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Webster B. Kay Memorial

Webster B. Kay
December 8, 1900 - February 19, 1996

Taken from the Official Minutes of the University Board of Trustees Meeting

The Board of Trustees of the Ohio State University expresses its sorrow upon the death on February 19, 1996, of Webster B. Kay, Professor Emeritus in the Department of Chemical Engineering.

Dr. Kay was born on December 8, 1900 in Hammond, Indiana. Professor Kay attended country schools, graduated from Lima High School in 1918, and received his B.S. degree in Chemical Engineering from the Ohio State University in 1922. In 1926 he received his Ph.D. in Chemistry from the University of Chicago. His survivors are his wife Ruth, two children, Bruce and Bonnie; four grandchildren, Kyle, Michelle, Lucia, and Lila, and several nieces and nephews.

Dr. Kay joined the Chemical Engineering faculty at Ohio State University in 1946, after twenty years as a Research Scientist at Standard Oil of Indiana. He was known world wide as a leader in experimental research in Thermodynamics. With his many graduate students he published his research results extensively in prestigious archival journals. His method of combining the critical constants of the pure components in a mixture, known as Kay's Rule, is found in thermodynamic textbooks for chemical engineering courses. In 1980, a special Symposium in honor of Dr. Kay was held at the annual meeting of the American Institute of Chemical Engineers in Chicago to acknowledge his many outstanding contributions in thermodynamics research. In addition to his research accomplishments, the courses Dr. Kay taught at Ohio State were highly regarded by students who appreciated his friendly manner and concern for their learning.

In 1971, he was granted the title of Emeritus Professor, but he continued to do research in thermodynamics and to advise graduate students working in this area. He was a member of the American Institute of Chemical Engineers, Sigma XI Scientific Honorary Society, and a lifetime member of the American Chemical Society.

On behalf of the University, the Board of Trustees expresses to the family of Professor Kay its deep sympathy and sense of understanding in their loss. It is directed that this resolution be inscribed upon the minutes of the Board of Trustees and that a copy be tendered to the family as an expression of the Board's heartfelt sympathy.
Dear Alumni,

I am sorry to report the death of one of our esteemed colleagues, Dr. Webster B. Kay. Dr. Kay will long be remembered in this Department not only for his outstanding achievements in the field of thermodynamics, but also for his tireless dedication to students and his unselfish giving of many hours before and after retirement to helping our graduate students with their research projects. Our great respect for his teaching and research abilities and his quiet, gentle good humor endeared him to us all. He was 95 years old. Web Kay is survived by his wife, Ruth, son Bruce W., and his wife Paulette Kay, and daughter Bonnie J., and her husband, Dr. Thomas Robins and five grandchildren. Friends who wish to may make a donation to the Webster B. Kay Scholarship Fund in our Department or to the Memorial Fund of the North Broadway United Methodist Church. An entourage from the Department attended his memorial service. We would have liked to have informed more people but the memorial service was held very soon after his death and time did not permit.

This past year has been a very exciting one in the Department. We continue to have very active undergraduate and graduate organizations with whom we have frequent dialogue on matters of scholastic and professional interest. Our Faculty's continuous pursuit of excellence in education and research has been recognized by several important awards. I am also proud to announce the Department of Chemical Engineering has been informed that it is one of six departments on campus who are finalists for the newly created "University Distinguished Department Teaching Award." We feel very honored to be recognized for our continued tradition of striving for excellence in education.

In 1995, Dr. Bakshi received a Young Researcher Participation Award at the Gordon Conference on Statistics in Chemistry and Chemical Engineering. Dr. Davis accepted the position of Interim Director of University Technology Services, Dr. Fan received the 1995 Fluidized Process Recognition Award from the AIChe Particle Technology Forum and a Visiting Professorship of The Netherlands, Dr. Lee received a OSU College of Engineering Lumley Research Award and Best Paper Award of the 50th Annual Conference of the Society of Plastics Industry, Dr. Ozkan received the 1994-95 Centre de la Recherche Scientifique Fellowship, Dr. Rathman received the OSU College of Engineering 1995 Charles A. McQuigg Award for Outstanding Teaching, Dr. Yang received a College of Engineering Lumley Research Award and Dr. Zakin received a Senior Fulbright Research Fellowship and Visiting Professorship at the Technion, Israel and the OSU 1995 Outstanding International Faculty Award.

Already in 1996, Dr. Rathman received an Alumni Distinguished Teaching Award (the highest teaching award given at OSU), Dr. Davis received the first OSU College of Engineering Boyer Award for Teaching Innovation, Dr. Zakin received the first College of Engineering Clara M. and Peter L. Scott Award for Excellence in Engineering Education, Dr. Fan was given the FLOTU Award by Tsinghua University in P.R. China in recognition of distinguished research in fluidization and contributions to international education, Dr. Lee is a recipient of one of the first OSU College of Engineering Annual Research Accomplishment Award and
Dr. Ozkan was recognized by the Ohio Academy of Science as an Outstanding Woman in Science and Technology, received a College of Engineering Lumley Research Award, and is the 1996 Newcomb Lecturer at the University of Tulane. Dr. Yang and Dr. Chalmers were awarded a $1.5M Ohio Board of Regents Investment Fund grant for their new Ohio Bioprocessing Research Consortium program; and Dr. Tomasso, Dr. Koelling and Dr. Lee secured $310,000 from the Board of Regents Investment Fund Grant for their polymer processing and supercritical fluid program. Combined with several other research grants that have been received recently, our level of research funding will surpass 1995’s funding of $3.2M, which was an increase from 1994’s $2.6M. 1995 was, indeed, a memorable year and 1996 looks even more promising!

1996 is the inaugural year for the William G. Lowrie Lectureship. The intent is to award this lectureship once a year to an individual who has made significant contributions to fundamental or applied research in the field of chemical engineering. The awardee is selected by departmental faculty in the spring quarter of the academic year. The award consists of a plaque and an honorarium. The lectureship was named to honor a distinguished alumnus, William (Bill) Lowrie, President of Amoco Oil, Inc., and a strong advocate of the Department. Mr. Lowrie was also the Chair of our Industrial Advisory Board for many years. The first recipient, Dr. John A. Davidson, Vice-Master, Trinity College, University of Cambridge, will speak on April 25 and May 3, 1996, at 3:30 PM. Of course our alumni are always very welcome to attend these lectures as well as our 999 seminars. If you would like to be placed on the seminar list to receive an agenda of lectures, please let us know.

The AIChE student chapter in the Department is hosting the Regional AIChE Student Conference. This is the most important AIChE student activity of the year. The last time such a conference was held at OSU was more than 15 years ago. The meeting will include a planned tour of the facilities, technical presentations of papers, workshops, student awards, etc. The students have worked very hard to put together a fine program. The Department considers this to be an important showcase for recruiting purposes for students from the Big 10+ universities.

We are currently interviewing a slate of top notch faculty candidates for an Assistant/Associate Professor position and I will report to you on the new faculty member in the next newsletter. Our other major search effort underway is for a candidate for the Morrow Endowed Professorship which has been fully funded by Amoco Foundation. We are seeking candidates of national and international stature.

We have also experienced some success with our recruiting efforts for outstanding high-school and graduate students. The Department has developed an undergraduate brochure to be used for recruiting outstanding high school students (honor/high ACT-SAT scores). The Department has been making a real recruiting effort to attract high-school honor students to our undergraduate program. We have seen moderate improvement this year and expect this to increase each year. We also have an excellent graduate recruiting program led by Professor Jim Lee, Chair of the Graduate Committee. In this year’s recruiting effort, 10 of the 14 graduate fellowships offered to highly recruited candidates were accepted, the highest acceptance rate we have had in recent years. We are very excited by the caliber of students coming to our program (such as the top student from Rensselaer Polytechnic Institute). We have also made strong efforts towards recruiting minority students and we will have 2 new outstanding African American students joining a class of approximately 21. Our recruiting success reflects partly on our increased recognition by other universities.

We have instituted a Department of Chemical Engineering Home Page on the World Wide Web (http://www.er6.eng.ohio-state.edu/che/). Most of our faculty also have home pages describing their research
areas. Some of our faculty also use WWW for homework problems and course work. This year we had our first Alumni Newsletter in the history of the Department. We hope to engender more communal spirit between the Department and our Alumni and to use it as a vehicle for our alumni to keep in touch with each other and our Department.

The Department has completely renovated the biochemical laboratory with a grant from the National Science Foundation (NSF) and significant cost-sharing contributions from the Ohio Board of Regents Action Fund and the University. The biochemical laboratory and student offices have been consolidated on the first floor with modern bio-equipment as well as bio-processing equipment in the Unit Operations Laboratory. This modern bio-lab is used for teaching and research and has attracted considerable attention by prospective graduate students, visitors, and professionals. The Department has also established a new rheology laboratory with an equipment grant from NSF.

We have been successful in obtaining the space needed for the Morrow Chair. The new space will be in the MacQuigg building (under the same roof as Koffolt). I am now working hard at securing additional space for growth of our research programs.

The University has embarked on an ambitious fund-raising campaign and the College and Department are participating. The Department has earmarked $9.5M as a fund-raising goal, funds to be used for three endowed professorships, renovation of the Units Operations Laboratory as well as scholarships. I would like those of you that are now experiencing success in your careers to remember your "Unit Ops Days" and consider helping us improve the Unit Ops experience for our students. We would like to add state-of-the-art equipment and make it a modern updated laboratory.

Finally, we want to take this opportunity to thank those of you that contribute to the Department and let you know how important that support is to us, especially now as the University budget shrinks further and further, and government research funds have been reduced significantly. There are many worthy students who need financial assistance. Much more than that, however, is the department's need to stay up-to-date in order to provide our students with the kind of education that will be relevant to today's job market. Without the continued support of our alumni and friends, we will not be able to stay abreast of current educational trends. If you contribute to Ohio State through the Development Office, please be sure to designate Chemical Engineering or we will not receive it (or even be notified of it).

Please know that we are interested in you. At the back of the annual report is an informational coupon. This information will be reported to your friends and colleagues in the Alumni Newsletter. Keep in touch — you are still a part of this Department!

Best regards,

Liang-Shih Fan
Professor and Chair
Frank J. Schuh is the President of Drilling Technology, Inc., in Plano Texas. He received both the Bachelor of Science and the Master of Science Degrees in Chemical Engineering in 1956.

