

Heather Coleman, PhD

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Employment

- March 2011* – *present* Assistant Professor, Department of Biology, Syracuse University, Syracuse NY
- August 2011* – *July 2015* Visiting Fellow, Queensland University of Technology (QUT), Brisbane, Australia
- Jan 2010* – *Jan 2011* Australian Research Council Postdoctoral Fellow, QUT, Brisbane, Australia
- June 2008* – *Dec 2009* Research Fellow, Syngenta Centre for Sugarcane Biofuels Development, QUT, Brisbane QLD, Australia

Education

- June 2008* PhD Faculty of Forestry, Wood Science Department
University of British Columbia, Vancouver, Canada
Modification of cellulose biosynthesis through varied expression of sucrose metabolism genes in tobacco and hybrid poplar
- April 2002* BSF (Forest Resource Management), Faculty of Forestry
University of British Columbia, Vancouver, Canada
Graduated with honours.

Grants

- July 2013* Department of Energy – Early Career– Extreme expression of cellulases in poplar
- November 2009* Australian Research Council (ARC) Super Science Fellowships – Extreme expression: building a platform for industrial plant biotechnology (Co-Chief Investigator with JL Dale, P Waterhouse, R Harding, and B Dugdale)
- February 2009* ARC Discovery Program - Modification of lignin biosynthesis in sugarcane for the improved efficiency of pre-treatment in ethanol production
- October 2008* QUT Early Career Researcher Grant - Modification of lignin biosynthesis in sugarcane for the improved efficiency of pre-treatment in ethanol production

Scientific and Leadership Recognition

- April 2014* Invited to participate in 2014 Indonesian-American Kavali Frontiers of Science (National Academy of Sciences)
- Jan 2011* Vice Chancellors Award 2010, QUT (awarded January 2011)

Teaching

- 2013 – 2015 Biology 459, Plants and People
2012 – 2014 Biology 421, Biotechnology Capstone Seminar
2012 – 2013 Biology 705, Graduate seminar

Publications

- Kinkema M, Geijskes J, deLucca P, Palupe A, Shand K, **Coleman HD**, Brinin A, Williams B, Sainz M, Dale J. (2014) Improved molecular tools for sugar cane biotechnology. *Plant Molecular Biology*, **84**: 497-508
- Kinkema M, Harrison M, Geijskes J, Shand K, **Coleman HD**, Palupe A, Sainz M, Dale J. (2014) An improved chemically inducible gene switch that functions in the monocotyledonous plant sugar cane. *Plant Molecular Biology*, **84**: 443-454.
- Ralph J, Akiyama T, **Coleman HD**, Mansfield SD. (2012) Effects on lignin structure of coumarate 3-hydroxylase downregulation in poplar. *Bioenergy Research*, **5**: 1009-1019.
- Coleman HD**, Canovas FM, Man H, Kirby EG, Mansfield SD. (2012) Enhanced expression of glutamine synthetase (GS1a) confers altered fiber and wood chemistry in field grown poplar (*Populus tremula* × *alba*; 717-1B4). *Plant Biotechnology Journal*, **10**: 883-889.
- Yie X, Busov V, Zhao N, Meilan R, McDonnell LM, **Coleman HD**, Mansfield SD, Chen F, Li Y, Cheng Z-M. (2011) Transgenic poplar trees for forest products, bioenergy, and functional genomics. *Critical Reviews in Plant Sciences*, **30**: 415-434.
- Harrison MD, Geijskes J, **Coleman HD**, Shand K, Kinkema M, Palupe A, Hassall R, Sainz M, Lloyd R, Miles S, Dale JL. (2011) Accumulation of recombinant cellobiohydrolase and endoglucanase in the leaves of mature transgenic sugarcane. *Plant Biotechnology Journal*, **9**:884-896.
- Coleman HD**, Beamish L, Reid AM, Park JY, Mansfield SD. (2010) Altered sucrose metabolism impacts plant biomass production and flower development. *Transgenic Research*, **19**: 269-283.
- Coleman HD**, Yan J, Mansfield SD. (2009) Sucrose synthase affects carbon partitioning to increase cellulose production and altered cell wall ultrastructure. *Proceedings of the National Academy of Sciences, USA*, **106**: 13118–13123.
- Coleman HD**, Samuels AL, Guy R, Mansfield SD. (2008) Perturbed lignification impacts tree growth in hybrid poplar – a function of sink strength, vascular integrity, and photosynthetic assimilation. *Plant Physiology*, **148**: 1229-1237.
- Coleman HD**, Park JY, Nair R, Chapple C, Ralph J, Mansfield SD. (2008). RNAi-mediated suppression of *p*-coumaroyl-CoA 3'-hydroxylase in hybrid poplar impacts lignin deposition and soluble secondary metabolism. *Proceedings of the National Academy of Sciences, USA*. **105**: 4501-4506.
- Coleman HD**, Canam T, Kang KY, Ellis DD, Mansfield SD. (2007). Over-expression of UDP-glucose pyrophosphorylase in hybrid poplar affects carbon allocation. *Journal of Experimental Botany* **58**: 4257-4268.
- Coleman HD**, Ellis DD, Gilbert M, Mansfield SD. (2006). Up-regulation of sucrose synthase and UDP-glucose pyrophosphorylase impacts plant growth and metabolism. *Plant Biotechnology Journal*. **4**: 87-101.

