

PROMOTION RECOMMENDATION

Approved by the Regents

May 17, 2007

The University of Michigan-Dearborn College of Arts, Sciences, and Letters Department of Natural Sciences

John C. Thomas, associate professor of biology, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters, is recommended for promotion to professor of biology, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Academic Degrees:

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| Ph.D. | 1986 | Genetics (minor Biochemistry), University of Arizona, Tucson |
| M.S. | 1980 | Genetics, University of Arizona, Tucson |
| B.S. | 1982 | Biology, American University, Washington, D.C. |

Professional Record:

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| 1999 to Present | Associate Professor of Biology, Department of Natural Sciences, University of Michigan-Dearborn |
| 1994 to 1999 | Assistant Professor of Biology, Department of Natural Sciences, University of Michigan-Dearborn |
| 1989 to 1994 | Research Associate, Dr. H-J Bohnert, Department of Biochemistry, Biosciences West, University of Arizona, Tucson, Arizona |
| 1988 to 1989 | Research Associate, Rhône Poulenc Agrochimie, 14-20 Rue Pierre Baizet B.P. 9163, 69263 Lyon Cedex 09, France |
| 1986 to 1988 | Research Associate, Biological Sciences Dept, Texas A&M University, College Station, Texas |

Summary of Evaluation:

Teaching: The review committee has rated Professor John Thomas' teaching as excellent. He teaches general genetics and the stand alone laboratory. Other courses include a laboratory and lecture in cell biology (cellular and molecular class), plant physiology and lab (organismal class), introductory cellular and molecular biology lecture and laboratory, and restoration ecology, a graduate course in the Environmental Science Master's degree program. Uniformly positive student opinions illustrate his teaching effectiveness. Students regard Professor Thomas and his classes as rigorous and at the same time respect his fairness in their assessment. Several students noted his discussions of research papers and findings in his classes provided them a direct advantage in their job interviews and professional school applications. In recognition of his excellent teaching Professor Thomas was given the Distinguished Teaching Award in 2006.

Research: The review committee has rated Professor Thomas' research as excellent. His research centers on the biological consequences of stress. Stress is an essential aspect of existence. However, most organisms also can profit from stress; a curious paradox. Professor Thomas is attempting to understand how "stress" (heavy metals and salt stress) in higher plants induce biochemical responses to short and long term stress alleviation. A second related area is the phytoremediation of polyaromatic hydrocarbons (PAHs), molecules of environmental concern. Using the former Ford Rouge Steel Plant as a laboratory, Professor Thomas and his

students discovered that plants and microbes likely communicate via materials exuded by plant roots. Unknown and awaiting elaboration, the biochemical mechanism(s) leading to effective PAH degradation are signaled and elucidated across biological kingdoms. The final two projects in Professor Thomas' lab include the use of natural plant products as potential anti-cancer drugs and the mechanism of tomato geminivirus replication and symptom development. All projects have been funded by either internal or external sources and the research is conducted on the Dearborn campus with students and several key national and international scientific collaborators. Professor Thomas includes many undergraduate students in his research and as co-authors in the subsequent publications.

Recent and Significant Publications:

- J.C. Thomas, M. Perron, P.C. LaRosa, A.C. Smigocki, Cytokinin and the regulation of a tobacco metallothionein-like gene during copper stress, *Physiologia Plantarum* 123, 262. (2005)
- C.L. Rugh, E. Susilawati, A.V. Kravchenko, J.C. Thomas, Metabolic enrichment of polyaromatic hydrocarbon degrading soil bacteria during phytoremediation by different plant species, *Zeitschrift für Naturforschung* 60C, 331. (2005)
- J.C. Thomas, M. Perron, E.C. Davies, Genetic responsiveness to copper in the Ice Plant, *Plant Science* 167, 259. (2004)
- J.C. Thomas, Characterization of the CCR5 chemokine-receptor gene. *Biochemistry and Molecular Biology Education*, 32, 191. (2004)
- J.C. Thomas, E.C. Davies, F. Malick, C. Endreszl, C. Williams, M. Abbas, S. Petrella, K. Swisher, M. Perron, P. Osenkowski, N. Urbanczyk, W. Wiesend, K.S. Murray, Yeast metallothionein in transgenic tobacco promotes copper uptake from contaminated soils, *Biotechnology Progress* 19, 273. (2003)

Service: The review committee has rated Professor Thomas' service as excellent. He has served on various committees at the department, college and the university level. He has chaired the Biology Discipline and Master's Program in Environmental Science. He has served on the Department's Executive Committee, and several faculty search committees. At the University level, he has served on many Faculty Senate committees, Graduate Board Committee, Institutional Bio-safety Committee, and the Dean Search Committee. His service to the professional organizations include, chair of the Botany section of Michigan Academy of Science, Arts and Letters, and serving as a manuscript reviewer for some journals in his area of research. Professor Thomas also is the Michigan Representative for the Consortium for Plant Biotechnology, an organization that devises grants which matching industry contributions with EPA or DOE targeted funds.

External Reviewers:

Reviewer (A)

"Dr Thomas has also demonstrated his personnel commitment to maintaining a high quality active research laboratory by obtaining USDA/ARS funds to support his sabbatical research on 'Metallothionein-like genes in the Ice Plant'. Furthermore, Dr. Thomas has expended considerable efforts in obtaining funds to help improve the research infrastructure at Dearborn..."

Reviewer (B)

“I think the highest impact paper since promotion to tenure is the *Biotechnology Progress* paper, which describes the ability of transgenic tobacco expressing a yeast metallothionein gene to promote copper uptake from soils. This is likely to have high impact in the field of remediation of contaminated soils. Furthermore, it stresses the importance of this protein...”

Reviewer (C)

“From the basic research perspective, his paper in *Plant Science*, 2004, whereby he analyzed the response of the ice plant to copper provides important information to the plant biology community on the genes and biochemical pathways involved in heavy metal stress.”

Reviewer (D)

“‘Yeast metallothionein in transgenic tobacco...’ (*Biotechnol. Prog.*) was, in my opinion, an outstanding paper. This work stood out as a well-designed and meticulous investigation into an interesting research problem. There is a logical progression of sub-problem investigations. The data and interpretation were interesting. Additionally the paper was clearly written and was easy to follow. I was rather impressed with Dr. Thomas’s record of publication...”

Reviewer (E)

“John has made several contributions dealing with not only the heavy metal tolerance but its relationship to other plant stress responses as well. His papers reflect a deep understanding not only of molecular genetics, but plant physiology and development. I was impressed with completeness of John’s publications as well as the quality of journals the papers appeared in.”

Summary of Recommendation:

Professor Thomas is successful in the classroom and is an active researcher with well funded research projects. We are very pleased to recommend, with the strong support of the College of Arts, Sciences, and Letters Executive Committee, John C. Thomas for promotion to professor of biology, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.



Kathryn Anderson-Levitt
Dean
College of Arts, Sciences, and Letters



Daniel Little
Chancellor
University of Michigan-Dearborn

May 2007