For 30 years, he held a variety of executive and technical positions with ARCO Oil and Gas Co. From 1972 to 1982, he was the Director of the Drilling Technology Section of the Drilling Engineering Staff. Schuh, who has received over 30 patents, also served as ARCO's Director of Drilling and Production Mechanics Research.

Schuh has developed and applied advanced technology to solve difficult well design and operational problems, especially for horizontal drilling projects. He also has traveled the globe to teach others horizontal drilling technology.

A member of the prestigious National Academy of Engineering since 1989, he also is Vice President of Engineering/Design with JENA Drilling Co., Inc. Active in professional groups, he was National Director of the Society of Petroleum Engineers (SPE) from 1983 to 1986 and has held leadership positions with the American Petroleum Institute. In addition, he has earned numerous other professional awards, including being named as an SPE Distinguished Member in 1989. He also has won the 1986 SPE Drilling Engineering Award and the 1985 Atlantic Richfield Award for Outstanding Technical Achievement.
Dr. Kenneth N. McKelvey is the Engineering Manager of Environmental and Chemical Technologies at DuPont Engineering. He received the Master of Science and the Doctoral Degrees in Chemical Engineering in 1967 and 1968, respectively.

Since joining DuPont in 1968, McKelvey has held a number of leadership positions and has made considerable contributions to his discipline. From 1974 to 1978, he served as Manager of Chemical Engineering and directed a team of about 30 engineers which undertook fundamental chemical engineering studies for DuPont businesses.

In his position as the Director of the Engineering Technology Laboratory from 1985 to 1990, McKelvey led the strategic redirection of the lab and focused on electronic materials, bioengineering, composites, polymer membranes for gas separation, polymer alloys, and other advanced technologies.

As the Director of Environmental and Energy Engineering from 1991 to 1993, McKelvey directed about 200 DuPont engineers in environmental engineering, process safety and fire protection, and other areas. In his current position, he was a founder of DuPont's Nylon Enterprise Technology Team, which has developed major new concepts for nylon polymerization.

McKelvey has been a member of the Advisory Committee of the Department of Chemical Engineering for more than ten years. Active in the American Institute of Chemical Engineers, he received the 1989 Texnikoi outstanding Alumnus Award from the College.
Faculty and Research Areas

Bakshi, Bhavik, Assistant Professor, Ph.D., M.I.T., 1992. Process Control, Intelligent Controllers, Wavelet Neural Networks, System Integration, Artificial Intelligence in Design, Planning, and Analysis

Brodkey, Robert S., Professor Emeritus, Ph.D., University of Wisconsin, 1952. Turbulent Motion, Mixing and Kinetics, Image Processing and Analysis, Reactor Design, and Rheology

Chalmers, Jeffrey J., Associate Professor, Ph.D., Cornell University, 1988. Biochemical Engineering, Hydrodynamic Effects on Cells, Cell Separations, Biodegradation/Bioremediation

Davis, James F., Professor, Ph.D. Northwestern, 1981. Artificial Intelligence in Diagnosis and Control, Intelligent Control, Data Interpretation, Pattern Recognition, Neural Networks, Systems Integration, Model Integration

Fan, Liang-Shih, Professor and Chair, Ph.D., West Virginia University, 1975. Fluidization, Powder Technology, Multiphase and Particulates Reaction Engineering, and Mathematical Modeling

Friedman, Morton H., Professor, Ph.D., Michigan, 1961. Biomedical Engineering and Hemodynamics

Hershey, Harry C., Professor Emeritus, Ph.D., University of Missouri-Rolla, 1965. Thermodynamics and Environmental Engineering

Koelling, Kurt W., Assistant Professor, Ph.D., Princeton, 1992. Polymer Processing, Liquid Crystalline Polymers, Biodegradable Polymers, Polymer Rheology and Morphology

Lee, L. James, Professor, Ph.D., University of Minnesota, 1979. Polymer Processing, Composite Manufacturing, and Thermoset Polymers

Ozkan, Umit S., Professor, Ph.D., Iowa State University, 1984. Application of Heterogeneous Catalysis to Energy and Environmental Issues, Catalytic Materials, and Heterogeneous Kinetics

Rathman, James F., Assistant Professor, Ph.D., University of Oklahoma, 1987. Chemical Reactions in Surfactant Solutions, Thermodynamics of Micelle Formation, Wetting and Adhesion, Interfacial Adsorption and Transport

Tomasko, David L., Assistant Professor, Ph.D., University of Illinois, at Urbana, 1992. Intermolecular Interactions in Supercritical Fluids, Supercritical Fluid Extraction, and Molecular Thermodynamics

Yang, Shang-Tian, Associate Professor, Ph.D., Purdue University, 1984. Biochemical Engineering and Biotechnology, Fermentation Processes, and Bioseparation

## Faculty and Staff Members

### Professors
- Robert S. Brodkey (Emeritus)
- James F. Davis
- Liang-Shih Fan
- Milton H. Friedman (Biomed Eng.)
- C.J. Geankoplis (Emeritus)
- Edward R. Haering (Emeritus)
- Harry C. Hershey (Emeritus)
- L. James Lee
- R.E. Lynn (Emeritus)
- Umit S. Ozkan
- H.C. (Slip) Slider (Emeritus)
- Edwin E. Smith (Emeritus)
- Thomas L. Sweeney (Emeritus)
- Jacques L. Zakin

### Associate Professors
- Jeffrey J. Chalmers
- Karl Svanks (Emeritus)
- Shang-Tian Yang

### Assistant Professors
- Bhavik R. Bakshi
- Kurt W. Koelling
- James F. Rathman
- David L. Tomasko

### Adjunct Professors
- S.C. Chen
- Rosemarie Wesson

### Visiting Professor
- Robert Mudde (Netherlands)
- Jian Zhang (P.R. China)

### Visiting Scholars
- Kai Gu (P.R. China)
- Shoujie Li (P.R. China)
- Evelyne Querat (France)

### Research Associate I
- A. Ghosh Dastidar
- Peijun Jiang
- Jeenhuci Tsai

### Post Doctoral Research Associates
- Devamita Chattopadhyay
- Shih-Chou Chen
- Kerang Han
- Tao Hong
- Yu Liang Huang (Fellow)
- Yoon-Seob Lee
- Shirdar Reddy
- Yang Zhao

### Department Administrative Staff

#### Academic Advisor
- Sherry McDonald

#### Administrative Associate
- William Walters *

#### Design Engineer
- Michael Kukla

#### Instrument Maker
- Carl Scott

#### Secretaries
- Kathleen Doddroe (Chair Secretary)
- Shirley Newsom

#### Graduate Administrative Associate
- Paul Gudde

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* Editor of Annual Report
Publications and Presentations

Books and Book Chapters


Referred Papers


10
Refereed Papers (cont)


Refereed Papers (cont)


Publications and Presentations

Refereed Papers (cont)


Proceedings Publications


### Proceedings Publications (cont)


### Technical Reports


Publications and Presentations

Technical Reports (cont.)


Patents


Software Licenses
Davis, J.F., Knowledge-based diagnostic system development software generated as an expression of the theoretical approach developed has been licensed for specific applications to the following new companies in 1995: Honeywell ASM Consortium

Davis, J.F., Neural net development software generated as an expression of the theoretical approach developed has been licensed for specific applications to the following new companies in 1995: Honeywell ASM Consortium

PRESENTATIONS

A. Invited Lectures, Seminars and Short Courses


A. Invited Lectures, Seminars and Short Courses (cont)


Mahesh Kunthekar - Working on Raman Spectroscope for Catalyst Characterization
A. Invited Lectures and Seminars (cont.)


Rathman, J.F., ChiE Department Seminar, The Ohio State University, November 1995


Tomasko, D.L., "Solute-Solute Effects in the Supercritical Fluid Processing of Biomolecules" Department of Chemical Engineering, University of Toledo, (May 1995).

Tomasko, D.L., "Solute-Solute Effects in the Supercritical Fluid Processing of Biomolecules" Department of Chemical Engineering, University of Akron, (October 1995).


Zakin, J.L., "Turbulent Drag Reduction by High Polymers and Surfactant Solutions", Istanbul Technical University (Turkey), January 1995

Zakin, J.L., "Turbulent Drag Reduction by High Polymers and Surfactant Solutions", Bogazici University (Turkey), Jan. 1995

Zakin, J.L., "Turbulent Drag Reduction by High Polymers and Surfactant Solutions", Middle East Technical University (Turkey), January 1995
Publications and Presentations

Zakin, J.L., "Turbulence and Flow Properties of Drag Reducing Surfactant Solutions", Tel Aviv University (Israel), February 1995

B. Additional Paper Presentations


Publications and Presentations

B. Additional Paper Presentations (cont)

Rathman, J.F, 69th ACS Colloid and Surface Science Symposium, Salt Lake City, June 1995


Zakin, J. L., SNIZENI TLAKOVYCH ZTRAT V. OTOPNYCH SOUSTAVACH, with J. Myska, Trade Fair ESSENTIA, Poster Session, Brno, Czech Republic, Sept. 11-17, 1995.
C. Organizers and Session Chairs of National and International Meetings


Davis, J,F., International Organizing Committee, PSE '96, Trondheim Norway

Fan, L.S., Chairman (1992-date); Member (1989-date), AIChE National Program Committee, Area 7e - Multiphase Flow.


Koelling, K.W., Chair - American Institute of Chemical Engineering Annual Meeting, "Fiber and Film Processing", Chicago, IL, November 1996

Koelling, K.W., Organizing Committee for Local Arrangements: 1997 Annual Meeting of Society of Rheology to be held at The Ohio State University.


Lee, L.J., Organizer and Chair of the 2nd International Liquid Composite Molding Workshop, Columbus, OH, June, 1996.

Lee, L.J., Program Chair of Area 8f, AIChe Meeting, Chicago, IL, November 1996.

Ozkan, U.S., Catalysis and Photocatalysis by Metal Oxides, 209th National Meeting of the American Chemical Society, Colloids and Surface Chemistry Division, Chicago, IL, August 1995.

