling* **222**: 2227-2233.
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70. Yin, L., S-L. Shaw, D. Wang, E. A. Carr, M. W. Berry, L. J. Gross and E. J. Comiskey. 2012. A framework of integrating GIS and parallel computing for spatial control problems – a case study of wildfire control. *Int. J. Geographical Information Sci.* **26**:621-641.
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72. Beckage, B., L. J. Gross, W. J. Platt, W. Godsoe and D. Simberloff. 2012. Individual variation and weak neutrality as determinants of forest diversity. *Frontiers of Biogeography* **3**:145-154.
73. Gross, L. J. and B. Beckage. 2012. Toward a metabolic scaling theory of crop systems. *Proceedings of the National Academy of Sciences* **109**:15535-15536.
74. Federico, P., L. J. Gross, S. Lenhart, and D. Ryan. 2013. Optimal control in individual-based models: implications from aggregated methods. *American Naturalist* **181**: 64-77.
75. Gross, L. J. 2013. Use of Computer Systems and Models. In: Levin S.A. (ed.) Encyclopedia of Biodiversity, Second Edition, Volume 2, pp. 213-220. Academic Press, Waltham, MA.

76. Beckage, B., S. Kauffman, A. Zia, C. Koliba and L. J. Gross. 2013. More complex complexity: Exploring the nature of computational irreducibility across physical, biological, and human social systems. In H. Zenil (ed.) Irreducibility and Computational Equivalence: 10 Years After Wolfram's A New Kind of Science, pp. 133-143. Springer, Berlin.
77. Kultz,D., D. F. Clayton, G. E. Robinson, C. Albertson, H. V. Carey, M. E. Cummings, K. Dewar, S. V. Edwards, H. A. Hofmann, L. J. Gross, J. G. Kingsolver, M. J. Meaney, B. A.Schlinger, A. W. Shingleton, M. B. Sokolowski, G. N. Somero, D. C. Stanzione and A. E. Todgham. 2013. New frontiers for organismal biology. *Bioscience* **63**: 464-471.
78. Gross, L. J. 2013. Selective ignorance and multiple scales in biology: deciding on criteria for model utility. *Biological Theory* **8**:74-79.
79. Gross, L. J. 2013. Some lessons from fifteen years of educational initiatives at the interface of mathematics and biology: the entry-level course. In: G. Ledder, J.P. Carpenter and T. D. Comar (eds). Undergraduate Mathematics for the Life Sciences: Models Processes and Directions. Mathematical Association of America, Philadelphia, PA.
80. Stevenson, R. D., K. M. Klemow and L.J. Gross. 2014. Harnessing bits and bytes to transform ecology education. *Frontiers in Ecology and the Environment* **12**: 306-307.
81. Waldrop LD, S.C. Adolph, C. G. D. Behn, E. Braley, J. A. Drew, R. J. Full, L. J. Gross, J. A., Jungck, B. Kohler, J. C. Prairie, B. Shtylla, and L. A. Miller. 2015. Using Active Learning to Teach Concepts and Methods in Quantitative Biology. *Integrative and Comparative Biology* **55**: 933–948
82. Baron, J. S., A. Specht, E. Garnier, P. Bishop, C. A. Campbell, F. W. Davis, B. Fady, D. Field, L. J. Gross, S. M. Guru, B. S. Halpern, S. E. Hampton, P. R. Leavitt, T. R. Meagher, J. Ometto, J. N. Parker, R. Price, C. H. Rawson, A. Rodrigo, L. A. Sheble, M. Winter. 2017. Synthesis Centers as Critical Research Infrastructure. *Bioscience* **67**:750-759.
83. Hilker, F. M., L. J. S. Allen, V. A. Bokil, C. J. Briggs, Z. Feng, K. A. Garrett, L. J. Gross, F. M. Hamelin, M. J. Jeger, C. A. Manore, A. G. Power, M. G. Redinbaugh, M. A. Rúa and N. J. Cunniffe. 2017. Modelling virus coinfection to inform management of maize lethal necrosis in Kenya. *Phytopathology* **107**: 1-14.
84. Hampton, S. E., M. B. Jones, L. A. Wasser, M. P. Schildhauer, S. R. Supp, J.Brun, R. R. Hernandez, C. Boettiger, S. L. Collins, L. J. Gross, D. S. Fernández, A. Budden, E. P. White, T. K. Teal, S. G. Labou and J. E. Aukema. 2017. Skills and knowledge for data-Intensive environmental research. BioScience 67(6): 546–557.
85. Bucini, G., B. Beckage, and L. J. Gross. 2017. Climate seasonality, fire and global patterns of tree cover. *Frontiers of Biogeography* **9**(2): 1-15.
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87. Beckage, B., G. Bucini, L. J. Gross, W. J. Platt, S. I. Higgins, N. L. Fowler, M. G. Slocum and C. Farrior. 2019. Water Limitation, Fire, and Savanna Persistence: A Conceptual Model. Chapter 19 (pages 645-658) in P. Scogings, & M. Sankaran (Eds.), Savanna Woody Plants and Large Herbivores. Wiley, NY.
88. Bennett, A. E., K. Preedy, A. Golubski, J. Umbanhowar, S. R. Borrett, L. Byrne, K. Apostol, J. D. Bever, L. Biederman, A. T. Classen, K. Cuddington, M-A. de Graaff, K. A. Garrett, L. J. Gross, A. Hastings, J. D. Hoeksema, V. Hrynkiv, J. Karst, M. Kummel, C. T. Lee, C. Liang, W. Liao, K. Mack, L. Miller, B. Ownley, C. Rojas, E. L. Simms, V. K. Walsh, M. Warren and J. Zhu. 2019. Beyond the black box: Promoting mathematical collaborations for

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Reports, Letters and Non-refereed Articles:

1. Gross, L. J. 1972. Maximum entropy spectral analysis. National Radio Astronomy Observatory Internal Report.
2. Gross, L. J. 1972. Polarization of extragalactic radio sources. *Drexel Tech. J.* **35**: 10-15.
3. Gross, L. J. 1985. Math models used to explore plant biology. SI*AM News* **18**: 4-5.
4. Bevelhimer, M. S., S. M. Adams, and L. J. Gross. 1990. Habitat selection by kokanee salmon and smallmouth bass in thermally heterogeneous environments: the importance of growth maximization to diel habitat shifts. Environmental Sciences Division Pub. No. 3463, Oak Ridge National Lab, TM-11475.
5. Gross, L. J., K. A. Rose, E. J. Rykiel, W. Van Winkle, and E. E. Werner. 1992. Individual-based modeling: summary of a workshop. Pages 511-522 in: D. DeAngelis and L. J. Gross (eds.), Individual-Based Approaches in Ecology: Concepts and Models**.** Routledge, Chapman, and Hall.
6. Gross, L. J. 1994. Antibiotic resistance. Letter to *Science* **265**:590-591.
7. Fleming, D. M., D. L. DeAngelis, L. J. Gross, R. E. Ulanowicz, W. F. Wolff, W. F. Loftus, M. A. Huston. 1994. ATLSS: Across Trophic Level System Simulation for the Freshwater Wetlands of the Everglades and Big Cypress Swamp". National Biological Survey, South Florida/Caribbean Field Laboratory Report.
8. Comiskey, E. J., L. J. Gross, D. M. Fleming, M. A. Huston, O. L. Bass, H.-K. Luh and Y. Wu. 1997. A spatially-explicit individual-based simulation model for Florida panther and white-tailed deer in the Everglades and Big Cypress landscapes. Proceedings of the Florida Panther Conference, Ft. Myers Fla., Nov. 1-3, 1994, Dennis Jordan, ed., U.S. Fish and Wildlife Service, pp. 494-503.
9. Gross, L. J., D. L. DeAngelis, and M. A. Huston. 1988. Approaches to large-scale ecosystem modeling across multiple trophic levels: some early lessons from the South Florida ATLSS experience. Pages 71-76 in: J. B. Waide and L. M. Gandy (eds.), Proceedings of the Workshop on Aquatic Ecosystem Modeling and Assessment Techniques for Application within the U.S. Army Corps of Engineers. Waterways Experiment Station Miscellaneous Paper EL-98-1.
10. Gross, L. J. 1998. Where to start? An introduction to concert sound engineering (Part 1). *Live Sound International* **7**(1):68-73 (Jan.-Feb. issue)
11. Gross, L. J. 1998. Now that you've started. An introduction to concert sound engineering (Part 2). *Live Sound International* **7**(2):66-69 (March issue).
12. Gross, L. J. 1998. Mentoring in a distributed world. *D-Lib Magazine* http://www.dlib.org/dlib/september98/09editorial.html.
13. Gross, L. J., E. J. Comiskey, J. Curnutt, H. Gaff, M. Palmer, M. P. Nott, R. Salinas, S. Sylvester. 1997-1999. ATLSS Project Evaluation Reports for the Central and South Florida Restudy. Nineteen reports posted to ftp://ftp.www.tiem.utk.edu/pub/atlss/ between September 1997 and January 1999.
14. Gross, L. J. 2005. It's Wednesday: take two. Pages 119-121 in The Art of College Teaching: Twenty-eight Takes. M. Kallet and A. Morgan (eds.). University of Tennessee Press, Knoxville.
15. Wang, D., M. W. Berry, N. Buchanan and L. J. Gross. 2006. A GIS-enabled Distributed

Simulation Framework for High Performance Ecosystem Modeling. *Proceedings of ESRI International User Conference*, August 7-11, 2006. http://gis.esri.com/library/userconf/proc06/papers/papers/pap_1272.pdf

16. Beckage, B., W. Godsoe, L. Gross, W. Platt and D. Simberloff. 2010. Individual Variation Slows Competitive Exclusion. *Science* (E-Letter, 14 July 2010), www.sciencemag.org/cgi/eletters/327/5969/1129

17. Brewer, C. and D. Smith (eds.), C. O'Connor, M. Withers, S.Donovan, S. G. Hoskins, D. Lopatto, P. Varma-Nelson, H. White, C. Bauerle, L. Gross, J. Labov, M. Poston, D. Wessner, D. Lynn, S. Drew, K. Tanner, W. Wood, C. Fry, M. Matyas, A. DePass, C. A. Anderson, D. Ebert-May, W. McClatchey, N. Pelaez, D. Wubah, S. Singer. 2011. Vision and Change in Undergraduate Education: A Call to Action. AAAS, Washington, DC.

18. Ellner, S. P., L. J. Gross, S. A. Levin and M. Lewis. 2019. Special issue of theoretical ecology to honor Alan Hastings' 65th birthday. Theoretical Ecology, 12(2), 129-130.

World Wide Web Site Management:

1. The Mathematics Archive for the Life Sciences. Moderator for this component of the archives. http://archives.math.utk.edu/mathbio/ 1996-2002.
2. The Institute for Environmental Modeling, University of Tennessee. Manager for this site. http://www.tiem.utk.edu/ 1997-present
3. The ATLSS Home Page. Manager for this site, in previous and current domain. http://atlss.org/ 1996-present

Book Reviews:

1. Ellner, S. P. and L. J. Gross. 1982. Population dynamics and local linearization. Book review of R.M. Nisbet and W.S.C. Gurney, **Modeling Fluctuating Populations**. *Ecology* **63**:1988-1989.
2. Gross, L. J. 1988. Ecosystems from top to bottom. Book review of E. -D. Schulze and H. Zwolfer (eds.), **Potentials and Limitations of Ecosystem Analysis**. *Trends in Ecology and Evolution* **3**: 283-284.
3. Gross, L. J. 1988. Delimiting ecology. Book review of Tom Fenchel, **Ecology – Potentials and Limitations**. *Ecology* **69**:2034-2035.
4. Gross, L. J. 1989. Book review of Michael R. Rose, **Quantitative Ecological Theory: an Introduction to Basic Models**. *Quarterly Review of Biology* **64**: 216-217.
5. Gross, L. J. 1990. Mathematical modeling. Book review of Clark Jeffries, **Mathematical Modeling in Ecology: a Workbook for Students**. *Ecology* **71**: 2400-2401.
6. Gross, L. J. 1991. Biophysical reductionism evolving. Book review of Park S. Nobel, **Physicochemical and environmental plant physiology**. *Ecology* **72**: 2302.
7. Gross, L. J. 1993. Book review of Dennis Rosen, **Mathematics Recovered for the Natural and Medical Sciences**. *Quarterly Review of Biology* **68**:479-480.
8. Jager, H. I. and L. J. Gross. 2000. Spatial control: the final frontier in applied ecology. Review of J. G. Hof and M. Bevers, **Spatial optimization for managed ecosystems**. *Ecology* **81**:1473-1474.
9. Gross, L. J. and S. Duke-Sylvester. 2001. Review of Will Wilson, **Simulating Ecological**

and Evolutionary Systems in C. *SIAM Review* **43**:719-722.

