Chemical Engineering

1995

Forty-Seventh Annual Report to the Alumni
The Ohio State University
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Dear Alumni ...

It is good to have this opportunity to write to you again about the activities taking place in the Department. I realize you received an Annual Report not too long ago, but it was a delayed report due to the Chair transition. This report goes out to you in the time frame I intend to establish so that you will receive it before ACE Day. The next report may even be a little earlier in the year. We also intend to have a Departmental newsletter that will come out in December, 1995. Traditionally the Chair reports on each faculty member's activities but as I brought you up to date on everyone's activities just several months ago, it will not be included in this report. I would like to let you know, however, that the latest awards in the Department were the University's 1995 Outstanding International Faculty Award, which was awarded to Jack Zakin and the Lumley Engineering Research Award, which was awarded to Jim Lee and S. T. Yang. We would also like to inform you of a prestigious award to an alumni, Dr. Derrick K. Rollins (PhD 1990 advisor, Dr. Jim Davis) who is presently teaching at Iowa State University of Science and Technology, who received the Presidential Faculty Fellows Award of 1994. We are extremely proud of Dr. Rollins and extend our congratulations. The Faculty and I take great pride when our students receive such awards as we feel it reflects well on the quality of the program.

My first eight months as Chair of ChE have been interesting and productive. Our immediate goals are to acquire more space, increase the size of our faculty, renovate the unit operations lab and create a new biotechnology lab. We have made some administration changes in order to better serve the needs of students and faculty. We now have a staff position devoted to academic advising and coordination of the graduate program (Sherry McDonald), a full-time Administrative Associate (Bill Walters) was named to oversee Department finances and act as an Office Manager, and a full-time instrument maker (Carl Scott) was hired to oversee the machine shop and to aid students in fabricating equipment for research. We are also in the process of moving our undergraduate recruiting efforts to the Engineering Career Center, while maintaining our traditional graduate recruiting program. Despite the job market for chemical engineers not having fully recovered, enrollment at the undergraduate level continues to be high, with a sophomore enrollment in the ChE 200 course of 100 students. These students were selected from a total of 150 freshmen who had declared an interest in pursuing a chemical engineering major. According to the Engineering Career Center at OSU, the starting salaries for B.S., M.S. and Ph.D. chemical engineers remains the highest of all the engineering disciplines. The quality of the upcoming class looks very promising as forty-three incoming freshmen who declared an interest in pursuing the ChE degree received Dean's scholarships. We continue to be extremely well-represented by outstanding women engineers. At the last Women in Engineering Graduating Seniors Dinner, Chemical Engineering had more attendees than any other Department in the College.

We are constantly striving to streamline the curriculum and to enhance our national reputation, particularly as to how we are perceived by our peers at other academic institutions. We are concerned about our ranking and have honed our strategy to qualify as a Center of Excellence in academics and research. On the curriculum and instructional front, we would like to provide students with more opportunities for summer quarter internships to broaden their industrial knowledge and enhance their opportunities for employment after graduation. Serious
deliberation is underway to move the traditional undergraduate Unit Operations Laboratory (UOp) Course from summer of the junior year to regular academic quarters. The UOp course is regarded by industry as one of the most important courses in the undergraduate curriculum. We are discussing changing our current methods of teaching UOp to one in which we would share the responsibility amongst the faculty by having them oversee the unit operation in their area of specialty. Our goal is to provide more in depth instruction and better student/teacher contact. The Faculty has also observed a need to offer a tech elective course (both undergraduate and graduate) in applied mathematics in ChE. Applied math has been covered in various ChE courses dealing with specific chemical engineering subjects. A general course offering on this topic could eliminate the redundancy of the same subject being covered in various ChE courses.

On the research front, it is clear that faculty research is expanding beyond what has been experienced at any time in the history of the Department. While continuing their current excellent individual research programs, the faculty also recognizes that important exposure would be gained by developing Centers of Excellence in different fields of ChE. The faculty are well-posed in several key technology areas as defined by the College and University such as: 1) advanced materials (polymer); 2) material processing (polymer processing); 3) computation, and 4) biotechnology. After reviewing the common interests of the faculty and considering student/industrial preferences, the faculty ascertained environmental engineering would be the thrust of the department's efforts. We are currently in the midst of establishing an Industry/University consortium program in environmental control technology focused on the paper and pulp industry. It was decided to establish an industry-funded research program centered on this industry as a nucleus that could be expanded to an NSF/Industry/University center.

The Amoco Corporation has fully funded the Richard C. Morrow Chair and we will be seeking a renown individual to fill this position in the near future. We are currently seeking to fill Prof. Harry Hershey's vacancy when he takes early retirement at the end of this academic year, with a candidate who has credentials preferably in fluid mechanics with applications to environmental engineering. We have a partnership with Civil Engineering and are currently working on creating a program that will offer our students the ability to minor in environmental engineering. A Chemical Engineer with an environmental minor will have an edge in career placement. We intend to stay on top of changes in the work place to ensure that our graduates have sufficient career opportunities.

Two faculty members took sabbatical leave to foreign academic and/or research institutions, Dr. Jacques Zakin and Dr. Umit Ozkan. Both will return to teaching Fall Quarter 1996. Dr. Zakin spent the first half of his sabbatical at the Technion in Israel working on microstructures of cationic surfactant-counterion micellar systems in order to relate the structures to drag reduction and rheological properties previously measured at Ohio State and in the laboratory of Prof. Ishi Talmon, his sponsor, obtaining Transmission Electron Microscope (TEM) images of the microstructures of dilute surfactant solutions using Cryo-TEM. He is currently at the New Jersey Institute of Technology in the Emissions Reduction Research Center working on pollution prevention on a consortium project made up of members from four universities, government agencies and a number of pharmaceutical companies. Dr. Ozkan is at the Catalysis Research Institute in Lyon, France as an invitee of the French Centre National de la Recherche Scientifique (CNRS). While effectively managing her on-going research projects at OSU through E-mail and occasional return visits, she is involved in collaborative research at the CNRS, working on a new class of catalysts called heteropoly anions and delivering keynote lectures at various academic and research institutes in order to establish long-term contacts that could lead to international research collaboration and to graduate student recruitment.
The Faculty and I want to thank the Department of Chemical Engineering's Industrial Advisory Committee for all their assistance. During our last meeting in March, Bill Lowrie (AMOCO) hosted a dinner in honor of Jack Zakin and then we went on to have a very productive meeting the next day. Jack Hammond (Westvaco) succeeded Bill as Chairman of the Advisory Committee. The Department owes a tremendous debt to Bill for his many years of service to the Department in more ways than I can enumerate in this letter. Thankfully, Bill has agreed to continue his work on the Committee as a member. I think it appropriate to make all our Alumni aware of these individuals who serve the Department in this capacity and they are: Dr. J. A. Brothers (Ashland Oil), Dr. E.R. Corino (Exxon), Nancy C. Dawes (Procter & Gamble), David R. Grove (Eli Lilly), Ronald D. Harris (Kraft), Dr. John P. Henry, Jr. (Data Genetics), Kerry G. Hertenstein (Pfizer, Inc.), E.L. Jarrett (OSI Specialties, Inc.), Dr. John B. Martin (ret., Procter and Gamble), Dr. K. N. McKelvey (DuPont), Karen T. Murphy (Ashland Oil), Cloyd P. Reeg (TRICAT), John Salladay (DOW), and Gene Wheeler (ret., Clorox). Frank Schuh (Drilling Technology, Inc.) and M.D. Winfield (UOP) have agreed to join our Committee this year and we give them a hearty welcome.

