

Mohammad A. Zahraee, Ph.D., P.E.
Purdue University Northwest
Hammond, Indiana 46323
219-989-2464
Zahraee@pnw.edu



Education

August 1988

Ph.D., Engineering Mechanics, Department of Civil Engineering, Mechanics and Metallurgy, University of Illinois at Chicago. Subject area of thesis: Random Vibrations.

December 1982

M.S., Structural Engineering, Department of Materials Engineering, University of Illinois at Chicago.

June 1981

B.S., Engineering Mechanics, Department of Engineering Mechanics and Materials, Southern Illinois University at Carbondale.

Academic Experience

Purdue University Northwest, Hammond, IN, August 1989 – present

- 2018 – Present
Associate Dean & Professor – College of Technology
- 2022 – 2023
Interim Dept. Chair – Engineering Technology
- 2019 - 2020
Interim Dean & Professor – College of Technology
- 2010 - 2019
Associate Dean for Graduate Studies & Professor – College of Technology
- 1997 – present
Professor of Mechanical Engineering Technology
- 1996 – 2007
Department Head, Manufacturing Engineering Technologies & Supervision (METS). Programs included: Mechanical Engineering Technology (MET), Industrial Engineering Technology (IET), Organizational Leadership and Supervision (OLS), and Computer Graphics Technology (CGT).
Full-time faculty: 16; Part-time faculty: 12-17; Full-time Staff: 5
- 2000 – 2006
Acting Dept. Head, Electrical & Computer Engineering Technology.
Full-time faculty: 8, Part-time faculty: 4-8; Staff: 3
- 1993 – 1997
Associate Professor and Program Coordinator of Mechanical Engineering Technology.
- 1989 - 1993

Assistant Professor and Program Coordinator of Mechanical Engineering Technology.

Activities / Achievements as an Administrator:

- Started the Doctor of Technology Degree program, starting in spring 2023, with 4 students
- Helped Purdue University Calumet College of Technology achieve the third largest enrollment and number of graduates in the MS in Technology program in the nation (ASEE data, 2012)
- Managed over \$350,000 in annual contracts with industry for College of Technology (2012-present)
- Successfully started the fully on-line MS in Technology with concentration in Technology Management and Leadership
- Successfully initiated and implemented five concentrations in MS in Technology between fall 2013 and fall 2015
- Increased the number of graduate students in Technology to over 180 within five years of the start of the program
- Initiated and expanded the new Computer Graphics Technology BS program.
- Added Manufacturing Engineering Technology as an option under MET & IET.
- Increased the number of faculty in METS department from 11 to 16, while increasing enrollment in the department from 320 in 1996 to 506 in fall 2005.
- Continuously promote scholarly activity of faculty by rewarding them. The amount of awarded contracts and grants for the METS department was over \$300,000 in 2005. This was a cultural change in the SOT departments. Currently, the College of Technology has achieved a much larger dollar value in grants and contracts on an annual basis.
- worked closely with the department of Distance Education and Extended Learning (DEEL) to promote faculty outside activity through training. This also increased the unrestricted cash budget of the METS department to over \$100,000 in 2006. As the Associate Dean, did the same thing with the newly created graduate program.
- Increased the student membership in professional societies in the two departments to 180. This was the result of paying the first year membership fee for students from departmental funds.
- Developed a system of faculty evaluation, incorporating continuous improvement.
- Managed to re-vamp the two options of Computers, Networking, & telecommunications as well as Process Control Instrumentation in the ECET department. Also supported the creation of Cisco Academy that has become a good recruitment tool as well as a money generator.
- Justified hiring of academic advisors for both departments.
- Re-organized the senior project presentation format and combined both departments presentations to emulate a conference atmosphere on the presentation day.
- Started hiring of Engineering Graduate students as Graduate Aids to help both ET departments' faculty in laboratories, as well as the Engineering department by attracting more graduate students through offering graduate assistantships. This was before start of the graduate program in the School of Technology. Currently,

an average of 19 Technology graduate students are hired as graduate aides every semester.

- Increases in the flexible budget of both departments resulted in providing more graduate student help for faculty for their research.

Illinois Technical College, Chicago, Illinois, August 1988-August 1989

Part-time Faculty, Computer Aided Design & Drafting.

Moraine Valley Community College, Palos Hills, Illinois, August 1984-August 1989

Part-time Faculty, Engineering (Physical Sciences) and Mathematics Departments.

Oakton Community College, Des Plaines, Illinois, January 1985-May 1986

Lecturer, Engineering Department.

University of Illinois at Chicago, September 1982-August 1988

Teaching Assistant, taught engineering courses such as Statics, Dynamics, Strength of Materials, Vibrations, and Stress Analysis.

Southern Illinois University at Carbondale, January 1981-August 1981

Teaching/Research Assistant, taught Engineering Numerical Analysis as a 1/4 teaching assistant. Also, performed experimental Two-Phase flow studies for Union Carbide.

Industrial Experience

Superior Engineering Services, Inc. Lisle, Illinois. April 1988-August 1989

Engineering/CAD Specialist.

- Performed pipe stress analysis and pipe shielding blanket design for nuclear power plants.
- Developed CAD Isometrics of Byron Unit I for Commonwealth Edison Company.
- Was the project manager for all CAD projects.

Superior Engineering Services, Chicago, Illinois. January 1983-August 1984

Engineering Analyst.

- Performed Finite Element Analysis of structural members.
- Worked with pipe stress analysis codes on nuclear power plant related projects.

