

**THE UNIVERSITY OF TEXAS**  
**College of Engineering**  
**Resume**

**FULL NAME:** Philip Stephen Schmidt

**RANK:** Professor

**ENDOWED POSITION:** Donald J. Douglass Centennial  
Professor of Engineering

**DEPARTMENT:** Mechanical  
Engineering

**HONORARY TITLE:** University Distinguished Teaching Professor

**EDUCATION:**

Bachelor of Science, Aeronautics and Astronautics, M.I.T., 1962  
Master of Science, Mechanical Engineering, Stanford University, 1965  
Doctor of Philosophy, Mechanical Engineering, Stanford University, 1968

**PROFESSIONAL REGISTRATION:** Texas #31472

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

Research and Teaching Assistant, Mechanical Engineering, Stanford University, 1964-1968  
Associate Professor, Mechanical Engineering, Prairie View A&M College, 1968-1970  
Assistant and Associate Professor, Mechanical Engineering, University of Texas at Austin, 1970-1981  
Professor, Mechanical Engineering, University of Texas at Austin, 1981-Present  
Appointed to Donald J. Douglass Centennial Professorship, 1990  
Named University Distinguished Teaching Professor, 1996  
Associate Dean, Graduate School, University of Texas at Austin, 1978-1981  
Head, Process Energetics Program, Center for Energy and Environmental Resources, 1986-2003  
Associate Chair for Undergraduate Programs, Dept of ME, UT Austin, 2003-present

**OTHER PROFESSIONAL EXPERIENCE:**

Bell Helicopter Company, Aerodynamics Research Engineer, 1962-1964  
Lawrence Radiation Laboratory, Research Engineer, Summer 1969  
Electric Power Research Institute, Senior Consultant (in residence), Full time 1981-82 and summer 1986

**HONORS AND AWARDS:**

Woodrow Wilson Teaching Fellow and National Teaching Fellow (at Prairie View A&M) 1968  
Engineering Foundation Faculty Award, 1971, 1972, 1974, 1975, 1976  
Ralph R. Teetor Award, Society of Automotive Engineers, 1972  
Student Engineering Council Distinguished Advisor Award, 1972, 1981  
Pi Sigma Pi Minority Engineering Students' Outstanding Advisor Award, 1977  
Student Engineering Council Teaching Excellence Award, 1977, 1978, 1979, 1980  
General Dynamics Award for Outstanding Teacher in the College of Engineering, 1983

Outstanding Mechanical Engineering Professor Award, ASME Student Chapter, 1983  
Distinguished Service Citation, American Society of Mechanical Engineers, 1984  
College of Engineering Faculty Leadership Award, 1986, 1989, 1993  
Named by UTmost Magazine as one of the "Eight Best" teachers at UT for 1989, 1992  
UT Excellence Award for Undergraduate Teaching, 1989 (by Ex-Students Assoc.)  
Friar Centennial Teaching Fellowship Award, 1991  
Amoco Foundation Outstanding Teaching Award, 1991  
Ralph Coats Roe Award, American Society for Engineering Education, 1992  
Best Paper Award, ME Division, American Society for Engineering Education, 1993  
Texas Professor of the Year, Carnegie Foundation, 1994-1995  
Piper Professorship, Minnie Stevens Piper Foundation, 1994-1995  
William D. Blunk Memorial Professorship, 1994-1995  
Inaugural Member of Academy of Distinguished Teachers, UT Austin, 1995-present  
Outstanding ME Faculty Award, 1996 (by vote of membership of UTME Alumni Assoc.)  
Eyes of Texas Excellence Award, 1997  
Graduate Engineering Council Faculty Excellence Award, 1997  
Student Engineering Council Outstanding ME Professor Award, 1999

**MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES: (figures in parentheses are year of initial membership)**

Sigma Xi (1968)  
Pi Tau Sigma (1972)  
Tau Beta Pi (1972)  
American Society for Mechanical Engineers (1968)  
American Society for Engineering Education (1968)  
Texas Society for Professional Engineers (1969)  
National Society for Professional Engineers (1969)  
International Microwave Power Institute (1984)  
Drying Association of North America (1993)  
University of Texas Academy of Distinguished Teachers (1995)

**PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:**

Member, Committee on Energy Conservation, ASME Energetics Division, 1975-1984  
Member, FEA Task Force on Strategic Planning for Energy Conservation, 1976  
Member, ERDA Conservation Program Review Panel, 1976  
Member, Advisory Committee on Industrial Energy Conservation, Governor's Office of Energy Resources, 1977  
Member, Committee on Certification of Industrial Energy Auditors, Texas Industrial Commission, 1977-1979  
Member, Committee on International Graduate Education, Council of Graduate Schools of the United States, 1978-1981  
Member, Electricity Utilization Working Group, Office of Technology Assessment, U.S. Congress, 1983  
Member, Committee on the Future of Central Station Electric Power, National Academy of Engineering, 1986-1987

Director, Texas Drying Research Consortium, 1987-1992  
Chairman, Organizing Committee, Drying Association of North America, 1993-1996  
Member, EPRI/DOE Technology Roadmap Initiative Task Force, 1998-1999

#### **JOURNAL EDITORSHIPS AND EDITORIAL BOARDS:**

Member, International Editorial Advisory Board, Drying Technology Journal, 1993-1998  
International Scientific Committee, 1996 International Drying Symposium, 1994-96

#### **CONFERENCES AND SESSIONS ORGANIZED/CHAired:**

Technical Program Chairman, TIC/DOE Conference on Industrial Energy Conservation Technology, April, 1979  
Chairman, Session on Energy Consulting, ASME Energy Technology Conference, New Orleans, February, 1980.  
Chairman, Session on Low-Level Heat Recovery, 1979 Conference on Industrial Energy Conservation Technology, sponsored by the U.S. Department of Energy and the Texas Industrial Commission, Houston, April, 1979.  
Technical Proceedings Chairman, 2nd Conference on Industrial Energy Conservation Technology, April, 1980.  
Technical Proceedings Chairman, 3rd Conference on Industrial Energy Conservation Technology, April, 1981.  
Chairman, Session on Recovery of Low-Level Waste Heat in Industry, Third International Conference on Energy-Use Management, Berlin, West Germany, October 27, 1981.  
Chairman, Session on Electrical Technology for Energy Conservation, 1982 Conference on Industrial Energy Conservation Technology, Houston, April 5, 1982.  
Chairman, Session on Heat Pumps and Mechanical Vapor Recompression, International Conference on Electrotechnology for Industry, Montreal, May 25, 1982.  
Chairman, Joint US-Soviet Symposium on Efficient Electricity Use, 1986  
Chairman, Session on Innovative Electrotechnology Applications for Industry, 10th Energy Technology Conference, Washington, April, 1987  
Chairman, Workshop on Research Needs in Industrial Drying, Drying Association of North America, Austin, November 4-5, 1995

#### **UNIVERSITY COMMITTEES AND ADMINISTRATIVE ASSIGNMENTS:**

Member, Faculty Senate and University Council, 1974-1976, 1990-1992  
Member, Student Financial Aid Committee, 1974-1979, Chairman, 1975-1977  
Chairman, National Merit Scholarship Committee, 1977-1979  
Associate Dean of the Graduate School, 1978-1981  
Head, Process Energetics Program, Center for Energy Studies, 1986-Present  
Member, Plan II Honors Liberal Arts Program Executive Committee, 1990-96  
Member, President's Consultative Committee on Selection of the Provost, 1993-94  
Member, Provost's Academic Advisory Council, 1994-96  
Member, Multimedia Instruction Committee, 1994-97, Chair, 1996-97  
Member, Long Range Planning for Information Technology Committee, 1996-1998  
Member, Academy of Distinguished Teachers, 1995-present