10. Nanda, S. and L. Gross. 2004. Book Review of L. J. S. Allen, **An Introduction to Stochastic Processes with Applications to Biology**. *SIAM Review* **46**:583-584.

Software Developed:

1. Schroda, M., S. Peak, and L. J. Gross. 1993. **MENSTR: A Program for predicting menstrual cycles**. MS-DOS. Version 1.1 released by the Institute for Environmental Modeling, University of Tennessee, Knoxville as CharityWare. Version 1.2 released 1994.
2. Gross, L. J. Project manager for the ATLSS collection of models, including High Resolution Hydrology Model, Landscape Structure Model, ALFISH Landscape Fish Model, Wading Bird Foraging Potential Models, SIMSPAR Individual-based Cape Sable Seaside Sparrow Model, White-tailed Deer Breeding Potential Model, Snail Kite Index Model, Alligator Index Model, SIMPDEL Individual-based Deer-Panther Model. These contain > 100,000 lines of C++ Code and Visualization using PV-Wave. Released in various versions since 1996.
3. Gross, L. J. and B. A. Johnson. 2007. Equity Salary Analysis. This is a Matlab collection of functions developed to carry out a resampling analysis of faculty salaries across the University of Tennessee – Knoxville, to evaluate hypotheses regarding equity. Reports describing the methodology and resulting application are available on the author's web site.

Audio Recordings:

Produced from recordings of concerts by L. Gross in the role of Volunteer House Sound Engineer at the Laurel Theater for Jubilee Community Arts.

1. McCollough, Sean. 2000. Peanut Butter and Jelly. Recorded Live at the Laurel Theatre. Recorded at the Laurel Theater by L. Gross, 1999. Knoxville: Sean McCollough. Cassette.
2. Dismembered Tennesseans. 2001. Live at the Laurel. Recorded at the Laurel Theater by L. Gross, 31 March 2001. Chattanooga: Dismembered Tennesseeans.
3. Fletcher Bright Fiddle Band. 2002. Live at the Laurel. Recorded at the Laurel Theater by L. Gross, 26 January 2002. Chattanooga: Fletcher Bright Fiddle Band.
4. Howard Armstrong. 2002. Sweet Old Song. Documentary directed and produced by Leah Mahan. Segments of video recorded by Leah Mahan and audio recorded by L. Gross at the Laurel Theater, 14 Oct 2000. Boston: Leah Mahan Productions. Broadcast on PBS in 2002.
5. Maid-Rite String Band. 2006. Live at the Laurel Theater. Recorded at the Laurel Theater by Louis Gross, 13 Oct 2006. Knoxville: Maid-Rite String Band.
6. Fletcher Bright Fiddle Band. 2006. Back at the Laurel. Recorded at the Laurel Theater by L. Gross, 11 November 2005. Chattanooga: Three Guys Records.
7. Pea Ridge Ramblers. 2007. Live at the Laurel. Recorded at the Laurel Theater by L. Gross, 10 Feb 2007. Atlanta: Pea Ridge Ramblers.
8. Hicks, Johnny Ray. 2007. Crossville Criminal and other songs and stories of the Cumberland Plateau. Songs and stories of the late Fentress County ballad singer Johnny Ray Hicks. Includes several tracks recorded by L. Gross. JCA-1004.
9. Appalachian String Band. 2007. Live at the Historic Laurel Theater. Recorded at the Laurel Theater, 27 Jan 2007 by L. Gross. [Clinton, TN]: Backwoods Records, BW012707.
10. Jeff Barbra. 2008. Country Music for Country People. Two tracks recorded at the Laurel

Theater, May 2007 by L. Gross. Walland, Tenn: Barb Hollow Music.
11. Jeff Barbra and Sarah Pirkle. 2011. Family Singing. One track recorded at the Laurel Theater, May 2010 by L. Gross. Walland, Tenn: Barb Hollow Music.
12. Four Leaf Peat. 2014. Live at the Laurel Theater. Recorded at the Laurel Theater by L. Gross, 9 Nov 2012 and 22 Nov 2013. Knoxville: Four Leaf Peat.
13. Charlie McCoy. 2015. Celtic Dreams. Track#13 by Four Leaf Peat recorded at the Laurel Theater by L. Gross, 9 Nov 2012 and 22 Nov 2013, overdubbed by Charlie McCoy. Nashville: Charlie McCoy Music.

EXTERNAL SUPPORT:

Total External Support as Lead Principal Investigator since 1990:
$49,107,452

Additional External Support as Co-Principal Investigator since 1990:
$4,238,165

Total of External Support since 1990:
$53,345,617

SPONSORED RESEARCH AS LEAD PRINCIPAL INVESTIGATOR:

National Science Foundation Grant MCS80-00963, Models of the evolution of phenotypic plasticity in variable environments, 1980.

US Forest Service Southern Forest Experiment Station Ecosystem Modeling Competition, Cooperative Agreement #19-91-065. M. A. Huston (co-PI), Landscape- scale ecosystem analysis of forest productivity and habitat suitability indices. 1991-1993. $59,622.

National Science Foundation Grant USE-9150354, Undergraduate Curriculum and Course Development Program. Quantitative sciences curriculum for life science students. 1991-1995. $160,000.

National Park Service, Subagreement #8 to Cooperative Agreement 5460-0-9001. D. L. DeAngelis (co-PI), Individual-based modeling of key Everglades consumer populations. 1991-1994. $344,500.

US Geological Survey Cooperative Agreement 1445-CA09-95-0094. M.A. Huston (co-PI), Across trophic level system simulation of the Everglades/Big Cypress landscape". 1995-1997. $685,000.

Martin Marietta Energy Systems, Subcontract #11X-SL583V to Contract #DE-AC05-84OR21400. Research assistantships in environmental modeling. 1992-1993: $20,500. 1993-1994: $17,000.

Martin Marietta Energy Systems, Subcontract #11X-SN972V to Contract #DE-AC05-84OR21400. L. J. Gross, Research assistantships in parallel processing for environmental modeling. 1993-1994: $17,000.

National Science Foundation Grant BIR-9318160, Computational Biology Program, D. L. DeAngelis, T. G. Hallam, M. R. Leuze (co-PIs). Parallel processing for individual-based models. 1994-1996. $519,305.

National Biological Service Cooperative Agreement (USGS, Biological Resources Division) 1445-CA09-95-0094 Subagreement 1, M.A. Huston (co-PI), Across-Trophic Level Systems Simulation for Wetland Ecosystems of South Florida. 1995-1998. $1,095,632.

National Biological Survey Cooperative Agreement 1445-CA09-95-0094, Subagreement 3. M.A. Huston, M. P. Nott (co-PIs), Individual Based, Spatially Explicit Model of Cape Sable Seaside Sparrow Population in Florida Everglades. 1998-1999. $79,165.

National Biological Service Cooperative Agreement (USGS, Biological Resources Division) 1445-CA09-95-0094 Subagreement 1, Across-Trophic Level Systems Simulation for Wetland Ecosystems of South Florida. 1998-2001. $1,048,046.

National Science Foundation Grant DUE-9752339, B. C. Mullin, S. E. Riechert (co-PIs), Alternative Routes to Quantitative Literacy for the Life Sciences. 1998-2001. $148,303.

National Institutes of Health Grant 1 R25 GM59924-01. S. Gavrilets, M. Kot (co-PIs), Short Courses on Mathematics of Biological Complexity. 1999-2001. $118,333.

National Science Foundation Grant DMS-0010920. S. Lenhart (co-PI), QEIB: Spatially-distributed population models with external forcing and spatial control. 2001-2004. $742,500. UBM (Undergraduate Biology and Mathematics) supplement of $99,992. 2002-2005.

US Geological Survey Cooperative Agreement 04HQAG0125, Subagreement 99155HS002. Critical Model Development for the Restudy - Additional DOI Restudy Needs and ATLSS Production-Runs for Various Hydrologic Evaluations. 2001-2003. $19,999.

US Geological Survey Cooperative Agreement 99155HS001, Selected Model Components of Across-Trophic Level Systems Simulation for Wetland Ecosystems of South Florida. 2002-2005. $567,386.

National Institutes of Health Grant 2 R25 GM59924-02. S. Lenhart, J. Wolf (co-PIs), Short Courses on Mathematics of Biological Complexity. 2002-2003. $136,080.

National Science Foundation Grant DMS-02-11991. S. Lenhart (co-PI), International Conference on Mathematics in Biology. 2002-2003. $17,040.

National Science Foundation Grant DEB-02-19269. M. Berry (co-PI), ITR: Parallel and Grid Computing for Ecological Multimodeling. 2002-2004. $497,729.

National Science Foundation Grant IIS-0427471. M. Berry, S. Lenhart (co-PIs), ITR: Grid Computing for Ecological Modeling and Spatial Control. 2004-2007. $1,416,610.

National Park Service Critical Ecosystem Studies Initiative (Everglades National Park). Cooperative Agreement 1443CA500009900. ATLSS Modeling: Extensions to Variable Spatial Grid Hydrologic Models. 2004-2005. $144,869.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F, Work Release 42. C. Welsh (co-PI). Support to the ETTP Site-Wide Remedial Investigation Work Plan (RIWP). 2004. $18,286.

Department of Energy, Bechtel-Jacobs Contract 23900-BA-CA021F Work Release 41, 45. F. Dolislager (co-PI), David Witherspoon Inc. Technical Support. 2004-2006. $93,791.

Fish & Wildlife Research Institute (FWRI), Florida Fish & Wildlife Conservation Commission. E. J. Comiskey, E. Carr (co-PIs), Initial Development of a Boat Pattern Simulator. 2005-2006. $51,120

Department of Energy, Bechtel-Jacobs Contract 23900-BA-CA021F Work Release 48. F. Dolislager, L. Galloway (co-PIs), Risk Integration Support. 2005-2006. $45,833.

University of Florida. Scientific and Technical Support for a Joint Ecosystem Modeling Laboratory. 2006-2008. $80,000.

Fish & Wildlife Research Institute (FWRI), Florida Fish & Wildlife Conservation Commission. E. J. Comiskey, E. Carr (coPIs), Phase 2 Development of SimBoat, a Boat Pattern Simulator. 2006-2007. $60,000.

US Geological Survey Cooperative Agreement, 04HQAG0125, Subagreement 04125HS001 Development of Selected Model Components of an Across-Trophic Level Systems Simulation (ATLSS) for the Wetland Ecosystems of South Florida. 2006-2010. $269,000.

Science Applications International Corporation E. J. Comiskey (co-PI), Scientific and Technical Support for Phase 2 of Supplemental Environmental Impact Statement for the Lake Belt. 2007. $9,890.

National Science Foundation Cooperative Agreement EF-0832858. National Institute for Mathematical and Biological Synthesis. 2008-2013. $16,000,000. Supplements: $186,298 and $199,986.

US Department of Energy, UT-Battelle, ORNL Contract 4000098343, EPA Risk - Environment Assessment and Decision Analysis. 2010-2011. $300,000.

US Department of Energy, UT-Battelle, ORNL Contract 4000110008, Mod 1-9, EPA Risk - Environment Assessment and Decision Analysis. 2011-2015. $1,931,959.

US Geological Survey Cooperative Agreement G11AC90026 Subagreement 04125HS001. Development of Selected Model Components of an Across-Trophic Level Systems Simulation (ATLSS) for the Wetland Ecosystems of South Florida. 2011-2013. $65,000.