Some of you responded and sent in the coupon contained in the last newsletter. We hope to get a better response with this report as not only we, but your former classmates would really like to hear from you. The preliminary coupon response indicates that many of you would like to get in touch with former classmates. Unfortunately we cannot release names and addresses due to privacy laws but this information can be obtained from the Alumni Office (614-292-2500). Through them you can request all the names and addresses they have for a certain graduating class. Just a reminder for those of you who 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). Also be sure to return your coupon for the newsletter on the last page of this Report.

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. There are many worthy students who need financial assistance. As many of you know, the rigor of chemical engineering make it more difficult for our students to be able to work outside of the University while enrolled in school. 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. With cuts in government spending for research being particularly worrisome we have had to get very creative in order to seek other sources for funding. We are in the process now of establishing Industrial/University Consortia as a partial means of creating research opportunities for the training of graduate students. If ever your support was appreciated before, it is even more so now. I would also like to take this opportunity to invite all of you to attend ACE Day, which is on May 19 this year. We look forward to seeing as many of our alumni as possible. We are happy to announce that The Benjamin G. Lamme Meritorious Achievement Medal is to be awarded to Frank J. Schuh (Class of 1956), and Kenneth N. McKelvey (PhD 1968) will receive a Distinguished Alumnus Award. Those of you who graduated in any year ending with a 0 or a 5 (i.e., 1940, 1945) are considered a member of an anniversary class and have an even more special reason for attending. Hope to see you soon!

Best regards,

Liang-Shih Tan
Professor and Chairman
### 1994 Contributors

<table>
<thead>
<tr>
<th>Year</th>
<th>Contributors</th>
</tr>
</thead>
</table>
| 1923 | Edgar C Hendrickson  
       | Gordon H Mutersbaugh |
| 1924 | Dr Charles C Clark |
| 1927 | James L Collins |
| 1930 | Parker S Dunn  
       | Marion M McAdams |
| 1932 | Samuel S Johnston |
| 1933 | John S Eckert |
| 1934 | Clarence N Fisher  
       | William J Lawless Jr  
       | Edward E Slowter |
| 1935 | Willis M Losh  
       | Albert R Morrison  
       | Dr Linton E Simerl  
       | Frederick L Thomas |
| 1936 | Richard A Miller  
       | Dr Robert N Miller  
       | Joseph G Mravec |
| 1937 | Andrew E Chute  
       | Nicholas Fatica  
       | Charles W Gaylord  
       | Donald C Miller  
       | Dr George H Sheets  
       | Dr Charles E Stoops Jr  
       | Robert T Whitaker |
| 1938 | Edward J Haven  
       | Robert S Radow  
       | George S Tobias |
| 1939 | Ira J Kail  
       | Howard G Rohrer  
       | Dr Charles A Rohrmann |
| 1940 | Prof Bernard R Sarchet  
       | Clay H Anechansley  
       | Charles H Boardman III  
       | Don E Kennedy  
       | Robert L Lambert  
       | Francis J Malik  
       | Arthur G Mayer  
       | John H Miller  
       | Louis J Nowacki |
| 1941 | Peter P Grebus  
       | Roy H Homans  
       | George L Meyers Jr  
       | H R Unkel  
       | Charles D Young |
| 1942 | Dr Donald S Arnold  
       | Ronald E Bailey  
       | Dr Dale B Baker  
       | Dr Forrest R Hurley  
       | Clyde H Kearns  
       | G J Lambillotte  
       | Donald E Lintala |
| 1943 | Nicolae N Bacaintan  
       | Walter E Craw  
       | Dalton F Drake  
       | Glenn L Gifford  
       | Leonard A Harris  
       | Robert F Lange  
       | Dr Myrl E Miller  
       | James R Randall  
       | Raymond K Ritzert  
       | Dr Wade Wolfe Jr |
| 1944 | Wallace L Bostwick  
       | William R Harris  
       | Clarence A Haveyler Jr  
       | Edward W Powell  
       | Grover C Strickler Jr |
| 1947 | Willard F Andrews  
       | Thurman L Graves  
       | John B Martin  
       | Aloysius M Sebian |
| 1948 | Richard A Arnold  
       | Dr Saul Barron  
       | Robert L Bates  
       | Richard E Durst  
       | Donald E Garrett  
       | John G Gerlach  
       | Earl W Goodman  
       | Maurice E Hatten  
       | Richard F Hoffman  
       | Manuel Ramos  
       | George R Secrit  
       | Jack C Stewart |
| 1949 | Paul E Bates  
       | Raymond D Hammond  
       | Frederick A Mac Dougall  
       | Richard N Miller  
       | Donald R Roberts  
       | Charles R Shepherd  
       | Roland I Spencer  
       | Howard R Steele |
| 1950 | David W Hardesty  
       | Richard H Inmel  
       | Franklin A Retzke  
       | Verne R Rinehart  
       | Richard L Scott  
       | Earl C Sumner  
       | Alfred E Withrow |
| 1951 | Charles E Breithaupt  
       | Charles L Dornbusch  
       | Dr David A Strang |
| 1952 | Robert F Aldrich  
       | James F Froning  
       | Richard E Saylor  
       | Charles J Schmitz  
       | Dr David G Stephan |
| 1955 | Howard L Foltz  
       | Wendell B Hammond Jr |
| 1956 | Paul Alexander Jr  
       | Glenn F Althouse  
       | William D Coe |
| 1957 | Walter R Andrews Jr  
       | Arthur L Carter |
| 1958 | Dr Edward H Bollinger  
       | John R Kearns  
       | Valdis E Petritis  
       | Richard M Smith  
       | James W Stark  
       | Dr Lawrence R Steele |
| 1959 | James O Alberly  
       | Dr Ronald M Kovach  
       | James H Laughlin  
       | Darryl J VonLehmden  
       | Dr Gerald A Wilcox |
| 1960 | Virgil L Anderson  
       | Orville W Gruebmeier Jr  
       | Warren E McAdams |
| 1961 | Paul R Bigley  
       | Dr Edward R Corino  
       | Ronald D Harris  
       | Dr James H McMicking  
       | David A Parker |
| 1962 | Dr David E Bidstrup  
       | Kenneth J Fulk  
       | George M Hauswirth  
       | Charles D Osbun  
       | Dean Snider  
       | Michael D Winfield |
| 1963 | Dr John P Henry Jr  
       | Robert P Kasper  
       | Fred A Shaffstall  
       | Wilbur H Sider  
       | Kay L Snider |
## 1994 Contributors