## **COLLEGE COMMITTEES AND ADMINISTRATIVE ASSIGNMENTS:**

Chairman, Equal Opportunity in Engineering Program, 1971-1973  
Member, Equal Opportunity in Engineering Program, 1971-1984, 1975-1977, 1982-1984  
Member, Engineering Committee on Professional Writing, 1977-1978  
Member, College of Engineering Televised Instruction Committee, 1990-95  
Chairman, Project VERSE (Video Educational Resources for Science & Engineering), 1990-93  
Chairman, College of Engineering Instructional Technology Committee, 1995-present  
Director, College of Engineering Instructional Media Laboratory, 1994-1999  
Member, College of Engineering Courses and Degrees Committee, 1996-1998  
Member, College of Engineering Strategic Planning Committee, 1997-present  
Member, College of Engineering K-12 Outreach Committee, 1998-present  
Member, College of Engineering 2020 Committee (strategic planning), 1999-present

## **DEPARTMENT COMMITTEES AND ADMINISTRATIVE ASSIGNMENTS:**

Co-Director, Energy Systems Engineering Program, 1973-1976  
Coordinator, M.E. Department Cooperative Education Program, 1976-1981  
Faculty Advisor, Tau Beta Pi, 1982-1984  
Area Coordinator, Energy and Fluids Systems Program, 1983-1985  
Chairman, ME Department Committee on Design in the Curriculum, 1987-1988  
M.E. Department Faculty/Student Ombudsman, 1987-Present  
Chairman, ME Curriculum Committee, 1996-98, Member 1998-2000  
Chairman, Thermal/Fluid Systems Faculty Recruitment Committee, 1997-present  
TA Coordinator, Thermal/Fluid Systems Program, 1994-present  
Director, Project PROCEED, 2000-present  
Associate Chair for Undergraduate Program Development, 2003-present

## **GRANTS AND CONTRACTS**

### **Research Grants**

Lower Colorado River Authority, "Thermal Discharge Effects from a Power Plant on Lake LBJ", with E.G. Fruh and B. Maguire), \$286,000, 1970-1976  
Texas Atomic Energy Research Foundation, "Heat Transfer Systems for Thermonuclear Reactors", with G.C. Vliet, \$84,000, 1972-75  
University Research Institute, "Heat Pump Integration in Industrial Processes", \$2,000, 1977  
National Science Foundation, "Heat Transfer to Liquid Alkali Metals in High Magnetic Fields", with G.C. Vliet. \$95,000, 1975-1978  
Texas Energy and Natural Resources Council, "Ground-Water Based Heat Pumps", with J.W. Jones, \$25,000, 1978-1979  
Badische Chemical Corporation, "Computer Modeling of Steam System Operations", \$4,000, 1979  
Anderson Clayton Corporation, "Energy Conservation Software", \$1,000, 1980  
Cosden Oil and Chemical Company, "Waste Asphalt Utilization in Process Furnaces", \$1,000, 1980

Texas Energy and Natural Resources Council, "Microcomputer Applications for Industrial Energy Conservation", \$11,000, 1980

Electric Power Research Institute, "Industrial Electrification Studies", \$25,000, 1981

Electric Power Research Institute, "Dielectrically-Enhanced Heating and Drying of Industrial Materials", with T.L. Bergman, M.M. Crawford, and J.A. Pearce, \$1,573,000, 1984-1989

Electric Power Research Institute, "Electricity Form-Value Models", with M.M. Crawford, \$157,000, 1985-1986

University Research Institute, "Program Development in Process Energetics", \$24,000, 1986-1987

Gas Research Institute, "Integrated Models for Foundry Design and Operation", with M.M. Crawford, \$45,000, 1986-1988

National Science Foundation, "Dual Channel Imaging Radiometer for Enhanced Thermal Processes Research", with J.R. Howell, G.C. Vliet, and T.L. Bergman, \$49,000, 1988-1989

Texas Advanced Technology Research Program, "Enhanced Drying Technology", with J.R. Howell and J.A. Pearce, \$231,000, 1988-1990

Energy Research Applications Program, State of Texas, "Texas Drying Research Consortium", with J.A. Pearce, J.R. Howell, M.M. Crawford, and T.L. Bergman, \$709,000, 1989-1992

Energy Research Applications Program, State of Texas, "Radiatively Enhanced Processing of Complex Materials", with J.R. Howell and J.A. Pearce, \$402,000, 1989-1992

