

Dr. Karen Wosczyzna-Birch
Professor of Science and Technology
State Director of the College of Technology
Executive Director of the Regional Center for Next Generation Manufacturing

EDUCATIONAL EXPERIENCE: DEGREES AND ACADEMIC STUDY

Doctorate; University of Hartford; 2000. Title of Dissertation: "A Case Study of the College of Technology: An Inter-organizational Arrangement in Connecticut's Higher Education System."

Master of Science Neurochemistry/Neurophysiology, University of Connecticut, 1978.

Bachelors of Science Chemistry, minor physics & biology, St Joseph College, 1976, graduated with high honors.

Courses, Workshops and Certifications: Inquiry Based Learning; Multiple Intelligences and Learning; Designing Industry Based Laboratories; Recruitment/ Retention of Women and Under-represented Populations for Science, Engineering and Technology; Gender Equity and Diversity in Engineering, Science, and Technology; Chemical Engineering for Chemists; Teaching Science with Toys; School to Career Skill Standards; Telecommunications; Certified Integrator Technician in Cabling, A+ and Networking, Certified DACUM facilitator; Certified TQM facilitator.

ACADEMIC: ADMINISTRATIVE AND TEACHING

Regional Center for Next Generation Manufacturing, Executive Director, August 1, 2004- present.

Provide leadership and direction for the National Science Foundation funded \$3 million dollar grant to establish a Regional Center for Next Generation Manufacturing under the CT College of Technology. Responsibilities include: Developing marketing and implementing recruitment and retention strategies for attracting a diverse population into science, engineering and technology career paths; Facilitating the development and implementation of new courses and programs through the College of Technology in laser manufacturing, alternative energy resources, quality including lean manufacturing and digital manufacturing; providing leadership for the collaboration which includes industry, government agencies, the community college system and its 12 colleges, six four year universities, the Technical High School System and its 17 high schools and comprehensive high schools and middle schools; Creating a just-in-time delivery mechanism that includes online delivery of courses; Creating a clearing house of resources for students, faculty and industry. The Center is responsive to workforce needs and is a regional and national model for engineering and technology education.

Community-Technical Colleges Chancellor's Office, State Director of the College of Technology 1995-present.

Provide leadership for the implementation and growth of the statewide College of Technology, a seamless (2 + 2 + 2) pathway in Engineering Science and Technology between the Community-Technical College System (includes 12 state-wide Community Colleges), six four- year colleges/universities, the Technical High School System (17 Technical High Schools) and comprehensive middle schools and high schools. Additional partners include the CT Center for Advanced Technology, CBIA, Office of Workforce Competiveness, and CPEP- Mastering science, math and engineering program for priority district middle and high schools, The COT now has two A.S. pathway programs that are fully articulated and has expanded to include over 11 engineering technology options including precision manufacturing, CAD and CAM; biotechnology, plastics, lineman technician, industrial diagnostics, electronics, integrator technician (cabling, networking and A+), wastewater, and photonics. As State Director of the College of Technology, assist with the development and articulation of the College of Technology curriculum used for the Precision Machining Institutes established at Asnuntuck CC and Manchester CC and currently being implemented at Middlesex Community College.

Tunxis Community-Technical College, Chairperson of Math, Science and Technology 1997-1999;

Professor of Science and Technology 1997-present. Provided leadership and facilitated DACUM workshops with industry for major curriculum development and implementation in Engineering Science and Technology including manufacturing, wastewater and telecommunications.

NASA Space Grant College Consortium, Campus Director, 1999- present.

Campus Director for the CT College of Technology. Responsibilities include organizing workshops and seminars for community college students in science, engineering and technology, recruitment and retention of matriculated students, providing opportunities to link with four year institutions, and identifying scholarship recipients.

CPEP: Increasing the Mastery of Math, Science and Technology. Bristol Site Coordinator, 1998-present. Coordinate a middle school program for three schools in Bristol, CT. Activities include: After school and Saturday programs with hands-on projects, field trips, guest speakers and statewide competitions.

Charter Oak State College, Faculty, Math, Science and Technology Committee, and a member of the Charter Oak Academic Council, 1988-present.

Chair of Math, Science and Technology Committee for two terms, served on numerous subcommittees regarding program assessment and outcomes; review and approve individual student programs and portfolios for acceptance into the engineering, science and technology concentrations.

Capital Community-Technical College (formerly Hartford State Technical College)

Chairperson Chemical Engineering and Fire Technology 1980-1997. Professor of Chemical Engineering Technology 1980-1997. Developed new program options in Biotechnology, and Waste Water. Received a NSF ILLI grant for modernization of the Chemistry Laboratories. Developed two state certified training programs in Lead and Asbestos Abatement.

