

TWO POST-DOCTORAL FELLOWS - Plant Molecular Biology/Biochemistry



Department of Molecular and Cellular Biology, University of Guelph, Ontario

Two post-doctoral positions are immediately available for 3 years funded by the Agricultural Bioproducts Innovation Program (ABIP) at the University of Guelph, Ontario, Canada. The ABIP-funded positions each form part of international multidisciplinary networks focussed on **1)** understanding starch biosynthesis in the potato crop (the Biopotato Network) and **2)** studying the regulation of tocopherol biosynthesis in plants (the Nutraceuticals Emerging from Agricultural Technologies [NEAT] network).

1) The Regulation of Starch Biosynthesis in the Potato Tuber

This project will examine regulation of starch synthesis in amyloplasts of potato tuber. The proposed research builds on recent discoveries (Plant Physiology **146** [2008], 1878-1891, and 1892-1908) that a number of key enzymes involved in amylopectin biosynthesis form phosphorylation-dependent protein complexes, and that the activities of some of these enzymes in plastids is controlled by plastidial kinases and phosphatases. The successful candidate will have the opportunity to work in a new and challenging field which will make a major contribution to our understanding of starch biosynthesis in higher plants.

2) The Organization of Tocopherol Biosynthesis in Higher Plants

Tocopherols and tocotrienols are important lipid-soluble antioxidants produced exclusively in photosynthetic tissues, and which confer vitamin E activity when ingested. This research project will investigate the regulatory mechanisms governing tocopherol biosynthesis in oilseed plastids, the organization of the pathway within organelles, and its relationship to other metabolic pathways. A multidisciplinary approach will be used to examine components of the pathway in chloroplasts of *Arabidopsis* and developing photoheterotrophic plastids of soybean in order to identify regulatory factors and elements of signal transduction cascades and intra-plastidial trafficking systems. The research will provide important insights into the control of important metabolic pathways, and contribute to engineering crops with improved nutritional value and enhanced high-value bioproducts.

Candidates for both positions are expected to have a strong background in cellular and molecular biology and biochemistry. Experience in heterologous protein expression, mass spectrometry and protein-protein interactions would be advantageous. Applicants should submit a brief description of research experience, *curriculum vitae*, and the names and contact information of three referees to Dr. Ian Tetlow, Department of Molecular and Cellular Biology, New Science Complex, University of Guelph, Ontario N1G 2W1, Canada. Phone 519-824-4120, ext 52735, fax 519-837-1802, email: itetlow@uoguelph.ca



The University of Guelph is committed to an employment equity program that includes special measures to achieve diversity among its faculty and staff. We therefore particularly encourage applications from qualified aboriginal Canadians, persons with disabilities, members of visible minorities, and women.