Ozkan, U.S., American Chemical Society Colloids and Surface Chemistry Division Co-Chair of the Continuing, Symposia in Catalysis (National) (1994-1996)

Ozkan, U.S., Eleventh International Congress in Catalysis (ICC), Baltimore, MD, June 1996 (Program Committee)

Ozkan, U.S., Third World Congress on Selective Oxidation, San Diego, CA, September 1997, (Organizing Committee). (International)

Ozkan, U.S., Second World Congress on Environmental Catalysis, Miami Beach, FL, November 1998 (Organizing Committee). (International)


Zakin, J.L., Chair, Session on 'Surfactant Solutions, Fluid Flow Interactions," Annual Meeting of the Society of Rheology, Sacramento, Oct. 8-12, 1995

Zakin, J.L., Chair, Local Arrangements Committee, Annual Meeting of the Society of Rheology, Columbus, Ohio, Oct. 17-23, 1995
Publications and Presentations

D. Editorial Boards, National Committees and Other Professional Activities


Broek, R.S., Vice Chair and Treasurer of the US National Committee-Theoretical and Applied Mechanics, to 1997.

Broek, R.S., Member North American Mixing Forum (NAMF, former Area 3a of AIChE)

Broek, R.S., ABET/AIChE Chemical Engineering Visiting Accreditation Panel, 1984-to date

Broek, R.S., Organizing Committee, The 8th Beer Sheva Seminars on MHD Flows and Turbulence, Ben Gurion University of the Negev, Beer Sheva, Israel, Feb. 1996


Davis, J.F., Board of Trustees of the CACHE (Computer Aids in Chemical Engineering) Organization) since 1987. The Board of Trustees for CACHE consists of 21 academic and 7 industrial representatives from from the United States and Canada. Re-Elected to a three-year terms, Board of Trustees, CACHE Corporation, in (1990, 1993).

Davis, J.F., Chair CACHE Standing Committee on Curriculum since November 1991.

Davis, J.F., CACHE Secretary and Executive Committee since November 1994

Davis, J.F., Co-Editor, Proceedings Intelligent Systems in Process Engineering (ISPE '95), Snowmass Co, July 1995

Fan, L.S., Consulting Editor of Noyes Publications on book series on Particle Technology (1994 to date).


Fan, L.S., Member of the Scientific Committee, 2nd International Conference on Multiphase Flow '95-Kyoto, April 3-7, 1995 in Kyoto, Japan.

Fan, L.S., Member, National Science Foundation Environmentally Conscious Mfg. Panel, August 10, 1995.


Fan, L.S., Member, Council for Chemical Research, Inc., July 1994 to date.

Fan, L.S., Member of the International Advisory Committee, The 1st International Symposium on Measuring Techniques for Multiphase Flow, Nanjing, P.R. China, May 7-10, 1995


Fan, L.S., Consulting Editor, AIChE Journal (1994 to date).

Fan, L.S., Director, Ohio State University Coal Research Program (Program theme: Dry sorbent injection technology for air pollution control in coal combustion) (1987 to date).

Fan, L.S., Member, AIChE National Program Committee, Area 3B - Fluidization and Fluid-Particles Systems, Member of Steering Committee (1985 to date).

Fan, L.S., Chairman, Fluidization Thrust Area, Particle Technology Forum-An Affiliated Organization of AIChE (1992 to date).

Lee, L.J., Editorial Board, Journal of International Polymer Processing

Lee, L.J., Editorial Board, Science and Engineering of Composite Materials


Lee, L.J., Principal Investigator of a NSF Proposal to establish the Industry/University Cooperative Research Center for Advanced Polymer Engineering at OSU


Ozkan, U.S., Division of Kinetics, Catalysis and Reaction Engineering, Member of Board of Directors

Publications and Presentations

D. Editorial Boards, National Committees and Other Professional Activities (Cont)


Rathman, J.F., Associate Editor, Journal of the American Oil Chemists' Society


Yang, S.T., Member of Board of Directors, The Ohio Chinese Academic and Professional Association.

Zakin, J.L., Co-Director, Emission Reduction Research Center (at NJIT), March 1 - July 31, 1995

Zakin, J.L., Associate Director, Emission Reduction Research Center (at Ohio State), Aug. 1, 1995 -

Zakin, J.L., ABET/AIChE Chemical Engineering Accreditation Visiting Panel.

Zakin, J.L., Editorial Board, Chemical Engineering Research Compendium.

E. Honors and Professional Recognition
Bakshi, B.R., Young Researcher Participation Award, Gordon Conference on Statistics in Chemistry and Chemical Engineering, New Hampton, NH, July 30 - Aug 4, 1995

Davis, J.F., in July 1995, accepted the position of Interim Director of University Technology Services. UTS is the central computing and information services organization for University. Currently with staff of 300 FTE and approximately 200 students and part time employees, UTS is responsible for all central academic and administrative computing and University support functions.

Fan, L.S., 1995 Fluidized Process Recognition Award from the Particle Technology Forum of the AIChE.

Fan, L.S., Visiting Professorship of The Netherlands, appointed by the Dutch National Graduate Research Schools in Chemical Engineering in June 1995 for an indefinite period.

Lee, L.J., 1995 College of Engineering Research Award, OSU


Ozkan, U.S., 1994-95 Centre de la Recherche Scientifique (CNRS) Fellowship to spend a year at the Catalysis Research Institute, in Lyon-France as a Senior Research Scientist.

Rathman, J.F., 1995 Charles A. McQuigg Award for Outstanding Teaching, OSU

Zakin, J.L., Senior Fulbright Research Fellow and Visiting Professor, Technion, Israel.

Zakin, J.L., 1995 Outstanding International Faculty Award, OSU.
Sponsored Research

**Department Research Data**  
1/1/95 - 12/31/95

- **Total Current External Research Funding**: 6.7M
- **Industrial Contribution to Research through Development Funds**: 175 K
- **Research Proposals Submitted**: 60
- **Proposals Awarded**: 30
- **$ Amount of New Awards**: $1.8 M
- **1994-95 Research Expenditures**: $1.6M
- **Projected Expenditures 1995-96**: $2.0M