National Science Foundation Cooperative Agreement DBI-1300426. National Institute for Mathematical and Biological Synthesis. 2013-2018. $18,600,000. (PI from 2013-2014 and 2017-2019, co-PI 2015-2017)

US Department of Energy, UT-Battelle, ORNL Contract 4000117539, EPA Risk - Environment Assessment and Decision Analysis. 2012-2015. $54,744.

US Department of Energy, UT-Battelle, ORNL Contract 4000142329 Mod 1-6, EPA Risk - Environment Assessment and Decision Analysis. 2015-2020. $68,913

US Department of Energy, UT-Battelle, ORNL Contract 4000141793 Mod 1-20, EPA Risk - Environment Assessment and Decision Analysis. 2015-2020. $2,562,591

National Science Foundation Award HRD-165039. P. Bishop, E. Brothers, S. Lenhart (co-PIs). DCL: NSF INCLUDES Conference on Multi-Scale Evaluation in STEM Education. 2016-2018. $248,397

US Department of Energy, UT-Battelle, ORNL Contract 4000148661 Mod 1-5. Mathematics support for spatio-temporal population and population dynamics modeling and simulation. 2016-2018. $107,008.

Burroughs-Wellcome Fund. Grant ID#1018963. Enhancing Quantitative and Data Science Education for Graduate Students in Biomedical Science. 2018-2020. $150,000.

Burroughs-Wellcome Fund. Grant ID#1020790.Workshop on Quantitative Education in Life Science Graduate Programs. 2018-2020. $49,995.

SPONSORED RESEARCH AS CO-PRINCIPAL INVESTIGATOR:

National Science Foundation Grant DMS-8704386, Mathematical Sciences, J.S. Bradley (PI), O. Karakashian, L. Gross (co-PIs). Mathematical Sciences Research Equipment. 1987. $20,000.

Lockheed-Martin P.O. 41X-SF622V. T. G. Hallam (PI), L. Gross (co-PI). Populations, communities and ecosystems: an individual perspective. 1990. $15,000.

National Science Foundation Grant DMS-9414353, Mathematical Sciences, T. G. Hallam (PI), L. Gross (co-PI). Fourth Autumn Course in Mathematical Ecology. 1994-1995, $12,000.

Environmental Protection Agency Grant 825157-01, M. A. Huston (PI), L. J. Gross, T. G. Hallam (co-PIs). Use of Multi-Scale Biophysical Models for Ecological Assessment, 1997,

$567,457.

Nuclear Regulatory Commission Contract NRC-04-02-057, R. Stewart (PI), L. J. Gross, T. Purucker (co-PIs). Bayesian subsurface radiological surveying and analysis in SADA. 2002-2005. $948,249.

Department of Energy, Bechtel-Jacobs #23900-BA-CA02F, Work Releases, 23, 29,36,37,39,44,46,49,51,54,55,58,59,61,63). F. Dolislager (PI), L. J. Gross (co-PI). Risk Integration Technical Support. Risk Assessment Information System-RAIS. 2002-2011. $506,918.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F Work Release 24,. F. Dolislager (PI), L. J. Gross (co-PI). PORTS Specific RAIS. 2002-2003. $72,000.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F Work Release 31. F. Dolislager (PI), L. J. Gross(co-PI). UEFPC Soils Remediation of Decision Planning. 2002-2003. $3,000.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F, Work Release 32. C. Welsh (PI), L. J. Gross (co-PI). Ecological Risk Support for ETTP. 2002-2003. $5,000.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F, Work Releases 34,43. C. Welsh (PI), L. J. Gross (co-PI). Demonstration of SADA for Ecological Evaluations. 2002-2004. $165,208.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F Work Release 33. F. Dolislager (PI), L. J. Gross (co-PI). ORNL Surface Impoundments B Risk Analysis Support. 2002-2003. $8,690.

Department of Defense Contract DACA42-03-P-0138. F. Dolislager (PI), L. Galloway, L. Gross (co-PIs). Modifications to the RAIS Database to Allow Seamless, Automated, Web Queries by ARAMS. 2003. $4,800.

Frankie Friend and Associates, Inc. D. Stewart (PI), L. Gross (co-PI). Mask Task Agreement for FFA's Prime Contract No. DE-AM05-03OR22969. 2003. $14,100.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F, Work Release 35. C. Welsh (PI), L. J. Gross (co-PI). PORTS Groundwater Technical Advisory Board. 2003-2004. $7,282.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F, Work Release 50,52,53,56,57. C. Welsh (PI), L. J. Gross (co-PI). ETTP Site-wide Remedial Investigation. 2006-2008. $68,581.

Nuclear Regulatory Commission NRC-04-06-066, R. Stewart (PI), L. J. Gross, T. Purucker (co-PIs). Sparse Radiological Subsurface Survey Data Analysis. 2006-2009. $978,063.

US Department of Energy, UT-Battelle, ORNL Contract 4000059491, L.Galloway (PI), L. Gross (co-PI).Mammalian Research. 2007-2013. $137,978.

Department of Energy, Bechtel-Jacobs Agreement #23900-BA-CA021F Work Release 60,62,64,66. F. Dolislager (PI), L. J. Gross (co-PI). ETTP Zone 1 ROD Amendment Support. 2010-2013. $126,701.

Department of Energy, URS CH2M Oak Ridge LLC (UCOR) #23900-BA-CA021F Work Release 63,65. F. Dolislager (PI), L. J. Gross (co-PI). Risk Integration Support. 2011-2013. $59,710.

State of Alaska. Award #18-9009-14. F. Dolislager (PI), L. J. Gross (co-PI). Training in the EPA Regional Screening Levels (RSL) and Risk Assessment Information System (RAIS). 2013-2014. $24,000.

State of Alaska. Award #18-9009-14 Work Order 4-5. F. Dolislager (PI), L. J. Gross (co-PI). Hosting and Maintenance of an Alaska-Specific Risk-Based Cleanup Levels Calculator. 2016-2017. $133,000

Department of Energy, URS CH2M Oak Ridge LLC (UCOR) # SC-15-012909 Rev 1-12. F. Dolislager (PI), L. J. Gross (co-PI). Risk Integration Technical Support. 2014-2016. $62,288

National Science Foundation Award DUE-1544375. P. Bishop (PI), L. Gross, S. Lenhart (co-PIs). EAGER: Assessing Interdisciplinary Examples Impacting Math Learning Goals. 2015-2017. $299,990

National Science Foundation Award DUE-1833548. S. Lenhart (PI), L. Gross, G. Wiggins (co-PIs). The 2018 NIMBioS Undergraduate Research Conference at the Interfaceof Biology and Mathematics. 2018. $20,150.

Internal Awards:

UTK Faculty Development Awards: 1981, Mathematical Models in Agriculture

UTK Faculty Leave Award: 1986, Mathematical Modeling of Photosynthesis

UTK Professional Leave Award: 1994, Curriculum Development and Research in Quantitative Biology.

HONORS AND AWARDS:

Drexel University: Dean of Science Award, 1974.

Cornell University: University Program Board Award, 1979.

National Academy of Sciences Inter-academy Exchange Project Development Award, Czechoslovakia. Theory of plant allocation under environmental stress. July 29-August 14, 1991.

University of Tennessee, Knoxville: Chancellors Research Award, 2000.

Tennessee Business Magazine: Top 10 Tennessee Scientists, 2004.

American Institute of Biological Sciences: Distinguished Scientist Award, 2006.

American Association for the Advancement of Science: Fellow, 2008.

Society for Mathematical Biology: Fellow, 2017.

Southeastern Conference: Faculty Achievement Award, 2018.

State of Tennessee House of Representatives: House Joint Resolution No.1013, honor and commend. April 11, 2018.

SOCIETY MEMBERSHIPS:

American Association for the Advancement of Science, Society of Industrial and Applied Mathematics, Ecological Society of America, American Society of Naturalists, Society for Mathematical Biology, Society for Conservation Biology, American Institute of Biological Sciences, Mathematical Association of America, Society for Integrative and Comparative Biology.

CONFERENCES AND WORKSHOPS ORGANIZED:

Organizer and co-chair, Symposium on Some Mathematical Questions in Plant Biology, sponsored by AMS/SIAM/AAAS, May, l985. (Budget: $8000).

Co-director (with S. A. Levin and T. G. Hallam). Second Autumn Course on Mathematical Ecology, 1986 (Budget: $250,000). First Autumn Workshop on Mathematical Ecology, 1988 (Budget: $160,000). Third Autumn Course on Mathematical Ecology, 1990 (Budget: $122,000). Second Autumn Workshop on Mathematical Ecology, 1992 (Budget: $80,000). Fourth Autumn Course on Mathematical Ecology, 1994 (Budget: $82,000).Third Autumn Workshop on Mathematical Ecology, 1996 (Budget: $65,000). Fifth Course on Mathematical Ecology, 2000 (Budget: $65,000). International Centre for Theoretical Physics, Trieste, Italy

Co-organizer. Workshop on Populations, Communities, Ecosystems: an Individual Perspective; sponsored by Science Alliance of UTK, Electric Power Research Institute, and Oak Ridge National Laboratory. Knoxville, Tennessee, 1990 (Budget: $26,000).

Organizer. Eighth Southeastern Mathematical/Statistical Ecology Conference. Fontana Village,

NC. March 1991.

Organizer. Workshop on A Quantitative Curriculum for Life Science Students. Funded by the National Science Foundation. Knoxville, TN. 1992 (Budget: $20,000).

Organizer. Workshop on Quantitative Training for Life Science Students. Funded by the National Science Foundation. Knoxville, TN. 1994 (Budget: $17,000).

Workshop Leader, Pellissippi State College Workshop on Mathematical Modeling for Community College Faculty: A Technological Approach, funded by National Science Foundation. May 1994, October 1994, March 1995.

Co-organizer, Workshop on Across Trophic-Level System Simulation for the Freshwater Wetlands of the Everglades and Big Cypress Swamp. Sponsored by Everglades National Park and the National Biological Survey, Homestead, Florida. June 1994.

Organizer, Symposium on Quantitative Training for Life Science Students and Open Computer Laboratory, American Institute for Biological Sciences Annual Meeting, Knoxville, TN. August 1994.

Co-organizer, Second Workshop on Across Trophic-Level System Simulation for the Freshwater Wetlands of the Everglades and Big Cypress Swamp. Sponsored by Everglades National Park and the National Biological Service, Miami, Florida. April 1995.

Organizer. SIAM Minisymposium on Environmental Modeling and Computation. Annual Meeting of the Society for Industrial and Applied Mathematics, Charlotte, NC. October 1995.

Co-organizer and co-chair. MAA Special Contributed Paper Session on Interdisciplinary Programs with Undergraduate Mathematics. Annual Meeting of the Mathematics Association of America, Orlando, FL. January 1996.

Session organizer. National Conference on Environmental Decision Making. Special Session on Computational Ecology and Environmental Decision Making. Knoxville, TN, May 1998.

Course Leader and Lecturer, NSF Chatauqua Course on Quantitative Life Science Education: Preparing Fearless Biologists, Memphis, TN, June 1999.

Organizing Committee, Fourth International Conference on GIS and Environmental Modeling: Problems, Prospects and Research Needs. Banff, Canada, September 2000.

Director and Organizer, Short Courses on the Mathematics of Biological Complexity. Knoxville, TN, June, October and December 2000.

Local Organizing Committee Member and Chair for Education, Outreach and Entertainment. Evolution 2001 Meetings of the Society for the Study of Evolution and the American Society of Naturalists. Knoxville, TN, June 2001.

Society for Mathematical Biology. Scientific Committee member for Annual Meetings (1999, 2000, 2005, 2010), 2002 Annual Meeting Chair and Organizer, Knoxville, TN.

Ecological Society of America, Symposium Organizer and Chair for "Spatial Control of Natural and Managed Systems: Theory and Applications". Discussion organizer "Helping undergraduates appreciate the role of theory in ecology". Madison, WI August 2001.

Co-Director. Workshops on Computational Science for Natural Resource Managers. Knoxville, TN. April 2006, April 2007.

Ecological Society of America, Program Chair, 2008 Annual Meeting, Milwaukee, WI.