Awards and Recognitions

2015 Elected to the ABET Board of Directors as the Engineering Technology Delegation Director

2014 Recipient of Purdue University's "Seed for Success Award", presented to those who secured a grant over \$1 M in the previous academic year.

- 2013 Elected to the ABET Board of Directors as the ASME representative for 2013-2016.
- 2008 Was featured in the December issue of “Community Matters”, the monthly ABET newsletter, at the “Volunteer Spotlight” section.
- 2007 Elected as the national “Chair” for TAC (Technology Accreditation Commission) of ABET for 2008-2009. Responsible for all TAC activities as well as the final editor for all TAC accreditation reports. This is a national position.
- 2006 Elected as “Chair-Elect” for TAC of ABET for 2007-2008.
- 2005 Elected as the “Vice Chair of Operations” for TAC (Technology Accreditation Commission) of ABET for 2006-2007. As the Vice Chair of Operations, I was the go-to-person on all accreditation issues of the TAC/ABET while commissioners (Accreditation team chairs) were on site visits. This position will usually lead to being the Chair-elect (the following year) and finally to being the Chair of TAC of ABET.
- 2004 Elected as a “Member-at-large” of TAC Executive Committee (a 8-member committee with four officers in charge of accreditation decisions.
- 2003 American Society of Mechanical Engineers (ASME) “**Ben C. Sparks Medal**”. I was presented with this medal in November meeting of the Society in Washington D.C. This award was presented for dedication and contributions to the mechanical engineering education.
- 2003 Outstanding Administrator Award, Purdue University Calumet, Hammond, Indiana. Nominated by faculty.
- 2002 ASME Dedicated Service Award. Presented in November meeting of the Society in New Orleans.
- 1997-2000 Certificates of appreciation from the Council on Engineering of ASME International in testimony of the high regards of colleagues and the deep appreciation of the society for services in advancing engineering education as chair, 1995-96 and past chair, 96-97 of the MET Dept. Heads Committee and as the Board member until 2000.
- 1994 Won the *Merl K. Miller Award for the Outstanding Computers in Education Journal Paper* in Teaching/Instructional Methods for the paper "Incorporating CAD and Commercial Software Tools into an Introductory Mechanism Kinematics Course". The award presentation took place in the ASEE annual meeting in Edmonton, Alberta, Canada, on June 28.
- 1992 Certificate of Recognition for services provided to the Society of Manufacturing Engineers (SME) as the student chapter's Faculty Advisor.

- 1991 Certificate of Appreciation from Mayor McDermott (Mayor of Hammond) in recognition of contributions for promoting the needs of persons with disabilities. The Certificate was presented on the Mayor's commission on disabilities' Annual Award Breakfast, Monday, October 28, 1991.
- 1991 SME Outstanding Faculty Advisor Award. Club MET, Purdue University Calumet No. 161 was also recognized as the Outstanding Student Chapter and received a cash award.

Refereed Papers, Research Abstracts, and Other Publications

Latif, N., Zahraee, M. "Augmenting undergraduate Engineering Technology education through applied research", *Proceedings of the 129th American Society for Engineering Education (ASEE) Conference & Exposition*, Minneapolis, MN, June 26-29, 2022.

Chandramouli, C., Nakayama, S., Zahraee, A., Latif, N. "Pathway to BS degree Program for Construction Trade Professionals at Purdue University Northwest", *Proceedings of the American Society for Engineering Education (ASEE) Conference for Industry and Education Collaboration (CIEC)*, Phoenix, AZ, February 9-11, 2022

Hossain, A., Zahraee, M. "Experiential Learning of Students Through Prescriptive Laboratory Experiments Versus Open-ended Laboratory Assignments", *Proceedings of the 126st American Society for Engineering Education (ASEE) Conference & Exposition*, Tampa, FL, June 16-19, 2019.

Zahraee, A., Mapa, L., Zahraee, M, "Leveraging Industry Partnership for Experiential Learning and Laboratory Improvement", *Proceedings of the American Society for Engineering Education (ASEE) Conference for Industry and Education Collaboration (CIEC)*, New Orleans, LA, January 28 – February 1, 2019

Hossain, A., Zahraee, M. "Virtual Software and Hardware Environment to Enhance Learning for Mechatronics Engineering Technology", *Proceedings of the 125st American Society for Engineering Education (ASEE) Conference & Exposition*, Salt Lake City, UT, June 24-27, 2018.

Zahraee, M., Latif, N. "Building and Sustaining a Successful Graduate Degree Program in Technology", *Proceedings of the 124st American Society for Engineering Education (ASEE) Conference & Exposition*, Columbus, OH, June 25-28, 2017.

Latif, N, Zahraee, M. "Short-term Experiential Learning Program for Students from Foreign Institutions.", *Proceedings of the Conference for Industry and Education Collaboration (CIEC) of American Society for Engineering Education (ASEE)*, Jacksonville, FL, February 8-10, 2017.

Latif, N, Wendel, S., Zahraee, M, Sikoski, A, Bennet, R. “Leadership Capacity Building for Manufacturing Education., *Proceedings of the 122st American Society for Engineering Education (ASEE) Conference & Exposition*, Seattle, WA, June 14-17, 2015.

Chandramouli, M, Elbadwi,I, Ziller, M, El Ashmawy, M, Zahraee, M.A. “Underwater Remotely Operated Vehicle Manufacturing Assembly and Training Using X3D/Virtual Reality Modeling Language.”, *Proceedings of the 2014 IAJC-ISAM International Conference*, Orlando, Florida, September 25-27, 2014.