<table>
<thead>
<tr>
<th>Year</th>
<th>Contributors</th>
</tr>
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</table>
| 1964 | Dr Michael B Cutlip  
        James A Moomaw  
        Mr Girish D Parikh  
        William V Whitmer |
| 1965 | Frederick H Flor Jr  
        Dr Kiu H Lee  
        Frederick J Rerko  
        Michael C Royer  
        Eugene N Wheeler |
| 1966 |William F Deehake  
        Linda L Jarrett  
        Dr Eugene L Jarrett  
        William G Lowrie  
        Glenn L McKee |
| 1967 |Frank W Hauschildt Jr  
        Graham F Painter Jr  
        Bruce E Poling  
        John M Yacher |
| 1968 |Richard T Linak  
        James W Sebert |
| 1969 |Smith E Howland  
        Dr M A Rao  
        John W Toussant |
| 1970 |George E Cressman Jr  
        David R Grove  
        Michael L Nevin  
        John D Rensel  
        Richard B Strait  
        Dr Rosa Uy  
        Dr Harry H Yieh |
| 1971 |Karen L Hendricks  
        Kerry G Hertenstein  
        Jeffrey L Kosch  
        William E Pritchard  
        Dr Stephen Zakanycz |
| 1972 |Dr Martin R Okos |
| 1973 |Dr Johnny O Wright  
        John E Myers  
        Dr William M Pekman |
| 1974 |John T Erikson |
| 1975 |Dr Donald W Buchanan Jr  
        Lawrence R Latta |
| 1976 |Philip M Rose  
        Kenneth A Yunker |
| 1977 |Donald L McDowell  
        Dr Neil P Stuber  
        Paul W Vance Jr  
        Thomas E Winkler  
        Richard J Yoch |
| 1978 |Craig W Sherban  
        David J Wasela  
        Dr Keith D Wisecarver |
| 1979 |Dr Frederick T Clark  
        Fred D Ehrman  
        Matthew J Galosi  
        Mark A George  
        Mark C Oliver  
        Dr David G Vutetakis |
| 1980 |Christine P Brown  
        Nancy C Dawes  
        Douglas V Lenz  
        James A Telljohann |
| 1981 |Debra D Funderburg  
        Summer M Saeks  
        James J Toth  
        Dr Andrew M Weber III |
| 1982 |Amy S Doty  
        Paula F Oren  
        John W Oren  
        Annette B Ventura |
| 1983 |Darrin L Lacheta  
        James V Lombardi  
        Kara B Long |
| 1984 |Gregory M Masica  
        Scott R Northrup |
| 1985 |Andrew W Bur  
        Roger G Facer  
        David J Moonay  
        Richard T Strait  
        Sharyn S Veley |
| 1986 |Timothy M Allen  
        Cynthia G Bishop  
        Rajeev L Gorowara  
        Isaac A Robinson III |
| 1987 |Dr Martin D Legg  
        Dallas B Noe |
| 1988 |Dr Prasad P Ramanathan |

**FRIENDS**  
Dr Robert S Brodkey  
Carol H Camm  
Dr Jeffrey J Chalmers  
LtC Russell F Dubes  
Norman E Ernstine  
Dr Liang-Shin Fan  
Marilyn B George  
Judith W Harris  
Milton H Hendricks  
Jane A Hess  
Joann H Hoge  
Dr Umit S Ozkan  
Ruth Porter  
Charles F Porter  
Sridhar Reddy  
Dr Jacques L Zakin
Industrial Supporters and Corporate Gift Matching

3M Foundation
AT&T Foundation
Abbott Labs Fund
A C Technology
Air Products & Chemicals, Inc.
Aluminum Company of America
American Electric Power
Amoco Foundation, Inc.
Appleton Papers, Inc.
ARCO Foundation
Aristech Corporation
Ashland Chemical, Inc.
Ashland Oil, Inc.
B. P. America, Inc.
Bell Helicopter Textron
Brewster Dairy, Inc.
Bristol-Myers-Squibb Foundation
Bristol Myers Squibb Company
Burroughs Wellcome Company
Cargill, Inc Corn Mill (90012075)
Cargill, Inc.
Certainteed Foundation
Chevron USA, Inc.
Chiron Corp.
Clorox Company Foundation
Cook Composites & Polymers
Corning Glass Works Foundation
Dow Chemical Company
Dow Chemical Company Foundation
Dow Chemical USA
Dow Corning Corp.
E I Du Pont De Nemrs Co.
Eli Lilly & Company Foundation
Exxon Co., USA
Exxon Education Foundation
Ford Motor Company Fund
The French Oil Mill Machinery
General Electric Foundation
General Motors Foundation
Givaudan-Roure Corporation
B F Goodrich Company
Goodyear Tire & Rubber Co.
Grace Foundation, Inc.
Ronald D. Harris Trust
Hoechst-Celanese Foundation
Honeywell Foundation
Hydrocarbon, Inc.
IBM Corp.
Industrial Risk Insurers
International Paper Co.
S. C. Johnson Wax Foundation
W. M. Keck Foundation
M. W. Kellogg Company
Kerr-McGee Corp.
Kraft General Foods, Inc.
Eli Lilly & Co
Lubrizol Foundation
Martin Marietta Corporate Foundation
Matheson Gas Products Foundation
Menasha Corporate Foundation
Mitsubishi Chemical Corp
Mobil Foundation, Inc.
NCR Foundation
National Starch & Chemical Foundation
Olin Corporation Trust
Omicon Chem, Inc.
Owens Corning Fiberglas
Oxytech Systems, Inc.
PPG Industries Foundation
PepsiCo Foundation
Pfizer, Inc.
Philip Morris Corporate Support Programs
Polaroid Foundation, Inc.
Polysis, Inc.
Premix, Inc.
Procter & Gamble Fund
Rohm & Haas Co
Saline Processor, Inc.
G. D. Searle & Company
Shell Companies Foundation
Shell Oil Compay
Edward E. Slower Fund
Texaco Inc Philanthropic Fund
Texaco Services, Inc.
USG Corporation Foundation
USX Corporation Foundation
Union Carbide Charitable Foundation
Faculty and Staff Members

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

Associate Professors
Jeffrey J. Chalmers
Karl Svanks (Emeritus)
S.T. Yang

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

Adjunct Professors
James Booth
S.C. Chen
Kent S. Knaebel

Visiting Professor
Yoshiyuki Yamashita

Visiting Scholars
Petr Komrzy
Shoujie Li
Vaclav Vanecek

Research Associate I
Peijun Jiang

Post Doctoral Research Associates
Ping Cai
A. Ghosh Dastidar
Kerang Han
Tao Hong
Shirdar Reddy
Jeenhuei Tsai
Jun-Tien Twu
T.M. James Wang
Chao Zhu

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

Bin Lu - Graduate Research Associate

* Editor of Annual Report
Graduate Students

Research Associates

Essam Abou-Zeida
Mukul Agarwal
Rajeev Agnihotri
Devamita Chattopadhyay
Shriniwas Chauk
Guo-Hua Chen
Yuen-Yuen Chiu
Paul Clark
Angel Garcia-Brione
Vishal Gauri
Andrew Goodaker
Lorinda Hancock
Yi He
Yan Huang
Zuwei Jin
Yujira Jirapino
Wai-Ming Kan
Mahesh Kumthekar
Paul Kust
Eung Lee
Sangwha Lee
Wen Li
Shu-Chien Liang
Tsao-Jen Lin
Bin Lu
Xukun Luo
Suhas Mahuli
Steve McVey
Shailesh Muzumdar
Jenn-Yeu Nieh
Nirajumar Patel
Vivek Rohatgi
Brian Schilf
Oron Schuss
Chih-Hsin Shih
Hojae Shim
Cincin Siswanto
Rajesh Srinivasan
Liping Sun
Yi Tseng
Raghavan Venkat
Rahul Vir

Chung-Min Wang
Yyh-Wen Yen
Timothy Zelmanski
Jiang-Ping Zhang
Liping Zhang
Hui Zhu

Mukul Agarwal and Angel Garcia-Brione, adjusting lighting for a flow visualization experiment.