**Sponsored Research Distribution**  
1991 - 1995

(34.1%) Federal  
(19.2%) Industrial  
(46.7%) *Other

* Includes state and local agencies, and foundations

**Current Sponsored Research Projects:**

<table>
<thead>
<tr>
<th>Budget</th>
<th>PI/Title/Sponsor</th>
<th>Project Period</th>
</tr>
</thead>
</table>
| $30,000| Bakshi, B.R.  
Intelligent Process Monitoring and Information Extraction  
From Measured Data Using Neuro-statistical Methods.  
Ohio Aerospace Institute | 08/28/95 - 08/27/96 |
| $40,000| Bakshi, B.R.  
Novel Techniques for Integrated Data Analysis and  
Information Extraction in Millwide Information Systems  
Tappi Foundation, Inc. | 12/01/95 - 12/31/96 |
| $66,370| Brodkey, R. S.  
Using Mixing to Minimize Waste in Reactive Systems  
Rutgers University | 09/1/94 - 08/31/95 |
| $180,000| Chalmers, J. J.  
Development of a Continuous, Magnetic Cell Separator  
The Whitaker Foundation | 01/01/95 - 12/31/97 |
<table>
<thead>
<tr>
<th>Amount</th>
<th>Name</th>
<th>Description</th>
<th>Start/End</th>
</tr>
</thead>
<tbody>
<tr>
<td>$95,720</td>
<td>Chalmers, J. J.</td>
<td>Applications and Development of Biochemical Engineering Principles to the Production of Soil Amendments</td>
<td>12/1/94 - 11/30/95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Consortium for Plant Biotechnology Research, Inc.</td>
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<tr>
<td>$62,262</td>
<td>Chalmers, J. J.</td>
<td>Continuous Magnetic Cell Sorting</td>
<td>02/01/95 - 01/31/96</td>
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<td></td>
<td></td>
<td>The Cleveland Clinic Foundation</td>
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<tr>
<td>$212,500</td>
<td>Chalmers, J. J.</td>
<td>National Science Foundation Young Investigator Award</td>
<td>09/01/92 - 08/31/96</td>
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<td>National Science Foundation</td>
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<tr>
<td>$75,000</td>
<td>Davis, J. F.</td>
<td>Multi-year Graduate Fellowship</td>
<td>09/01/95 - 08/31/98</td>
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<td>U.S. Department of Defense</td>
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<tr>
<td>$30,000</td>
<td>Davis, J. F.</td>
<td>A Computation Approach to Teaching Problem Solving Skills</td>
<td>09/01/94 - 03/31/96</td>
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<td>NSF Gateway Coalition</td>
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<tr>
<td>$7,500</td>
<td>Davis, J. F.</td>
<td>Intelligent Systems to Increase Production Yield</td>
<td>10/17/94 - 06/30/95</td>
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<td>American Cyanamid Company</td>
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<tr>
<td>$10,000</td>
<td>Davis, J. F.</td>
<td>A Virtual Measurement of Catalyst Circulation Rate (CCR)</td>
<td>05/23/95 - 05/22/96</td>
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<td>BP Oil International Limited</td>
<td></td>
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<td>$22,373</td>
<td>Davis, J. F.</td>
<td>Failure knowledge database programming structure with application to HAZOP.</td>
<td>07/15/95 - 07/14/96</td>
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<td>Mobil Research &amp; Development Corporation</td>
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<td>$60,759</td>
<td>Davis, J. F.</td>
<td>Knowledge-Based System for Detecting Process Abnormalities</td>
<td>07/01/93 - 06/30/96</td>
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<td>Shell Development Company</td>
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<td>$120,000</td>
<td>Fan, L.-S.</td>
<td>Fluidization and Particulate Reaction Energy and</td>
<td>01/01/95 - 12/31/95</td>
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<td>$160,000</td>
<td>Fan, L.-S.</td>
<td>Slurry Bubble Column Hydrodynamics: Quantification and Scale-up</td>
<td>07/14/95 - 07/13/98</td>
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<td>Washington University/U.S. Department of Energy</td>
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<td>$750,000</td>
<td>Fan, L.-S.</td>
<td>Intrinsic Flow Behavior in a Slurry Bubble Column at High pressure and High Temperature Conditions. Air Products &amp; Chemicals/U.S. Department of Energy</td>
<td>04/03/95 - 06/30/99</td>
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<tr>
<td>$19,000</td>
<td>Fan, L.-S.</td>
<td>Fluidization VIII: International Travel for U.S. Academic Delegates</td>
<td>02/01/95 - 06/30/95</td>
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<td>National Science Foundation</td>
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<tr>
<td>$49,000</td>
<td>Fan, L.-S.</td>
<td>Mechanisms and kinetics of solid metal cleaning. Lawrence Associates, Inc.</td>
<td>07/20/95 - 04/30/96</td>
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<tr>
<td>$70,000</td>
<td>Fan, L.-S.</td>
<td>Role of Fly Ash in Heavy Metal Removal from Flue Gas</td>
<td>09/01/94 - 08/31/95</td>
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<tr>
<td>$145,000</td>
<td>Fan, L.-S.</td>
<td>Kinetics and Structural Evolution of Sorbents at High Temperature</td>
<td>09/01/93 - 08/31/95</td>
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<tr>
<td>$145,000</td>
<td>Fan, L.-S.</td>
<td>Selenium Emission Control at High Temperature with Mineral Sorbents</td>
<td>09/01/93 - 08/31/95</td>
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<td>$119,418</td>
<td>Fan, L.-S.</td>
<td>Handling, Transport, and Dispersion of Sorbent Power for In-Furnace Injection</td>
<td>09/01/93 - 08/31/95</td>
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<td>$260,000</td>
<td>Fan, L.-S.</td>
<td>Accomplishment-Based Project Renewal: Study of Gas-Liquid-Solid Fluidization</td>
<td>06/01/92 - 05/31/95</td>
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<td>Amount</td>
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<td>$10,000</td>
<td>Hershey, H. C. and Zakin, J. L.</td>
<td>Institutional Coordination of Emission Reduction Research Center</td>
<td>New Jersey Institute of Technology</td>
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<tr>
<td>$143,946</td>
<td>Koelling, K.W. and Altan, T</td>
<td>Gas Assisted Injection Molding</td>
<td>National Science Foundation</td>
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<td>$90,000</td>
<td>Koelling, K. W.</td>
<td>Gas-Assisted Displacement of Viscoelastic Fluids in Simple Geometries</td>
<td>National Science Foundation</td>
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<td>$30,000</td>
<td>Koelling, K. W.</td>
<td>Gas-Assisted Injection Molding of Long Glass Fiber Filled Thermoplastics Delphi Interior and Lighting/LNP Plastics</td>
<td>National Science Foundation</td>
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<tr>
<td>$10,000</td>
<td>Koelling, K. W.</td>
<td>The Dynamics of Gas Bubble Penetration Through Viscoelastic Fluids</td>
<td>The Petroleum Research Fund</td>
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<td>$70,000</td>
<td>Seghi, R., and Koelling, K. W.</td>
<td>Thermoplastic Resin Matrix Dental Composites</td>
<td>NIH - Dental Composites</td>
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<td>$344,295</td>
<td>Lee, L. J.</td>
<td>Analysis of Liquid Composite Molding</td>
<td>The Dow Chemical Company</td>
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<td>$100,000</td>
<td>Lee, L. J.</td>
<td>Design and Manufacture of Prototype Composite Ducts and Panels Using RTM and Braided Preforms for Aerospace and Commercial Applications</td>
<td>Ohio Aerospace Institute</td>
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<td>$467,289</td>
<td>Lee, L. J., Brodkey, R. S. and Shivpuri R.</td>
<td>Development of an Advanced Analysis Tool for Characterization, Simulation, and Remedy of Molding Induced Defects in Liquid Composite Molding</td>
<td>National Science Foundation</td>
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<td>$350,000</td>
<td>Lee, L. J., Zakin, J. L., Koelling, K. K., Rathman, J. F. , Chalmers, J. J., Brodkey, R. S.</td>
<td>Engineering Research Equipment: A Rheological Measurement System for Polymer and Composite Processing, and Rheology of Colloids, Emulsions, Polymer Solutions, and Biomaterials</td>
<td>National Science Foundation</td>
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<td>Structural composites manufacturing process.</td>
<td>GenCorp, Inc.</td>
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<td>$75,000</td>
<td>Lee, L. J.</td>
<td>Material Characterization and Process Simulation of Injection/Compression: Structural Reaction Injection Molding (SRIM)</td>
<td>General Motors Corporation</td>
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<td>$40,000</td>
<td>Lee, L.J., and Benatar, A.</td>
<td>Survey and Preliminary Analysis of Rapid Adhesive Bonding Methods for Structural Applications</td>
<td>Edison Welding Institute</td>
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<td>$30,000</td>
<td>Lee, L. J.</td>
<td>Polymeric Composite Tubing and Fittings Made from Braided Preform Resin Transfer Molding for Fluid Power</td>
<td>Ohio Aerospace Institute</td>
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<td>$682,107</td>
<td>Lee, L. J. and Altan, T</td>
<td>Mass Production of Liquid Composite Molding</td>
<td>National Science Foundation</td>
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<td>$42,315</td>
<td>Lee, L. J.</td>
<td>Polymer Engineering/Net Shape Manufacturing</td>
<td>OSU Engineering Research Center</td>
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<td>Lee, L. J. and Altan, T</td>
<td>Analysis of Advanced Sheet Molding Compound</td>
<td>National Science Foundation</td>
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<td>$304,522</td>
<td>Lee, L. J. and Altan, T</td>
<td>Compression Molding and Moldability Measurement</td>
<td>National Science Foundation</td>
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<td>$250,000</td>
<td>Ozkan, U. S.</td>
<td>Catalytic Hydrodenitrogenation of Petroleum Derivatives</td>
<td>National Science Foundation</td>
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27
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<td>$330,316</td>
<td>Ozkan, U. S.</td>
<td>Catalytic Partial Oxidation of Lower Alkanes</td>
<td>National Science Foundation</td>
<td>11/15/94 - 10/31/98</td>
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<td>$90,000</td>
<td>Rathman, J. F.</td>
<td>Research Initiation award: A novel process for the synthesis of surfactants based on micellar autocatalysis.</td>
<td>NSF Div. Chemical &amp; Transport Systems</td>
<td>07/01/93 - 06/30/96</td>
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<td>$120,000</td>
<td>Rathman, J. F.</td>
<td>Environmentally conscious manufacturing: Aqueous surfactant solutions as replacements for volatile organic solvents in chemical manufacture.</td>
<td>NSF Div. Chemical &amp; Transport Systems</td>
<td>09/15/95 - 08/31/96</td>
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<td>$105,000</td>
<td>Rathman, J. F.</td>
<td>Micellar Phase-Transfer Catalysis as a Replacement for Organic Solvents in Synthesis Reactions in the Pharmaceutical Industry</td>
<td>New Jersey Institute of Technology</td>
<td>07/01/93 - 06/30/95</td>
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<td>$90,000</td>
<td>Tomasko, D. L.</td>
<td>Rates and Equilibria in Supercritical Extraction from Solid Matrices</td>
<td>National Science Foundation</td>
<td>07/01/94 - 06/30/97</td>
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<td>$5,000</td>
<td>Tomasko, D. L.</td>
<td>Polymer-Pharmaceutical Intermolecular Interactions for Design of Controlled Release Matrices</td>
<td>American Cyanamid Company</td>
<td>03/25/94 - 03/24/95</td>
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<td>$114,878</td>
<td>Yang, S.-T.</td>
<td>Sodium Lactate Production from Acid Whey</td>
<td>Kraft General Foods</td>
<td>05/01/93 - 12/31/96</td>
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<td>$144,800</td>
<td>Yang, S.-T.</td>
<td>A Novel Fibrous Bed Bioreactor for Bioprocessing</td>
<td>New Jersey Institute of Technology</td>
<td>07/01/93 - 09/30/96</td>
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<td>$50,000</td>
<td>Yang, S.-T.</td>
<td>A Novel Extractive Fermentation Process to Economically Produce Organic Acids from Corn Gluten Feed and Other Plant Biomass</td>
<td>The Consortium for Plant Biotechnology Research, Inc.</td>
<td>07/01/94 - 06/30/96</td>
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<td>Yang, S.-T.</td>
<td>Calcium Magnesium Acetate (CMA) at Lower-Production Cost/Production of CMA Deicer from Cheese Whey</td>
<td>04/01/95 - 03/31/97</td>
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<td>$110,000</td>
<td>Yang, S.-T.</td>
<td>Calcium Magnesium Acetate at Lower-Production Cost; Production of CMA Deicer from Cheese Whey, Phase II</td>
<td>04/01/95 - 03/31/97</td>
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<td>$28,669</td>
<td>Yang, S.-T.</td>
<td>Simultaneous Saccharification and Fermentation of Plant Biomass Under Solid State Fermentation Condition</td>
<td>03/01/95 - 05/30/96</td>
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<td>$20,000</td>
<td>Yang, S.T., and Min, D. B.</td>
<td>A Novel Continuous Process to Produce Microbial Polysaccharide, Xanthan Gum from Glucose by Fermentation and Ultrafiltration</td>
<td>03/01/95 - 02/29/96</td>
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<td>$10,000</td>
<td>Yang, S.T.,</td>
<td>Support of Biochemical Engineering Research Brewster Dairy, Inc.</td>
<td>01/01/95 - 12/31/96</td>
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<td>$5,000</td>
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<td>CMA Research Great Lakes Chemical</td>
<td>01/01/95 - 12/31/95</td>
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<td>$78,545</td>
<td>Yang, S.T., Whitlatch, Jr. E. E., Fisher, S. W.</td>
<td>FY 1995 Ohio State Water Research Institute Program Department of the Interior</td>
<td>07/01/95 - 06/30/96</td>
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<td>$234,199</td>
<td>Zakin, J. L., Yang, S.T., and Chalmers, J.J.</td>
<td>Renovation of Laboratory for Biochemical and Bioprocess Engineering Research</td>
<td>04/01/94 - 03/31/96</td>
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<td>$106,075</td>
<td>Zakin, J. L., Yang, S.T., and Chalmers, J.J.</td>
<td>Renovation of Laboratory for Biochemical and Bioprocess Engineering Research Ohio Board of Regents</td>
<td>04/01/94 - 03/31/96</td>
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<td>$20,500</td>
<td>Zakin, J. L.</td>
<td>Senior Fulbright Research Fellowship Committee for International Exchange of Scholars</td>
<td>09/01/94 - 02/28/95</td>
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<td>$150,000</td>
<td>Zakin, J. L.</td>
<td>Reducing Energy Costs in District Heating Systems Agency Intl. Development</td>
<td>08/16/91 - 08/15/96</td>
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<td>$36,448</td>
<td>Zakin, J. L.</td>
<td>Interpersonnel Research Exchange with Emissions Reduction Research Center New Jersey Institute of Technology</td>
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<td>$5,000</td>
<td>Zakin, J. L.</td>
<td>Coordination of Emission Reduction Research Center New Jersey Institute of Technology</td>
<td>07/01/95 - 06/30/96</td>
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</table>

Sharon Ma - Performing supercritical fluid coating of high-density polyethylene fibers.