Latif, N, Zahraee, M.A., Sikoski, A, Rasoul, B. “Workforce Development in Mechatronics – A three year NSF-ATE project.” *Proceedings of the 121st American Society for Engineering Education (ASEE) Conference & Exposition*, Indianapolis, IN, June 15-18, 2014.

Bennet, R.J, Latif, N, Sikoski, A, Webdel, S, Zahraee, M.A. “Leadership for Manufacturing and Manufacturing-Related Programs.” *Proceedings of the 121st American Society for Engineering Education (ASEE) Conference & Exposition*, Indianapolis, IN, June 15-18, 2014.

Chandramouli, M, Zahraee, M.A., Winer, C. “A Fun-Learning Approach to Programming: An Adaptive Virtual Reality Platform to Teach Programming to Engineering Students.” *Proceedings of the 2014 IEEE International Conference on Electro/Information Technology*, Milwaukee, WI, June 5-7, 2014.

Latif, N, Zahraee, M.A., Colwell, J.L. “Impact of a Successful Technology Graduate Degree Program- Report on program and its graduates” Presented and Published in the *Proceedings of the 120th American Society for Engineering Education (ASEE) Conference & Exposition*, Atlanta, Georgia, June 23-26, 2013

Hossain, A, Zahraee, M.A, “Remote Demonstration of Packaging”, Presented and Published in the *Proceedings of the 120th American Society for Engineering Education (ASEE) Conference & Exposition*, Atlanta, Georgia, June 23-26, 2013

Latif, N., Zahraee, M., Sikoski, A., Rosul, B., “Manufacturing Workforce: Report on NSF-ATE Project Pertaining to Mechatronics Technician Development.” Presented and Published in the *Proceedings of the 2012 National Conference of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, San Antonio, Texas, June 2012

Hossain, A., Kadir, H., Zahraee, M., “Frame-by-Frame Analysis and Diagnosis of a High-speed Packaging System Using Fastec InLine Network-ready Camera Vision Equipment.”, Published in the *Proceedings of the 2012 National Conference of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, San Antonio, Texas, June 2012

Rosul, B., Latif, N., Zahraee, M., Sikoski, A., “Modular Curriculum Development for Mechatronics Technicians.” Presented and Published in the Proceedings of the 2011 *National Conference of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Vancouver, Canada, 2011

Fathizadeh, M., Neff, G., Latif, N., Higley, J., Zahraee, M., “A New Mechatronics Engineering Technology Curriculum Degree with Industry Collaboration.” International Symposium on Engineering Education, IGIE’ 2011

Fathizadeh, M, Higley, J, Hossain, A, Neff, G., Zahraee, M., “A packaging Focused Mechatronics Engineering Technology Program”. Presented and published in the proceedings of the 2009 *National Conference of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Austin, Texas.

Scachitti, S., Neff, G., Corum, C., Higley, J., Zahraee, M., Cooper, H., “Using outcomes-based Assessment and Continuous Quality Improvement Practices from ABET Program Accreditation in Institutional Accreditation.” [CD-ROM]. Presented and published in the proceedings of the 2007 *National Conference of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*. June 2007, Honolulu, Hawaii.

Farook, O., Agrawal, Jai, Sekhar, C., Bouktache, E, Ahmed, A, & Zahraee, M.A. “Outcome Based Education and Assessment”, Presented and published in the proceedings of the *American Society for Engineering Education (ASEE) Annual Conference*, Chicago, June 18-23, 2006, Chicago, Illinois.

Neff, G., Scachitti, S., Higley, J., and Zahraee, M.A. “Lessons Learned: Reflections on a Department’s First TC2K Evaluation.” *Presented and published in the proceedings of the ASEE Annual Conference*, Chicago, June 2006. (with 4 other METS faculty)

Zahraee, M.A. “A Continuous Improvement / Management-by-Objectives approach to evaluating University Faculty.” Presented and published in the *proceedings of the International Mechanical Engineering Congress & Exposition*, November 15-20, 2003, Washington, D.C.

Higley, J.B., D.A. McLeese, and M.A. Zahraee. “A Case Study in Laboratory-Based Online Courses - Teaching CNC Programming.” Presented and published in the *proceedings of the International Mechanical Engineering Congress & Exposition*, November 15-20, 2003, Washington, D.C.

Zahraee, M.A., J. Lambert, K.A. McIndoo. “Modifications and Improvements to the Braking System of Ford Mustang.” Presented and published in the *proceedings of the International Mechanical Engineering Congress & Exposition*, November 11-16, 2001, New York, NY.

Neff, G.P., S. Scachitti, M.A. Zahraee. “Closing the Loop: The Difference Between Making Improvements and Continuous Improvement.” Presented and published in the

proceedings of the National American Society of Engineering Education Conference, June 2001, Albuquerque, N.M.

Scachitti, S., G.P. Neff, M.A. Zahraee. "Missions, Goals, and Objectives: The Yardstick for Assessment and Accreditation." Presented and published in the *proceedings of the National American Society of Engineering Education Conference*, June 2001, Albuquerque, N.M.

Neff, G.P., S. Scachitti, M.A. Zahraee. "Continuous Improvement of Engineering Technology Programs – Coming Soon to a University Near You." Presented and published in the *proceedings of the National American Society for Engineering Education Conference*, June 2000, St. Louis, MO.

Scachitti, S, G.P. Neff, L. Mapa, M.A. Zahraee. "Instituting Continuous Improvement within a Tenure/Promotion Culture (and taking advantage of it)." Presented and published in the *proceedings of the National American Society for Engineering Education Conference*, June 2000, St. Louis, MO.

