

NEWSLETTER

Department of Metallurgy and Mining Engineering

University of Illinois at Urbana-Champaign

February 1978

Undergrad Program Growth

Undergraduate enrollment has continued the pattern of growth that started in 1974 when our enrollment was at a low of 46 students. In the following years, our enrollment has been constantly increasing, reaching a total of 84 students in the fall semester of 1977. This growth of over 80 percent is more than twice the rate of growth of the College. While part of this increase has been due to increased interest in engineering careers, our strong recruiting efforts based on financial aid grants supported by industry have been the most important factor in stimulating interest in careers in the metals industry.

We are proud of the fact that not only has the number of students increased, but so has their quality. Four of this year's graduating class of 25 are members of Tau Beta Pi, and 12 have grade-point averages over 4.0. The last four classes of freshmen admitted to metallurgy had ACT composite test scores of just under 28.

For comparison, scores for all curricula in the College averaged 27, and for the entire UIUC campus the average was 25, while the Chicago Circle campus was about 19.

There are other changes in the character of the student population that some alumni wouldn't recognize. Four of this year's graduating class are women, and there are 13 women enrolled in all classes. There has also been growing interest in cooperative education (alternate semesters between school and an industrial work assignment), and we now have 10 metallurgy students in co-op programs.

This continued pattern of growth and improvement would not be possible without financial support of those industries that realize the importance of a strong metallurgy program at the University, and the need for a vigorous recruiting effort to maintain it. ●

New Staff Members in Polymers

Dr. Richard Wool joined our staff last fall as an assistant professor in another step in the development of the polymers program in the department.

A native of Ireland, Dr. Wool received his B.S. from the National University of Ireland in Cork. He came to this country in 1970 and completed his M.S. and Ph.D. at the University of Utah. Before accepting the position here, he spent two years as an assistant professor at the City College of New York.

His research interests involve the molecular mechanics of polymers and their deformation and fracture mechanisms. Richard taught an introductory course in polymers this fall to a large class of about 40 students, which was equally divided among metallurgists, chemists, and chemical engi-

neers. This semester, he will teach a laboratory course, Polymers Characterization. Two courses at the graduate level are also planned, dealing with the amorphous state and crystalline state, respectively.

The polymers program is attracting students from a wide range of interests, and Richard is expected to play a major role in the growth of this program, along with Richard Gaylord, Ted Rowland, and an additional staff member whom we are now seeking. ●

Harold Walker, our department head from 1938 to 1953, has returned to the area, and is living in retirement at RR 1, Bennett Drive, Monticello, IL 61856.

RESIGNATIONS

Professor Ronald Yeske has resigned his position as assistant professor effective January 1, 1978, and has accepted a position with Westinghouse. He will join the power generation division of their Pittsburgh research laboratory. Ron's principal work there will be involved in solving materials problems in large power-generating equipment.

Although Ron had been with our department only four years, he had become an important part of our teaching and research programs. His interests were in the general area of mechanical properties, and he had developed a facility to study the effect of cyclic stress on high-temperature creep. In addition, he was an important participant in the department's program on hydrogen embrittlement.

Ron had also developed a reputation as an outstanding teacher. In addition to teaching our required course in mechanical metallurgy, he had developed two new courses: Radiation Damage, and Fracture and Failure Analysis. These were popular electives in technical areas of great concern to metallurgists.

Professor Harry Cook resigned last August to take a position with Ford Motor Co. research laboratories in Dearborn. Harry had worked for Ford prior to coming to Urbana-Champaign in 1972. While at UIUC, Harry's appointment was shared between metallurgy and mechanical engineering. His interests ranged from the very practical (engineering materials in transportation, especially friction materials and braking systems) to the very theoretical (thermodynamics of spinodal transformations).