Teaching Associates

Patricia Bauer
Pranay Gupta
Sengjoo Haam
Paul Jacyk
Xun Ma
Jack Marchio
Saputra
David Shackleford
Dede Surjadi
Huan Zhong

Administrative Associates

Paul Gudde
Todd Harris
## Sponsored Students

| Graduate Fellowships | David Miller  
|                     | Xindong Sun  
|                     | Robert Scheehle  
|                     | Bradley Wooleedge  
| Amoco                | Undergraduate Scholarships  
| John Clay            | Alcoa Foundation  
|                      | Audrey Moravek  
|                      | William R. and Doris M. Harris  
|                      | Evelyn Kim  
|                      | Thomas Knuth  
|                      | Konstantinos Metheou  
|                      | Christopher Voight  
| DuPont               | Engineering Research Center  
| Jose Garcia          | Ashland  
|                      | Thang Hoang  
|                      | Christopher Money  
|                      | Gary Sturgill  
|                      | Hoechst-Celanese  
|                      | Jason Galloway  
| Exxon Graduate       | Betz-Metchem  
| Paul Clark           | Christiana Hambadi  
|                      | Class of 1941  
|                      | Samir Paarikh  
|                      | Seth Gibbs  
|                      | Jeffrey Goddin  
|                      | Amanda Young  
| Arno C. Fieldner     | Dow Chemical  
| Utomo Utojo          | Angela Klemann  
|                      | Webster B. Kay  
|                      | Jakub Cech  
|                      | Lei Mei Low  
|                      | Jonathan Piazza  
| International Paper Co. | Proctor & Gamble  
| Jack Reese           | David H. George  
|                      | Alicia Collins  
|                      | Cynthia Lamareaux  
|                      | Lubrizol  
|                      | Cassandra Foltz  
|                      | Marla Langdon  
| Koftoll              | Dorothy J. and Herbert L. Fenburr  
| Jong-Hyun Kim        | Phillip Rancitelli  
| DeDe Surjadi         | Steven Schuman  
| National Science Foundation | David Schwartz  
| Donna Gardner        | Allan I. Gordon  
| Ellen Silva          | Mark Buzek  
|                      | Michael McGraw  
|                      | Jaideep Vaidya  
|                      | Proctor and Gamble  
|                      | Trent Yonkers  
|                      | Sultane Salim  
|                      | Todd Yunker  
|                      | D.J. Signal  
|                      | Lloyd Sweeney  
|                      | Lynn Swensgard  
|                      | Darren Tanner  
|                      | Paul Zola  
| Louis A. and Lucille Roberts | Ray Hammond  
| Randy Lytle          | Sean Crowley  
| Huan Zhong           | Kane Doerfler  
| Shell                | David Klepak  
| Michael Elsass       | Melissa Kobbe  
| Union Carbide        | Meredith Lewis  
| Glenn Wheeler        | David Lick  
| University Fellows   | Aldrich Syverson  
| Prakar Bansal        | Yani Angsani  
|                      | Min Joo  
|                      | Jeanine Lohman  
|                      | Michael triplet  
|                      | William H. Whirl  
|                      | Nicole Williams  

Row 1: Craig Olwert, Denise Cromes, Jason Long, Derek Heath, Mark Tripodi, John Martin, Rolland Neutzling, Mitch Kaminski
Row 2: Michael Peterson, Robert Brodkey, Cincin Siswanto, Xun Ma, Lisa Apel, Gwen Cheney, Jerry Spires, Tate Jenkins
Row 3: Liang-Shih Fan, Jeanine Lohman, Mark Menning, Darren Tanner, Trant Holt, Tonya Huff, Scott Horne, Michael Giffen
Row 4: Todd Morris, Matt DeWitt, Dale Vandersommen, Jacqueline Head, Min Joo, Joseph Rusckak
Row 5: Sror Kat-Kuoy, Miguel Garcia-Briones, Jay Nardi, Chris Money, Paul Nelson, Don Kennedy, Nilay Dalal
Row 6: Venkat Raghavan, Scott Goff, Robert Pfaffle, John Tritschuh, Webster Schooley
Row 7: Harry Hershey, Chris Wunker, Christopher Voight, Trent Shidaker, Paul Jacyk
AIChe Student Awards - Presented by L.S. Fan

Cincin Siswanto
The AIChe Outstanding Senior Award

Trent Shidaker
The AIChe Outstanding Senior Award

Cassandra Foltz
The AIChe Outstanding Junior Award

Mark R. Sippola
The AIChe Outstanding Junior Award

Jason Galloway and Audrey Moravek (not pictured)
The AIChe Outstanding Sophomore Award
Student Awards

Matthew DeWitt
The American Institute of Chemists Award
Presented by Professor Umit S. Ozkan

Jason Galloway
Hoechst-Celanese Outstanding Sophomore Award
Presented by Professor Jack L. Zakin

Utomu Utojo
Hoechst-Celanese Outstanding Teaching Associate Award
Presented by Professor Jack L. Zakin

Angela Kleman
Dow Outstanding Junior Award
Presented by Rich Brandon, B.S. '83
NOTICE:
Computer Users - OSU ChE has an Information (WWW) Page on the Internet

Check out the OSU ChE Home page at: Http://kcgI1.eng.ohio-state.edu/che/
The Ohio State University Home Page: Http://www.acs.ohio-state.edu

Some other useful links to WWW Servers:

WWW Virtual Library: Chemical Engineering: Http://www.che.ufl.edu/www-che/
American Institute of Chemical Engineers: Http://che.ufl.edu/www-che/AIChE
Computing and Systems Technology Division of AIChE: Http://control.che.g.nd.edu/cast10/
Computer Aids for Chemical Engineering Education: Http://che.utexas.edu/cache:80
American Chemical Society Publications Division: Http://pubs.acs.org
Placement of Chemical Engineering Graduates

**June 94**
**Doctor of Philosophy**
- No Graduates

**Master of Science**
- No Graduates

**Bachelor of Science**
- L. Apel, Kraft, IL
- T. Charske, PPG, OH
- G. Cheney, Majestic Paint, OH
- T. Cooke, Barney Corp., MO
- D. Gromes, Strathmore Paper Co., MA
- N. Dalal, No Information Available
- M. Dewitt, Grad School
- K. Ferguson, General Elec., OH
- M. Giffen, Crown Envir. Group, OH
- R. Gill, Aristech Chemical Corp., OH
- S. Goff, No Information Available
- D. Heath, Betz Labs., KY
- T. Holt, Roxanne Labs, Columbus
- L. Jenkins, No Information Available
- S. Johnson, Goodyear, OH
- D. Kennedy, Graduate School, Ohio Univ.
- J. Long, No Information Available
- X. Ma, Grad School, Ohio State Univ.
- J. Martin, Grad School
- R. Morris, AGA Gas, Inc., OH
- P. Nelson, OSI Specialties Inc., WV
- R. Neutzling, Goodyear, OH
- Z. Odel, No Information Available
- R. Pfaffle, OM Group, Inc., OH
- T. Richmond, Dow Corning, KY
- J. Rusak, Goodyear, OH
- W. Schooley, Ameri. Home Products, IA
- C. Siswanto, Graduate School, Ohio State Univ.
- J. Spires, DNV Technica, OH
- M. Tripodi, Kurtz Brothers Compost, OH
- J. Truttschuh, Goodyear, OH
- D. Vandersommen, No Information Available