Scachitti, S, G.P. Neff, M.A., Zahraee. "Continuous Improvement of ET Programs – An Unfamiliar Process, An Ever Increasing Expectation for Accreditation." Presented in and published at the *proceedings of the American Society for Engineering Education, Illinois/Indiana Section*, March 11-12, 1999, DeKalb, IL.

Zahraee, M.A, S. Scachitti. "Working with Industry: A Valuable Key to Program Survival, Faculty Advancement, and Student Learning," *Proceedings of the American Society for Engineering Education, IL/IN section*, March 27-28, 1998, Carbondale, Illinois.

Zahraee, M.A., G.P. Neff, and D. Morrison. "Finite Element Analysis of Tube Clamp; Outcome vs. Assumptions," Accepted for publication as individual and presentation in the *International Mechanical Engineering Congress and Exposition*, November 16-20, 1997, Dallas, TX.

Neff, G.P., M.A. Zahraee, and D. Morrison. "Aircraft Landing Gear Simulation & Analysis," *Proceedings of the American Society for Engineering Education Annual Conference*, June 1997, Milwaukee, WI.

Zahraee, M.A., and D. Morrison. "Finite Element Analysis of TuffTube Clamps," *Proceedings of the American Society for Engineering Education, IL/IN section*, March 18-19, 1997, Indianapolis, IN.

Zahraee, M.A., and G.P. Neff. "Computer-Aided Kinematics Analysis of Cam Mechanisms: A Reverse Engineering Approach," *Proceedings of the Second International Mechanical Engineering Conference and Fourth Annual Mechanical Engineering Conference of ISME*, May 13-15, 1996, Shiraz, Iran.

Neff, G.P., and M.A. Zahraee. "Cam Design: A practical topic to integrate several computer/lab oriented MET Courses," Presented and published as individual paper in the *International Mechanical Engineering Congress and Exposition*, November 12-17, 1995, San Francisco, CA.

Sekhar, C, and M.A. Zahraee. "Seamless Transition: Tech-prep to A.S. to B.S. in Technology - Partnership with the community," presented and published as individual paper in the *International Mechanical Engineering Congress and Exposition*, November 12-17, 1995, San Francisco, CA.

Zahraee, M.A. "Transient RMS Response of Multiply Supported Tuned Subsystems to Seismic Excitation," *Proceedings of the 2nd International Conference in Seismology and Earthquake Engineering*, May 15-17, 1995, Tehran, Iran.

Neff, G.P., J. Higley, M.A. Zahraee, and S. Tickoo. "Computer Aided Kinematics Analysis of Flat Plate Disk Cams: A Reverse Engineering Approach," *Proceedings of the 1995 ASEE Illinois-Indiana Section Meeting*, March 17-18, 1995, Purdue University, West Lafayette, IN.

Neff, G.P., S. Tickoo, M.A. Zahraee, and J.B. Higley. "Using a Multi-Course project to integrate CAE, CADD, and CAD/CAM," *Proceedings of the Annual ASEE North Central Section Conference*, April 7 - 9, 1994, Grand Valley State University in Grand Rapids, MI.

Zahraee, M.A., and G.P. Neff. "Incorporating CAD and Commercial Software Tools into an Introductory Mechanism Kinematics Course," published in the *"COMPUTERS IN EDUCATION JOURNAL" Vol. III, No. 2, April-June 1993*. Professor Zahraee presented this paper in the American Society for Engineering Education Annual Conference, Engineering Mechanics Division, June 21-24, 1992 at Toledo, Ohio. The paper was also published in the Conference Proceedings.

Zahraee, M.A., S. Tickoo, and G.P. Neff. "Integrating CAE, CADD, and Computer Assisted Manufacturing into a Multi-Course Project," *Proceedings of the ASEE Illinois/Indiana Section Annual Conference*, March 5-6, 1993. This paper was also presented in the conference held in Indiana State University, IN.

Zahraee, M.A. "Transient RMS Response of Dynamical Systems to Multi-Support, Multi-Component Random Excitation," published in *Developments in Mechanics, Proceedings of the Twenty-Second Midwestern Mechanics Conference*, Vol. 16, 1991. Professor Zahraee also presented this paper at the Twenty-Second Midwestern Mechanics Conference, University of Missouri-Rolla, Rolla, Missouri, October 7-9, 1991.

Tickoo, S., M.A. Zahraee, and G.P. Neff. "The Interaction of Manual Drafting and CAD at Purdue University Calumet," published by the *American Society of Mechanical Engineers as ASME Technical Paper 91-WA-MET-1*. This paper was also presented at the 1991 American Society of Mechanical Engineers (ASME) Winter Annual Meeting in Atlanta, Georgia. The paper has been referenced in the "1991 Engineering Technology Education Bibliography" published in the April issue of Mechanical Engineering Magazine.

Zahraee, M.A., and G.P. Neff. "Computer Software & Programming Utilization in Kinematics," published by the American Society of Engineering Education in the *ASEE Conference Proceedings*. Professor Zahraee also presented this paper in the ASEE Illinois/Indiana Section Meeting on April 26, 1991 at the University of Illinois, Urbana-Champaign, Illinois.

Tickoo, S., M.A. Zahraee, and G.P. Neff. "Design of Economical Robots and PLC Trainers for Undergraduate Laboratory Use," published by the American Society of Engineering Education in the *Conference Proceedings*. This paper was also presented at the ASEE Illinois/Indiana Section Meeting on April 26, 1991 at the University of Illinois, Urbana-Champaign, Illinois.