Ron and Harry will be sorely missed, not only because of the excellence of their teaching and research, but also because we enjoyed the warmth and friendliness of the Yeske and Cook families. ●

DEPARTMENT NOTES

A special seminar is planned on April 5, 1978, to honor Paul Beck. He will give a lecture on mictomagnetism (spin glass alloys) which reviews some of his work of recent years in this area of research. Paul has also just completed a review of this field for publication in *Progress in Materials Science*. A number of Paul's former students in the area are planning to join the department in recognizing his exceptional contributions to metallurgy, and we invite all of Paul's friends and colleagues to come to Urbana for this occasion. The mandatory retirement age forced Paul's retirement last year, but his vigor and continued interest in his work brings him to the office every day and he continues business as usual. ●

If you think you've been busy, reflect on the many ways in which Charlie Wert has served his profession lately. He serves on advisory committees to the Materials Research Laboratory of Northwestern University and to the Department of Materials Science of the Polytechnic Institute of New York. He is a member of the Committee on Investigators in Materials Research at Small Universities of the National Academy of Sciences and also of an international committee concerned with developing bibliographic data and publications on binary and ternary phase diagrams. This committee will attempt to correlate phase diagram publications in the U.S. and Canada, as well as in England, Germany, U.S.S.R., France, and Japan. He is also chairman of ASM's Education Committee.

Charlie and Lucy spent the first three weeks of July in Japan where he attended a meeting on internal friction in solids in Tokyo. Lucy visited many libraries and government agencies concerned with information management in Japan. Lucy, incidentally, has left the library research area, and is now librarian at the UIUC Chemistry Library with the rank of professor of library administration. In December, Charlie traveled to Stuttgart, Germany, as a member of a committee to advise the Max Planck Society about future programs of the Institut für Werkstoffwissenschaften. ●

Continuing education has received a great deal of emphasis in recent years, as practicing engineers see the need for keeping up with developments in their field, and to prepare themselves for changing responsibilities. The UIUC College of Engineering has attempted to respond to requests for course offerings in a variety of ways. The most recent development in the evolution of methods to deliver off-campus education is the "electronic blackboard." By this scheme, a regular on-campus course is taught in a studio classroom which features two-way audio communication with several sites throughout the state combined with a "blackboard" which transmits on TV monitors.

Last fall, our course in engineering alloys was taught to 25 local students, with 12 engineers at Caterpillar simultaneously taking the course in Peoria. This spring, we are planning to offer the corrosion course similarly.

Use of this system is expected to increase, since regular courses can be taken at different locations at the same time, and does not require time-consuming travel by faculty to each of several locations throughout the state. ●

Professor David Lieberman was guest of the Ukrainian Academy of Science while presenting a paper and participating in the International Conference, "Martensite Transformations," held in Kiev last May to commemorate the 50th anniversary of Kurdjumov's first paper on martensite, and the 30th anniversary of the discovery of "thermoelastic" martensite by Kurdjumov and Khandros at the Kiev Metallurgical Institute.

Dave has been named a Sigma Xi National Lecturer for the 1977-78 year. Sigma Xi, honor society for research, has sponsored this program for 40 years to give local chapters the opportunity to hear nationally known scientists discuss areas of current research in a manner appropriate for interdisciplinary audiences. ●

Professor Marvin Wayman's efforts and accomplishments in the field of phase transformations have brought him wide recognition. He has been informed that he will receive the Mathewson Gold Medal of the Metallurgical Society of AIME. The pre-

sentation will be a part of the annual AIME meeting in Denver in late February. The medal is bestowed upon an author of a paper considered to be the most notable contribution to metallurgical science in the previous year. The American Society for Metals has also honored Marv by naming him a fellow of the society in 1977. He has also been selected to present the annual Zay Jeffries Lecture of the Cleveland Chapter of ASM; these lecturers are chosen on the basis of their contributions to progress in metallurgy. Among his other activities, Marv is chairman of the ASM/AIME Joint Commission on Metallurgical Transactions and program chairman for the 3rd International Conference on Martensite (ICOMAT-3) to be held in Boston in 1979. ●

The American Society for Metals, through the influence of its education committee, chaired by Charlie Wert, has established a competitive scholarship program to stimulate student interest in metallurgy. One of our students, Patrick Murzyn, of Lansing, Ill., was one of the first group of students to win this award, a grant of \$500.