Norton Company, "Exploratory Study of Dielectrically-Enhanced Drying of Zeolite Extrusions", \$15,000, 1990

Rangeaire Corporation, "Modeling of Energy Utilization in Lime Kilns: Phase 1", \$12,500, 1990

BP Research, Inc., , "Dielectric Loss Properties of Selected Organic Solvents", with John A. Pearce, \$3,000, 1991

Southern California Edison Company, "Technology Assessment of Membrane and Freeze Separation Processes", \$25,000, 1991

Frito-Lay, Inc., "Unrestricted Grant for Process Energetics Research", \$19,000, 1991

Ralston-Purina Corporation, "Evaluation of Dielectrically-Enhanced Drying for Pelletized Pet Food Products", with John A. Pearce and Vincent M. Torres, \$90,000, 1991-1992

Gulf Coast Hazardous Substance Research Center, "Recovery of Volatile Organic Compounds by Microwave Regeneration of Adsorbents", \$150,000, 1992-1995

Proctor and Gamble, "Drying Research", \$5,000, (unrestricted grant) 1993

Borden Company, "Unrestricted Grants for Dielectric Heating Research", \$250,000, 1993-1998

Frito-Lay, "Unrestricted Grant for Drying Research", \$10,000, 1993-1994

Borden Company, "Enhanced Drying Research", \$67,000, 1994-1998

Environmental Protection Agency/Gulf Coast Hazardous Substance Research Center, "Field Demonstration of VOC Recovery Using Microwave Regeneration of Adsorbents", with J.H. Davis, \$205,000, 9/1/96-4/30/99

3M Corporation, "Unrestricted Grant for Research in Microwave Enhanced Processes for VOC Recovery", with J.H. Davis, \$60,000, 6/1/97-8/31/99

3M Corporation, "Unrestricted Grant for Research on Microwave Welding of Polymers", with O. Ezekoye, \$20,000, 1996-1997

Texas Higher Education Coordinating Board, Technology Development and Transfer Program, "Recycling of Industrial Solvents by Microwave Regeneration of Adsorbents", \$196,436, 1/1/98-8/31/00.

## **Educational Grants**

- National Science Foundation, "Undergraduate Laboratory for Measurement Engineering", with C.H. Yew, \$19,500, 1972-1974
- National Science Foundation, "Graduate Program Development in Energy Systems Engineering", with E.L. Draper, \$75,000 1973-1976
- Department of Energy, "Graduate Traineeships in Energy Conservation Engineering", \$8,000, 1978-1979
- Texas Industrial Commission, "Graduate Internship Program in Industrial Energy Conservation", \$1,000, 1979
- American Public Power Association, "Project DEED Undergraduate Scholarship Award for Research in Efficient Electricity Utilization", \$3,000, 1990.
- National Science Foundation, "Video Educational Resources for Instruction in Engineering Thermodynamics", with John R. Howell, \$215,000, 1993-1996
- National Science Foundation, "ThermoNet: Interactive Internet Resources for Introductory Engineering Thermodynamics", \$99,261, 4/1/97-3/31/99 (with O.A. Ezekoye)
- Hewlett-Packard Corporation, "Equipment Grant for Computer-Based Classroom", \$130,000, 3/1/97-12/31/97 (with J.R. Howell)
- Motorola, IBM, Lucent Technologies, Shell, ARCO and Ford Motor Corporations, "Unrestricted Grants for Summer Engineering Design Institutes for Gifted High School Students", \$85,000, 1/1/97-12/31/00 (with R.Crawford, and K.Wood)
- Ford Motor Company, \$5,000; Halliburton Company, \$5,000; Cameron Corporation, \$5,000; Dr. James Truchard, \$5,000; Jeff and Carol Heller, \$5,000, Engineering Design Institute: 2001 (with R.Crawford, and K.Wood)
- Ford Motor Company Foundation, "Project PROCEED: Project-Centered Education in Mechanical Engineering", \$875,000, 10/1/2000-12/31/2006
- Applied Materials Corporation, "Project PROCEED: Project-Centered Education in Mechanical Engineering", \$500,000, 3/1/2001-12/31/2006
- Caterpillar Corporation, "Project PROCEED: Project-Centered Education in Mechanical Engineering", \$60,000, 9/1/2003-12/31/2006
- General Motors Corporation, "Project PROCEED: Project-Centered Education in Mechanical Engineering", \$25,500, 9/1/2003-12/31/2006

## **CONTINUING EDUCATION**

"Principles of Fossil-Fueled Power Generation" and "Progress in Industrial Energy Conservation", Short Course on Electric Power and the Environment, U.T. Austin, June, 1977.