Mapa, L., S. Tickoo, M.A. Zahraee, and G.P. Neff. "Mechanical and Manufacturing Senior Projects and Outreach at Purdue University Calumet," published by the American Society of Engineering Education in the *Conference Proceedings*. This paper was also presented in the ASEE Illinois/Indiana Section Meeting on April 27, 1991 at the University of Illinois, Urbana-Champaign, Illinois.

Neff, G.P., S. Tickoo, and M.A. Zahraee. "MET Senior Projects at an Urban University," published by the American Society of Mechanical Engineers as *ASME Technical Paper 90-WA/MET-2*. The paper has been referenced in the "1990 Engineering Technology Education Bibliography" published in the May/June issue of *Engineering Education*, and *Mechanical Engineering* magazine. It has also been *published by the ERIC Clearinghouse on Higher Education, Washington, D.C. and abstracted in Resources in Education, May 1991*

Debchaudhury, A., and M.A. Zahraee. "Stochastic Dynamic Response of Multiply Supported Tuned Subsystems to Non-Stationary Seismic Excitation," published in the *International Journal of MECHANICS OF STRUCTURES AND MACHINES*, Vol. 18, No. 2, 1990.

Debchaudhury, A., and M.A. Zahraee. "On the Response of Dynamical Systems to a Class of Vector Random Excitation," published in the *Proceedings of the 17th International Congress of Theoretical and Applied Mechanics*. This work was also presented in the conference, which was held at Grenoble, France, August 21-27, 1988.

Zahraee, M.A. "Stochastic Transient Response of Dynamical Systems to Multi-Support, Multi-Component Seismic Excitation," Ph.D. Thesis, University of Illinois at Chicago, August 1988.

Debchaudhury, A., and M.A. Zahraee. "Stochastic Dynamic Analysis of Earth Dams to Realistic Seismic Excitation," presented at and published in the *Abstract Proceedings of the Symposium on Reliability-Based Design in Civil Engineering*, Lausanne, Switzerland, July 7-9, 1988.

Zahraee, M.A., and S.. Kim. "An Improved Formulation for Earthquake Analysis of Structures," presented at and published in the *Abstract Proceedings of Sigma XI Graduate Research Forum*, University of Illinois at Chicago, April 6, 1988.

Kim, S.D., and M.A. Zahraee. "A New Response Spectrum Method for Seismic Analysis of Structures," presented at and published in the Abstract *Proceedings of Sigma XI Graduate Research Forum*, University of Illinois at Chicago, April 6, 1988.

Debchaudhury, A., and M.A. Zahraee. "Dynamic Response of Piping System(s) in Buildings subjected to Seismic Excitation," presented at *The 6th Specialty Conference, American Society of Civil Engineers, Engineering Mechanics Division*, Buffalo, New York, May 20-22, 1987

Grants & Contracts

June 1, 2021 – December 30, 2023

CO-PI, \$1,025,952, US Department of Commerce – EDA – “Project TRAVERSE: agTech Robotics, Automation and the Virtually Employed Resiliently Scaling Enterprises.”

October 1, 2019 – September 30, 2021

CO-PI, \$386,316, US Department of Commerce – i6 Grant – “C2C-2020 (Concept to Commercialization 2020): Meeting innovations and Workforce Needs for Advanced Manufacturing.”

January 1, 2018 – June 30, 2018

PI, \$92,450 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program and CAD training.

June 2017 – May, 2021

Director, \$360,000 , Director for the Duy Tan University (Vietnam) and Purdue University Northwest faculty/student exchange program.

January 1, 2017 – December 31, 2017

PI, \$164,000 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program.

October 1, 2013 – September 30, 2017

Co-PI, \$2,741,491, U.S. Department of Labor (DOL) “AWAKE- Assisting Workforce by Advancing Knowledge for Employment”.

January 1, 2016 – December 31, 2016

PI, \$158,400 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program.

July 1, 2013 – June 31, 2016

Co-PI, \$764,765 , National Science Foundation, NSF Award Id: DUE 1304391 Sub-Award through Sinclair Community College, “Leadership Capacity Building for Manufacturing and Manufacturing-related Faculty Members”, PUC Sub-Award amount:\$121,998.

January 1, 2015 – December 31, 2015

PI, \$157,120 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program.

January 1, 2014 – December 31, 2014

PI, \$151,000 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program.

January 1, 2013 – December 31, 2013

PI, \$156,000 , BP Products North America, Inc., Whiting, Indiana. Contract on training of apprenticeship program.

January 1, 2011 – December 31, 2013

PI, \$28,500 , National Science Foundation Sub-Award through Sinclair Community College, “The High School STEM Teacher Sunergistic Institute”, NSF Award Id: DUE 1003048.

August 1, 2010 – July 31, 2013

Co-PI, \$613,862 , National Science Foundation - ATE, “Meeting Worforce Needs for Mechatronics Technicians”, NSF Award Id: DUE-1003668.

January 1, 2012 – December 20, 2012

PI, \$264,500 , BP Products North America, Inc., Whiting, Indiana. Contract on training of one apprenticeship program, as well as AUTOCAD, Surveying, Metallurgy, Vibrations, and Hydraulics training for BP employees.

March 1, 2009 – February 28, 2012

Co-PI, \$147,900 , National Science Foundation - CCLI, “A Mechatronics Curriculum and Packaging Automation Laboratory Facility”, NSF Award Id: DUE-0837164.