Jim Ackerman - Working on fundamental flow visualization for gas-assisted injection molding.
Chemical Engineering Graduates

Bachelor of Science

June 1995
Daisy Anggraini *Magna Cum Laude*
Bridget Diane Blaney *Magna Cum Laude*
Stacy Ann Bohlman
Jesse James Bowers
Charmaine R. Burgin-Riggins
Erin Denise Cannon
Jason Lee Chamberlain
Sean Patrick Crowley
Anthony Lee Croy *With Distinction*
Alexander Fred DeSantis
Judith Lynn Edginton
Mark D. Elkowitz
Thomas Forrest
Elpiniki Gregoriades
Karen Helen Grueling
Michael Keith Hagans
Karen Sue Herzog
Thang Ding Hoang
Shannon Robin Hoffman
James William Ibinson
Min J. Joo *Cum Laude*
David Joseph Klepak
Thomas William Knuth *Cum Laude*
Melissa Marie Koebe *Magna Cum Laude*
Cynthia Marie La Moreaux
Hung Tsang K. Lee
Meredith Alison Lewis
Kendra Lee McCamey *Cum Laude*
Claudette Minimmi McCauley
Lisa Jane Mowrer
Kelley M. Orelmann
Thomas Edward Paxton *With Distinction*
Philip Neil Rancitelli *Summa Cum Laude*
Prasenjit Ray
Teddy Kusuma Saputra
Edward Chi Ching Shiao
Gary Lee Sturgill *Cum Laude*
John William Swiger
Linda Tiong
John Andrew Watkins
Todd Allan White
Bradley Robert Wooldridge

August 1995
Aisha Michele Barry
David C. Grimm
Kimberly Sue Lauby
Richard James Schmitz
Brian Matthew Spain

December 1995
Craig Brian Fuller
Lisa Suemoto Lear
James Michael Peters
Gary Alan Phillips
Sophia Niem Quach
William Eugene Razor
Steven Jay Schuman
Roberta Jo Urffer

March 1996
Cassandra Lynne Foltz *Summa Cum Laude*
Matthew Michael Keltt
Bradley David McDonel
William A. McKenzie, Jr.
Mark Raymond Sippola *Summa Cum Laude*
Chemical Engineering Graduates

M.S. Degrees

Paul Clark
Thesis: Preparation and Catalytic Hydrotreating Properties of High Surface Area Molybdenum Nitride
Advisor: U. Ozkan

Jacques E. Gates
Thesis: Polymeric Composite Tubing Made From Braided Preform RTM: Molding and Numerical Simulation
Advisor: L.J. Lee

Lorinda L. Hancock
Thesis: Effects of Environmental Conditions On Animal Cell Microcarrier Cultures
Advisor: J.J. Chalmers

Paul C. Huzyak
Thesis: The Effects of Rheology on the Penetration of a Gas Bubble Through Viscoelastic Fluids
Advisor: K.W. Koelling

Wai-Ming Johnson Kan
Thesis: LPA Performance of Low Temperature SMC/BMC Molding
Advisor: L.J. Lee

Jong-Hyun Kim
Thesis: Supercritical Fluid Processing of Biomolecules: Solute-Solute Effects on Solubility and Rapid Expansion of Supercritical Solutions
Advisor: D. Tomasko

Oron E. Schuss
Thesis: Micellar Phase transfer Catalysis of the Williamson Reaction
Advisor: J.F. Rathman

Rajesh Srinivasan
Thesis: Material Characterization of High Temperature RTM Resins
Advisor: L. J. Lee

James J. Toth
Thesis: Material Characterization in Liquid Injection/Compression Molding
Advisor: L. J. Lee

Glen W. Wheeler
Thesis: A linked Supercritical Extraction-Biodegradation System to Extract and Degrade Phenol
Advisor: D.L. Tomasko

Doctoral Degrees

Shu-Chien Liang
Thesis: Studies on Hydrodynamic Interactions Between Particles in Liquid-solid Systems
Advisor: L.S. Fan

Suhas Kant Mahuli
Thesis: Mechanistic Studies of Ultrafast SO₂ and Selenium Removal by Calcium-based Sorbents
Advisor: L.S. Fan

Jenn-Yeu Nieh
Thesis: Analysis of Morphology, Crystallization Kinetics, and Properties of Heat Affected Zone in Hot Plate Welding of Polypropylene
Advisor: L.J. Lee

Vivek Rohatgi
Thesis: Liquid Molding of Textile Reinforcements: Analysis of Flow Induced Voids and Effect of Powder Coating on Preforming and Moldability
Advisor: L.J. Lee

YI Tseng
Thesis: Application of Spectroscopic Analysis (FT-IR) to a Bench-scale Solid Substrate Fermentation (Composting) System
Advisor: J.J. Chalmers

Raghavan Venkat
Thesis: Study of Hydrodynamics Due to Turbulent Mixing in Animal Cell Microcarrier Bioreactors
Advisor: J.J. Chalmers

Hui Zhu
Thesis: A Novel Fibrous-bed Bioreactor for Mammalian Cell Culture
Advisor: S.T. Yang
Kneeling: David Grimm, Mike Hagans, Andy Watkins, Kip Sturgill

Row 1: Jack Mardiro, Erin Cannon, Shannon Hoffman, Cindy Lamoreaux, Kim Torti, Kelley Orlemann

Row 2: Makul Agarwal, Judi Edgington, Richard Schmitz, Claudette McCauley, Stacy Bohland, Daisy Anggraini, Cassie Foltz

Row 3: Jim Peters, Lisa Suemoto Lear, Suhas Mahuli, Mark Elkovitch, Jason Chamberlain, Lisa Mowrer

Row 4: Harry Hershey, David Tseng, Oron Schuss, Bill Razor, Gus Matheou, Yi He, Sherry McDonald

Row 5: Linda Tiong, Gary Phillips, Jacques Gates, Charmaine Burgin-Riggins, Kendra McCamey, Mike Hamilton, Seung Joe Haam

Row 6: Craig Fuller, David Lick, Rajesh Svinivasan, Teddy Saputra, Sean Crowley, Carl Scott

Row 7: Steven Schuman, Brian Spain, Thang Hoang, Philip Rancitelli, Essam Abou-Zeida, Shirley Newsom, Tom Paxton, Jong-Hyun Kim
Student Recognition and Awards

AIChe Awards (Central Ohio Section)
Outstanding Contribution to Local Chapter:
Cindy LaMoreaux and Alex DeSantis

American Institute of Chemists Awards
Outstanding Senior
Cassandra L. Foltz

Outstanding Graduate Student
Ellen M. Silva

Outstanding Postdoctoral Scholar
Abhijit Ghosh Dastidar, Ph.D.

AIChe Donald F. Othmer Sophomore
Academic Excellence Award
Alicia Ann Collins

Alicia Ann Collins
Presented by L.S. Fan

Dow Corning Co-op Award
Mark Arlinghaus

Hoechst-Celanese Outstanding
Sophomore Award
Michael Timko

Dow Outstanding Junior Award
Audrey Slane

Hoechst-Celanese Outstanding
Teaching Associate Awards
Ellen M. Silva and Dede Surjadi

Chemical Engineering Department
Teaching Associate Award
For Best Single Quarter
Patricia Ann Bauer
Elpiniki Gregoriades -Honorable Mention
### Fellowship and Scholarship Students

#### Graduate Fellowships
- **Amoco**
  - Zafar Ali

- **DuPont**
  - John Clay
  - Cristin Cutright
  - Leander Richards

- **Engineering Research Center**
  - James Ackerman
  - James Toth

- **Exxon Graduate**
  - Mike Elsass

- **Arnao C. Fieldner**
  - Minesh Tendulkar
  - Zhifeng Wang
  - Hong Wu

- **GEM**
  - Abdu Bunch

- **International Paper Co.**
  - Jack Reese

- **Joseph H. Koffolt**
  - Chunhuan Chen
  - Anit Jain
  - Yi-Je Juang
  - Ling Li

- **Helen Kurtz Fellow**
  - Bin Lu

- **POMEP**
  - Derek Rosa

- **Proctor & Gamble**
  - Amy Kneidel

- **Louis A. and Lucille Roberts**
  - Chunhuan Chen
  - David Shackleford

- **Shell**
  - Michael Elsass

  - **Union Carbide**
    - Glenn Wheeler

  - **Graduate School Fellowships**
    - University Fellow
      - Raashina Humayun

  - **Presidential Fellowship**
    - Ellen Silva

  - **Undergraduate Scholarships**
    - Alcoa Foundation
      - Brian Collett
    - Ashland
      - Jennifer Chou
      - Jonathan Piazza
      - Benjamin Wakefield
      - Robert Woodruff
    - Paul E. Bates
      - Alicia King
    - Class of 1941
      - Kimberly Dargan
      - Jennifer Drignat
      - Matthew Ehlerding
      - Vanessa Guscoff
      - Kevin Woleab
      - Todd Yunker
    - Dow Chemical
      - Audry Slane
    - DuPont
      - Brian Collett
    - Eli Lilly
      - Jeffrey Goulait
      - Prasad Gupte
      - James Holder
      - Douglas Krystak
    - Dorothy J. and Herbert L. Fenburr
      - Mark Buzek
      - Jakub Cech
      - Paul Cowan
      - Abraham George
      - Thomas Simpson

#### Scholarships
- **David H. George**
  - Alicia Collins
  - Christiana Hambudi
  - Renata Mealy
  - Steven Shippley
  - Nicholas Smith

- **Allan I. Gordon**
  - Aravind Astagiri
  - Gregory Bass
  - Lorie Burgess
  - Erin Conner
  - Theresa Dziewatkoski

- **Ray Hammond**
  - David Evans
  - Jason Galloway
  - Paul Garcia
  - Brandon Harbaugh
  - Marla Langdon
  - Thomas Nichelson
  - Robert Scheehle
  - Michael Triplett

- **Todd D. Harris**
  - Amy Bridges

- **William R. and Doris M. Harris**
  - Ranju Arya
  - Lorie Burgess
  - Michael Davis
  - Joel Duvall
  - Brandon Harbaugh
  - Michael Hill
  - Mitesh Kadakia
  - Konstantinos Matheou
  - Jonathan Novak
  - Shannon Novosad
  - Virginia Pankratz
  - Samir Parikh
  - Sophia Quach
  - Jesse Sawyer
  - David Schwartz

- **Webster B. Kay**
  - Christopher Andrews
  - Rebekah Dahlstrom
  - Amy Teleron