Organizer and Moderator, AAAS Symposium on "Moving Across Scales: Mathematics for Investigating Biological Hierarchies" February 21, 2010, cosponsored by AAAS Sections A and G and The National Institute for Mathematical and Biological Synthesis.

Steering Committee, NSF Workshop on Mathematical Challenges for Sustainability, Center for Discrete Mathematics and Theoretical Computer Science, Rutgers University. Rutgers, New Jersey. November 2010

Steering Committee, National Academy of Sciences Workshop on The Role of Animal Agriculture in a Sustainable 21st Century Global Food System. Washington, DC. November 2010

Society for Mathematical Biology. 2012 Annual Meeting Chair and Organizer, Knoxville, TN. July 2012

Steering Committee, Workshop on Integrating Environmental Health Data to Advance Discovery, National Research Council Standing Committee on Use of Emerging Science for Environmental Health Decisions. January 2013

Co-organizer (with Brian Beckage, Sarah Metcalf and Asim Zia) - Working Group on "Integrating Human Risk Perception of Global Climate Change into Dynamic Earth System Models" - SESYNC, Annapolis, MD. June 2013, June 2014, July 2015, May 2018, NIMBioS January 2014, July 2016.

Steering Committee, NSF RCN-UBE Incubator Workshop: Enhancing Data Discovery and Usability for Inquiry in Biology Education – Univ. of Michigan, Ann Arbor. July 2013

Advisory Board, Vision and Change II - Chronicling Change, Inspiring the Future - NSF, HHMI, USDA, AAAS. Washington, DC. August 2013

Planning Committee, DIMACS Workshop on Urban Planning for Climate Events. Rutgers University, New Brunswick, NJ. September 2013

Planning Committee Member, Enabling Architecture for the Next Generation of Life Science Research. National Academies, Washington, DC. October 2013

Organizing Committee, SAMSI Year on Mathematical and Statistical Ecology, Durham, NC. August 2014-July 2015.

Director, NSF IDEAS Lab on Quantitative Biology Education. Washington, DC. March-April 2014.

Chair, Organizing Committee. NIMBioS/SAMSI/ESA Graduate Workshop on Current Issues in Statistical Ecology. Knoxville, TN. April 2015.

Co-Organizer, SAMSI Special Year on Mathematical and Statistical Ecology: Transition Workshop, SAMSI, Research Triangle Park, NC. May 2015.

Workshop Organizer, HHMI/BioQuest/ScienceCaseNet Workshop on Count the Ways: Engaging Students in Quantitative Biology Applications. Harvey Mudd College, Claremont, CA. June 2015.

Organizing Committee, SIAM Activity Group on Education First Conference, Philadelphia PA. October 2016.

Conference Chair, NSF INCLUDES Conference on Multiscale Evaluation. Knoxville, TN. February 2017.

Organizer, NIMBioS Workshop on the Mathematics of Gun Violence. Knoxville, TN. May 2019.

Ecological Society of America, Symposium Organizer and Chair for "Theory in Ecology: Adding Humans to the Equations". Organizer and Moderator for Special Session "Ecology and the Data Science Bandwagon: Broadening Undergraduate Quantitative Education". Moderator for Organized Oral Session "Managing Ecological Systems at Multiple Scales: The Role of Institutions and Stakeholder Interactions". Louisville, KY August 2019

PROFESSIONAL SERVICE:

Referee for: Journal of Mathematical Biology, SIAM Journal of Applied Mathematics, Biometrics, Theoretical Population Biology, Ecology, Oecologia, American Journal of Botany, Trends in Ecology and Evolutionary Biology, Bulletin of Mathematical Biology, American Naturalist, Bioscience, PLOS Biology, PNAS, Ecology Letters, PLOS Computational Biology.

Editorial Boards:
Karachi Journal of Mathematics; 1983-1987
Ecological Applications; 1989-1992, Ecological Society of America
Ecology, and *Ecological Monographs*; 1990-1992, Ecological Society of America
Journal of Theoretical Biology, 2001-2005

Letters in Biomathematics, 2016-2018

For Professional Societies:

Society for Mathematical Biology:
Scholarship Committee, 1987-89
Scientific Organizing Committee and Chair of Special Session on Education, International Congress on Theory and Mathematics in Biology and Medicine, Amsterdam, 1999
Scientific Organizing Committee, Annual Meeting, Salt Lake City, 2000
Chair and Organizer, 2002 Annual Meeting, Knoxville, 2002
President-Elect, 2002-2003; President, 2003-2005; Past-President, 2005-2006
Nominating Committee Chair, 2009
Okubo Prize Award 2011-2013 (Chair, 2011)
Chair and Organizer, 2012 Annual Meeting, Knoxville 2012
Bulletin of Mathematical Biology Revisioning Committee, 2013-2014

Ecological Society of America:
Judge for the Murray F. Buell Award (various years).
Committee on Ecologists in Developing Countries, 1990-1993
International Relations Committee, 1993-1998
Theoretical Ecology Section, Vice Chair, 2000-2001; Chair, 2001-2002
Advisory Board Member, Ecological Education Network Digital Library, BioEdNet Project, 2001-2003
Meetings Committee, 2004-2010
Program Chair, 2008 Annual Meeting
Steering Committee, Ecology and Education Summit, Ecological Society of America and the National Education Association. Washington, DC. October 2010
SEEDS Mentor, 2009, 2011, 2019
MacArthur Awards Committee, 2012-2014

American Institute of Biological Sciences:
Board of Directors, elected by Membership-at-large, 2008-2011
Treasurer, 2010-2012
Finance Committee Member, 2009-2015

Society for Industrial and Applied Mathematics:
Organizing Committee, SIAM Activity Group on Education First Conference, 2016.
Committee on Science Policy, 2016-present

Service to Government Agencies:

National Science Foundation:
NSF Innovative Technology Research Panel on Advanced Computational Science (2000, 2002)
NSF Panel on Interdisciplinary Informatics Post-docs (June, 2004; June 2006)
NSF Panel on Evolutionary and Population Ecology (April, 2005)
NSF Panel on Human and Social Dynamics (May 2007)

NSF Panel on Review of Teragrid (February 2007)
NSF Panel on Center for Environmental Implications of Nanotechnology (April 2008)
NSF Blue Ribbon NEON Observatory Review Panel (February 2009)
NSF Macrosystems Biology Panel (January 2010)
National Science Board, Discussion Group for Task Force on Unsolicited Mid-Scale Research, (March 2011)
NSF Site Review iDIGBio (April 2013)
NSF Site Review (Chair). NESCent (May 2013)
NSF Site Review (Chair), BEACON (December 2013)
NSF DUE IDEAS Lab on Quantitative Biology Education (Director, March 2014)
NSF EPSCoR RII Track 1 Reverse Site Visit Panel (Chair, September 2014)
NSF Postdoctoral Research Fellowships in Biology Panel (January 2016, January 2017)
NSF INCLUDES Pilot Preproposal Review Panel (February 2017)
NSF INCLUDES Pilot Full Proposal Review Panel (June 2017)
NSF Reverse Site Visit Review (Chair), iDIGBio (March 2018)

Environmental Protection Agency:
EPA Fellowship Review Panel, Terrestrial Ecology and Ecosystems (2000, 2001, 2002, 2007).
EPA Review Panel for Pathfinder Innovation Projects, Stage 1 (June 2014)
EPA Review Panel for Pathfinder Innovation Projects, Stages 2-3 (March 2015), Stage 1 (January 2017)

US Army:
Army Research Office, Mathematical Sciences Division Board of Visitors (2010, 2012, 2014)

National Institutes of Health:
NIH/National Institute on Alcohol Abuse and Alcoholism Review Panel on Ecosystem Models of Alcohol-Related Behavior (2003).
NIH Special Emphasis Panel/Scientific Review Group 2005/05 ZRG1 BST-A (90) (2005)

Non-US Agencies:
Co-Director, Courses and Workshops on Mathematical Ecology, International Centre for Theoretical Physics, Trieste, Italy (1982, 1986, 1988, 1990, 1992, 1994, 1996, 2000)
Member, World Bank Scientific Review Panel on Lower Kihansi Environmental Management, Tanzania (2003 – 2004)
Member, European Commission Review Panel for NEST Programme (2004, 2006)
Member, Natural Sciences and Engineering Research Council of Canada (NSERC) Joint Prizes Selection Committee (2011)
Reviewer, French National Research Agency (ANR) BIOADAPT program (2012)
Reviewer, European Research Council Advanced Grant program (2012)
Reviewer, UK EPSRC Centres for Doctoral Training Panel (2013)
Member, Review Panel for Chile Millenium Science Initiative (2014)
Fields Institute (Toronto) Proposal Review (2016)
Netherlands Organization for Scientific Research (2018)

National Academy of Sciences/National Research Council:

Member, National Academy of Sciences Mathematics and Computer Science Panel for the Bio2010 Project (2001-2002)

Chair, National Research Council Committee on Integrating Biocomplexity Research and Education (2001-2003) Chair of Workshop held April 2002 in Washington, DC, and Reviewer of Report (report released February 2003).

Presenter, Public Briefing on National Research Council Bio2010 Report, Undergraduate Biology Education to Prepare Research Scientists for the 21st Century (September 2002)

Presenter, National Research Council Math Science Education Board Meeting, (November 2002)

Reviewer, National Research Council Review of the Florida Keys Carrying Capacity Study (February 2002)

Presenter, National Research Council Panel to Review the Critical Ecosystems Studies Initiative, Key Largo, FL (May 2002)

Reviewer, National Research Council Report, Re-engineering Water Storage in the Everglades: Risks and Opportunities (September 2004)

Invited Participant, National Academy of Sciences Workshop on New Classes of Antimicrobials (May 2005)

Reviewer, National Research Council Report, Progress Restoring the Everglades: the First Biennial Review (May 2006)

Member, National Research Council Committee on Environmental Decision Making: Principles and Criteria for Models (2003-2007)

Member, Board on Life Sciences (2008-2014)

Steering Committee Member, Workshop on The Role of Animal Agriculture in a Sustainable 21st Century Global Food System (November 2010)

Liaison, Board on Life Sciences to the NRC Standing Committee on Use of Emerging Science for Environmental Health Decisions (2010-2014)

Presenter and Invited Discussant, NRC Mathematical Sciences and its Applications Board, Workshop on Data Collection in Support of Modeling and Simulation (November 2012)

Steering Committee, Workshop on Integrating Environmental Health Data to Advance Discovery, NRC Standing Committee on Use of Emerging Science for Environmental Health Decisions (January 2013)

Planning Committee, Scoping Meeting on Enabling Architecture for the Next Generation of Life Science Research (October 2013)

Reviewer, Gulf Research Program, Exploratory Grants (September 2015)

Member, Committee on Envisioning the Data Science Discipline: the Undergraduate Perspective, (2016-2018)

Talks to NRC Committees:

Pedagogical Aspects of Computational Thinking (February 2010)
Data Collection in Support of Modeling and Simulation (November 2012)
Barriers and Opportunities in Completing 2- and 4-year STEM Degrees (November 2013)
Committee on Envisioning the Data Science Discipline (December 2016, Webinar April 2017)

Advisory Boards:

