Terry J. O'Brien

Associate Professor
Biological Sciences

obrien@rowan.edu

Education:
BS (Botany), University of Iowa
MS (Botany), University of Iowa
PhD (Integrative Biology), University of California at Berkeley

Research Expertise:
Plant Cell Culture | Plant Anatomy and Morphology | Plant Diversity and Evolution

My research interests are in three major areas: plant cell culture, anatomy and morphology of nonvascular and vascular plants, and evolutionary biology of plants.

My current research focuses on the production of useful plant metabolites from plant cell cultures derived from vascular cambial cells. These metabolites are diverse in chemical structure, vary with taxonomic groups of plants, and are used in applications ranging from medicine to cosmetology to agriculture. My work especially seeks to improve the cost efficiency and reliability of production of metabolites from plant cell cultures.

I also am interested in and have prior research projects in the use of anatomy, morphology, and nucleic acids to reconstruct patterns of evolution in plants, in particular, the mosses. This research helped to establish our current knowledge of broad relationships and trait evolution within mosses, an ancient lineage of plants. Related to this work, I also have research interests in the population biology of vascular plants, especially the pteridophytes (ferns and allies) and lycophytes (club mosses).

Honors and Awards:
Hattori Prize for Best Publication in Bryology, with NE Bell, D Quandt, AE Newton. 2009.

Member of:
American Society of Plant Biologists (aspb.org)
Botanical Society of America (www.botany.org)

Recent Publications:

Bell NE, Quandt ED, O'Brien TJ, Newton AE. (2009) Taxonomy and phylogeny in the earliest diverging pleurocarps: square holes and bifurcating pegs. The Bryologist 110:533-560.

O'Brien TJ. (2009) The phylogenetic distribution of pleurocarpous mosses: evidence from cpDNA sequences. Pp. 19-41 in Pleurocarpous Mosses: Systematics and Evolution (A Newton, E deLuna, R Tangney, Eds) CRC Press.