**August 94**
**Doctor of Philosophy**
- K. Sravana, No Information Available
- C. Tritt, Univ. of Wisconsin, Milwaukee

**Master of Science**
- W. Halvorsen, No Information Available

**Bachelor of Science**
- J. Dawson, Artesian OH Employed
- J. Head, Grad School

- S. Kat-Kuoy, Allied Machine & Engineering OH Employed
- J. Lenczyk, Still Looking
- C. Olwert, Exxon LA Employed
- M. Peterson, No Information Available
- T. Shidaker, Grad School
- D. Webb, No Information Available

**December 94**
**Doctor of Philosophy**
- Y-Y. Chiu, No Information Available
- M. Garcia-Briones, International Papers AL Employed
- S. Muzzumdar, No Information Available
- N. Patel, General Electric, IN Employed

**Master of Science**
- J. Clay, Grad School
- D. Gardner, DuPont OH Employed
- T. Harris, RNT Inc. OH Employed
- P. Kust, Grad School
- F. Von Fahnestock, No Information Available

**Bachelor of Science**
- G. Horne, Ford Plastics & Trim, OH
- T. Huff, Andersen Consulting OH Employed
- P. Mount, Andersen Consulting OH Employed
- J. Nardi, No Information Available
- D. Tanner, Goodyear Tire & Rubber Co, TX Employed
- C. Voight, Battelle Columbus Operations OH Employed
- C. Wunker, No Information Available

**March 1995**
**Doctor of Philosophy**
- D. Chattopadhyay, No Information Available
- S. Lee, No Information Available
- J. Yen, No Information Available

**Master of Science**
- No Graduates

**Bachelor of Science**
- J. Lohman, Lexmark, KY
- C. Money, Lexmark KY
- M. Washburn, No Information Available
Kurt M. Dubowski is the George Lynn Cross Distinguished Professor of Medicine at the University of Oklahoma College of Medicine. He received the Bachelor of Science, Master of Science, and Doctoral degrees in Chemical Engineering in 1944, 1947, and 1949, respectively.

He began his career in chemical toxicology and forensic science by holding positions in Connecticut and Iowa hospitals and working simultaneously in coroners’ offices in Bridgeport and Des Moines. In 1958, Dubowski joined the clinical chemistry department of the University of Florida. In 1961, he became Director of the Clinical Chemistry laboratories of the University of Oklahoma Hospitals.

His research interests have involved various aspects of clinical chemistry and toxicology methodology, as well as many clinical studies with human subjects. Over the past 20 years, his research has also included studies on the behavioral toxicology of marijuana and other substances which affect the central nervous system and are subject to abuse.

The author of over 100 publications and a visiting professor at over a dozen universities, Dubowski has been elected Fellow of the New York Academy of Sciences, Fellow of the American Academy of Clinical Toxicology, and Distinguished Fellow of the American Academy of Forensic Sciences.
Publications and Presentations

Books and Book Chapters

Brodkey, R.S., "The Phenomena of Fluid Motions", first published in 1969, has been corrected and will be reissued as a Dover Publication in July 1995.


Referred Papers


Davis, J.F., Blau, G., and Reklatis, G.V., "Computers in Undergraduate Chemical Engineering Education: A Perspective on Training and Application", Chemical Engineering Education (in press)


Publications and Presentations


17
Publications and Presentations


Chattopadhyay, M.; Rathman, J.F.; Chalmers, J.C. Biotechnology and Bioengineering, in press "Thermodynamic Approach of Cell Adhesion to Air-Medium Interfaces"


Proceedings Publications


Publications and Presentations


Technical Reports


Yang, S.T., Yen, J.W., Marchio, J.L., "Quasi-Elastic Light Scattering Studies of Protein Refolding and Aggregation", final report to the National Science Foundation, February 1994

Yang, S.T., Huang, Y., Jin, Z., Zhu, H., "Calcium Magnesium Acetate at Lower-Production Cost, Production of CMA Deicer from Cheese Whey", Phase I interim report to Federal Highway Administration and New York State Energy and Development Authority, 100 pages, May 1994


Patents


PRESENTATIONS

A. Invited Lectures, Seminars and Short Courses


Brodkey, R.S., "Image Processing and Analysis in Fluid Dynamics Research", Seminar at the Applied Mechanics Department, University of Illinois, March 24, 1994

Brodkey, R.S., "Image Processing and Analysis in Fluids in Chemical Engineering Research", The W.W. Clyde Seminar at the College of Engineering, University of Utah, October 25, 1994

Brodkey, R.S., "Image Processing and Analysis in Fluids and in Chemical Engineering Research", Seminar in Chemical Engineering at Clarkson University, March 23, 1995

Shu-Chien Liang, taking measurements of flow properties in multi-phase systems.
Publications and Presentations


Fan, L.S., "Fluidized Bed Bioreactor," Univ. of Queensland, Australia, Sept. 20, 1994


Koelling, K.W., K. Ishii, "Life-Cycle Design and Polymer Degradation Model", Life Cycle Design Meeting, Fawcett Center, Ohio State University, June 9, 1994


Lee, L.J., Department of Chemical Engineering, Tsinghua University, Beijing, China, June (1994).

Lee, L.J., Department of Chemical Engineering, East China Science & Technology University, Shanghai, China, June (1994).

Lee, L.J., Department of Chemical Engineering, Zhejiang University, Hangzhou, China, July (1994).

Lee, L.J., Research & Development Center, Bell Helicopter Inc., Fortworth, TX, August (1994).


Lee, L.J., Department of Chemical Engineering, McMaster University, Hamilton, Canada, September (1994).

Lee, L.J., Department of Chemical Engineering, University of Akron, Akron, OH, October (1994).


Ozkan, U.S., "Selective Catalytic Reduction of Nitric Oxide with Ammonia-- Mechanistic Investigations", Princeton University, Department of Chemical Engineering, Princeton, New Jersey, presented March 1994


Publications and Presentations


Rathman, J.F., Seoul National University, Department of Chemistry Education, Seoul, Korea, (1994)

Rathman, J.F., Seoul National University, Department of Chemical Engineering, Seoul, Korea, (1994)

Rathman, J.F., Korean Advanced Institute of Science and Technology (KAIST), Taijon, Korea, (1994)


Yang, S.T., "Novel Processes for Organic Acids Production from Whey", Annual Food and Dairy Industries Conference, Ohio State University Department of Food Science and Technology, Columbus, OH, February 15-16, 1994


Yang, S.T., "Ecological Processing for Value-Added Products from Agricultural Commodities and Food Processing Wastes", presented at the meeting with The Japanese Research and Development Association for Ecological Processing in Food Industry, Ohio State University, Columbus, OH, November 7, 1994


Yang, S.T., "A Novel Fibrous Bioreactor for Bioprocessing", presented to member companies of the Emission Reduction Research Center, State College, PA, November 30, 1994


Zakin, J.L., "Recent Developments in Cationic Surfactant Drag Reduction", Technion - Department of Chemical Engineering (1994)

Zakin, J.L., "Recent Developments in Cationic Surfactant Drag Reduction", Ben Gurion University (1994)


B. Additional Paper Presentations


Brodkey, R.S., Papers presented by co-Authors at the National A.I.Ch.E. meeting, San Francisco, November 1994


Fan, L.S., P. Jiang, T.-J. Lin and X. Luo, "Flow Visualization of High Temperature and High Pressure Three-Phase Fluidization Bed
Publications and Presentations