- **Proctor and Gamble**
  - Kathryn Lynch
  - Allison Mahood
  - Lara Philippi
  - Mark Watkins

- **Aldrich Syversen**
  - Matthew Aubert
  - Scot Bailey
  - Carrie Chambers
  - Michael Chiang
  - Kane Doerfler
  - Evelyn Kim
  - Konstantinos Matheou

- **Texaco**
  - Mohammad Hossain

- **William H. Whirl**
  - Sue Purvis
  - Steven Solomon

- **James R. Withrow**
  - Konstantinos Matheou
  - Phillip Smith
  - Ariel Tu
  - Jaideep Vaidya
  - Nicole Voss

---

**35**
<table>
<thead>
<tr>
<th>Graduate Students (By Advisor)</th>
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<tbody>
<tr>
<td><strong>Bhavik Bakshi</strong></td>
</tr>
<tr>
<td>Prakhar Bansal</td>
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<tr>
<td>*Utomo Utojo</td>
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<tr>
<td>Huan Zhong</td>
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<tr>
<td><strong>Robert Brodkey</strong></td>
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<tr>
<td>Sengjoo Haam</td>
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<tr>
<td>Leander Richards</td>
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<tr>
<td>*Ron Kaminski</td>
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<tr>
<td></td>
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<tr>
<td><strong>Jeff Chalmers</strong></td>
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<tr>
<td>*Mukul Agarwal</td>
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<tr>
<td>Patricia Bauer</td>
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<tr>
<td>Guo-Hua Chen</td>
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<tr>
<td>Elpiniki Gregoriades</td>
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<tr>
<td>*Lorinda Hancock</td>
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<tr>
<td>Liping Sun</td>
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<tr>
<td>*Yi Tseng</td>
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<td>*Raghavan Venkat</td>
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<td>Rahul Vir</td>
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<tr>
<td><strong>James Davis</strong></td>
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<td>Zafar Ali</td>
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<td>Michael Elsass</td>
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<tr>
<td>*Pranay Gupta</td>
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<td>*Yujira Jirapino</td>
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<td>Randy Lytle</td>
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<td>Jack Marchio</td>
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<td>Steven McVey</td>
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<td>David Miller</td>
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<td>Hong Wu</td>
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<td><strong>L.S. Fan</strong></td>
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<td>Essam Abou-Zeida</td>
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<td>Rajeev Agnihotri</td>
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<td>Shrinivas Chauk</td>
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<td>Eung Lee</td>
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<td>*Shu-Chien Liang</td>
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<td>Tsao-Jen Lin</td>
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<td>Xukun Luo</td>
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<td>Suhas Mahuli</td>
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<td>Jack Reese</td>
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<td>Shen-Hsing Wei</td>
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<td>Jiang-Ping Zhang</td>
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*Graduated in 1995

M = Master Program
P = Ph.D. Program

36
B.S. Graduate Placement Information

Employers That Hired B.S. Graduates

<table>
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<tr>
<th>Employer</th>
<th>#/State</th>
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<tr>
<td>ABB</td>
<td>3</td>
<td>OH</td>
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<tr>
<td>Allied Machine &amp; Engineering</td>
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<tr>
<td>American Power Conversion</td>
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<td>RI</td>
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<td>Andersen Consulting</td>
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<td>CA</td>
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<tr>
<td>Andersen Consulting</td>
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<td>Andersen Consulting</td>
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<tr>
<td>Artesian</td>
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<tr>
<td>ASC</td>
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<tr>
<td>Ashland Chemical</td>
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<tr>
<td>Battelle</td>
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<td>BP Chemicals, Inc.</td>
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<tr>
<td>Cargill</td>
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<tr>
<td>Champion International Corp.</td>
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<tr>
<td>Crane Plumbing</td>
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<tr>
<td>Dow Chemical</td>
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<td>MI</td>
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<tr>
<td>Exxon</td>
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<td>LA</td>
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<tr>
<td>Exxon</td>
<td>1</td>
<td>TX</td>
</tr>
<tr>
<td>Ford Motor Company</td>
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<td>OH</td>
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</table>

| General Electric                | 1       | OH    |
| The Geon Company                | 1       | OH    |
| Goodyear Tire & Rubber Co.      | 1       | TX    |
| Honda                           | 1       | OH    |
| Industrial Risk Insurers        | 1       | OH    |
| ISP Fine Chemicals              | 1       | KY    |
| Koch Engineering                | 1       | LA    |
| Lexmark                         | 2       | KY    |
| Lord Corporation                | 1       | PA    |
| Motorola                        | 1       | NC    |
| Pfizer, Inc.                    | 1       | NY    |
| Proctor & Gamble                | 1       | OH    |
| Quantum Chemical Company        | 1       | TX    |
| Research Oil                    | 1       | OH    |
| Scott Company                   | 1       | OH    |
| TRC Environmental               | 1       | OH    |
| UOP                             | 1       | NY    |
| Veratec                         | 1       | GA    |

Status of B.S. Graduates (SU94 - SP95)

<table>
<thead>
<tr>
<th>No. BS Grads</th>
<th>% Reg'd W/ECS*</th>
<th>% Report Employ.</th>
<th>% to Grad School</th>
<th>% to Military</th>
<th>% Other Plans+</th>
<th>% Seek Employ.</th>
<th>% No Info</th>
<th>Avg. Annual Salary Accept.</th>
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<td>61</td>
<td>88.5</td>
<td>75.4</td>
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<td>3.3</td>
<td>3.3</td>
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* Registered with Engineering Career Services
+ Includes Returned Overseas

Summary of Recruiting Activities

<table>
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<tr>
<th>Year</th>
<th>1994-95</th>
<th>1993-94</th>
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<tr>
<td>No. of Employer Divs. Conducting Interviews</td>
<td>53</td>
<td>49</td>
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<tr>
<td>No. of Interviews</td>
<td>428</td>
<td>284</td>
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<tr>
<td>No. of Resume Requests</td>
<td>74</td>
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Yearly Starting Salaries

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<th>Year</th>
<th>Average</th>
<th>High</th>
<th>Low</th>
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<tr>
<td>1994-95</td>
<td>$37,426</td>
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<tr>
<td>1993-94</td>
<td>$37,348</td>
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Placement data from Engineering Career Services 1995 Annual Report
## Course Enrollments

### Summer Quarter 1994

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHE 630 Unit Operations</td>
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**Second Term**

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<td>CHE 717 Colloids and Surfaces</td>
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**Full Term**

<table>
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<tr>
<th>Course</th>
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<tr>
<td>CHE 489 Professional Practice in Industry</td>
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<tr>
<td>CHE 693 Individual Studies</td>
<td>2</td>
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<tr>
<td>CHE 981 Research Seminar</td>
<td>16</td>
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<tr>
<td>CHE 999 Graduate Research</td>
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### Autumn Quarter 1994

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CHE 200 ChE &amp; Process Calculations</td>
<td>65</td>
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<tr>
<td>CHE 489 Professional Practice in Industry</td>
<td>4</td>
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<tr>
<td>CHE 508 ChE Thermodynamics</td>
<td>68</td>
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<tr>
<td>CHE 521 Transport Phenomena II</td>
<td>65</td>
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<td>CHE 624 Chemical Process Dynamics and Control</td>
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<td>CHE 693 Individual Studies</td>
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<tr>
<td>CHE 750 Profession of Chemical Engineering</td>
<td>58</td>
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<tr>
<td>CHE 760 ChE Economy and Strategy</td>
<td>65</td>
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<td>CHE 761 ChE Processes</td>
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<tr>
<td>CHE 773 Intro to High Polymer Engineering</td>
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<td>CHE 779 ChE Experimental Design</td>
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<td>CHE 812 Advanced ChE Kinetics</td>
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<td>CHE 815.01 Advanced Mass Transfer I</td>
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### Winter Quarter 1995

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<tr>
<td>CHE 200 ChE &amp; Process Calculations</td>
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<td>CHE 489 Professional Practice in Industry</td>
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<td>CHE 509 ChE Thermodynamics</td>
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<td>CHE 522 Transport Phenomena III</td>
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<td>CHE 626 Digital Control</td>
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<td>CHE 666 Principals of Biochemical Eng.</td>
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<td>CHE 693 Individual Studies</td>
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<td>CHE 764 ChE Process Design</td>
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<td>CHE 771 Air Pollution Control</td>
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<td>CHE 776 Principals of Polymer Conversion operations</td>
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<td>CHE 815.08 Advanced Momentum Transfer I</td>
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<td>CHE 981 Research Seminar</td>
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<td>CHE 999 Graduate Research</td>
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### Spring Quarter 1995

<table>
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<tr>
<th>Course</th>
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<tr>
<td>CHE 201 ChE &amp; Process Calculations</td>
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<td>CHE 420 Elements of ChE</td>
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<td>CHE 489 Professional Practice</td>
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<td>CHE 520 Transport Phenomena</td>
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<td>CHE 523 ChE Operations</td>
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<td>CHE 610 ChE Kinetics</td>
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<tr>
<td>CHE 750 Profession of Chemical Engineering</td>
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<tr>
<td>CHE 762 ChE Process Development</td>
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<td>CHE 766 Biotechnology and Bioprocess Engineering</td>
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<td>CHE 775 Rheology of Fluids</td>
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<td>CHE 801 Advanced Special Problems</td>
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<td>CHE 808 Advanced Thermodynamics I</td>
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<td>CHE 815.05 Advanced Heat Transfer</td>
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<td>CHE 999 Graduate Research</td>
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## Current Academic Status and Capsule History

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<td>Pre-ChE Undergrad</td>
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<td>283</td>
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<td>Course Enrollment/</td>
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<th>92-93</th>
<th>93-94</th>
<th>94-95*</th>
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<td>B.A., B.S. Degree</td>
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<td>M.S. Degrees</td>
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<td>Ph.D. Degrees</td>
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<td>Ph.D. Degrees (cumulative)</td>
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<td>62</td>
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## ChE Starting Salary Offers for 1994-95 graduates:

- B.S.: $37,842
- M.S.: $39,333
- Ph.D.: $68,750
Department Seminar Speakers

January 18, 1995  Dr. Fernando Muzzio, Rutgers University
"Using Time-dependent flows to Enhance Mixing in multiphase and Reactive Applications"

January 25  Dr. V.P. Privalko, National Academy of Science, Ukrain
"Properties of the Boundary Interphase in Filled Polymers"

February 1  Dr. Eunsook Goidel, U.S. EPA
"Policy Issues as They Relate to Life Cycle Design"

