

The Journal of Technology Studies

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

Editor

Dennis W. Cheek

Co-Editor

Jerry Streichler

Editorial Board

E. Stephanie Atkinson
University of Sunderland
School of Education
Hammerton Hall, Gray Rd.
Sunderland, U.K. SR2-8JB
stephanie.atkinson@sunderland.ac.uk

Wan-Lee Cheng
Department of Design and Industry
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132
415.338.2211
fax: 415.338.7770
wlcheng@sfsu.edu

Marvin Sarapin
(representing the Board of Directors)

Michael J. Dyrenfurth
Department of Industrial Technology
Purdue University
1410 Knoy Hall, Room 461
West Lafayette, IN 47907-1410
765.496.1203
fax: 765.494.0486
mjdyrenfurth@tech.purdue.edu

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

Howard E. Middleton
School of Vocational Technology
and Arts Education
Faculty of Education
Griffith University
Nathan 4111 Queensland
Australia
61.7.3875.5724
fax: 61.7.3875.6868
h.middleton@mailbox.gu.edu.au

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

Christopher J. Shelley CMfgE
W. L. Gore & Associates
705 Guido Dr.
Middletown, DE 19709
302.598.7289
cshelley@wlgore.com

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

Staff for this Issue

**Editorial
Consultants**
Nancy Hoose

Publisher
Jerry Streichler

Art & Layout
Knappe Designs

Office Manager
Susan Pickens

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 2006 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 free 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 or EBSCO Publishing, 10 Estes Street, Ipswich, MA 01938-0682, 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

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

Marvin Sarapin
Department of Computer Graphics Technology
Purdue University
West Lafayette, IN 47907-2021
765.494.4585
fax: 765.494.9267
msarapin@purdue.edu

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

Robert E. Wenig
735 St. Andrews Dr.
Pinehurst, NC 28374
910.295.3730
fax: 419.372.9502
rwenig@nc.rr.com

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

David Devier
University of Cincinnati, Clermont College
4200 Clermont College Drive
Batavia, OH 45103
513.732.5209
fax: 513.732.5275
David.Devier@uc.edu

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

Dr. Ray Diez
Department of Technology
The University of North Dakota
Box 7118
Grand Forks, Nd 58202-7118
701.777.2198
fax: 701.777.4320
clayon.diez@mail.business.und.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)

James Edwards
Department of Design & Industry
San Francisco State University
1600 Holloway Avenue
San Francisco, CA 94132
415.338.7896
fax: 415.338.7770
jge@sfsu.edu

Associate Executive Director for Information and Communication

Dennis Cheek
Technology Building
Bowling Green State University
Bowling Green, Ohio 43403
419.372.2425
fax: 419.372-9502
jots@bgsu.edu

Associate Executive Director for International Affairs

Michael Dyrenfurth
School of Technology
Purdue University
Room 461, Knoy Hall
West Lafayette, IN 47907-1410
765.496.1203
fax: 765.494.0486
mjdyrenfurth@tech.purdue.edu

Executive Director

Jerry C. Olson
Technology Building
Bowling Green State University
Bowling Green, Ohio 43403
419.372.0378
fax: 419.372.9502
jcolson@bgnet.bgsu.edu