St. Joseph College, University of Connecticut and University of Hartford, Adjunct Chemistry Instructor.

1980-present Courses include both undergraduate and graduate course. Specific course taught include Chemistry, Biochemistry, Pharmacology, Toxicology, Physical Chemistry, specialized courses for Engineers and a summer scholars program for under-represented populations.

Department of Education; Chair, School to Career Design Team for Technology, 1995-96.

Developed, wrote and validated Statewide School to Career Industry Skill Standards in Engineering Technology.

EVALUATION EXPERIENCE

Evaluator for the four year State grant funded Math and Science Summer Institute, St. Joseph College, 2000-2004. Prepared formative and summative evaluations including the design and analysis of quantitative and qualitative instruments.

Evaluator, Three Rivers Community College, National Science Foundation Computer Science, Engineering and Technology Scholarship (CSEMS) grant. Wrote the evaluation plan for the original grant. Currently the evaluator for the grant that was successfully awarded. 2002-present.

NSF National Visiting Board, 2004- present; Member of a NSF appointed board for the NSF ATE funded project awarded to Hofstra University, New York.

NSF panel reviews. Participated in numerous NSF panels for peer-reviewed grant proposals including Curriculum and Lab Improvement Proposals and Advanced Education Technology Proposals.

Reviewer for NSF ATE curriculum materials for the Southeast Community College ATE Grants, Lincoln, Nebraska, 1996-2001.

Reviewer and Field Tester, *CHEMISTRY An Industry-Based Introduction with CD-ROM.* J. Kenkel, P. Kelter and D. Hage; 2001. CRC Press LLC.

Reviewer and Field Tester, *CHEMISTRY An Industry-Based Laboratory Manual,* J. Kenkel, P. Kelter and D. Hage; 2001. CRC Press LLC.

Field Tester and Reviewer. American Chemical Society Technician SciTEKS (Industry Based, Interactive CDs). Reviewed and piloted curriculum materials. Organized workshops and assisted with dissemination. 1997-1999.

INDUSTRIAL AND RESEARCH EXPERIENCE

Consultant and trainer for numerous small companies 1980-present.
Industry Externships at *Boehringer Ingelheim*, 2003
Industry Externship at *Trumpf Manufacturing and Hamilton Standard* 1998;
Cabling Business Institute 1999-2003.
University of Connecticut Health Center and Storrs CT. Research Assistant 1975-80.

GRANTS FUNDED

National Science Foundation ADVANCED TECHNOLOGY EDUCATION (ATE) GRANT. Regional Center for Next Generation Manufacturing Grant.

Four-year Award of \$3 million dollars awarded to the CT College of Technology. August 1, 2004-2008.

Wrote and successfully received one of six regional center awards in the U.S.. Principal investigator Dr. K. Wosczyzna-Birch, CT College of Technology, co-principal investigators: Robert Fortier, Manchester CC; Frank Gulluni, Asnuntuck CC; Richard Weber, Naugatuck Valley CC, and Lauren Kaufman, CBIA.

In addition to the educational collaborative, partners include the CT Center for Advanced Technology, the Office of Workforce Competiveness, CT Business and Industry Association, several regional manufacturing associations and alliances and professional societies.

National Science Foundation ATE GRANT. Statewide College of Technology Curriculum Enhancement in Advanced Technology Elective courses, 2001-2003, (\$300,000) Principal investigator Dr. K. Wosczyzna-Birch, Tunxis Community Technical College (TCTC), co-principal investigators: L. Lema, Central CT State University; S. Speaker, TCTC; R. Adrezin, University of Hartford; L. Kaufman, CBIA.

National Science Foundation ATE GRANT. Statewide College of Technology Professional Development Grant; 2002-2005, (\$654,000) Principal investigator ; L. Kaufman, CBIA.; co-principal investigators: Dr. K. Wosczyzna-Birch, CT College of Technology/Community Colleges ; Dr. Lou Saloom., CBIA.

National Science Foundation Computer Science, Engineering and Math Scholarship GRANT. Sept 2000-Sept 2004; (\$400,000) Four year grant awarded to the CT College of Technology to provide scholarships for students majoring in engineering, technology and math programs. 36 students per year receive \$3650 towards their full-time program of study. Principal investigator Dr. K. Wosczyzna-Birch, Tunxis Community Technical College (TCTC), co-principal investigators: R. Fortier, Manchester CC; R. Tremblay, Gateway CC; J. Pazdar, Capital CC; L. Kaufman, CBIA.

Department of Transportation TRAC GRANT. Sept 1999-present; (\$45,000 per year). Awarded to the College of Technology/Tunxis CC and CPEP. Statewide grant to work with High School teachers/students. Activities include workshops, summer student internships, curriculum development and conferences.