The local Sangamon Valley Chapter of ASM has established two awards to be given annually to seniors in metallurgy. One recognizes high academic performance and the other outstanding achievement. The first awards were given in spring 1977 at the chapter's annual Student Night, and were won by Tom Bond and Terry Myers, respectively. These awards were a choice of volumes from the *ASM Handbook* series. ●

Professor Howard Birnbaum made a round-the-world trip in June and July attending a meeting on hydrogen in metals in Paris, giving a series of lectures in Israel, and attending a meeting in Tokyo on internal friction in solids. Howard has been named a member of the advisory committee to the Metallurgy Department of the University of Notre Dame. ●

ALUMNI NOTES

Charles Boley, '35, Ph.D. '47, retired from the ERDA Grand Forks Energy Research Center in Grand Forks, N.Dak. last year. Chuck spent a number of years with the U.S. Army before joining the Bureau of Mines in 1956. A year later, he moved to their Denver Coal Research Lab, and transferred to the Grand Forks lab in 1965 when these facilities merged. Chuck and his wife plan to live in Denver for their retirement.

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We are happy to report that, contrary to the entry in the last edition of our alumni directory, John Bell, '43, is alive and kicking and doing business as usual at Western Electric's Hawthorne plant.

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Harry Czyzewski, '41, M.S. '50, president of MEI-Charlton, Inc. in Portland, Ore., received an award for engineering excellence from the American Consulting Engineers Council for his work in determining the cause of brittle failure of an interstate highway bridge in Oregon. Harry's thorough study attributed the failure to complex interactions among a number of factors, and resulted in revisions to the American Association of State Highway and Transportation Officials standard specifications for bridge design. Harry was nominated last July as president-elect of the American Council of Independent Laboratories, an association whose purpose is to deal with business and ethical development of independent scientific laboratories.

*

Burton Person, '47, has been elected president of Hinderliter Energy Equipment Corp., Tulsa. This company makes equipment for the petroleum industry, as well as operates one of the largest heat treating facilities in the Southwest. Burt received his M.B.A. from Harvard after leaving Illinois with an M.S. in management, and has held executive positions with a number of companies including McKinsey & Co., Singer, and CBS. Most recently he was vice president of corporate development for The Resource Science Corporation.

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Bill Apblett, '48, has been appointed vice president and chairman of the Technical Directorate of Foster Wheeler Development Corp. Bill con-

tinues as chief metallurgist of F-W's Carteret facility. He has been with the company since 1954, and was formerly at the Naval Research Lab in Washington, D.C.

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Among the newly named fellows of ASM are these names. Keith Lampson, '49, with Marquardt Corp. in Van Nuys, Calif., was recognized for his contributions to the development of alloys for use in propulsion systems. M. N. Partharasthi, Ph.D. '60, was noted for his research on ductile iron and recrystallization textures as well as innovative approaches to problems in production, research, and development. Also named was Professor Marvin Wayman for his important work on phase transformations.

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Roy Brodnick, '49, M.S. '51, must have some kind of record for long-distance commuting: his new job with Berol makes him operations manager for divisions in Danbury, Conn., and Burbank, Calif. Roy joined Berol's operation in Rockford, Ill., a few years ago after working many years in Honeywell's Microswitch Division in Freeport, Ill.

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Carl Weymueller, '49, is now with Penton/IPC in Cleveland, publishers of a number of technical magazines and journals. Carl is working with *Welding Design and Fabrication*. He was for many years with ASM as senior editor of *Metal Progress*.