Advisory Board Member, NSF Mathematics Across the Curriculum Project. University of Nevada, Reno (1994-1998)
Advisory Board Member, NSF Mathematics for Biology Project. Iowa State University (1995-1997)
Member, National Advisory Committee for the NSF-funded Middle Atlantic Consortium for Mathematics and its Applications. University of Pennsylvania (1997-1998)
National Advisory Board Member for NSF-funded project, An Interdisciplinary Approach to Teaching Mathematics and Composition Through a Course Cluster. Marist College (1998-1999)
National Advisory Board Member for NSF-funded project, Mathematical Modeling in the Life Sciences, City College of New York (1998-1999)
Board of Governors, Mathematical Biosciences Institute (NSF Division of Mathematical Sciences), Ohio State University, 2002-2006. Chair, 2003-2005.
Advisory Committee, MAA Committee on the Undergraduate Program in Mathematics (CUPM) Curriculum Initiative (2002-2005). Mathematical Biology CUPM Panel (2012-2014)
Advisory Committee Member, NSF-funded Bioinformatics Education Project, University of Texas, San Antonio (2003)
Scientific Advisory Board Member, The BioQuest Project. Beloit College (1998-2004)
Advisory Committee Member, NSF-STEP (Talent Expansion in Quantitative Biology) Award, East Tennessee State University (2006-2010)
Advisory Board and Steering Committee, Vision and Change in Undergraduate Biology Education, AAAS and NSF (2009)
Steering Committee, Workshop on Mathematical Challenges for Sustainability. DIMACS, Rutgers University (November 2010)
AAAS Panel for Science Prize for On-line Resources (SPORE) (2010-2012)
Advisory Board and Steering Committee, Vision and Change in Undergraduate Biology Education II, AAAS, HHMI, NIH and NSF (2012-2013)
Chair, Advisory Board, HHMI Project on the Quantitative Biology Undergraduate Program, University of California, Davis. (2016)
Advisory Board, NSF QUBES (Quantitative Undergraduate Biology Education and Synthesis) (2016-present)
Advisory Board, NSF SMILES project, Penn State University (2016-2018)
Advisory Board, AAAS INCLUDES Conference (2017)
External member, Review of the Bioinformatics Graduate Program, University of Texas –El Paso (2017)
Member, Analytics Subcommittee, SEA Change project, AAAS (2017-present)
External member, Review of the Biological Sciences Department, University of Notre Dame (2018)
Facilitator, STEM for all Video Showcase: Transforming the Educational Landscape (2018)
Advisory Board, NSF BD-Spoke Collaborative: Integrating Biological Big Data Research into Student Training and Education, Spelman College (2018-present)
International Scientific Advisory Board, EUR H2O'Lyon, Université de Lyon, France (2019-present)
Advisory Board, NSF RCN-UBE: Quantitative Biology at Community Colleges, Montgomery College (2019-present)

Other Professional Service:

Visiting Scholar Program, Oak Ridge Associated Universities (1989-1993)

Course instructor, Short Course on Mathematical Modeling, NSF Research Experience for Undergraduates Program, University of Tennessee1 (1989)

Mathematics Enrichment Program, Sequoyah Elementary School, Knoxville TN. Developed a pilot program during 1993-1994 for 3rd and 4th graders using games to illustrate probability concepts. Ran this program for several classes of these grades during 1994-1995.

Moderator for the Life Sciences Section of the Mathematics Archive Site (ftp/gopher/WWW) (1994-2002)

Review Committee, Howard Hughes Medical Institute Collaborative Pilot Grant Initiative (2013)

Tenure and Promotions Reviews: Arizona State University, Case-Western Reserve University, Cornell University, Duke University, Florida State University, Georgia State University, Iowa State University, Macalester College, Moffitt Cancer Center, New Mexico State University, North Carolina State University, Pennsylvania State University, Rutgers University, San Diego State University, San Francisco State University, SUNY – Geneseo, Texas Tech, Tulane University, University of Alabama – Huntsville, University of Alberta, University of Arizona, University of California – Riverside, University of California – Santa Cruz, University of Chicago, University of Connecticut, University of Delaware, University of Florida, University of Georgia, University of Glasgow, University of Guelph, University of Houston, University of Kentucky, University of Louisiana – Lafayette, University of Maryland, University of Miami, University of Minnesota – Minneapolis, University of Nebraska- Lincoln, University of Nevada – Reno, University of North Texas, University of Ottawa, University of Richmond, University of South Florida, University of Texas – El Paso, University of Toronto, University of Vermont, University of Washington – Seattle, University of Washington – Takoma, University of Waterloo, University of Wisconsin – Madison, Utah State University, Washington State University, William and Mary University, Woods Hole Oceanographic Institution, Yale University, York University

UNIVERSITY SERVICE:

Faculty member in the Plant Physiology and Genetics, and Ethology Programs as part of the Life Sciences Graduate Program, 1983-1995.

Appointed to UTK Science Alliance Center of Excellence, 1984,1986-1989, 1991-1994, 1996-2001.

Volunteer producer and host, Live at Laurel radio show, WUOT-FM. 1983-1989.

Faculty Senate:
Faculty Senator 1989-1992, 2001-2004, 2015-2018.
Faculty Senate Budget Committee, 1989-1994, 2001-2006, 2015-present, Chair 2002-2004, Chair 2015-2018.
Executive Committee, 2002-2004, 2005-2008, 2016-2018.
Committee on Teaching Evaluations, 1991-1993.
President-Elect, 2005-2006.
President, 2006-2007.
Past-President, 2007-2008.
Member: Commission for Blacks, Commission for Women, LGTB Commission 2006-2007.

UTK Review and Redirection Task Force, 2003-2004.

UTK Residency Classification Committee, 1987-1990.

UTK Classroom Upgrade Committee, 2000-2005.

University of Tennessee System Federal Compliance Task Force, 2003-2008.

Search Committee Member, Director for Joint Institute for Computational Science, 2010-2011.

Search Committee Member, UTK Chief Information Officer and Assistant Vice Chancellor, 2011-2013.

University of Tennessee System IT Committee, 2007-2008.

Scalable Intra-Campus Network Grid (SinRG) Project - Computer Science NSF Infrastructure Award - Steering Committee, 2000-2004.

College of Arts and Sciences Speakers Bureau, 1995-2010.

Chair, Graduate Program in Ecology Admissions Committee, 1989-1990.

Department of Ecology and Evolutionary Biology. Tenure and Promotion Committee, Chair, 1998-2000.

DII Users Advisory Group on Computing, 1995-1996.

Faculty advisor, The Knoxville Country Dancers (student organization). 1989-2003.

Faculty advisor, Alpha Phi Omega Service Fraternity (student organization). 1997-1999.

Search Committee, UTK Chief Information Officer (2011-2013)

Office of Research Red Team Review for NSF STC Proposals (2014)

Department of Physics and Astronomy Ten Year Review (2015)

Materials, Research, Science and Education Center Review (2016)

Provost and Research Office Review Committee for Data Science Cluster Hires (2017)

UTK Advisory Board, elected Faculty member, (2019-present)

Office of Research Red Team Review for NSF Materials Innovation Platform (2019)

Community Service:

Scoutmaster, Boy Scout Troop 12. Vestal and Mount Olive Schools (1980-1985).

Jubilee Community Arts. Live at Laurel Radio Show Founder and Producer (1981-1989); Board of Directors (1989-1993, 1997-2000); Treasurer (1990-1993); House Sound Engineer (1989-present).

Temple Beth El. Board of Directors (1980-1982, 2001-2004).

Community Shares. University of Tennessee Advisory Board (1985-1992); Board of Directors (1997-2001); Treasurer (1999-2001); Finance Committee member (1998-present).

INVITED PRESENTATIONS:

American Mathematical Society Annual Meeting Special Session on Mathematical Modeling, New York City. April 1979.

International Centre for Theoretical Physics. Lectures for UNESCO Course on Mathematical Ecology. Trieste, Italy. November 1982

American Mathematical Society/Society of Industrial and Applied Mathematics Symposium on Some Mathematical Questions in Biology, AAAS Meeting, Los Angeles, May 1985

International Centre for Theoretical Physics. Lectures for Second Course on Mathematical Ecology. Trieste, Italy. November 1986

Asilomar Conference on Theoretical Ecology, Pacific Grove, California. May 1987

Workshop on Biomathematics and Related Computational Problems, Capri, Italy. May 1987.

International Symposium on Mathematical Approaches to Environmental and Ecological Problems, Cornell University, Ithaca, NY. November 1987.

International Centre for Theoretical Physics, First Autumn Workshop on Mathematical Ecology,

Trieste, Italy. October - November, 1988

Visiting Scholar Lecturer, University of Puerto Rico, Rio Piedras. November 1989

Visiting Scholar Lecturer, Texas Women's University, Denton, Texas. February 1990

Sigma Xi Wingspread Workshop on Entry-level Science Courses for Undergraduates. Racine, Wisconsin. June 1990

Society of Environmental Toxicology Workshop on Ecological Modeling in Avian Toxicology. Kiawah Island, South Carolina. July 1990

US DOE Program in Theoretical Ecology. Theoretical ecology: progress and prospects, Beltsville, MD. April 1991

Ecological Society of America Annual Meeting, Symposium presentation. Honolulu, Hawaii. August 1992.

International Centre for Theoretical Physics, Second Autumn Workshop on Mathematical Ecology, Trieste, Italy. November 1992

AMS/MAA Workshop on Changing Collegiate Education: Mathematical Sciences and their Uses in Other Disciplines. Washington, DC. March 1994.

National Park Service and Scientific Sub-committee of the Interagency Task Force on South Florida Restoration. Homestead, FL. June 1994

American Institute of Biological Sciences Annual Meeting. Symposium presentation, Knoxville, TN. August 1994

International Centre for Theoretical Physics, Fourth Autumn Course on Mathematical Ecology. Trieste, Italy. November 1994

Workshop on First-Year Mathematics Courses for Students in the Life Sciences. Iowa State University, Ames, Iowa. December 1994

Conference on Mathematical Models in Population Dynamics. Utah State University, Logan, Utah. August 1995

San Diego Supercomputer Center Workshop on Computational Ecology. San Diego, CA. September 1995

SIAM Annual Meeting. Symposium presentation. Charlotte, NC. October 1995

Sixth Symposium on Environmental Toxicology and Risk Assessment: Modeling and Risk Assessment, ASTM and Society for Environmental Toxicology. Orlando, FL. April 1996

Conference on Mathematics for Life Sciences Undergraduate Students. Keynote speaker. Iowa State University. Ames, Iowa. May 1996

Symposium on The Interface between Theoretical Ecology and Conservation Biology. Annual Meeting of the Society for Conservation Biology. Providence, RI. August 1996

International Centre for Theoretical Physics, Third Autumn Workshop on Mathematical Ecology. Trieste, Italy. October 1996

Workshop on Aquatic Ecosystem Modeling and Assessment Techniques, Winrock Conference Center, Morrilton, Arkansas. July 1997

Workshop on Strategies of Modeling Biological Systems. Indiana University, Bloomington, Indiana. November 1997

Special Year in Mathematical Biology, International Center of Sciences, Cuernavaca, Mexico. November 1997

Workshop on Integrating GIS and Multi-Agent Modelling Techniques, Santa Fe Institute, Santa Fe, New Mexico. March 1998

National Conference on Environmental Decision Making, Knoxville, TN. May 1998

Advanced Course in Ecological Modeling, Beijer Institute, The International Institute of Ecological Economics. The Royal Swedish Academy of Sciences. Santa Fe Institute. Santa Fe, New Mexico. December 1998

NSF Workshop on Modelling across the Sciences, University of Chicago, Chicago, Illinois. April 1999

Troisieme cycle romand en sciences biologiques: Wetlands, Population Dynamics of Plants and Animals. Fribourg, Switzerland. October 1999

Conference on Predicting Species Occurrences: issues of scale and accuracy. Snowbird, Utah. October 1999

Workshop on Biocomplexity Special Competition: opportunities in the Mathematical Sciences sponsored by the NSF. Institute for Mathematics and its Applications, University of Minnesota. Minneapolis, Minnesota. January 2000

International Centre for Theoretical Physics. Fifth Course on Mathematical Ecology. Trieste, Italy. March 2000

Ecole de Printemps, Modäles et theories pour le contrìle de ressources vivantes et la gestion de systämes Ecologiques. Institut National Agronomique Paris-Grignon, France. International

invited lecturer. May 2000

MAA Curriculum Foundations Workshop in Biology and Chemistry. Macalester College, St. Paul, Minnesota. Keynote speaker. November 2000

Arizona State University Mathematics Department Distinguished Lecture Series. Tempe, Arizona. March 2001

Hollins University. Public lecture series. Hollins, Virginia. April 2001

National Academy of Sciences Workshop: Bio2010: Undergraduate Biology Education to Prepare Research Scientists for the 21st Century. Snowmass, Colorado. August 2001

Workshop on Applied Biology/Biotechnology, Florida Gulf Coast University. Naples, Florida. September 2001

Workshop on Intellectual Imperatives in Ethnobiology. Missouri Botanical Garden, St. Louis, Missouri. April 2002

Mathematical Biology Workshop. University of Nebraska, Lincoln, NE. Featured lecturer. May 2002
Project Kaleidoscope Summer Institute. Williamsburg, Virginia. Workshop leader and presenter. May 2002.