Book Chapters

McDonnell LM, **Coleman HD**, French DG, Meilan R, Mansfield, SD. (2010) Engineering trees with target traits. In: Forests and Genetically Modified Trees. International Union of Forest Research Organizations, Food and Agriculture Organization Joint Publication (In Press).

Conference Presentations (Presenter underlined)

Poovaiah CR, **Coleman HD**. (2014) Inducible extreme expression of cellulases in poplar. Integrated Wood-Based Biorefinery at ESF and the New Forest Economy (NFE) workshop, May 19, Syracuse NY

Coleman HD. (2014) Tailoring feedstocks for biofuels and bioproducts, University of Massachusetts, Amherst, April 17, Amherst MA

Coleman HD. (2014) Extreme expression of cellulases in Populus. Genomic Sciences Contractor-Grantee Meeting XII / USDA-DOE Plant Feedstock Genomics for Bioenergy Awardee Meeting, Feb 10-12, Crystal City, VA

Coleman HD. (2014) Nitrogen use and wood quality: Designing efficient, high quality feedstocks for fuel, Plant and Animal Genomics conference (PAG), January 11-15, 2014, San Diego, CA

Coleman HD. (2013) Extreme expression of cellulases in poplar. International Phytotechnologies Conference, Biofuels Session, October 2, Syracuse, NY

Coleman HD. (2013) Tailoring feedstocks for biofuels and bioproducts. Advanced Energy Conference, Bio Energy & Products in the Canada-New York Region, May 1, New York, NY

Coleman HD, Nair R, Chapple C, Mansfield SD. (2007) Manipulating poplar lignin content and structure by RNAi-mediated suppression of p-coumaroylshikimate 3'-hydroxylase (C3'H). International Conference on Biotechnology in the Pulp and Paper Industry, June 10-15. Madison, USA

Coleman HD, Canam T, Kang KY, Ellis DD, Mansfield SD. (2007) Over-expression of UDP-glucose pyrophosphorylase affects carbon allocation in hybrid poplar. IUFRO Tree Biotechnology Meeting, June 3-8. Sao Miguel, Portugal

Ralph J, Akiyama T, Hoon K, Lu F, Ralph SA, Chapple C, Nair RB, Wagner A, Chen F, Reddy MSS, Dixon RA, **Coleman HD**, Mansfield SD. (2006) Lignification in transgenics deficient in 4-coumarate 3-hydroxylase (C3H) or the associated hydroxycinnamoyl transferase (HCT). XXIII International Conference on Polyphenols, August 22-25. Winnipeg, Canada

Coleman HD, Park JY, Nair R, Chapple C, Mansfield SD. (2005) The impact of RNAi-mediated suppression of p-coumaroylshikimate 3'-hydroxylase expression on lignin content and structure in poplar. IUFRO Tree Biotechnology Meeting, November 7-11. Pretoria, South Africa

Coleman HD, Gilbert M, Ellis D, Mansfield SD. (2005) The effects of altered carbohydrate allocation and metabolism on plant growth and cellulose yield. Plant Canada, June 15-18. Edmonton, AB, Canada

Coleman HD, Gilbert M, Ellis D, Mansfield SD. (2004) Manipulating carbohydrate allocation for increased fibre production. 9th International Conference on Biotechnology in the Pulp and Paper Industry, October 10-14. Durban, South Africa

Coleman HD, Gilbert M, Ellis D, Mansfield SD. (2004) The effects of altered carbohydrate allocation and metabolism on plant growth and cellulose yield. American Chemical Society National Meeting, March 28 – April 1. Anaheim, CA, USA