

West Virginia State University Faculty Lecture Series,
American Chemical Society Speaker Series and
Gus R. Douglass Institute Present

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**“Membrane transporters in the model legume *Medicago truncatula*:
Genomic perspectives on symbiotic nitrogen fixation”**



Medicago truncatula is a close relative to alfalfa (*M. sativa*) and model legume species which genome sequence has been recently published. We study *M. truncatula* especially to understand how the mutualistic symbiosis between legumes and rhizobial bacteria is established, how root nodules develop and how biological nitrogen fixation occurs at the genetic, physiological, biochemical and developmental levels.

As integrators of cell, organ and whole plant physiology, membrane transporters are lipophilic proteins that mediate the transport of hydrophilic compounds across biological membranes. We explored the whole *M. truncatula* genome in order to identify and classify the genes coding for membrane transporters in this model legume. Furthermore, we carried out a comprehensive analysis of gene expression on all plant organs, focusing on nitrogen fixation nodules to better understand how membrane transporters are involved in symbiotic nitrogen fixation. Currently, we are conducting functional genetic analyses to verify biochemical properties and physiological functions of membrane transporters that are specific to or have enhanced presence (gene expression) in nodules.

Hamblin Hall Auditorium

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12:30 – 1:30