February 8  Dr. Joseph J. Breen, U.S. EPA
"The Design for Environment Program: Cleaner Technologies for a Safer Future"

February 15  Dr. Freeman, U.S. EPA
"Pollution Prevention: A New Trend in Environmental Management"

February 22  Dr. Dave Wieting, Schiely Corporation
The Schiely Heart Valve

March 1  Mr. Convery, U.S. EPA, Cincinnati, Ohio
Programs at the Cincinnati Center

April 4 *  Dr. Marshall Long, Yale University
"Multi-Parameter Imaging Diagnostics of Reacting and Non-Reacting Flows"

April 18 *  Dr. Yann Guezenne, Ohio State University
"Development of a 3-D Particle Tracking Velocimetry Technique: A State-of-the-Art Tool to Probe Flow Fields in I.C. Engines"

April 25 *  Dr. John Georgidias, University of Illinois at Urbana-Champaign
"Quantitative Visualization of Complex Multiphase Systems"

May 2 *  Dr. Martin Morris, McDonnell Douglas Aerospace, St. Louis, Mo.
"Applications of Pressure-Sensitive Paints"

May 9  Dr. Arthur W. Westerberg, Carnegie Mellon University
"The Synthesis of Continuous and Batch Separation Processes for Azeotropic Mixtures"

* Seminar Series "Measurements of Fluids", Organized by Professor Emeritus Brodkey
Department Seminar Speakers

May 23, 1995  Dr. Lawrence T. Drzal, Michigan State University
"Adhesion of Carbon Fibers to Polymers in Composites: Surface Chemicals and Topographic Effects"

May 25,  Fernando J. Muzzio, Rutgers University
"Suspension Dynamics: Three Applications"

May 31  Dr. Massimo Sangalli, University of Notre Dame
"Weakly Non-Linear Waves in Two-Phase Stratified Flows"

June 8  Dr. Daniel Kaftori, University of California, Santa Barbara
"Momentum, Mass, and Heat Transfer in the Turbulent Boundary"

June 13  Dr. Ivan Fort, Czech Technical University, Czech Republic
"Long Time Instabilities in Mixing Vessels"

October 5  Dr. H. Scott Fogler, University of Michigan
"Colloidally Induced Fines in Porous Media - The Existence of Microquakes"

October 10  Mr. Richard M. Morrow, Retired Chairman of Amoco Corporation
"The Engineer in a Changing World"

October 12  Dr. Robert Mudde, Delft University, Netherlands
"Air-Water Bubble Columns: A look Inside"

October 19  Dr. Franco Berruti, University of Calgary
"Hydrodynamics of Circulating Fluidized Bed Risers"

October 24  Dr. Robert Langer, Massachusetts Institute of Technology
"The role of Bio-materials in Drug Delivery"

October 26  Wayne W, Simmons, Battelle Research Institute
"Movement of Industry Towards Integration of Environmental Health and Safety Issues into Their Business"

November 19  Dr. James F. Rathman, Ohio State University
"Micellar Catalysis for Chemical Synthesis"

November 30  Dr. Howard Zhang, Ohio State University
"Pulse-Electric Field as a Food Preservation Technology"
### 1995 Contributors

**Presidents Club Donors in 1995**
- Paul E. Bates
- Robert L. Bates
- Dorothy J. Fenburr
- Marilyn E. George
- Raymond D. Hammond
- William R. Harris
- Jo Ann H. Hoge
- Ernestine Lowrie
- William G. Lowrie
- Jack Carlton Stewart

**Alumni Donors**

**1923**
- Gordon H. Mutersbaugh

**1927**
- James L. Collins

**1930**
- Parker S. Dunn

**1932**
- Harry J. Green
- Samuel S. Johnston

**1933**
- John S. Eckert

**1934**
- Edward E. Slowter

**1935**
- Albert R. Morrison
- Linton E. Simerl

**1936**
- Charles E. Green
- Richard A. Miller
- Robert N. Miller

**1937**
- Nichols Fatica
- Donald C. Miller
- Frederick R. Pullen
- George H. Sheets
- Charles E. Stoops
- Robert T. Whitaker

**1938**
- Edward J. Haven
- Robert S. Radow

**1939**
- Ira J. Kail
- Dillard W. Kuhlman
- Ralph E. Quigley
- Howard G. Rohrer
- Charles A. Rohrmann
- Bernard R. Sarchet

**1940**
- Charles H. Boardman
- Heinz A. Boker
- Loren F. Randel
- Don E. Kennedy
- Robert L. Lambert
- John H. Miller
- Louis J. Nowacki
- Everett H. Strobel

**1941**
- Roy H. Homans
- John D. Ireland
- George L. Meyers
- David Thomas

**1942**
- Donald S. Arnold
- Randal E. Bailey
- Dale B. Baker
- Forrest R. Hurley
- Clyde H. Kearns
- G. J. Lambillotte

**1943**
- Halvor S. Christianson
- Walter E. Craw
- Dalton F. Drake
- Glenn L. Gifford
- Leonard A. Harris
- Myrl E. Miller
- James R. Randall
- Raymond K. Ritzert
- Roy E. Schneider
- Carlyle E. Shoemaker
- Wade Wolfe
- Hong T. Yee

**1944**
- Wallace L. Bostwick
- William R. Harris
- George H. Montgomery
- Edward W. Powell
- Grover C. Strickler

**1946**
- Kenneth A. Brandtstetter
- Haskell H. McGriff

**1947**
- William K. Fell
- John M. Kolbas
- John B. Martin
- Aloysius M. Sebian

**1948**
- Charles C. Ballard
- Robert L. Bates
- John G. Gerlach
- Earl W. Goodman
- Maurice E. Hatten
- Lewis K. Jones
- Robert E. Kraus
- Manuel Ramos
- Jack C. Stewart
- Robert M. Tarr

**1949**
- Paul E. Bates
- Gordon G. Cross
- Samuel S. Fok
- Raymond D. Hammond
- Frederick A. MacDougall
- Richard N. Miller
- Donald R. Roberts
- Charles R. Shepherd
- Roland I. Spencer

**1950**
- Walter E. Donham
- David R. Hamilton
- David W. Hardesty
- Preston L. Hill
- Richard H. Immel
- Franklin A. Retzke
- Verne R. Rinehart
- Leo F. Salzberg
- Richard L. Scott
- Earl C. Sunner
- Alfred E. Withrow

**1951**
- Charles L. Dornbusch
- David B. Speed
- David A. Strang
- Clarence J. Svoboda

**1952**
- Robert F. Aldrich
- Charles J. Schmitz
- David G. Stephan

**1953**
- Robert A. Bates
- Roger L. Briggs
- Wilfred C. Ling
- William L. Maag
- Manoj Kumar D. Sanghvi
- Kenneth E. Whitehead
- James A. Wilson

**1956**
- Paul Alexander
- Glenn F. Althouse
- William D. Coe
- Robert M. Yarrington

**1957**
- Walter R. Andrews
- Ronald P. Rowand

**1958**
- James R. Facer
- Dan M. Hayes
- Valdis E. Petritis
- Richard M. Smith
- James W. Stark
- Lawrence R. Steele

**1959**
- Lee W. Addie
- James O. Albery
- James H. Laughlin
- Darryl J. VonLehmden
- Gerald A. Wilcox

**1960**
- Orville W. Grubemeyer
- Irwin B. Weinstock

**1961**
- Paul R. Bigley
- Edward R. Corino
- Jack A. Hammond
- Ronald D. Harris
- Kenneth D. McDaniel
- James H. McMicking
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David E. Bidstrup
Kenneth J. Fulk
Richard L. Hoffman
Charles D. Osburn
Dean Snider
Michael J. Sorocak
Michael D. Winfield

1963
Myers G. Hammond
Robert P. Kasper
Fred A. Shaffstall
Wilbur H. Sidner
Kay L. Snider

1964
Michael B. Cutlip
James A. Mooman
Girish D. Parikh
William V. Whitmer

1965
Kiu H. Lee
Arthur H. Mort
Frederick J. Rerko

1966
William F. Deehake
Eugene L. Jarrett
Linda L. Jarrett
William G. Lowrie
Glenn L. McKee

1967
Gerald A. Bullano
Frank Whauschildt
Wilma D. Januck
Graham F. Painter
John M. Yacher

1968
James W. Sebert
Douglas E. Smith

1969
M. A. Rao
John W. Toussant

1970
George E. Cressman
David R. Grove
Rosa Uy
Harry H. Yieh

1971
Karen L. Hendricks
Kerry G. Hertenstein

1972
John C. Bost
John A. Douglas
Harold E. Flinn
David J. Grigger
Ronald A. Howdyshell
Cheryl L. Kennedy
James A. Leonard
Robert P. Lewis
Julie M. Ockajik

1973
Kenneth R. Cox
Bruce K. Dawson
John F. Myers
George L. Ott
Micheal A. Patterson

1974
Charles T. Burwell

1975
Donald W. Buchanan

1976
Douglas J. Hallenburg

1977
Douglas T. Brown
Donald L. McDowell
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Tarrytown, NY 10591

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President & CEO
UOP
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Des Plaines, IL 60017
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Dr. James Roberts Cameron
W. Lawrence Campbell
John Dudley Crane
Frank F. Felkner
Henry A. Fulgrabe
Peter P. Grebbs
Stanley Phillip Greenfield
Roy Howard Homans
John David Ireland
Arthur H. Laube
Thomas F. Lavery
Richard F. Lescher
Roy G. Merryman
George L. Meyers, Jr.
Richard T. Reiss
Rev. John E. Rex
Williard L. Ridenour*
John W. Salter
Donald E. Somerset
David Thomas
H. Richard Unkel
Robert L. Waldivogel
William Warner, III
Mitchell E. Woods
Charles Dwight Young
Paul H. Young
J. Albert Zier

1921
Edwin Hayes Adkins
Chester H. Case
Dr. Cheh-Yao Chang*
C.J. Hassler

1926
Mao Han Tuan*
Cho Wu*

1931
William Bodine Abele
Harold W. Almen
Frank Esten Cook
Ned Sharp Fox
Robert A. Glaser
Dr. John Henry Koenig
Max M. Levine*
Dwight D. McKinney*
Dr. Yi Ou-Yang*
Dr. Ivan Albert Planck
Alvin B. Stiles
Paul F. Ulmer
Ray A. Witschey

