

The Journal of Technology Studies

A refereed publication of *Epsilon Pi Tau* The International Honor Society for Professions in Technology.

Editor-in-Chief

Dominick E. Fazzaro
Department of Agricultural
and Industrial Sciences
Sam Houston State University
Box 2088
Huntsville, TX 77341-2088
936.294.1228
fax: 936.294.1232
DEF003@shsu.edu

Associate Editor

Mark R. Miller
Department of Human Resource
Development and Technology
The University of Texas at Tyler
3900 University Blvd.
Tyler, Texas 75799
903.566.7186
fax: 903.565.5650
mark_miller@uttyler.edu

Editorial Board

Stephanie Atkinson
University of Sunderland
Faculty of Education and Society
City Campus Forster Building,
Chester Road
Sunderland, Tyne & Wear U.K.
SR1 3SD
e.stephanie.atkinson@btinternet.com

Marie Kraska
Educational Foundations, Leadership,
and Technology
Auburn University
4036 Haley Center
Auburn University, AL 36849-5221
334.844.4460
fax: 334.844.3072
kraskamf@auburn.edu

Karen Birch
CT Community Colleges
College of Technology/Regional
Center for Next Generation
Manufacturing
(representing the Board of Directors)

Sam C. Obi
Department of Technology
San Jose State University
One Washington Square
San Jose, CA 95192-0061
408.924.3218
fax: 408.924.3198
sobi@email.sjsu.edu

Wan-Lee Cheng
Chung Yuan Christian University
Chung Li, Taiwan 320
Republic of China
+886 3 265 1000
wlcheng@sfsu.edu

Xeushu Song
Department of Technology
Northern Illinois University
Dekalb, IL 60115-2854
815.753.1349
fax: 815.753.3702
q20xxs1@corn.cso.niu.edu

John Dakers
Faculty of Education
University of Glasgow
11 Eldon Street
Glasgow, Scotland G3 6NH
fax: 44 (0) 141 330 5451
j.dakers@educ.gla.ac.uk

Luke Steinke
School of Technology
Eastern Illinois University
600 Lincoln Avenue
Charleston, IL 61920
217.581.6271
fax: 217.581.6607
lsteinke@eiu.edu

Staff for this Issue

**Editorial
Consultant**
Lee Meiser

Publisher
Barry D. Piersol

Art & Layout
Knappe Designs

Office Manager
Susan Pickens

Front Cover Photo: "Courtesy of Oak Ridge National Laboratory, U.S. Dept. of Energy."

Email submissions should be sent to jots@bgsu.edu.

Paper submissions should be sent to:

Journal of Technology Studies
Epsilon Pi Tau, Technology Building
Bowling Green State University
Bowling Green, OH 43403-0296

Region 1 (The nations of Europe, the Eastern Provinces of Canada, and the Northeastern United States)

Thomas P. Bell
Department of Industry and Technology
P.O. Box 1002
Millersville University
Millersville, PA 17551
717.871.2301
fax: 717.872.3318
thomas.bell@millersville.edu

Region 2 (The nations of Africa, the Caribbean Islands, and the Southeastern United States)

Kevin R. Howell
Department of Technology
Appalachian State University
W Kerr Scott Hall
Boone, NC 28608
828.262.3114
howellkr@appstate.edu

Region 3 (All members-at-large, the Canadian Province of Ontario, and the North Central United States)

Todd D. Myers
Russ College of Engineering and Technology
Industrial Tech. Dept.
Ohio University
124b Stocker Center
Athens, OH 45701
740.593.1455
myerst2@ohio.edu

Region 4 (The nations of Central and South America, the Northern Territory and Central Provinces of Canada, and the Central United States)

Charles V. Schwab
Iowa State University
Agricultural and Biosystems Engineering
Department
220 Industrial Education II
Ames, IA 50011-3130
Grand Forks, ND 58202-7118
515.294.4131
fax: 515.294.1123
cvschwab@iastate.edu

Region 5 (Australia, the island nations of the Pacific and Indian Oceans, the nations of Asia, the Yukon Territory and Western Provinces of Canada, and the Western United States)

Sam C. Obi
Department of Aviation and Technology
San Jose State University
One Washington Square
San Jose, CA 95192
408.924.3218
fax: 408.924.3198
sobi@email.sjsu.edu

Associate Executive Director for Information and Communication

Katrina Burt
Technology Building
Bowling Green State University
Bowling Green, OH 43403
419.352.2425
fax: 419.372.9502
jots@bgsu.edu

Executive Director

Barry D. Piersol
Technology Building
Bowling Green State University
Bowling Green, Ohio 43403
419.372.0378
fax: 419.372.9502
ept@bgsu.edu

The Journal of Technology Studies (JTS) (ISSN 1071-6048) is the flagship, peer-reviewed journal of Epsilon Pi Tau, Inc., a nonprofit, academic and professional honor society. Headquarters and editorial offices are located at the Technology Building, Bowling Green State University, Bowling Green, OH 43403-0296. Use this address or jots@bgsu.edu for subscription matters or purchases.

Copyright 2009 by Epsilon Pi Tau, Inc.

The opinions expressed by the journal's authors are not necessarily those of the Board of Directors, staff, or members of Epsilon Pi Tau.

Two print issues per year are mailed to all members of the society upon request and to academic and general libraries around the globe. Issues that are published online only, the aforementioned printed issues, and past issues are available online at scholar.lib.vt.edu/ejournals/JTS.

The journal is currently indexed in Current Index to Journals of Education (USA), International Bibliography of the Social Sciences (IBSS) (UK), and the International Vocational Education and Training and Research Database at <http://www.nver.edu.au> (Australia).

Separate articles or complete issues are also available in a variety of media forms from National Archive Publishing Company, P.O. Box 1346, Ann Arbor, MI 48106-1346, EBSCO Publishing, 10 Estes Street, Ipswich, MA 01938-0682, USA, and ERIC, 655 15th Street NW Suite 500, Washington, DC 20005, USA.

The JTS welcomes original manuscripts from scholars worldwide focused on the depth and breadth of technology as practiced and understood past, present, and future. Epsilon Pi Tau, as perhaps the most comprehensive honor society among the technology professions, seeks to provide up-to-date and insightful information to its increasingly diverse membership as well as the broader public. Authors need not be members of the society in order to submit manuscripts for consideration. Contributions from both academics and practitioners are equally welcome.

A general guide to the breadth of topics of potential interest to our readers can be gained by consideration of the 17 subclasses within "Technology" of the classification scheme of the Library of Congress, USA <lcweb.loc.gov/catdir/cpso/lcco/lcco_t.pdf>. This includes engineering and allied disciplines, informatics in its many manifestations, industrial technology, and education in and about technology.

Authors are strongly urged to consult the journal's "Guidelines for Authors," included in this publication, or available at the society's Web site (www.eptglobal.org) or provided upon request. It provides additional details on the breadth and nature of topics of interest, the journal's scholarly writing standards, submission guidelines, and review and publication processes.

Printed in the United States of America by Kennedy Printing Company, Findlay, Ohio.

Board of Directors