February 1, 2011 – December 20, 2011

PI, \$92,500 , BP Products North America, Inc., Whiting, Indiana. Contract on training of one apprenticeship program, as well as AUTOCAD, Surveying, and Metallurgy training for BP employees.

June 1, 2010 – December 20, 2010

PI, \$54,500 , BP Products North America, Inc., Whiting, Indiana. Contract on training of two apprenticeship programs.

May 4, 2009 – December 29, 2009

PI, \$38,000 , BP Products North America, Inc., Whiting, Indiana. Contract on training of two apprenticeship programs.

January 1, 2008 – December 29, 2008

PI, \$135,131 , BP Products North America, Inc., Whiting, Indiana. A one year contract on training of two apprenticeship programs.

January 1, 2007 – December 29, 2007

PI, \$215,000 , BP Products North America, Inc., Whiting, Indiana. A one year contract on training of three apprenticeship programs.

August – December 2005

PI, \$2,000 , BP Products North America, Inc., Whiting, Indiana. Training engagement seminars for twelve apprentices in the area of “Instrumentation”.

September 2005

PI, \$1,900 , Hadady Corporation, Dyer, Indiana. Part qualification testing of 80 production painting hanger assemblies in two styles each.

March 1, 2004 – December 30, 2004

PI, \$20,000 from British Petroleum (BP), Whiting, Indiana, to offer seminars and lectures for BP apprentices and employees in the Instrumentation & Measurement department. BP also committed to leave three simulators (worth \$153,000) at ECET laboratories after completion of the project.

March 1, 1997 – February 28, 1998

PI, \$15,402 cash grant from the Society of Manufacturing Engineers (SME) Education Foundation, Grant #597-2433. The funding was to be used to upgrade the Manufacturing and Hydraulic Laboratory Equipment.

September 1, 1996 – September 1, 1997

\$13,500 Software grant from Autodesk, Inc. The grant included one faculty copy of AutoCAD R13 including a Mechanical Desktop extension for 3D parametric design and four (4) copies of the Mechanical Desktop extensions for use in student’s laboratory.

March 1, 1995 – February 28, 1996

PI, \$7,830 cash grant from SME Education Foundation, Grant #595-2157, the funding, matched by university, was used to purchase two new Hydraulic Trainers for the Fluid Energy Laboratory.

March 1, 1994 – February 28, 1995

\$20,000 Software Grant (Algor Finite Element Analysis complete package) From Algor, Inc. and SME (Society Of Manufacturing Engineers). This grant also included a one-week free training by Algor, Inc.

Consulting Activities

April-May 2019

Industrial University of Ho Chi Minh City (IUH), Vietnam.
Consulted the faculty and Leadership of the Engineering Technology in their preparation for ETAC accreditation for Mechanical and Manufacturing Engineering Technology programs. This included study of self-studies, a 4-day Mock ABET Visit, including a full-day of addressing shortcomings in the self-study.

June 2017

Farmingdale State College (SUNY), Farmingdale, NY.
Consulted the faculty and Leadership of the Engineering Technology in their preparation for ETAC accreditation for all programs in the College. This included a full-day training of faculty regarding the ABET process as well as program and course embedded assessment.

June 2016

Central Ohio Technical College, Columbus, OH.
Consulted the faculty and Leadership of the Engineering Technology in their preparation for ETAC accreditation for all programs in the College.

October 2013

Northwestern State University, Natchitoches, Louisiana
Consulted the faculty and Leadership of the Engineering Technology in their preparation for ETAC accreditation for both Industrial & Electrical Engineering Technology programs. This included pre-visit preparation, a two day campus visit, and a report to the institution.

June-July 2013

Morrison Container Handling Solutions, Glenwood, Illinois
Consulting on Machine Frame design and analysis for packaging machinery equipment.

February 2013

Jubail Industrial College, Saudi Arabia (Through ABET Foundation)
Consulted the faculty and Leadership of the Engineering Technology in their preparation for ETAC accreditation for both Mechanical & Manufacturing Engineering Technology. This included pre-visit preparation, a five day campus visit, and a report to the institution.

April 2012

Central Michigan University, Mount Pleasant, MI
Consulted the faculty and Leadership of the Engineering Technology Department in their preparation for ETAC accreditation for the Mechanical Engineering Technology.

This included pre-visit preparation, a one day campus visit, and a report to the institution.

2011

G & N Aircraft, Inc., Griffith, Indiana
Dr. Zahraee & Dr. Mapa performed analysis on the failed engine parts of a single engine airplane and reported their findings to the company per its request.

2008-2011

“Goods to Go”, a **\$275,000 NSF Grant**. Dr. Zahraee was an independent contractor and his role was to be the “Grant Evaluator” for this project. The PI for this project is Mr. Hank Rogers and Riverside Community College in California is the awardee organization.

1999-2010

Schluyer & Associates, Attorneys at Law. Expert witness and consultant in several cases from mechanical/manufacturing engineering related to safety related cases.

2005-2008

“Closing the Gap”, a **\$385,000 NSF Grant**. Dr. Zahraee is an independent contractor and his role is to be the “Grant Evaluator” for this project. The PI for this project is Mr. Hank Rogers and Riverside Community College in California is the awardee organization.

2002-2007

Casmin, Inc., Engineers & Consultants, Crown Point, IN. Help in design and perform certification of mechanical drawings for various projects.

2005

Pneumatic Vacuum Elevators, LLC, Miami, FL. Investigation and certification of typical two and three story installation drawings of pneumatic elevators.