BioQUEST Workshop on Biocomplexity in Undergraduate Education. Beloit College, Racine, Wisconsin. Workshop leader and keynote speaker. June 2002

Workshop on New Paradigms in Teaching Introductory and Cell Biology: Bio 2010. Annual Meeting of the American Society for Cell Biology. San Francisco, California. December 2002

Meeting the Challenges in Emerging Areas: Education Across the Life, Mathematical and Computer Sciences. Mathematical Association of America, National Science Foundation and National Institutes of Health. Keynote speaker. Bethesda, Maryland. February 2003.

Tenth Annual Hudson River Undergraduate Mathematics Conference (HRUMC) Union College, Plenary address. Schenectady, New York. April 2003

Conference of NIH/NIGMS MORE Division Program Directors. Lake Tahoe, Nevada. June 2003.

Alcala 2nd International Conference on Mathematical Ecology, Plenary lecturer, Alcala de Henares (Madrid), Spain. September 2003.

Project Kaleidoscope Assembly, University of Colorado. Boulder, Colorado. November 2003.

Association of American Medical Colleges, Group on Graduate Research, Education, and

Training Annual Meeting. Austin, Texas. April 2004

Symposium for Frontiers in Mathematical Biology and Bioinformatics, Auburn University. Auburn, Alabama. May 2004

Annual Meeting Society for Mathematical Biology. Presidential address. Ann Arbor, Michigan. July 2004

Kansas City Regional Mathematics Technology EXPO. Rockhurst University. Keynote address. Kansas City, Missouri. October 2004

Symposium on Quantitative Science in the Biology Curriculum, University of Maryland Baltimore County. Baltimore, Maryland. December 2004

AMS Special Session on Mathematics and 21st Century Biology. Joint Mathematics Meetings. Atlanta, Georgia. January 2005

Workshop on Spatial Ecology: The Interplay Between Theory and Data, University of Miami. Miami, Florida. January 2005

Symposium on Math and Bio2010: Linking Undergraduate Disciplines. Annual Meeting of the AAAS, Washington, DC. February 2005

The First Young Researchers Workshop in Mathematical Biology, Mathematical BioSciences Institute, Ohio State University. Columbus, Ohio. March 2005

European Conference on Mathematical and Theoretical Biology, Plenary speaker. Dresden, Germany. July 2005

Brazilian Society for Computational and Mathematical Biology Annual Meeting. Plenary speaker. Petropolis, Brazil. December 2005

South Carolina BIO 2010 Workshop, University of South Carolina, Columbia, South Carolina. March 2006.

US Military Academy Conference on Improving Undergraduate Mathematics through Applications in Biology. West Point, New York. April 2006.

Education in Mathematical Biology Workshop. Washington State University, Pullman, Washington. April 2006

NSF Workshop on Future Directions in Modeling for Environmental Observatories. Tucson, Arizona. May 2006

Workshop on Integrating Math and Science Content in Division Courses. University of St. Thomas, St. Paul, Minnesota. May 2006

NIH Institutional Research and Academic Career Development Award Annual Meeting. Kansas City, Missouri. June 2006

Annual Meeting, Society for Mathematical Biology and SIAM Life Sciences Activity Group. Raleigh, North Carolina. July 2006.

NSF Workshop on the Computational Worldview and the Sciences. Princeton, New Jersey. December 2006.

Mathematical Biosciences Institute Workshop on Opportunities in Mathematical Biology for Underrepresented Groups. Ohio State University, Columbus, Ohio. March 2007

Mathematical Biosciences Institute Workshop Over the Fence: Conversations between Mathematicians and Biologists about Curriculum Revitalization. Ohio State University. Columbus, Ohio. June 2007

Mathematical Association of America Summer Meeting (MathFest). Invited Address. San Jose, California. August 2007

Mathematical Biosciences Institute Conference on Integrating Differential Equations with Math Biology. Ohio State University, Columbus, Ohio. November 2007

Annual Meeting of the Kentucky Section of the Mathematical Association of America, Western Kentucky University, Keynote speaker. Bowling Green, Kentucky. March 2008

Pacific Institute of Mathematical Sciences Mathematical Biology Summer Workshop – University of Alberta, Invited International Guest. Edmonton, Alberta, Canada. May 2008

Ecological Society of America Annual Meeting. Symposium on New Approaches to the Evolution of Social Behavior. August 2008

Czech Academy of Sciences Institute of Systems Biology and Ecology. Symposium on Perspectives of Systems Biology and Ecology. Nove Hrady, Czech Republic. August 2008

National Conference of Society for Natural Areas, Symposium on Decision Support Tools for Natural Area Management - Accounting for Changing Conditions. Nashville, Tennessee. October 2008.

Pan American Studies Conference on Long Term Changes in Tropical Forests: La Selva as a Case Study. La Selva Biological Field Station, Costa Rica. April 2009

Pacific Northwest Conference on Comprehensive Mathematical Modeling in the Natural and Engineering Sciences Organized in the Spirit of L. A. Segel, Washington State University, Pullman, Washington. June 2009

Mathematical Modeling and Analysis of Ecological Systems Symposium, First Joint Meeting of the Society for Mathematical Biology and the Chinese Society for Mathematical Biology. Hangzhou, China. June 2009

Ecological Society of America Annual Meeting, Symposium on Undergraduate Ecological Education. Albuquerque, New Mexico. August 2009

MAA Environmental Mathematics Activity Group, Joint Meeting of the American Math Society and Mathematics Association of America. San Francisco, California. January 2010

National Academies' Committee on Computational Thinking for Everyone - Washington DC - (presented via web). February 2010

Association for the Advancement of Science Annual Meeting, Symposium on Moving Across Scales: Mathematics for Investigating Biological Hierarchies. San Diego, California. February 2010

Mathematics and Biology Departments, Arizona State University, Distinguished Lecturer. Tempe, Arizona. March 2010

National Academy of Sciences Beyond Bio2010 Conference. Keynote talk. Washington, DC. May 2010

HHMI Quantitative Biology Meeting, University of Delaware, Keynote speaker. Newark, Delaware. June 2010

Department of Homeland Security Annual Chemical and Biological Division Performers Conference, Washington, DC. August 2010

Ecology and Education Summit, Ecological Society of America and the National Education Association. Washington, DC. October 2010

Workshop on Evolutionary Dynamics in Cancer, James S. McDonnell Foundation. Almagro, Spain. September 2010

Workshop on The Role of Animal Agriculture in a Sustainable 21st Century Global Food System, Board on Agriculture and Natural Resources, National Academy of Sciences. Washington, DC. November 2010

NSF Workshop on Mathematical Challenges for Sustainability, Center for Discrete Mathematics and Theoretical Computer Science, Rutgers University, Rutgers, New Jersey. November 2010

Symposium on Systems Biology: Definitions and Implementations, Vanderbilt, University, Nashville, Tennessee. February 2011

Conference on Computational and Systems Biology, University of Florida, Gainesville, Florida.

March 2011

University of Tennessee Undergraduate Honor's Symposium. Keynote talk. Knoxville, Tennessee. March 2011

Workshop on Glioma Ecosystem Opportunities, James S. McDonnell Foundation, La Jolla, California. April 2011
DOE Low Dose Radiation Research Investigators' Workshop. Washington, DC. May 2011

University of Tennessee Comparative and Experimental Medicine/Public Health Research Symposium, Keynote talk. Knoxville, Tennessee. June 2011

Konrad Lorenz Institute Workshop on Meaning of Theory in Biology. Vienna, Austria, June 2011

NSF Workshop on Adaptive Organismal Biology. Washington, DC. September 2011

4th International Symposium on Biomathematics and Ecology: Education and Research. Plenary speaker. University of Portland, Portland, Oregon. December 2011

Association of Southeastern Biologists Annual Meeting, Symposium on A New 'Vision' for Undergraduate Biology Education. Athens, Georgia. April 2012

HHMI Conference on Making Biomath Happen. University of Arizona, Tucson, Arizona. June 2012

Mathematical Biosciences Institute Summer Graduate Course, Ohio State University, Columbus, Ohio. June 2012

AAAS/NSF Workshop on Introductory Biology. Washington, DC. June 2012

SIAM/NSF Workshop on Modeling across the Curriculum. Washington, DC. August 2012

Workshop on Data Collection in Support of Modeling and Simulation. National Research Council Mathematical Sciences and its Applications Board, Washington, DC. November 2012

Department of Biology, Morehouse College, Atlanta GA. February 2013

Mathematical Biosciences Institute Colloquium Series, Ohio State University, Columbus, OH. March 2013

SEMOVI series, Laboratoire de Biométrie - Biologie Evolutive, Université de Lyon, Lyon France. March 2013

Biology Department. University of Florida. Gainesville, FL. April 2013

Sigma Xi Banquet and Scholar's Week. Murray State University, Murray KY. April 2013

National Science Foundation, Biological Sciences Directorate. May 2013

HHMI Quantitative Biology Workshop. Emory University, Atlanta GA. June 2013

Mathematics and Society Lecture. Macalester College, St. Paul, MN. September 2013.

Workshop on Urban Planning for Climate Events. DIMACS, Rutgers University, New Brunswick, NJ. September 2013.

Symposium on Interdisciplinary Science Education. University of Delaware, Newark, DE. October 2013.

National Research Council Workshop on a New Architecture for the Life Sciences. Washington, DC. October 2013.

Workshop on Sustainable Management of Living Natural Resources. Mathematical Biosciences Institute, Ohio State University, Columbus, OH. November 2013.

National Research Council Committee on Undergraduate STEM Degrees. November 2013.

Distinguished Lecture, Mathematics Department, Arizona State University, Phoenix, AZ. January 2014.

Lyceum Speaker, Emory and Henry College, VA. February 2014.

Investigative Workshop on Plant Viral Disease. NIMBioS, Knoxville TN. March 2014.

Symposium on Math Ecology and Control in honor of Suzanne Lenhart, American Mathematical Society Sectional Meeting, Knoxville, TN. March 2014.

MPE 2013+ Workshop on Sustainable Human Environments, DIMACS, Rutgers University, New Brunswick, NJ. April 2014.

Distinguished Lecturer, Centre for Disease Modellling, York University, Toronto, Canada. April 2014

Symposium on Mathematical Biology in the Undergraduate Curriculum, Fields Institute for Research in Mathematical Sciences, University of Toronto, Toronto, Canada. April 2014.

Symposium for Naming of Simon A. Levin Center Mathematical, Computation and Modeling Center, Arizona State University, Phoenix, AZ. May 2014.

Symposium in Honor of Alan Hastings 60th Birthday, University of California, Davis, CA. August 2014.

Opening Workshop for the Year in Mathematical and Statistical Ecology, Statistical and Applied Mathematical Sciences Institute, Durham, NC. August 2014.

Symposium on Leading Students and Faculty to Quantitative Biology Through Active Learning, Annual Meeting of the Society for Integrative and Comparative Biology, West Palm Beach, FL. January 2015.

Data Science Seminar Series, National Institute of Environmental Health Science, Research Triangle Park, NC. February 2015.

Symposium on Graduate Education in Quantitative Biology, AAAS Annual Meeting, San Jose, CA. February 2015

Seminar Series, Center for Education Innovation in Life Science, University of California, Los Angeles, CA. February 2015.

Panel Speaker, Meeting on Transforming Post-Secondary Education in Mathematics, Institute for Pure and Applied Mathematics, Los Angeles, CA. February 2015.

Organizer and Panelist, NIMBioS/SAMSI/ESA Graduate Workshop: Current Issues in Statistical Ecology, University of Tennessee, Knoxville, TN. April 2015.

Organizer and Invited Speaker, SAMSI Special Year on Mathematical and Statistical Ecology: Transition Workshop, SAMSI, Research Triangle Park, NC. May 2015.

