

Research Profile



First Name: Cyril **Middle Initial:** E. **Last Name:** Broderick
Title: Associate Professor (tenured)
Department/School: Agriculture and Natural Resources,
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Professional Education:

- Doctor of Philosophy (Ph.D.), Plant Physiology, Department of Plant Science, University of New Hampshire, Durham, NH 03824 - September 1979 to May 1982
- Master of Science (M.Sc.), Plant Physiology, Department of Agronomy, Iowa State University of Science & Technology, Ames, Iowa 50010 - September 1974 to May 1976
- Bachelor of Science (B.Sc.), General Agriculture, College of Agriculture & Forestry, University of Liberia, Monrovia, Liberia - March 1970 to December 1973

Research Interest Area(s):

Plant Physiology

The physiology of a number of species has been studied, and research work continues in some form with most of these species: Soybean (*Glycine max*) flowering and yield enhancement; Winter squash (*Cucurbita maxima*) yield and quality improvement; Hevea rubber (*Hevea brasiliensis*) selection, breeding and physiology; physiological improvement of horticultural crops, including okra (*Hibiscus esculentus*), members of the Nightshade family (*Solanaceae*), including eggplant, peppers, and tomatoes.

Characterization of plant morphology and analytic description of anatomical features in plant tissues and organs are also pursued. Fluorescence study of the anatomy and physiology of peppers, especially hot peppers (*Capsicum chinense*) versus the non-hot Bell pepper (*Capsicum annuum*).

Plant tissue analysis

Analysis of plant tissues for nutrient elements in characterizing the biochemical and physiological activity of reactions in the metabolism of a selected number of plant species.

Investigations of environmental physiological parameters have also been a research objective. Published data on climate change in West Africa have been presented, and they are among the few that are available for that area of the globe.

Active Grants & Funding:

- DSU seed grant to study sulfur in plants.
- Collaborative research with the Microscopic Imaging Division of the Eastern Regional Research Center (ERRC) of USDA/ARS in Wyndmoor, PA.

Professional Affiliations:

- American Society for Horticultural Science (ASHS) - Member
- Society of In Vitro Biology – Member
- American Chemical Society (ACS) – Member 2005

- American Society of Plant Physiologists – Member 2001
- International Society of African Scientists (ISAS) – President, 2003 to Present
- Liberian Studies Association (LSA) – Past President and Member
- Liberian Institute for Peace, Democracy and Good Governance – President and Member

Honors & Awards received (last five years):

- USDA/ARS – Grape Germplasm Excellence for Group Research Award - 1998
- Marquis Who's Who Among America's Teachers Award - 2004
- Strathsmore Who's Who Award – 2005-2006

Publications (last three years):

Broderick, Cyril E. Sr. 2004. Sulfur Requirements, Fertilizer Supply and Use are Critical to Sub-Saharan Agriculture. *Journal of the Pennsylvania Geographical Society* 42(1): 74-90.

Broderick, Cyril E., Sr. 2001. Ethylenediurea (EDU) and the desiccation effects of high concentrations of ozone on the jade plant (*Crassula argentea*). *Journal of the Society of In Vitro Biology* 37(3):28-A. In Vitro

Broderick, Cyril E. Sr. and G. A. Jones, III. 2001. Germination and Seedling Development of St. John's Wort (*Hypericum perforatum* L.) Vary in Response to Different Wavelengths of Light. *HortScience* 36(3): 448.