2004

Alstom Power, Inc., Lisle, IL. Investigation of Cracking of Mill Base for a Roller Mill System for Kaolin Clay.

1998

Irene C. Gasparis, Attorney at Law. Expert witness and consultant, Steuer vs. Crnkovick.

1997-98

Union Tank Car Company, East Chicago, IN. Provided technical training on mechanical systems. Eight hours/ week for 20 weeks.

1996

Crown Abrasive Company, Inc., Merrillville, IN. Resolved a machine capability problem

Eagle Pitcher Industries, Fort Wayne, IN. CAD modeling of interface fits.

1995

Consort International, Indianapolis, IN. Best way to proceed to obtain useful 3D models of musical instruments to automate part of their production.

O'Murray Golf Co., St. John, IN. Combining the designs of two golf club heads and creating the 3-D model as well as 2-D prints for CNC milling.

LTV Steel Manufacturing Dept. Station 104, East Chicago, IN. Provided training in 3D/Solid and Surface Modeling using AutoCAD.

1994

Union Tank Car Company, East Chicago, IN. (with Professor Higley). Designed and moderated tests (In Drafting and Machining) for the new employees. This project was done through the Resource Center of the University.

SunCrest Christian Church, St. John, IN. Redesigned the support and the footings of a sign for the Church. This project was referred to Professor Zahraee by Gary Edwards and was done free of charge as a community service.

1993

Hammond & Robinson, Attorneys at Law, Merrillville, IN. Worked on the technical issues on a car accident case and appeared in the Michigan City, IN. court as an expert witness on the case.

ICL Interior Architects, Chicago, IL. Installed the new CAD hardware and software and provided update Release 12 instruction for employees.

C.A.D. TECH, Crown Point, IN. Shaft design and sizing of the motor for a Locomotive Transfer Device. Letter of appreciation and commendation from Patrick J. Novotny, President of the company, is on file.

1992

L.A. Construction, Lisle, IL. Performed all design and CAD drawings for a trailer/storage facility.

Andrew Corporation, Orland Park, IL. CAD consultant. Developed AutoLISP routines for different parts.

Hand, Muenich, Wilk & Reid Attorneys at Law, Highland, IN. An expert for a lawsuit case regarding the tip over of a garbage Dumpster that resulted in an injury. On July of 1992, I obtained another expert witness case from the mentioned law firm. This involved a five-car accident, and I investigated the integrity of the medical

reports, which discussed the dynamics of the accident and the impulse, and momentum, which caused the injury.

1991

Unimetrics Corporation, Shorewood, IL. (with Professor Tickoo). Developed a parametric design software package for the company. The program generated the piece part and assembly drawings of laboratory syringes. The program also automatically updated the assembly drawing if there was any change made in the piece parts.

Toth Consulting, Victoria, Canada (with Professor Tickoo). Developed a program to automatically generate various elements required for labeling different parts in a drawing.

1990

Gary Hobart Water Corp., Gary, IN. Performed stress analysis of Chlorine Cylinder Copper Tubing Connectors to investigate their failure cause. Consequently, appeared in a hearing as an expert witness. A letter of appreciation from Vice President of Production and Engineering at Gary-Hobart Water Corporation is on file.

Superior Engineering Services, Inc. Naperville, IL. Completed the AT&T CAD space study project that had started in the company before joining Purdue University Calumet.

Contributions Through Service

National Service

Technology Accreditation Committee of Accreditation Board for Engineering Technology (TAC/ABET)

2013 - 2016

- Member of the ABET Board of Directors.

2010 - 2011

- Team Chair of the visiting team for DeVry Campuses at Metro-Chicago.

2009 - 2010

- Executive Committee member of TAC/ABET, National **Past-Chair**. Also Chair of the Nominating Committee

2008 - 2009

- Executive Committee member of TAC/ABET, **National Chair**.

2007 - 2008

- Executive Committee member of TAC/ABET, Chair-Elect.

2006 - 2007

- Executive Committee member of TAC/ABET, Vice Chair of Operations.

2004 - 2006

- Executive Committee member of TAC/ABET. As one of the eight national members of the executive committee, I have edited 12-15 institutional reports as well as chairing the panel discussions in the TAC/ABET July meetings where the accreditation decisions are made.

1998 - 2011

- TAC commissioner. As the chair of the visiting team, visited and prepared accreditation report for the following colleges and universities:

DeVry University, 2010
 Yanbu Industrial College, Saudi Arabia, 2009
 Miami University, OH, 2007
 State University of NY at Farmingdale, NY, 2006
 New Mexico State University, NM, 2005
 Murray State University, Murray, KY, 2004.
 Cincinnati State Technical & Community College, 2004.
 New York City College of Technology, NY, NY, 2002.
 San Juan College, San Juan, NM, 2001.
 Spartanburg Technical College, Spartanburg, SC, 2001.
 Northwestern State University, Natchitoches, LA, 2000
 Monroe Community College, Rochester, NY, 2000
 West Virginia State College, Institute, WV, 1999
 Maine Maritime Academy, Castine, ME, 1999
 Arkansas State University, Beebe, AK, 1998

- As the TAC Commissioner, I have written the preliminary institutional report, checked them after due processes, and presented the university/college at the ABET annual meeting in July of each year.

- Member of the Criteria Committee of TAC 2001-2003

1992 - present

- ASME/ABET evaluator for TAC. Visited the following colleges and universities as either an Mechanical Engineering Technology or a Design & Drafting engineering technology program evaluator:

Ferris State University, 2021
 Kansas State University, 2020
 University of Cincinnati, Cincinnati, OH, 2018
 Lima Technical College, Lima, OH, 1997.
 Pennsylvania State University, Harrisburg, PA, 1996.
 Western Michigan University, Kalamazoo, MI, 1995.