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Ed Gempler, '49, with United Aircraft in Findley, Ohio, was chairman of the International Brazing and Soldering Conference held last April in Philadelphia.

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Vito Mitkus, '52, who was with Diamond Chain in Indianapolis for many years, is now materials laboratory supervisor at Chrysler's transmission plant at Kokomo. Vito's home address is 102 Chaucer Circle, Noblesville, IN 46060.

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Paul Shewmon, '52, was awarded the Henry Marion Howe Medal of ASM, given annually to the author of the best paper published in *Metallurgical Transactions*. The paper dealt with hydrogen attack on carbon steel. Paul, who has been chairman of the Metallurgy Department at Ohio State for

two years, was recently appointed to the Advisory Committee on Reactor Safeguards. The ACRS is an independent group of experts established to advise the Nuclear Regulatory Commission on safety aspects of nuclear energy. His background as director of the material science division at Argonne and director of NSF's division of materials research makes him eminently qualified for this important and arduous responsibility.

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We have two second generation metallurgists in the department this year. Jim Stanley, '52, Ph.D. '59, professor of metallurgy at Arizona State, sent his boy to Illinois, and Jim Jr. is a sophomore following a co-op schedule with Caterpillar. Richard H. Berry entered as a freshman last fall; his father, Richard R., '54, is with Olin in East Alton, Ill.

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Joe Yancik, '54, has joined the National Coal Association as vice president-research and director of technical services. In announcing his appointment, the president of NCA acknowledged Joe as one of the world's top mining authorities. Joe received his Ph.D. in 1960 from Rolla and was most recently at the U.S. Bureau of Mines in Washington, D.C., where he directed the government's research program in mining technology, safety, and health and environmental protection.

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Earl Carlson, '56, is director of research at Amsted's research laboratory in Bensonville. Earl is particularly involved in powder metallurgy, but also has projects in such areas as corrosion, wear, alloy development, and high-temperature properties.

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Charles Robertson, '56, M.S. '59, is manager of the materials engineering group at Suntech, Inc., the research and engineering division of Sun Oil. Chuck's oldest children, Charles and Cheryl, are studying chemical engineering at Grove City College and Virginia Tech.

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John Koucky, '57, was promoted to manager of the nodular foundry for Wagner Casting in Decatur, Ill., and is vice chairman of the Sangamon Valley Chapter of ASM.

More ALUMNI News from pg.3

Chuan-Tseng Wei, Ph.D. '59, has left Michigan State and returned to Taiwan, where he is helping the government set up a new steel mill facility.

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Jim Cost, Ph.D. '62, has left Purdue and accepted a position at Los Alamos. Jim's research activity there will be in the general area of mechanical properties of materials in reactor environments.

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John Ewing, '62, is now superintendent of production planning at U.S. Steel's Pittsburg, Calif., works. John has had previous responsibilities in engineering and marketing for USS's Western Steel Division.

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W. T. Shieh, M.S. '63, has left Timken in Canton, Ohio (where he published some impressive papers on shear cracking), and has taken a position as senior engineer, Development Materials Lab, GE-Aerospace Electronics Systems in Utica, N.Y. His new address is 47A Upper Woods Rd., New Hartford, NY 13413.

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Sam Williams, '65, after more than 10 years with the Rock Island Arsenal, has recently joined International Harvester's Farmall plant in Rock Island as supervisor, metallurgical control and testing. Sam is now chairman of the Tri-City Chapter of ASM.

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Dwight Diercks, '67, Ph.D. '71, now at Argonne National Lab, visited UIUC last February and presented a colloquium on specifications and standards for nuclear materials.

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Al Gustafson, '67, is now with Kemper Financial Services in Chicago. This firm provides financial advice to clients looking for secure growth investments. Al finds his background very useful in looking at the technical questions involved in evaluating an industrial situation.