Schmidt, P.S., "Measurement, Evaluation, and Improvement of Boiler Performance" Workshop on Energy Conservation in Industrial Boilers, sponsored by the U.S. Department of Commerce and the Texas Governor's Energy Advisory Council, Dallas, June 3, 1977.

"Energy Conservation Methods for Industrial Steam Systems", Workshop on Energy Efficiency in Steam Generation and Utilization, sponsored by the San Antonio Manufacturers' Association, San Antonio, August 23, 1977.

"Principles of Fossil-Fueled Power Generation" and "Progress in Industrial Energy Conservation", invited lectures, Short Course on Electric Power and the Environment, U.T. Austin, June, 1978.

- Schmidt, P.S., "Procedure for Energy Auditing of Industrial Processes", Short Course on Industrial Energy Auditing, University of Houston, August, 1978.
- Schmidt, P.S., "Energy Conservation in Steam Systems", Workshop on Industrial Energy Conservation, sponsored by the Texas Industrial Commission, Beaumont, Texas, August 16, 1978.
- "Combustion Calculations for Air Pollution Control", Short Course on Air Pollution Control in Combustion Systems, sponsored by the U.S. Environmental Protection Agency, Austin, May, 1979.
- "Principles of Fossil-Fueled Power Generation" and "Progress in Industrial Energy Conservation", invited lectures, Short Course on Electric Power and the Environment, U.T. Austin, June, 1979.
- Schmidt, P.S., "Procedure for Energy Auditing of Industrial Processes", Short Course on Industrial Energy Auditing, University of Houston, August, 1979.
- "Principles of Fossil-Fueled Power Generation" and "Progress in Industrial Energy Conservation", Short Course on Electric Power and the Environment, U.T. Austin, June, 1980.
- Schmidt, P.S., "Energy Conservation in Steam Systems", Workshop on Industrial Energy Conservation, sponsored by the Texas Industrial Commission, Corpus Christi, Texas, June 11, 1980.
- "Combustion Calculations for Air Pollution Control", Short Course on Air Pollution Control in Combustion Systems, sponsored by the U.S. Environmental Protection Agency, Kansas City, July, 1980.
- Schmidt, P.S., "Procedure for Energy Auditing of Industrial Processes", Short Course on Industrial Energy Auditing, University of Houston, August, 1980.
- Schmidt, P.S., "Energy Conservation in Steam Systems", Workshop on Industrial Energy Conservation, sponsored by the Texas Industrial Commission, Dallas, Texas, September 25, 1980.
- Schmidt, P.S., "What to Look for in User-Friendly Software", American Public Power Association, Workshop on Microcomputer Applications in the Utility Industry, Dallas, May 29, 1983.
- "Principles of Fossil-Fueled Power Generation" and "Progress in Industrial Energy Conservation", Short Course on Electric Power and the Environment, University of Texas at Austin, June, 1983 .
- Schmidt, P.S., "Energy and Productivity: The Electric Connection", Committee on Energy Awareness, Speakers Workshop, New York, March 22, 1984.
- Schmidt, P.S., "Industrial Electric Load-Growth Opportunities in Emerging Technologies", Middle-South Utilities Workshop on Industrial Power Marketing, New Orleans, June 5, 1984.
- "Industrial Use of Electricity", Short Course on Electric Power and the Environment, University of Texas at Austin, June 14, 1984.

Schmidt, P.S., "Industrial Electrotechnology: Its Implications for Improved Productivity", Industrial Workshop on Electroheat (Canadian Ministries of Energy and Trade, sponsors), Toronto, Canada, November 15, 1984.