1936
Harland Carl Anderson
Joseph W. Catron
Joseph P. Creagh
Robert Arno Ewing
Charles Everett Green
Harold Alvin Meyer
Harry V. Miles, Jr.
Dr. Robert Nathan Miller
Richard Anthony Miller
Joseph G. Mravec
Byron Wade Nelson
Clyde Custer Phillips
John E. Plumer
Dr. Leland F. Roy
Dan A. Truevell
Joseph Vasilosky
William P. Ward
Arthur A. Wuest*

1941
Earl Godfrey Anderson
Robert W. Archer
Maurice Barnette Baker, Jr.
Vernon C. Becher
Simon Bonta, Jr.
Harold Fulton Brown

1946
Kenneth A. Brandstetter
William Fowler*
Ernest Charles Grabill
Richard Irving Hang
Haskell H. McGriff, Jr.
Ben C. Michener
Dr. Robert Thomas Milligan
Richard Edward Morris*
Harold J. Oglevee
Phillip Edwin rose
Lloyd Douglas Treleaven
John William Walter

1951
George E. Aberhelden, Jr.
John Ellsworth Barker
Norman G. Bartrug
Raymond C. Beckett*
Joseph Patrick Boyer*
Charles E. Breithaupt
Fahrettin Can*
Paul R. Caris
Robert F. Carroll
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Myron A. Chernin
James Henry Clark
Richard J. Coffey
Merrill D. Colmery
Robert H. Congelliere
Joseph N. Craver, Jr.
Murray Leonard Davis*
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Charles L. Dornbush
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Gerald Houghton
Paul W. Izant
Dr. John Stuart Koegle
Richard M. Kreeger
Dr. Frank William Kroetz
John J. Lavin
Rai Tsing Lee
Richard L. Leslie
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Rob Roy MacGregor, Jr.
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George Marti, Jr.*
Bernard Lawrence Martin
Arthur N. Masse
Dr. A. Louis Medin
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Andrew P. Mizisin
James Robert Nelson
Charles L. Newton*
Richard E. Ody
Ali Ihsan Ozbayrak*
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Dr. Clyde Reeder, Jr.
Norbert Frederick Reinert
Donn P. Rice
Dr. Paul Thomas Santilli
Dr. Edward J. Scharf
John J. Schlosser, Jr.
David L. Sharps
James P. Slatpery
Paul W. Spaite
David B. Speed
Dr. David Arthur Strang
Clarence J. Svoboda
Dr. Foo Heng Tsye
Norman D. Van Hyning
Dr. Yeram Venkatesham*
Henry A. Voelkerding
Dr. Robert Bruce Weiser

1956
Paul Alexander, Jr.
Glenn Franklin Althouse
John Peter Berzins
John W. Cammarn
Robert A. Cody
William D. Coe
Herbert Henry Fanning
James Richard Farst
Joseph Theodore Fisher
George Clark Frazier, Jr.
Charles Ernest Golden
John S. Gordon
Dr. Edwin Raymond Haering
Dr. Raja Faris Hajjar
James P. Hazelton*
Jacob Carl Hill, III
Dr. Lawrence William Jordan
Paul C. Linder
Luther D. Loch
Albert P. Muren, Jr.
Robert R. Oubre
Carroll L. Oubre
Donald W. Rumsey
Richard N. Story
Sheron Edward Wears, Ret.
John Webster Weisel

1961
Paul Richard Bigley
Dr. Lynn G. Borchert
Paul G. Bork
James Waugh Bowers
Donald A. Brauer
Thomas Edgar Cattarin
Richard B. Cooper
Dr. Edward R. Corin
Rodrigo Donoso Hederra*
Dale Clifford Edwards
David A. Fichtner
Maj Clyde William Folk*
Ronald L. Follmer
Chester Gary Haines
Jack Arnold Hammond
Theodore J. Hanson
Ronald David Harris
Dr. David E. Hazebeek
Donald I. King
Robert A. Krakowski
Francis Thomas Kremblas, Jr.
Alvaro I. Lopez*
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#### 1961 (cont)
- Kenneth D. McDaniels
- Dr. James H. McMichick
- Thomas M. Mercer, Jr.
- Kenneth D. Negley*  
- Dr. Soon Ng
- David Alfred Parker
- Dr. Jerry B. Pausch
- John N. Rapach
- Harland Edward Taylor
- Howard H. Warye
- Dr. Richard Jay Wethern*  
- Lawrence E. Woodworth

#### 1966
- James Gilbert Arnold
- Jerome E. Balkenhol
- James Veryl Braun*
- Henry Carter Casitlone
- Dr. Robert Homer Cherry, Jr.
- William F. Deerhake
- Frank J. Dobscha, Jr.
- Erich L. Eggers
- Thomas Edward Fitz, Sr.
- Richard H. Furlow*
- James A. Gosney*
- Jeffrey E. Haas
- Rudolph Danner Hoffman
- Linda Lowe Jarrett
- Dr. Eugene Lawrence Jarrett
- Edward Forest Jefferies, III
- Ralph Bernard Jutte, Jr.
- Col. James Summers Knox
- Michael George Konicek
- William G. Lowrie
- Capt. Stephen W. Marlow*
- Lawrence D. Mathew
- Glenn L. McKee
- John Henry Miller
- John William Mitchell
- Donald J. Modell
- Jerry R. Morton
- Gary W. Moye
- James O. Nye
- Albert R. Shuct, Jr.
- Dr. Karlstr Svanks
- David W. Walter
- Donald P. Whiteman
- Hugh James Zeller

#### 1971
- Leonard Charles Angello
- Richard Lewis Baker
- Juliet Davison Balmer
- Dr. Anthony H.K. Chen
- Dr. Hyun Sam Cho
- Darryl Robert Conner
- John William Connor
- Dr. Michael Anthony Curran
- Marc Daiga
- Dale Allen Draudt
- Joseph James Fair
- Dr. Wayne Roland Fontaine
- James Raymond Glendon*
- Paul Michael Greenberger
- Dr. Eric Anderson Grulke
- Edward Charles Hauswald
- Karen Lafferty Hendricks
- Kerry George Hertenstein
- William Arthur Hodge, Jr.
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- Charles Scott Joublan
- 1Lt. Philip George Knowles
- Michael William Kosakowski
- Jeffrey Louis Kosch
- Carl Robert Lieberman
- Robert Marion Loar
- Thomas Lombardo
- John William Meredith
- Philip Jerome Meves
- David Russell Miller*
- Robert Lee Mills
- Richard Earl Morrical
- David Kuo An Ni
- William Edwin Pritchard
- James Francis Roff
- Robert Eugene Rosensteel
- Francois Song
- Dr. Paul Warren Springer
- Harrison Lowe Stebbins
- Charles Louis Steel
- Paul Russell Swartz
- Armen Tergsvorkian
- Dr. David Philip Turtle
- Edward Thomas Whalen
- Roy Shaukai Yang
- Dr. Stephen Zakanycz

#### 1976
- Sasha Abraham*
- Dale Frederic Arnold
- Gregory R. Bellopatrick
- Debra Garber Billman
- Darlene Hinneman Brown
- Dr. Donald W. Buchanan, Jr.
- James Michael Delabar
- Dr. Marie Carson Gill
- Carol Payne Glassburn
- Kenneth Edward Hansen
- Robert Richard Holbrook
- Daniel Thomas Horn
- Philip Carl Hursh
- Dr. Eugene Edward Imbrogno
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- Michael Maciejewski
- Mark Stephen Matosky
- Daniel Herman Millisor
- Gaynor Loomis Nash
- Gregory Eugene Prill*
- Stephen Abbott Repp*
- Mary Vercellotti Richardson
- Michael William Ryder
- Russell Allen Schilling
- David John Serbin*
- Richard Dewey Smith
- Luann Proctor Stickley
- John Richard Stout
- Ronald Edward Trawser
- Jeffrey John Thomas
- Panagiotis K. Tsibouris*
- Lawrence Michael Vikec
- David Robert Weber
- Larry Dale Zeagler

#### 1981
- Siamanto Abru
- Bruce Edward Beck
- Mark Robert Beny
- Robert Bergoch
- Carl Adrian Bixal
- James Christopher Blubaugh
- Christine Patricia Brown
- Helen Holmes Brown*
- David Dah-Wei Chang
- Donald Allan Chudanov
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- James Rick Vangeloff
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Steven Patrick Belding
Timothy S. Bentley
Cynthia Gerstle Bishop
Edward Bochenek
Charles Michael Butrey
Daniel William Caldwell
Robert Markham Conwright
Dennis Robert Daley
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Michael Leonard Gilles
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Ms. Kathleen Murphy Sanders
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Douglas E. Smith
Robert John Standtliander
Dr. Lori Ann Stiefel
Stephanie Lin-Lin Sung
Thomas Talbert
Sherry Roddy Talkington
Chao-Chi Tong
David Patrick Vance
Scott Glenn Vickery
James Franklin Walden
Beth Molloy Wescott
Andrew Martin Wescott
Paula Ann Snyder Wiley
Rick Douglas Worthington
Kit Wai Yam
Brian Andrew Yanok
Raymond Michael Yurick
Melissa Hult Zeligson

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Lynn Marie Adams
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Reinhard Friedrich Eisenmann

Daniel Roy Franke
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Lt. Timothy Joseph Shell
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Dr. Jing-Wen Tzeng
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Randolph James Van Sise
Joseph Stephen Vargo
Dr. Raghaven V. Venkat
Marcella Irene Vista
Susan Nicole Williams
Robert Matthew Wolterman
Richard Lee Wright

Class of 1980 - Kyle E. Kennedy, Ellen M. Silva, Cynthia A. Sheetz,
Matthew J. Galosi, and Gary R. Prok

*No current information available. If you know their address, please send it to us.

48
# Chemical Engineering Alumni Information

*Alumni News*

## PERSONAL

<table>
<thead>
<tr>
<th>Name</th>
<th>Spouse</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Address</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>City</th>
<th>State</th>
<th>Zip</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Children</th>
</tr>
</thead>
</table>

## COLLEGE

<table>
<thead>
<tr>
<th>Degree</th>
<th>Major</th>
<th>Month/Year</th>
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<table>
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<tr>
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<th>Major</th>
<th>Month/Year</th>
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## PROFESSIONAL

<table>
<thead>
<tr>
<th>Occupation</th>
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</table>

<table>
<thead>
<tr>
<th>Most Recent Employer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Department</th>
</tr>
</thead>
</table>

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News and information to share with fellow alumni and friends in Chemical Engineering. Work related, outside activities, achievements, honors, family news, etc.

| |
| |