Koelling, K.W., J. Clay, "Improved Biocompatibility of Polymer Coated Stents", Graduate Student Competition, Ohio State University, April 23, 1994

Koelling, K.W., P. Huzyak, "Influence of Polymer Rheology on the Gas-Assisted Injection Molding Process", ERC/NM Technical Review Committee Meeting, April 19, 1994


Suhas Mahuli, adjusting high temperature reactor for SO$_2$ capture studies.
Publications and Presentations


Gardner, D.K., Ozkan, U.S., "Use of Alkyl Halides to Probe Reaction Networks for Oxidative Coupling and Partial Oxidation of Methane" to be presented at the Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 1994


C. Organizers and Session Chairs of National and International Meetings

Brookley, R.S., Symposium Chair for "Symposium on the Measurement of Fluid Fields" at the US National Congress on Theoretical and Applied Mechanics, Seattle, WA, June 26-July 1, 1994

Brookley, R.S., Organized 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., Session co-chair, AIChE Spring National Meeting, Atlanta, April, 1994

Davis, J.F., Session co-chair, AIChE Fall National Meeting, San Francisco, November 1994


Davis, J.F., Co-Chair, 9th IEEE International Symposium on Intelligent Control, Columbus, OH, August 1994

Davis, J.F., Co-Chair, CACHE Corporation and CAST Division of AIChE, "Intelligent Systems in Process Operations", Snowmass, CO, July 1995

Koelling, K.W., Conference Chair and Organizer, International Conference on Gas-Assisted Injection Molding Technology, ERC/NNSM at Ohio State University, Nov., 1994


Lee, L.J., Session Organizer and Chairman, 10th Int. Polymer Processing Society Conference, Akron, OH


Ozkan, U.S., "Symposium on NOx Reduction" 207th National Meeting of the American Chemical Society, Petroleum Chemistry Division, San Diego, CA, March 1994

Tomasko, D.L., Session Co-Chair, AIChE Spring National Meeting, April, 1994

Tomasko, D.L., Session Co-Chair, AIChE Annual Meeting, Nov. 1994
Publications and Presentations

Yang, S.T., Co-chair and organizer, session on "Food Engineering IV: Biotechnology in Food Processing", AIChE Annual Meeting, San Francisco, November 13-18, 1994

Yang, S.T., Meeting organizer and host for the The Japanese Research and Development Association for Ecological Processing in Food Industry (14 Japanese company delegates), Ohio State University, November 7, 1994


Zakin, J.L., Chair, Organizing Committee for Local Arrangements for 1997 Annual Meeting of Society of Rheology to be held at The Ohio State University

D. Editorial Boards, National Committees and Other Professional Activities


Brodkay, R.S., ABET/AICHE Chemical Engineering Visiting Accreditation Panel, 1984-to date

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


Davis, J.F., Board of Trustees of the CACHE (Computer Aids in Chemical Engineering) The Board of Trustees for CACHE consists of 21 academic and 7 industrial representative from the United States and Canada since 1987

Davis, J.F., Chair of the Board of Trustees of the CACHE (Computer Aids in Chemical Engineering) The Board of Trustees of the CACHE consists of 21 academic and 7 industrial representative from the United States and Canada since 1987


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

Davis, J.F., External Examiner for PhD dissertation on knowledge-based diagnostic systems, University Trondheim, Trondheim, Norway, December 1994

Davis, J.F., Director, CAST (Computing and Systems Technology) Division AIChE (American Institute of Chemical Engineers), since 1991

Davis, J.F., Associate Director for Research Computing, Academic Technology Services, Ohio State University, 1992 to present

Davis, J.F., Coordinator and representative of a university-wide computing plan for research and instruction for the Ohio State University, since 1993

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


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

Fan, L.S., Founding Member and Chairman, Particle Technology Forum - An Affiliated Organization of AIChE (1992 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 (1992-date); Member (1989-date), AIChE National Program Committee, Area 7e - Multiphase Flow


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 of the Scientific Committee, First International Particle Technology Forum (3rd World Congress on Particle Technology), Denver, August 17-19 (1994); Repertoire for the Fluidization and Transport Phenomena program.

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


Fan, L.S., Elected Member of Honor Society of Phi Kappa Phi, April 8, 1994.

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

Fan, L.S., Member, the Scientific Committee, 2nd International Conference on Multiphase Flow '95-Kyoto, to be held on April 3-7, 1995 in Kyoto, Japan.
Publications and Presentations

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


Lee, L.J., Coordinator of Polymer Processing Thrust Area, Engineering Research Center for Net Shape Mfg, Ohio State Univ., 1988-date

Lee, L.J., Evaluator of NSF sponsored "Center for Molecular and Microstructure of Composites" at Case Western Reserve University and University of Akron.


Lee, L.J., Member of Technical Program Committee: Plastics Joining Special Interest Group, Society of Plastics Engineers, 1993-date

Lee, L.J., External Reviewer for Ph.D. Dissertation on Reactive Extrusion, McGill University, Canada, 1994

Lee, L.J., Foreign Proposal Reviewer: Kuwait University, Hong Kong Research Grants Council

Lee, L.J., Consultant of the International Research Cooperation Program, National Cheng Kung University, Taiwan, 1992-94

Lee, L.J., Special Consultant for Economic and Technical Exchanges, Ministry of Foreign Economic Relations and Trade, China, 1994

Lee, L.J., Reviewed proposals for NSF, ACS Petroleum Chemistry, DOE


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


Yang, S.T., Served on the review panel for National Science Foundation, Academic Research Infrastructure Instrumentation Grant 1994

Yang, S.T., Reviewed over 20 proposals for National Science Foundation, U.S. Dept. of Agriculture, Dept. of Energy, Hong Kong Research Grants Council, etc. 1994

Yang, S.T., Reviewed over 10 journal papers for Biotechnology & Bioengineering, Biotechnology Progress, Industrial & Engineering Chemistry Research, J. Food Science, and J. Food Engineering, 1994

Yang, S.T., External reviewer for Ph.D. dissertation "Development of a FIA/WJE System for Fermentation Monitoring" Yu-Liang Huang, National University of Singapore, 1994

Yang, S.T., Member of Board of Directors, The Ohio Chinese Academic and Professional Association, 1992-1994

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

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

Zakin, J.L., American Chemical Society, Petroleum Chemistry Award Canvassing Committee Professional Engineer

E. Honors

Brodkay, R.S., W.W. Clyde Chair of Engineering, Univ. of Utah, 1994

Brodkay, R.S., North American Mixing Forum Award for Outstanding Research, Division of AIChE, 1994

Brodkay, R.S., Annual AIChE meeting San Francisco, two sessions held in his honor for his 65th birthday, 1994

Davis, J.F., Elected to CACHE (Computer Aids in Chemical Engineering) Executive Committee, July 1994, CACHE is a non profit corporation comprised of 21 academic and 7 industrial trustees from the US and Canada commissioned to advanced computing technologies in academia and industry

Fan, L.S., 1994 Thomas Baron Award in Fluid-Particle System from Particle Technology Forum of the American Institute of Chemical Engineers.

Fan, L.S., 1994 American Institute of Chemical Engineers' Fluid-Particle Systems Plenary Lectureship Award.


Fan, L.S., The Kramers Fysisch Technologisch Lectureship of Delft University of Technology on the occasion of its 45th anniversary (ninth recipient award made once every five years).