Invited Speaker and Workshop Leader, American Society for Microbiology Conference for Undergraduate Educators, Austin, TX. May 2015.

Invited Speaker and Workshop Organizer, HHMI/BioQuest/ScienceCaseNet Workshop on Count the Ways: Engaging Students in Quantitative Biology Applications. Harvey Mudd College, Claremont, CA. June 2015.

Invited Speaker and Symposium Organizer, Society for Mathematical Biology Annual Meeting, Georgia State University, Atlanta, GA. July 2015.

Invited Speaker, Gordon Research Conference on Undergraduate Biology Education Research, Bates College, Maine. July 2015.

Panelist, DIMACS MPE Workshop on Education, NIMBioS. October 2015.

Panel Speaker, Meeting on Transforming Post-Secondary Education in Mathematics, National Academies, Washington, DC. March 2016.

Plenary Speaker, Midwest Mathematical Biology Conference, University of Wisconsin, La Crosse. May 2016.

Invited Speaker, Minisymposium on Educating Quantitative Biologists: Modeling, Computing, Data Science and Beyond. SIAM Annual Meeting, Boston, MA. July 2016.

Invited Speaker, 10th Anniversary of SeMovi, University of Lyon, Lyon, France. September 2016.

Invited Speaker, SIAM Activity Group on Education. Philadelphia, PA. October 2016.

Keynote Speaker, 2017 QUBES/CaseNet/Bioquest Summer Workshop. East Lansing, MI. July 2017.

Invited Speaker, Annual Meeting of the Ecological Society of America Organized Oral Session on "Bringing Research Data to the Ecology Classroom: Opportunities, Barriers, and Next Steps". Portland, OR. August 2017.

Keynote Speaker, Burroughs Welcome Fund Workshop "Models: At the intersection of data and discovery". Ann Arbor, MI. August 2017.

Invited Speaker, NSF INCLUDES Summit: "Broadening Participation through Center-Scale Research Activities". Washington, DC. January 2018.

Workshop Session Leader, Bioquest/QUBES Workshop "Wicked Problems: Investigating real world problems in the biology classroom". Claremont, CA. June 2018.

Invited Speaker, DIMACS Workshop on "Mathematics of Planet Earth 2013+: The Future". New Brunswick, NJ. July 2018.

Invited Speaker, David Bradford Seminar Series, Center for Policy Research on Energy and the Environment, Woodrow Wilson School, Princeton University. Princeton, NJ. March 2019.

Keynote Speaker, Meeting on "Galvanizing Interdisciplinary STEM in Tennessee". East Tennessee State University, Johnson City, TN. June 2019.

Workshop Session Leader and Invited Speaker, Bioquest/QUBES Workshop "Evolution of Data in the Classroom: from Data to Data Science". Williamsburg, VA. July 2019.

CONTRIBUTED TALKS AND SEMINARS:

Environmental Sciences Division, Oak Ridge National Laboratory, October 1979

DOE workshop on Applications of Mathematics to Environmental Problems, Knoxville, TN. December 1979

Workshop on Crop Simulation, Biological Systems Simulation Group, Mississippi State

University, March 1980

Ecological Society of America meeting, Tucson, August 1980

Workshop on Crop Simulation, Biological Systems Simulation Group, University of Florida, March 1981

Conference on Environmetrics, Society of Industrial and Applied Mathematics, Alexandria, Virginia, April 1981.

Association of Southeastern Biologists meeting, Knoxville, TN, April 1981

Ecological Society of America meeting, Bloomington, August 1981

Gordon Conference on CO_2 Fixation by Green Plants, Andover, NH, July 1982

Grassland Research Institute, Great Britain, September 1982

University of Liverpool, Department of Botany. Great Britain, October 1982

Workshop on Crop Simulation, Biological Systems Simulation Group, University of Nebraska-Lincoln, March 1984

Ecological Society of America meeting, Fort Collins, CO, August 1984

Math Department, University of California, Davis, May, 1985

Ecology and Systematics, Cornell University, November, 1985

International Congress of Mathematicians, Berkeley, California, August, 1986

Southeastern Math Ecology Conference, Clemson University. April, 1988

Horticulture, Biomathematics and Statistics, North Carolina State University. April, 1988

Annual Meeting of the Ecological Society of America, Davis, California. August, 1988

Section of Ecology and Systematics and Center for Applied Mathematics, Cornell University, May 1991

Department of Mathematics, Masaryk University, Brno, Czechoslovakia. August 1991

Annual Meeting of the American Mathematical Society, San Antonio, Texas. January, 1993

Southeastern Math Ecology Meeting. Highlands, NC. April 1993

Southeastern Mathematical Ecology Meeting, North Carolina State University. Raleigh, NC. April 1994

MAA Sectional Conference. Jefferson City, TN. April 1994.

Natural Resources Science Day, Washington, DC. May 1994.

NSF Workshop on Mathematical Modeling: a Technological Approach. Pellissippi State College. Knoxville, TN. May 1994

Project IMPACT: Disseminating innovation in undergraduate education, Washington, DC. June 1994

Annual Meeting of the Ecological Society of America. Knoxville, TN. August 1994

Mathematics Department, University of Nevado. Revo, NV. September 1994

Workshop on "Coupling ATLSS (Across Trophic Level System Simulation for the Everglades and Big Cypress Swamp) to empirical studies.", National Biological Service and University of Miami, Miami, FL. April 1995

SIAM Annual Meeting. Charlotte, NC. October 1995

MAA Annual Meeting. Orlando, FL. January 1996

Departments of Mathematics and Biology, Texas Technological University. Lubbock, TX. May 1996

National Science Foundation, Education and Human Resources Division. Washington, DC. June 1996

Annual Meeting of the Ecological Society of America. Providence, RI. August 1996

Meeting on ATLSS/ELM, University of Miami, Miami, FL January 1997

First Annual Conference, Walt Dineen Society. Florida International University. Miami, FL. May 1997

UAM-Iztapalapa, Mathematics Department. Mexico City, November 1997

UNAM, Faculty of Sciences, Mexico City, November 1997

Challenges in Environmental Sciences Session, WATTEC Conference, Knoxville, TN, February 1998

International Congress of Ecology, Florence, Italy, July 1998

SIAM Southeast section meeting. Knoxville, TN March 1999

Society for Mathematical Biology Annual Meeting. Amsterdam, Netherlands, July 1999

Mathematical Biology Seminar, University of Utah, October 1999

SUNY Geneseo Mathematics Department Invited Colloquium (supported by Mapstone Financial Group). Geneseo, NY, November 1999

Mathematics and Biology Departments, Ohio University. Athens, OH, December 1999

Cary Conference IX (Understanding Ecosystems: The Role of Quantitative Models in Observation, Synthesis & Prediction), Institute of Ecosystem Studies, Millbrook, NY. May 2001

Ecological Society of America, Madison, WI August 2001

Biomathematics Program. North Carolina State University, Raleigh, NC. February 2002

Everglades Ecosystem Restoration Informational Workshop Series. Nova Southeastern University, Davie, FL. May 2002

Short Course on the Mathematics of Biological Complexity. July 2002

Annual Meeting of the Ecological Society of America.Tucson, AZ. August 2002

Mathematics and Biology Departments, Appalachian State University, Boone, NC. August 2002

Mathematics and Biology Departments, University of Miami. Miami, FL. December 2002

Mathematics and Biology Departments, New Mexico State University. Las Cruces, NM. December 2002

UT Tampa Area Alumni speaker, Tampa, FL. April 2003

Southern Appalachian CESU Advisory Management Meeting. Knoxville, TN. May 2003

Society for Mathematical Biology Annual Meeting. Dundee, Scotland. July 2003

USGS National Biological Information Infrastructure Biodiversity Modeling Workshop. Maui High Performance Computing Center. July 2003

Undergraduate Biology/Mathematics Program, Truman State University, Kirksville, MO. October 2003

Biology Department, Indiana University/Purdue University Indianapolis. November 2003

Biology Department, MARC and RISE Scholars Program. California State University, San Marcos. February 2004

Miami Chapter, UT Alumni Association. April 2004

US Fish and Wildlife Service Staff, Vero Beach, FL. April 2004

West Palm Beach Chapter, UT Alumni Association. April 2004

Annual Meeting, Ecological Society of America, Portland OR. August 2004

Bioinformatics Program, University of Texas - El Paso. January 2005

Center for Integrating Statistical and Environmental Science, University of Chicago. February 2005

Greater Everglades Ecosystem Restoration Conference. Orlando, FL. June 2006

Alabama A&M University. Huntsville, AL. June 2006

University of Alberta Math Biology Program. June 2006

Stanford University Department of Biological Sciences. Palo Alto, CA. May 2007

Ecological Society of America Annual Meeting. San Jose, CA. August 2007.

University of Nevada, Las Vegas. Life Science and Mathematics. February 2010

Greater Everglades Ecosystem Restoration Meeting, Fort Meyers, FL. July 2010

Society for Mathematical Biology Annual Meeting, Rio de Janeiro, Brazil. July 2010

Ecological Society of America Annual Meeting, Pittsburgh, PA. August 2010

Departments of Mathematics and Biology, James Madison University - Harrisonburg, VA September 2010

Mathematics Department, Duke University, Durham, NC. November 2010

Departments of Mathematics and Biology, University of the Virgin Islands, St. Thomas. January 2011

Oak Ridge Institute for Continued Learning, Oak Ridge, TN. April 2011

University of Vermont Department of Plant Biology. Burlington, VT. October 2011

University of Missouri Life Sciences Program. Columbia, Missouri. November 2011

University of California at Los Angeles Department of Ecology and Evolutionary Biology. January 2012

NIH National Institute for General Medical Sciences. Bethesda, MD. January 2012

NIH National Institute for Biomedical Imaging and Bioengineering. Bethesda, MD January 2012

Departments of Mathematics and Biology, St. Olaf College. Northfield, MN. March 2012

Green Book, Brown Bag Series, Knox County Library. July 2012

NSF Biology Centers Meeting, SESYNC. Annapolis, MD. June 2012

NIH/NIBIB Multiscale Modeling Consortium Meeting. Bethesda, MD. October 2012

SICB Annual Meeting. San Francisco, CA. January 2013

NSF Workshop on ISEES: Visioning for a software institute for environmental science. NCEAS. Oakland CA. September 2013

Math and Biology Departments, University of Nevada. Las Vegas, NV. December 2013

BUILD Workshop for Undergraduate Biology Education. University of the Virgin Islands, St. Thomas, VI. January 2014

SIAM/America Statistical Association Workshop on Modeling across the Curriculum, Washington, DC. January 2014

Lumina Foundation Convening on Faculty Engagement and Student Degree Attainment - Indianapolis, IN. May 2014

Ecological Society of America Annual Meeting. Sacramento, CA. August 2014.

Mathematical Biology Seminar, University of Kentucky, Lexington, KY. March 2015.

UTK Governor's School on Science and Engineering, Knoxville, TN. June 2015

Seminar Series on Graduate Education for Educators and Mathematics Department Seminar, Middle Tennessee State University, Murfreesboro, TN. October, 2015.

Science Education Series and Mathematics Department, Oregon State University, Corvallis, OR. November 2015.

Mathematics Department, University of Missouri, Kansas City, MO. February 2016.

EEB and Mathematics Departments, Cornell University, Ithaca, NY. April 2016.

Bioinformatics and Mathematics, University of Texas El Paso, Bioinformatics and Mathematics, El Paso, TX. August 2016

Mathematics and Biology, New Mexico State University, Las Cruces, NM. September 2016.

Joint Mathematics Meetings, Atlanta, GA. January 2017.

Heatherwood Retirement Community, Burke, VA. January 2018.

VOICES Planning Conference, Songs for Science. Denver, CO. June 2018.

NSF Workshop: Rules of Life in the Context of Future Mathematical Sciences. Alexandria, VA. November 2018.

National Academies Workshop on Data Science Education: Professional Societies Perspective. Washington, DC. December 2018.

University of Tennessee Faculty Senate. Presentation on "How Universities Work". UTK, January 2019.

NSF INCLUDES NEON Conference EDSIN: Environmental Data Science Inclusion Network. Boulder, CO. April 2019.

