Mary L. Tierney

Department of Plant Biology

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**Education**

1976 Marywood College, B.S., Biology

1983 Michigan State University, Ph.D., Genetics

# Professional Experience

2009 – 2013: Director, Cellular, Molecular and Biomedical Sciences Graduate Program

1995 - present: Associate Professor - Department of Plant Biology, University of Vermont

1993 – 1995: Assistant Professor - Department of Botany and Agricultural Biochemistry,

 University of Vermont

1987 – 1993: Assistant Professor - Department of Agronomy, Ohio State University

1983-1987: Research Associate, Washington University, St. Louis MO

# Professional organizations

American Society of Plant Biologists

# Awards

Fellow, American Society of Plant Biology

**Current teaching**

PBIO 3990; Molecular Cell Biology

PBIO 6990; Ethics in Graduate Research

PBIO1040; Introduction to Botany

# Publications

# Lewis, CD and Tierney, ML. (2024) Contrasting Retromer with a Newly Described Retriever in Plants. Plants, 13: 2470.

# Lewis, CD, Preston, JC, Tierney, ML. (2022). CCDC22 and CCDC93, two potential retriever-interacting proteins, are required for root and root hair growth in Arabidopsis. Frontiers Plant Sci., 13: 1051503

# Tierney, ML, Sun, L, Domozych, DS. (2020) Rapid Assessment of Cell Wall Polymer Distribution and Surface Topology of Arabidopsis Seedlings. Methods in Molecular Biology: Plant Cell Wall. 2149: 315-325.

Jha, SG, Larson, ER, Humble, J, Domozych, DS, Barrington, DS, Tierney, ML. (2018) Vacuolar Protein Sorting 26C encodes an evolutionarily conserved large retromer subunit in eukaryotes that is important for root hair growth in Arabidopsis thaliana. Plant J. 94:595-611.

Larson ER, Tierney, ML, Tinaz B, Domozych DS (2014) Using monoclonal antibodies to label living root hairs: a novel tool for studying cell wall microarchitecture and dynamics in *Arabidopsis.* Plant Methods. 10:30.

LarsonER, DomozychDS, and Tierney ML (2014) SNARE VTI13 plays a unique role in endosomal trafficking pathways associated with the vacuole and is essential for cell wall organization and root hair growth in Arabidopsis. Ann. Bot. 114:1147-1159.

Mohnen D, Tierney ML (2011) Plant science. Plants get Hyp to O-glycosylation. Science. 332:

1393-4.

Bernhardt C, ML Tierney (2006) Proline-rich cell wall proteins – building blocks for an expanding cell wall? In Hayashi T (ed): The Science and Lore of the Plant Cell Wall: Biosynthesis, Structure and Function. Brownwalker Press, Boca Raton, Florida.

Carpita N, ML Tierney, M Campbell (2001) Molecular biology of the plant cell wall: searching for the genes that define structure, architecture and dynamics. Plant Mol Biol. 47: 1

Bernhardt, C., ML Tierney (2000) Expression of AtPRP3, a proline-rich structural cell wall protein from Arabidopsis thaliana, is regulated by cell-type specific developmental pathways involved in root hair formation. Plant Physiol. 122: 705-714.

Fowler, T.J., C. Bernhardt, ML Tierney (1999) Arabidopsis PRPs Derive From Two Distinct Subsets of Proline-rich Cell Wall Protein Genes Encoding Multiple-domain Proteins. Plant Physiol. 121: 1081-1091.

Suzuki, H., T. Wagner, ML Tierney (1993) Differential expression of two soybean PRP genes after wounding. Plant Physiol. 101:1283-1287.

Suzuki, H., T.J. Fowler, ML Tierney (1993) Deletion analysis and localization of SbPRP1, a soybean cell wall protein gene, in roots of transgenic tobacco and cowpea. Plant Mol. Biol. 21: 109-119.

Ebener, W., T.J. Fowler, H. Suzuki, J. Shaver, ML Tierney (1993) The expression of DcPRP1 is linked to carrot storage root formation and is induced by wounding and auxin treatment. Plant Physiol. 101:259-265.

Creelman, R.A., ML Tierney, J.E. Mullet (1992) Jasmonic acid/methyl jasmonate accumulate in wounded soybean hypocotyls and modulate wound gene expression. Proc. Natl. Acad. Sci. USA. 89: 4938-4941.

Kleis-San Francisco, S., ML Tierney (1990) Isolation and characterization of a proline-rich 30 kD cell wall protein from soybean seedlings. Plant Physiol. 94:1897- 1902.

Tierney, ML., J. Weichert, D. Pluymers (1988) Analysis of the expression of extensin and p33-related cell wall proteins in carrot and soybean. Mol. Gen. Genet. 211:393-399.

Tierney, ML and J.E. Varner (1987) The Extensins. Plant Physiol. 84: 1-2.

Lawton, M.A., ML Tierney, I. Nakamura, E. Anderson, Y. Komeda, P. Dube, N. Hoffman, R.T. Fraley, R.N. Beachy (1987) Expression of a soybean ß-conglycinin gene under the control of the Cauliflower Mosaic Virus 35S and 19S promoters in transformed petunia tissues. Plant Mol. Biol. 9:315-324.

Ladin, B.F., ML Tierney, D.W. Meinke, M. Veith, R.N. Beachy (1987) Developmental regulation of ß-conglycinin in soybean axes and cotyledons. Plant Physiol. 84: 35-41.

Tierney, ML E.A. Bray, J.L. Slightom, Y. Ma., R. Klassy, R. Drong and R.N. Beachy (1987) Isolation and characterization of a genomic clone encoding the ß-subunit of ß-conglycinin from Glycine max. Planta. 172: 356-363.

Tierney, ML and K.R. Schubert (1985) Isolation and characterization of RNA polymerase from vegetative and symbiotic forms of *Rhizobium japonicum*. J. Gen. Microbiol. 131: 2387-2398.

# Grants

# Current:

# Agency: USDA (Hatch): Role of endosomal pathways in controlling cell wall structure.

# 10/2021 – 9/2026; $75,000 for first 3 years

# Pending:

# Agency: NSF: Collaborative Research: Harnessing deep evolutionary divergence,

# proximity labeling and genetics to reveal mechanism of endosomal

# recycling in plants; $548,122, 2025-2029.