Fan, L.S., 1994 Institution Eminent Speaker Award from the Institution of Engineers, Australia.

Lee, L.J., outstanding Session Organizer Award, AIChE Summer Meeting, Seattle, 1994


Ozkan, U.S., W.M. Keck Foundation Engineering Teaching Excellence Award (National Award) 1994


Zakin, J.L., Outstanding Educator of the Year Award from Ohio Society of Professional Engineers

Zakin, J.L., Senior Fulbright Research Fellow

Zakin, J.L., Visiting Professor of Chemical Engineering at Technion - Israel Institute of Technology
Theses

PhD. Theses

Y. Chiu, B.S. (National Taiwan University); M.S. (Kansas State University); Experimental and Theoretical Analysis of Free Radical Crosslinking Polymerizations.

A. Garcia-Briones, B.S. (Ingeniero Autonomo Univ. of San Luis Potosi); M.S. (The Ohio State University); Studies on the Characterization of the Hydrodynamic Environment in Sparged Animal Cell Cultures.

S. Muzumdar, B.S. (Maharaja Sayajirao University); M.S. (Ohio State University); Rheological, Kinetic, and Volumetric Characterization of Unsaturated Polyester Resins.

N. Patel, B.S. (University of Bombay); M.S. (Ohio State University); Micro Scale Flow Behavior, Fiber Wetting and Void Formation in Liquid Composite Molding.

K. Sravana, B.S., M.S. (Indian Institute of Technology); Diagnostic Knowledge-Based Systems for Batch Chemical Processes: Hypothesis Queuing and Evaluation.

C. Tritt, B.S. (Ohio State University); M.S. (Ohio State University); An Investigation of Thermal Swing Adsorption Process for the Regeneration of Renal Dialysate.

J. Yen, B.S. (National Taiwan University); M.S. (National Tsing Hua University); Denaturation and Aggregation of Beta-Galactosidase During Cross-Flow Ultrafiltration.

Master's Theses

J. Clay, B.S. (University of Toledo); Use of Polyetherurethane Coating to Improve the Biocompatibility of Vascular Stents.

D. Gardner, B.S. (Youngstown State University); The Oxidative Coupling of Methane Over Alkali and Palladium-Promoted Manganese Molybdate

T. Harris, B.S. (Ohio State University); The Partial Oxidation of C5 Hydrocarbons Over Unpromoted and Alkali Promoted V205.

W. Havlorsen, B.S. (Case Western); Machine Interpretation of Complex Data Shapes.

P. Kust, B.S. (Purdue); Synthesis of N,N-Dimethyldodecylamine N-Oxide Using Micellar Autocatalysis.

Saputra, B.S. (Ohio State University); The Numerical Characteristics and Simulation procedure for Coal Combustion Modeling.

F. Von Fahnstock, B.S. (California State Polytechnic University); Full-Scale Baseline Performance Evaluation of the Agro-Kinetics Composting System.

Jacque Gates and Mitch Kaminski, preparing permeability measurement experiments for composite materials.
### Current Academic Status and Capsule History

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<td><strong>Graduate Student Applications</strong></td>
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*Estimated Spring '95
# Anniversary Classes

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<tr>
<td>*Harry Mitzenhandler</td>
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<tr>
<td>*Clifford R. Athy</td>
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<td>Robert A. Fisher</td>
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<td>*Philip M. Foote</td>
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<tr>
<td>Marion W. Harman</td>
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<tr>
<td>*Clare S. Martin</td>
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<tr>
<td>*Lyle J. Michael</td>
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<td>*Gordon D. Patterson</td>
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<td>*James T. Robson</td>
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<td>*Howard G. Cooper</td>
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<td>*Anthony George</td>
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<td>*Harold L. Hamilton</td>
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<td>Glendon L. Miller</td>
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<td>*John C. Pearse</td>
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<td>Napoleon A. Agapetus</td>
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<td>*Lawrence A. Bedford</td>
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<td>George S. Bonn</td>
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<td>Delwin Kaufman</td>
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<td>Harold C. Klassen</td>
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<td>*Norbert K. Koebel</td>
</tr>
<tr>
<td>*Wen-li Liao</td>
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<tr>
<td>Napoleon A. Agapetus</td>
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<td>Clay H. Aneshansley</td>
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<td>Jack P. Burch</td>
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<td>*Azro J. Cherry, Jr.</td>
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<tr>
<td>Robert S. Atkinson</td>
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<td>Felice J. Celli</td>
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<td>Robert E. Albert</td>
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<td>Theodore B. Burkholder</td>
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<td>Darren E. Calvin</td>
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<td>David R. Hamilton III</td>
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<td>*Sharadkumar C. Hansoti</td>
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<td>David W. Hardesty</td>
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<td>*James R. Harrison</td>
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<tr>
<td>Ellis L. Hawk, Jr.</td>
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</table>

*John R. Hill |
Preston L. Hill |
Richard H. Immel |
Clyde H. Kearn, Jr. |
*Robert J. King |
*R. F. Kelley |
Harold E. Knowton |
William L. Larcamp |
Robert W. Laurell |
William C. Leavitt |
Wayne H. Lee |
Charles D. Lindberg |
Carl J. Lyons |
Ju Luann Ma |
Frederick A. MacDougall |
Sanatkumar S. Majumdar |
Raymond J. Mayfield, Jr. |
Hobart C. McGinnis |
John R. Milne |
Ralph I. Mitchell |
*Vipinchandra C. Nauvati |
Thomas D. Nevens |
Louis J. Nowacki |
Kashihai D. Patel |
Jewel H. Perkins, Jr. |
Donald A. Plantz |
Joseph M. Quattlebaum, Jr. |
Ramwills J. Rathi |
Cherkupalli C. Reddi |
Harold F. Rein, Jr. |
Franklin A. Retzke |
Verne R. Renehart |
R. Brown Ritter |
John D. Rogers, Jr. |
Earl C. Rosenberger |
Bernard Rubin |
Alvin M. Sabloff |
Leo F. Salzburg |
Jean M. Scharenberg |
Richard L. Scott |
Frank E. Sennett |
Berman J. Shaffer |
Ralph E. Sieber |
Earl C. Summer |
Julius Teres |
Robert E. Thompson |
James J. Uebelhart |
Joseph P. Verkaart |
Louis J. Weiss |
Paul L. Wells |
David W. Wilson |
Fredrick H. Winterkamp |
Alfred E. Withrow |
*Bernard T. Wolfson |