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Tony Flores, '68, is now at Clark Equipment in Aurora, and lives at 1312 S. 12th, St. Charles, Ill. Clark Equipment is a participant in the College's Fracture Control Program, and Tony was on the campus last year attending a meeting of that group.

N. S. Choudhury, M.S. '68, received an award for scientific contribution by Systems Research Laboratories, Inc. Choudhury's work was on oxidation of titanium actinides, and was published in the proceedings of the Symposium on Properties of High Temperature Alloys. Choudhury received a Ph.D. from Iowa State after leaving UIUC.

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Bob Wlodek, '69, is now senior engineer with Westinghouse, Pittsburgh, in its Power Systems Projects Division. He is involved in the company's overseas nuclear power plant activities, and is enjoying a good deal of international travel.

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Dave Shapland, '70, who was formerly with Westinghouse's Advanced Reactor Division, is now at Los Alamos Scientific Lab, and lives at 2892 Calle de Pinos Altos, Santa Fe, NM 87501.

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Keith Moore, Ph.D. '71, is now associate professor of dental materials at the Indiana University School of Dentistry in Indianapolis. Diana, his wife, is free-lance writing, the restaurant critic for a monthly guide, and microwave oven demonstrator for Panasonic. Keith was formerly with the American Dental Association in Chicago.

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Mike Muntner, '71, is learning about the paper and pulp industry, a major customer of Bolton Emerson, Lawrence, Mass., which he recently joined as sheet metallurgist. He has remained in the Northeast since leaving school while previously working for Pratt & Whitney and GTE.

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Sanak Mishra, Ph.D. '73, visited us last fall while he was in the U.S. attending a conference on magnetism in Minneapolis. Sanak is at the Research Center for Iron and Steel, Hindustan Steel Ltd, Ranchi-2 Bihar, India. He reports that Bijoy Das, Ph.D. '71, is now with the National Physical Laboratory in New Delhi.

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Ed Cox, '73, received the A. E. Davis Silver Medal of the American Welding Society for the paper which contributed most to the progress of welding in the area of structural design. Ed's research outlined criteria establishing levels of weld quality necessary for specific structural situations.

After earning his Ph.D. in TAM, Ed worked at the Corps of Engineers Construction Engineering Research Laboratory in Champaign, and just recently took a job at Caterpillar Technical Center in Peoria.

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Kirk Webb, '74, M.S. '75, resigned from Lockheed in Sunnyvale, Calif., and has taken a position with Nalco Chemical Company in Chicago.

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Ed Jakawich, '75, is now working for the Mare Island Naval Shipyard in the Bay Area as a welding engineer. He had previously worked for Lockheed in Sunnyvale. Ed's job has involved him in some of the more exotic phases of welding such as plasma spraying and heavy fusion welding. His new address is 1457 N. Camino Alto, No. 110, Vallejo, CA 94590.

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Dilip Shah, Ph.D. '75, returned to India for a visit with family and friends, and has now taken a position with Pratt & Whitney in Middletown, Conn. Dilip is with the alloy research group concerned with nickel-base superalloys.

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Johnny Kujawa, '75, visited the department when he was in town for a football game last fall. He is technical manager for Keokuk Steel Castings in Keokuk, Iowa.

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Lance Labun, Ph.D. '76, joined the General Electric Lamp Division in Cleveland as part of the LEPPD (that's Lamp and Electronic Parts and Products Department). Lance has been given prime responsibility for improvement of several plastic components and initiating a laboratory for testing the materials developed. It appears to be an excellent match of Lance's skill and talent with GE's need. His home address is No. 2312, 1651 Mentor Ave., Painesville, OH 44077.

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Bob Shalvoy, Ph.D. '77, has also joined GE, and is at its turbine research and development facility at Schenectady, N.Y. Although Bob has been there only since last October, he has already been exposed to several challenging problems in power turbine materials. His home address is RR 1, Box 137A, Clifton Park, NY 12065.