Connecticut TALENT GRANT 2000-01, \$25,000 Consortium grant of 3 Middle Schools, 1 High School and 2 Colleges. Development and dissemination of curriculum using science, engineering and technology. Principal Investigator: Karen Wosczyzna-Birch

National Science Foundation ATE GRANT: Statewide College of Technology ATE Enhancement Project; 1999-2001, \$100,000; principal investigator Dr. K. Wosczyzna-Birch, Tunxis Community Technical College (TCTC), co-principal investigators: L. Lema, Central CT State University; S. Speaker, TCTC; R. Adrezin, University of Hartford; L. Kaufman, CBIA.

National Science Foundation ILI INSTRUMENTATION GRANT. Modernization of Instrumentation Laboratory in Liquid Chromatography and Computer Interfaced Instrumentation. 1990-91.
Hartford State Technical College; Principal Investigator: Karen Wosczyzna-Birch.

Greater Hartford CONSORTIUM GRANT Creating Change in the Mathematics Classroom: Strategies and Resources to Address Gender Issues. 1998-99. Co-PIs Karen Wosczyzna-Birch College of Technology; Caroline Cohen University of Hartford; Dorothy Zieser, St. Joseph College and Kathy Gavin, Central CT State University.

PACT Grant. Chemical Engineering for Chemists Weeklong Summer Workshop. 1999.

Principal Investigator: Karen Wosczyzna-Birch

Developed and instructed a weeklong summer program for High School and two year college faculty.

Participants represented seven US states.

Department of Higher Education. Gender Equity Grant, \$10,000. 1997-1998. Principal Investigator: Karen Wosczyzna-Birch.

Southern New England Academy of Engineering. Gender Equity Grants. 1995-1997. Two \$75,000 Gender Equity Grants Awarded to the College of Technology. Principal Investigators: A. Baron CCSU; Eric Soulsby UCONN; and K. Wosczyzna-Birch CT Community-Technical Colleges/COT.

Institute of Chemical Education ICE. ICE Affiliate Grant. 1990. Higher Education Faculty Mentor/Instructor at a two week summer program for High School teachers at the University of Colorado. Grant resources were used to establish the first ICE affiliate in Connecticut.

HONOR AND AWARDS

International Epsilon Pi Tau Honor Society Laureate Citation and Laureate Membership Status, May 2004.

National Catalyst Award, 2002, (sponsored by the American Chemical Council), for Excellence as a Science Educator.

Community-Technology College Distinguished Professor, 1999-2000. Featured in System Marketing Campaign

St. Joseph College Distinguished Alumni Award, 1999.

Epsilon Pi Tau International Honor Society Trustee, 1998-present, Co-founder of the first Statewide Chapter of Epsilon Pi Tau Gammi Phi Chapter awarded to the CT College of Technology.

Kappa Delta Pi 1998-present.

Tunxis CTC Corporate Sponsors Award, 1998.

Regional Catalyst Award for Teaching Excellence 1992, Chemical Manufacturer's Association..

American Association of University Women Award for Gender Equity Activities in Higher Education 1992.

Who's Who in American Colleges and Universities 1976

Who's Who in American Women 1993-1994.

St Joseph College Research Award, 1976.

Chemical Manufacturer's Association/Chemical Rubber Company Freshman Student Award, 1973.

PROFESSIONAL AFFILIATIONS

American Chemical Society 1972-present.

American Chemical Society, Division of Chemical Education 1990-present.

2YC₃ (Two Year College Committee of ACS) member, 1995- present.

American Society for Engineering Education, 1999-present.

American Society for Engineering Education, Manufacturing Division, 2002-present.

American Society for Engineering Education, Manufacturing Division Membership Committee, 2004

Northeast Division of ACS 1990-present.

New England Association of Chemistry Teachers, 1988-present

Member of the Northeast Regional Board of the 2YC₃, 1998-present

STATEWIDE AND NATIONAL COMMITTEES, ORGANIZATIONS AND ACTIVITIES

CT Legislative Task Force on Transfer and Articulation, Member, 2004-present.

Represent the College of Technology and participate on both the overall task force as well as the Manufacturing sub-committee. Objective is to recommend policy for establishing seamless career pathways in allied health and manufacturing between the Technical High School System and the Community Colleges.

CT Careers Council, Office of Workforce Competiveness, Member 2002-present. Statewide CT Careers Council. Council meets monthly and includes statewide representation from educational and nonprofit organizations involved in Career Pathways in CT.

ABET NSF funded professional workshop for New England professors in Engineering Technology. 2004.

Assisted with the organization of the regional workshop hosted in CT. Included organizing an industry day, identifying participants, marketing and hosting the conference at a Community College.