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<tr>
<td>William F. Avery</td>
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<td>Allen L. Barnes</td>
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<td>Charles L. Benford, Jr.</td>
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<td>*Mahendra N. Bhatt</td>
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<td>John R. Blunden</td>
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| 1970 | Paul C. Auh  
Benjamin Choy-Moc  
Lewis P. Clark IV  
Paul E. Cooke  
George E. Cressman, Jr.  
James F. Dietz  
Bradford F. Dunn  
Raul E. Fajardo  
*Gary W. Good  
Terry S. Groh  
David R. Grove  
David C. Grulke  
Carlos G. Guttmann  
*Donald C. Haberkost  
Aubrey J. Hafetz  
Gary Q. Johnson  
A. Jay Kaplan  
Charles A. Klingensmith  
David O. Kutscher  
Herbert R. Lauder, Jr.  
*Americo L. Larez  
Michael S. Lerch  
Michael L. McMillan  
Mukul M. Mehta  
Michael L. Nevin  
Walter R. Nixon II  
Doyle R. Painter, Jr.  
*Anukumar C. Patel  
Gautam A. Patel  
John D. Rensel  
Steven E. Russell  
William P. Skinner  
James N. Stambolis  
Richard B. Strait  
Fredrick A. Teeters  
Rosa Uy  
Danley B. Wolfe  
Harry J. Yeh |
| 1975 | Kolajo A. Afobari  
Paul C. Anh  
Paul G. Belcher  
Charles T. Burwell  
Sun I. Chen  
Hyon Sam Cho  
Michael T.F. Chow  
Gary S. Cullen  
Jacob O. Dingllian  
Louis R. Dossie  
John T. Erikson  
Gary L. Falady  
Richard D. Faller  
John R. Farison  
Robert N. Flagella  
Wayne R. Fontaine |
| 1980 | William M. Fugel  
Bahman Ghorashi  
Stephen L. Grant  
Eric A. Grulke  
Valerie L. Hershberger  
*William C.-S. Hu  
Thomas S. Johnson  
James A. Keen  
Fredrick C. Knopf  
Steven P. Lankton  
Ted W. Marker  
Wendell Mayo, Jr.  
Dennis L. McGinn  
John E. Myers  
Curt E. Nethero  
Martin R. Okos  
Krishnan R. Pandalai  
Simoni Papadimitriou  
Michael A. Patterson  
Dean H. Paulos  
William D. Peeples  
Sami A. Shubaily  
Yoon S. Song  
Robert B. Tait  
James R. Walker  
James S. Watt  
Johnny O. Wright |
Anniversary Classes

William A. Jones
Kyle E. Kennedy
George J. Krieski
Joseph E. Legenza
Richard L. Mayer
Larry M. Miller
Michael Moore
Carlos O. Mora-Perez
Laura L. Murphy
Kunle Ogunde
Mark C. Oliver
Ruben D. Alfonzo Paez
Keon Y. Park
David M. Pentenburg
Michael H. Peters
Joseph Petrarca, Jr.
Sanford L. Phillips
Gary R. Prok
Stephen R. Reiling
Mary S. Reynolds
James N. Rigano
Cynthia A. Scheetz
Daniel R. Schwaegerle
Wilmer R. Semoce
Pankaj P. Shah
Jeffrey L. Shifflett
Gary D. Shives
Ellen M. Silva
Christine A. Sink
Peter E. Steacy
Timothy L. Strickler
Wayne G. Studer
Charles W. Theruing, Jr.
Michael A. Tomes
Jim Y. Tou
Susan S. Vallera
David G. Vutetakis
Debra S. Warfield
Mark R. Warfield
Yaw-Chung Yang
Mark J. Zeto
Kent W. Zimmerman
Ronald R. Zitzman

Hsuan Chang
Shu-Wu Chiu
Pong Chung Chung
Eric D. Culp
Gary S. Datsko
John L. DeFilippo, Jr.
Laura J. DeMoor
Keith H. Dricoll
Andrea G. Dunham
Abdolreza Ebrat
Laertis Economikos
Najila Emadi
David E. Engler
Roger G. Facer
Jyh-Dar Fan
Chunchang Fang
Andrew E. Farell
Roger L. Frye
Alan G. Garascadden
Mary R. Gaynes-Bloom
Melhard Ghoferi
Maria C. Grosser
Charles A. Hall
Christina L. Hall
Scott G. Harris
David C. Harsh
Mark J. Hogan
Steven P. Hughes
Shyh-Jye Hwang
Rongcheng Jean
Timothy A. Johnson
Brian D. Jones
Kelly E. Jones
Chan-Sul Jung
John C. Kayser
Leila Kiae
Hong Pil Kim
Carl W. Kretchman
Adel Krichene
Michael F. LiCause
David A. Lodwick
David M. Love
Scott E. Lugibih
Jonathan Macar
Patricia B. Martinelli
Ronald W. Martin, Jr.
David A. May
Harve W. Mobley III
David J. Mooney
Charles D. Moss
Stig Mowatt-Larsen
Melody L. Munson-McGee
Douglas R. Myers
David W. Nolen
Kunle Ogunde
Kirsten J. Petrie
Lananh Thi Pham
Barbara A. Pierce
Timothy A. Pierce

*Robert A. Richard
Max K. Roper
Kathleen A. Shannon
Perry L. Sheldon
David B. Shields
Gyung-Ho Song
Richard T. Strait
George W. Stuttman
Kyle W. Sulcibarger
Paul A. Taigandes
Wen-Tzung Tang
Terrence A. Thaker
Randolph E. Treudler
Bruce M. Tyllock
Penny J. Vanek
Sharyn S. Veley
Mark E. Vetter
David G. Vutetakis
Kuan-Jong Wang
Jeffrey A. Watson
Lori J. Wellendorf
John W. Welsh
Virginia S. Wheeler
Terry V. Wilcox
Michael J. Yost

1990
Richard D. Blasick
Patricia B. Letzacker
Karl J. Borsody
Yepping Cai
Scott J. Cain
Michael E. Caskey
James P. Dangaran
James A. Davis
Larry D. Doza
Jacqueline Dusey
Kevin P. Fenton

Thomas H. Plegue
Gregory R. Glick
Seth D. Goldblum
Martha A. Gossett
Jennifer L. Grashel
Seungjoo Haam
Craig M. Kehres
Christopher Kiehl
Mark R. Kinkelar
Frank J. Kizlik
Darrin L. Lacheta
James V. Lombardi
Kara B. Long
Jyunda Lyau
Timothy F. Mathies
Zaini M. Jai
Michael D. Moore
Rebecca A. Mullins
Shailesh V. Muzumdar
Jenn-Yeu Nieh
William B. Northup
Paul R. Peck
Mark J. Perry
Thomas A. Rich
Derrick K. Rolans, Sr.
Stephen H. Rosansky
James M. Ryan
James H. Sawyer
Steven G. Sech
Tannim M. Shoemaker
Julio C. Silva
Vadakapat C. Tirumalai
Minh-Tuyet T. Tran
Lisandro Trevino
Kim K. Trinh
Scott A. Westfall
Daryl M. Westfield
Bernard E. Wilkerson
Stephen E. Wilson
Alex C. Woravka
Richard C. Zech

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

Class of 1934
Clarence N. Fisher and Edward Slawter

Class of 1939
Willis E. Jackson

Class of 1944
William R. Harris, Marshall C. Kidd,
Edwin E. Smith, Wallace L. Bostwick,
and David N. Clark

Class of 1949
George R. Lewis, Kurt M. Dubowski,
and John B. Martin
Anniversary Class Pictures

Class of 1954
Richard Dudley

Class of 1959
James O. Albery

Class of 1969
Robert D. Litt, John W. Toussant, and Smith E. Howland

Class of 1974
Kenneth R. Cox and Thomas B. Hackett

Class of 1979
John F. Krein
Chemical Engineering Alumni Information

Alumni News

PERSONAL
Name __________________________ Spouse __________________________
Address ______________________________________________________
City __________________________ State __________________________ Zip __________________________
Children __________________________

COLLEGE
Degree __________________________ Major __________________________ Month/yr __________________________
Degree __________________________ Major __________________________ Month/yr __________________________

PROFESSIONAL
Occupation ______________________________________________________
Most Recent Employer __________________________________________
Department ____________________________________________________

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

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