Emory University Celebration of Professor Les Real. Atlanta, GA. April 2019.

NSF IDEAS Lab: Harnessing the Data Revolution (HDR): Institutes for Data-Intensive Research in Science and Engineering. Tysons Corner VA. May 2019.

Society for Mathematical Biology Annual Meeting. Montreal, Canada. July 2019.

COURSES AND GRADUATE SEMINARS DEVELOPED:

Mathematics for the Life Sciences (Math 151-2, Fall 1993- present)
Stochastic Differential Equations (Spring 1980)
Evolutionary Theory - Evolution of Sex (Spring 1980),
Group Selection (Spring 1981), Models in Evolution (Spring 1982)
Mathematical Evolutionary Theory (Winter 1982, Spring 90)
Applied Probability Theory (1981-82, 84-85, Spring 90)
Introduction to Mathematical Ecology (Spring 1982)
Modelling Agroecosystems (Spring 1983)

Foraging Theory (Winter 1984)
Modern Topics in Plant Physiological Ecology (Spring 1985, 1988)
Theoretical Aspects of Behavioral Ecology (Spring 1986, 89)
Mathematical Modeling (Winter 1987, Winter 88, Fall 91)
Models in Biology (Fall 1984, Spring 89)
Scale and Ecological Processes (Fall 1997 with M. Weaver)
Computational Science for Natural Resource Management (Spring 2005)
Individual-Based Modeling in Ecology (Fall 2005)
Scientific Computing for Biologists (Fall 2018 with C. Chang)
Mathematical Theories of Everything: Game Theory, Chaos, Catastrophes and Complexity (Fall 2019)

POST-DOCTORAL ASSOCIATES:

Yegang Wu. 7/92-7/93. Developing individual-oriented computer models for deer and Florida Panther in a spatially explicit manner for Everglades landscapes.(Supported by Cooperative agreement with National Park Service).

Hang-Kwang Luh. 1/94-6/94. Developing landscape-scale imaging methods for Everglades models including deer-panther and vegetation (supported by Cooperative agreement with National Park Service).

Hang-Kwang Luh. 7/94-10/96. Developing parallelization methods for spatially-explicit individual-based models (supported by NSF grant).

Siddharthan Ramachandramurthi. 7/94-10/96. Developing parallelization methods for structured population individual-based models (supported by NSF grant - co-directed with Tom Hallam).

John Curnutt. 3/98-8/98. Developing comparisons of effects of hydrologic plans on various endangered species in South Florida (supported by U.S.G.S. Cooperative agreement)

M. Philip Nott. 10/98-12/99. Developing computer models for the endangered Cape Sable Seaside Sparrow (supported by U.S.G.S. Cooperative agreement).

Paul Wetzel. 9/00-6/01. Developing vegetation parameterizations for the dynamics of vegetation in ATLSS models (supported by USGS Cooperative agreement).

Brian Beckage. 11/01-12/03. Developing individual based models for pine population dynamics in the Everglades (supported by NSF Biofinformatics Post-doctoral Fellowship).

Rene' Salinas. 9/03-9/04. Developing models for spatial control of black bear populations (supported by NSF QEIB grant).

Seema Nanda. 11/03-12/04. Developing stochastic control models for population management (supported by NSF QEIB grant).

Dali Wang. 1/03-8/07. Developing grid computing and parallelization methods for ecological multimodels (supported by NSF ITR grant).

Andrew Whittle. 9/04-8/06. Developing optimal control models for integro-difference equations and spatial models for invasive species (supported by NSF ITR grant).

Michael Fuller. 10/04-7/07. Developing ecological components of models for spatial control in application to natural resource management and leading workshop on computational science for natural resource managers (supported by NSF ITR award).

Wandi Ding. 9/06-8/07. Developing mathematical methods for optimal spatial control of disease and ecological models (supported by NSF ITR award).

Paula Federico. 8/07-9/08. Developing mathematical methods for optimal spatial control in individual-based models (supported by NSF ITR award).

Will Godsoe. 9/09-9/11. Statistical analysis of species distributions and environmental impacts on biodiversity (supported by NIMBioS).

Emily Moran. 9/10-5/12. Community genetics as impacted by global change with emphasis on tree species responses in forest systems (supported by NIMBioS).

Orou Gaoue. 6/11-5/13. Integrating new developments in stochastic demography to modeling the ecological impacts of non-timber forest products harvest (supported by NIMBioS).

Andrew Kanarek. 8/11-7/13. An integrated theoretical analysis of the influence of individual trait variation on the dynamics and persistence of small populations (supported by NIMBioS).

Calistus Ngonghala. 8/11-9/13. A new model with vector demography for the dynamics of malaria transmission (supported by NIMBioS).

Arik Kershenbaum. 8/12-8/14. Extracting contextual information from vocalization syntax in dolphins and whales (supported by NIMBioS).

Daniel Ryan. 8/11-6/14. Investigating the effects of movement strategies on the population dynamics of multi-trophic ecological communities (supported by NIMBioS).

Chris Remien. 8/12-8/14. How animal metabolism shapes isotopic signatures of trophic dynamics (supported by NIMBioS).

Gesham Magombedze. 1/12-8/14. Modeling the immunological host-pathogen interaction of Johne's disease to understand its pathology and treatment (supported by NIMBioS).

Caroline Farrior. 9/14-7/16. Rare disturbance events and their impact on evolutionarily stable strategies of forest trees in competition for light, water, and nutrients (supported by NIMBioS).

Megan Rúa. 9/15-7/16. Exploring the relative importance of biotic and abiotic sources of selection for mycorrhizal interactions (supported by NIMBioS).

Charlotte Chang. 9/17-5/19. Probabilistic and spatially-explicit socio-ecological models of hunting (supported by NIMBioS).

GRADUATE STUDENT COMMITTEES:

Ph.D. Students: Linda Svoboda-Allen (Math), Medhat Antonios (Math), Jose de Luna (Math), Betsy Cochran (Ecology), Anthony King (Ecology), Rick Busing (Botany), Jia Li (Math), Greg Kauffman (Ecology), Elizabeth Smith (Ecology), Jeffrey Hyman (Ecology), Louis Provencher (Ecology), Xinyuan Wu (Ecology), Jacques Silva (Math), Masaki Kurasawa (Electrical Engineering), Nicholas McLetchie (Ecology), Azmy Ackleh (Math), Hank-Kwang Luh (Zoology), Shandelle Henson (Math), Graciela Canziani (Ecology), Konstadia Lika (Math), Mark Clark (Ecology), James Rosson (Ecology), Yan Wu (Civil Engineering), Yetta Jager (Ecology), Cynthia Crone (Math), QingPing Deng (Math), Audrey Mayer (EEB), Maria Siopsis (Math), Donald Martorello (EEB), Diego Vazquez (EEB), Betsy Von Holle (EEB), Jim Giocomo (Natural Resources), Erika Asano (Math), Wandi Ding (Math), Michael Collins (EEB), Tom Purucker (EEB), Hongtao Du (Electrical and Computer Engineering), Paula Federico (EEB), Peng Zhong (Math), Michael Lawton (EEB), Premal Shah (EEB), Rachael Neilan (Math), Rachel Leander (Math), Robert Stewart (Geography), Teng Ma (EECS), Marco Martinez (Math), Michael Kelly (Math), Gwenllian Iacona (EEB), Michael Kelly (Math), Austin Milt (EEB), Bruce Johnson (EECS), John Martin (EECS), Christine Dumoulin (EEB), Rachael Fovargue (EEB), Rebecca Pettit (Math), Mahir Demir (Math)

Masters Students: Betsy Cochran (Math), Graham Dynes(Math), Yetta Jager (Ecology), Jim Cockerill (Zoology), Betsy Groton (Forestry), Wen Lu (Math), Bronte Allen (Math), Joel Lown (Agricultural Engineering), Hal Beck (Electrical Engineering), Anett Trebitz (Ecology), Gail Wauford (Management Science), Richard Barrett (Math), Mark Drew (Botany), Tamara Henry (Math), Derek Prowe (Math), Scott Sylvester (Math), Catherine Abbott (Computer Science), Linda Mellott (Computer Science), Daryl Neergaard (Math), Erin Miller (Math), Eric Marsland (Entomology), Jennifer Manrod (EEB), Travis Belote (EEB), Cayenne Engel (EEB), Michael Harmon (Computer Science), Kristen Bains (Computer Science), Nick Buchanan (Computer Science).

Students directed:

Mark Bevelhimer, Ph.D. in Ecology, January 1990.
Dissertation: Habitat Selection of Kokanee Salmon and Smallmouth Bass in Thermally Heterogeneous Environments: the Importance of Growth Maximization to Diel Habitat Shifts.

Larry Pounds, Ph.D. in Ecology, August 1995.
Dissertation: A Model for Multiple Preserve Selection for Endangered Plants.

Milena Holmgren, Ph.D. in Ecology, August 1996.
Dissertation: The Interactive Effect of Shade and Drought on Seedling Growth and Survival (co-directed by M. A. Huston)

Holly Gaff, Ph.D. in Mathematics, August 1999. Dissertation:
Spatial Heterogeneity in Ecological Models: Two Case Studies.

Rene' Salinas, Ph.D. in Mathematics, August 2003. Dissertation: Modeling the Effects of Harvesting on Black Bears in the Southern Appalachians

Scott Duke-Sylvester, Ph.D. in Ecology and Evolutionary Biology, May 2006.
Dissertation: Applying Landscape-Scale Modeling to Everglades Restoration.

Erin N. Bodine, Ph.D. in Mathematics, May 2010.
Dissertation: Optimal Control of Species Augmentation Conservation Strategies (co-directed with Suzanne Lenhart).

Michael Joseph Hughes, Ph.D. in Ecology and Evolutionary Biology, August 2014.
Dissertation: New Remote Sensing Methods for Detecting and Quantifying Forest Disturbance and Regeneration in the Eastern United States. (co-directed with Daniel Hayes)

Nathan Louis Pollesch, Ph.D. in Mathematics, August 2016.
Dissertation: Mathematical Approaches to Sustainability Assessment and Protocol Development for the Bioenergy Sustainability Target Assessment Resource (Bio-STAR) (co-directed with Virginia Dale)

Mark Bullock, Masters in Management Science, June 1986.
Thesis: A Spatial Simulation Model for Disease Spread in a Crop.

Susan Harrell, Masters in Mathematics, August 2000.
Thesis: Spatio-temporal Variability in Keystone Species and Implications for Quantifying Interaction Strengths.

Dinesh Sharma, Masters in Mathematics, December 2002.
Thesis: Individual-Based Modeling: Comparing Model Outputs to Telemetry Data with Application to the Florida Panther.

Cui Xu, Masters in Ecology and Evolutionary Biology, December 2002.
Thesis: Time Series Analysis of Bat Ultrasound Signals.

Samantha Duchscherer, Masters in Mathematics, May 2018.
Thesis: Classifying Building Usages: A Machine Learning Approach on Building Extractions.

Non-Thesis Masters students in Mathematics: Joe Raine, Sherry Shannon, Mark Clark, Elias Camouzis, Dennis McDermot, Moris Shorrosh, John Gordon, Lindsey Chen, Eric Carr, Rick Dilling.

Undergraduate College Scholars Mentored:

Troy Alex Perkins. 2003-2006. Computational Ecology. Thesis topic: Multispecies interactions in competitive hierarchies.

Dustin Dat Le, 2012-2014. Computational Biology. Thesis topic: Select Topics with regard to the Immune System.

Undergraduate summer student projects directed:

Anamarie Vickery (1988); Michael Wilson (1989); Kelly McKeethan (1990); Shannon Peak (1992); Holly Gaff and Shannon Latham (1993); Christine Ely (1994); Craig Zimmerman and Elek Dobos (1995); Lora Ballinger (1996); Robert Meyers (1998); Linzy Brakefield (1999), Rebecca Pratt (2000), Jeffrey Berliss (2001), Sean Laverty (2003), Nancy Newren (2005), Alex Perkins (2005), Ashish Gauli (2015), Nathan Wikle (2015), Ryan Yan (2015).