CT Legislative Task Force on Careers Pathways, Member, 2002-04. Legislative Task Force created to address strategies for creating Career Pathways in Technology, Early Childhood Education and Health Care.

CT Department of Transportation, TRAC Program. 1999-Present. Coordinate with the Department of Transportation and CPEP, the community college involvement in the TRAC Program-a national outreach and career awareness initiative that targets underrepresented students for Career Awareness in Transportation. Program includes student career days at community colleges, industry day, workshops for students and teachers, seminars, student internships and after school guest activities

CPEP Coordinator, 1998-present. Co-ordinate after school and Saturday programs for priority schools in Bristol and East Hartford. Co-ordinate the Egg Drop competition annually as part of CPEP's statewide CPEP Day competition every may.

American Chemical Society Two Year Division Regional Meeting, 2002, Organized the regional meeting of the Two Year Division of Chemists, including program organization that included guest speakers including national guest presenters, space and an industry visit.

ACS Sci-Tec Project; participated in regional workshops and organized a one day workshop, 1999.

Board of Trustees for the Bristol Family Center and its new Science Museum, 2000-2003,

Women's Commission, 1988- present. Established a Women's Commission within the Technical Colleges to provide a mentoring and support system for women in non-traditional fields.

Safety Institute State Director, 1997-2000.

Statewide Technical Advisory Council, 1995-present.

Statewide Articulation Committee for Community-Technical Colleges and the State University System, 1996-present.

Project Connstruct Fellow, 1995-present.

Community-Technology College System Representative on Tech Prep Advisory Co. 1998-present

Statewide College of Technology Advisory Council, 1995-present.

Community-Technical College System Technology Committee, 1997-1999.

PROFESSIONAL PAPERS, WORKSHOPS AND PUBLICATIONS

Numerous presentations at professional conferences, local and regional workshops, and publications available upon request. Topics include: Industry and Inquiry Based laboratories; College of Technology: Business and Educational Partnerships; Gender Equity and Diversity in Math, Science, Engineering and Technology;

Introducing Engineering Technology into Science Classrooms; Hands-on Learning Activities; Articulation in Education. Examples include:

International Colloquium on Engineering Education; Beijing China, September 2004, (invited presenter)
Title of Paper: Next Generation Manufacturing in U.S.

American Society for Engineering Education; June 2004, (two peer reviewed papers and presentations).

National Association Workforce Initiative Regional Conference; Virginia, April 2004. Presented a paper on Technician Training for the Workforce.

National Tech Prep Conference, Oct. 2003, Nashville TN. Creating a Seamless 2 + 2 + 2 pathway. NSF ATE funded projects Showcase and two presentations.

American Society for Engineering Education; June 2003, Nashville, TN. *The College of Technology: A seamless pathway in engineering and technology education.* (peer reviewed paper and presentation).

ACP Central. August 2001 Vol. 1 number 2. *Voc-Tech Schools Offer Networking Education Pathways*; Karen Wosczyzna-Birch and Michael Suntag.

16th Biennial Conference on Chemical Education, University of Michigan, Ann Arbor, MI. July 2000.
Presentation: “*Connecticut’s College of Technology: a Collaborative effort with Industry and Higher Education.*”

Chemistry Laboratory Manual for Chemical Technicians: John Kenkel; Sept 2000; Lewis Press. Publication. Industry Based Laboratory with accompanying teacher’s notes entitled “*The Hydrogen Car Dilemma*” by Karen Wosczyzna-Birch.

Exploring New Horizons. Workshop Presenter 2000, 1999, 1998. Three Rivers Community College.

Connecticut’s Economy 1999 Conference. Sponsored by CBIA , Connecticut Economic Resource Center, Connecticut Policy and Economic Council and the Hartford Area Business Economists.
Sept 1999. One of three presenters for “*Building a Skilled and Flexible Workforce*” Breakout Session.

Learning Outcomes Conference. Connecticut’s Community Colleges. Naugatuck Valley Community College, January 29, 1999. Co-Presenter; “*Curricular Responses to Changing Employment Needs.*”

Connecticut’s Business and Industry Association. January 14, 1999.
Workforce Development Series. Cromwell, CT. Presenter: “*Bridging the Technical Skills Gap.*”

15th Biennial Conference on Chemical Education; Waterloo, Canada. August, 1998. Presentation: “*A Kinetics Laboratory using an Industry Based Scenario.*”

ACS Central Regional Meeting; Midland Michigan. May 1997. Presentation: “*Writing an Inquiry Based Kinetics laboratory using An Industry Based Scenario.*”

National Science Teachers Association Conference, Nov. 1998 “*Strengthening the Chemical Bond between Community Colleges and Four Year Institutions.* H. McKone and K. Wosczyzna-Birch.