Schmidt, P.S., "Electricity and Industrial Productivity", Short-Course on Electric Power and the Environment, University of Texas at Austin, June, 1990.

"Industrial Electrotechnologies and Interfuel Competition in Manufacturing", sponsored by East Ohio Gas Corporation, Warren, OH, July 10-11, 1997.

"Industrial Electrotechnologies and Interfuel Competition in Manufacturing", sponsored by the Gas Research Institute: Columbus, OH, July 21-22, 1997; Charlotte, NC, July 24-25, 1997; Los Angeles, CA, July 29-30, 1997.

"Engineering Design Institutes 97", sponsored by Motorola, IBM and Shell, UT Austin, June 21-28, 1997 and July 12-19, 1997.

"Engineering Design Institutes 98", sponsored by Motorola, IBM and Shell, UT Austin, June 20-27, 1998 and July 11-18, 1998.

"Engineering Design Institute 99", sponsored by Motorola and Lucent Technologies, UT Austin, July 10-17, 1999.

"Engineering Design Institute 2000", sponsored by ARCO and Ford, UT Austin, June 24-July 1, 2000.

"Industrial Electrotechnologies and Interfuel Competition in Manufacturing", sponsored by the MichCon (Michigan Consolidated Gas Company), Grand Rapids, MI, Sept. 13-15, 2000

"Industrial Electrification Technology and Economics", with F. T. Sparrow of Purdue University, MichCon Corporation, Grand Rapids, MI, March 12-15, 2001.

**PH.D. SUPERVISIONS COMPLETED:**

Gerald D'Arcy	1974	Mechanical Engineering
Hu Ting	1975	Mechanical Engineering
Clement Wong	1977	Mechanical Engineering
Alfredo Urdaneta	1980	Mechanical Engineering
Joseph Grolmes	1995	Mechanical Engineering
David Price	1996	Mechanical Engineering
Guobi Zhang	1997	Mechanical Engineering

**M.S. SUPERVISIONS COMPLETED:**

Gordon Park	1972	Mechanical Engineering
David Hall	1972	Mechanical Engineering
Zarum Islam	1974	Mechanical Engineering

Jon White	1974	Mechanical Engineering
Jeffrey Parkin	1974	Mechanical Engineering
John Voltin	1974	Mechanical Engineering
Roger Fix	1975	Mechanical Engineering
Lawrence Hauck	1976	Mechanical Engineering
James Branch	1977	Mechanical Engineering
Eileen Pitchford	1979	Mechanical Engineering
Vincent Torres	1980	Mechanical Engineering
Wilson Fraser	1981	Mechanical Engineering
Ann Spurgeon	1982	Mechanical Engineering
David Fisher	1982	Mechanical Engineering
Martin Guinn	1984	Mechanical Engineering
Barbara McNelis	1985	Mechanical Engineering
James Donley	1985	Mechanical Engineering
Amy Abel	1986	Mechanical Engineering
Mohammed Sutarwala	1986	Mechanical Engineering
Thomas Evans	1987	Mechanical Engineering
Barrett Flake	1987	Mechanical Engineering
Jean Accad	1987	Mechanical Engineering
William Melendez	1988	Mechanical Engineering
James Hitzfelder	1988	Mechanical Engineering
Michael Sanio	1989	Mechanical Engineering
Joseph Tatsch	1989	Mechanical Engineering
Manthi Raghavan	1989	Mechanical Engineering
Patrick Bierschenk	1990	Mechanical Engineering
Arne Weissenberger	1992	Mechanical Engineering
Rahman Shahdad	1993	Mechanical Engineering
Isola Prasad	1993	Mechanical Engineering
Carl Wolf	1993	Mechanical Engineering
Parthakumar Roy	1995	Mechanical Engineering
Tyler Blessing	1997	Mechanical Engineering
Martin J. Salinas	1997	Mechanical Engineering
Julian Chen	2000	Mechanical Engineering
David Dixon	2000	Mechanical Engineering
Carlos Medina	2003	Energy and Mineral Resources
Scott Haag	2005	Mechanical Engineering