Pennsylvania State University, McKeesport, PA, 1994.
Pennsylvania State University, York, PA, 1994.
University of North Carolina, Charlotte, NC, 1993.
SUNNY - Buffalo, NY, 1992.

American Society of Mechanical Engineers

1992 - Present

- ASME representative in TAC of ABET

1995 - 2005

- Member of the Committee on Technology Accreditation (CTA) of ASME.
- **Chair** of the Committee, 2001-2003.
- **Chair** of the Criteria Committee, 2000-2004. As the chair of this committee oversaw the development of the new criteria for both Mechanical Engineering Technology, and Drafting & Design Engineering Technology for TC2K. Solicited for input and put the criteria together, presented it to the Board on Engineering Education as well as MET Department Heads Committee.

2000 - 2003

- Member of the Council on Engineering Education as the senior TAC of ABET commissioner.

1997- 2003

- Member of the Board on Engineering Education of the American Society of Mechanical Engineers. Served the Board at various positions as the chair and past chair of the MET Department Heads Committee, as well as the TAC commissioner.
- Received certificate of appreciation from ASME International in 1997.
- Received the **ASME Dedicated Service Award** in November of 2002.

1996-1997

- Chair of the Nominating Committee of the National MET Department Heads Committee of ASME

1996 & 1997

- Member of the Ben C. Sparks Medal Selection Committee.

1995 – 1996

- National Chair of the MET Department Heads Committee (METDHC) of the ASME. In charge of the actions taken by this committee and also the organizer of the meetings of the MET Department Heads in both Winter annual meeting and the Summer Annual meeting of this committee for ASME and ASEE.

1994 - 1995

- National Vice-Chair of the METDHC of the ASME. In charge of all three technical sessions sponsored by the METDHC in the International Mechanical Engineering Congress and Exposition held in November 12-17, 1995 in San Francisco, CA.

1993 – 1994

- National Secretary of the MET Department Heads Committee of the ASME.

I have also been involved in numerous committees at the Regional, State and Community levels as well as those at the University, School and Departmental level at Purdue University Calumet.

Featured in Media

April 4, 2019

WJOB radio, Purdue Northwest program. Spoke in a 30-minute segment (second half) about Technology Graduate Programs at Purdue Northwest.
<https://www.wjobnetwork.com/on-demand.html>

February 4, 2016

Chicago Tribune / Post Tribune. Mentioned/pictured in the article “Outstanding Purdue Cal tech alum carving impressive niches. This article could be accessed through the following link:
<https://www.chicagotribune.com/suburbs/post-tribune/ct-ptb-lukoshus-column-st-0205-20160205-story,amp.html>

January 2014

The Bridge Newsletter, section: Academic Excellence. Was featured in this article for being elected to the ABET Board of Directors. The article, about ½ page with picture could be accessed through the following link:
<http://webs.purduecal.edu/the-bridge/6-faculty-staff-recognized/>

November 2009

Yanbu Newspaper (Saudi Arabia), Mentioned in this article as the Chair of (6-member) Accrediting team to Yanbu Industrial College (YIC). A picture of Dr. Zahraee, discussing accreditation issues with the Chair of Yanbu Royal Commission and the Provost of the YIC was also part of this article.

December 2008

Community Matters, Volunteer Spotlight. Featured in this article (first page) regarding my election to the National Chair of Technology Accreditation Committee of ABET and the work I had done with ABET.

December 2008

The Times, “Elected National Chair of Accreditation Commission”. Featured in this article regarding my election to the National Chair of Technology Accreditation Committee of ABET.

- March 2005
The Times, “Visclosky to discuss projects for region”. Quoted several times in this article regarding congressman Visclosky’s visit to Purdue Calumet’s “Center” to discuss manufacturing jobs, as a result of invitation from SME and PUC’s METS department.
- April 2004
The Chronicle (PUC), “Zahraee shines as outstanding professor, administrator.” A 1/2 page article highlighting my achievements as the recipient of ASME’s Ben C. Spark Medal as well as being named the “Outstanding Administrator of the Year” at Purdue University Calumet.
- Sept. 2003
The Times, “SME builds bridges with future engineers”. An article with my picture with the SME chapter president (and officers). The article was about SME donating \$1,000 to be used to purchase books for a lending library for manufacturing engineering technology students at Purdue University Calumet.
- Sept. 2003
Post Tribune, a full page article about the new Computer Graphics technology degree offered at Purdue University Calumet.
- August 2002
WYIN, The local PBS channel. A 14 minutes segment to talk about new developments in the two departments I am chairing, in particular, success of the new CGT program as well as the Networking option in EET.
- August 1996
The Times, “Careers in Engineering & Engineering Technology”. I wrote the article that appeared in the Times issue in “Jobs and Careers” section.
- April 1996
WJOB, 1230-am, Hammond station. Discussed the Tech. Exposition component of the Car show to be held at PUC in Thurm Ferree show.
- Feb. 1992
The Times, "PUC project evolves into gift for Hammond teen." The wheelchair lift design by three MET graduating students for which I was the faculty advisor. An article on this subject was also featured in the **Chronicle**, on February 5, 1992.
- Oct. 1991
Post Tribune, "Advisors recognized." An Article on the award given to PUC's student chapter of SME and awards given to Professors Zahraee and Neff by SME International as Outstanding Faculty Advisors.