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University of Minnesota
Minneapolis, Minnesota 55455

ITEMS

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Staehle Assumes Deanship on February 1, 1979

On Thursday, Feb. 1, 1979, Roger Washburne Staehle will, upon assuming the Deanship of the Institute of Technology, become the fifth occupant of the office since the establishment of the Institute of Technology in 1935. Preceeding him were Samuel C. Lind, Athelstan Spilhaus, Warren Cheston and Richard A. Swalin.

As he notes elsewhere in this issue of ITems, on the same date, Walter H. Johnson will return to the School of Physics and Astronomy to resume his previous role as researcher and teacher of Physics.

At 44 Staehle has accumulated an impressive dossier at his Alma Mater, The Ohio State University, where he first joined the faculty in 1961 as a research associate. He was awarded his Ph.D. in 1965 and became a full professor in 1970.

To start a telephone interview he was asked what he found impressive about I.T. and answered, "There are a number of things that are attractive about the Institute of Technology. The Institute has all the engineering and science schools and departments in a single structure, a unique situation for increasing interdisciplinary activities. It makes for a very good place to enable high-level people to do synergistic things."

He also commented, "The fact that the Institute of Technology is the only institution of its kind in Minnesota makes it possible for it to be the beneficiary of interest on the part of all its residents and the high technology firms who have research and instructional commitments parallel to those of the Institute. This can be of help in developing major programs and provides the capacity to focus our resources to gain strengths of mutual advantage to both I.T. and the high technology industries."

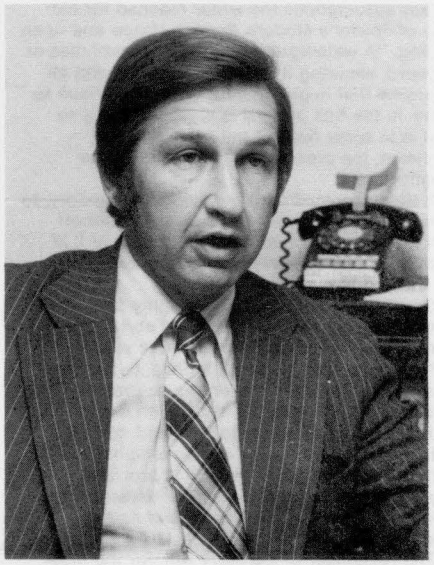
Staehle also sees an advantage in the Institute's Twin Cities location. In this regard, he observed, "I.T. enjoys an advantage in its Twin Cities location and the commitment many of the science and engineering firms have made to activities that are people oriented as well as their interest in its thriving cultural and arts activities."

Asked for other reactions, he said, "Closer to the center of our interests, the faculty can be described as very impressive. I carried a favorable impression away from every opportunity I have had to interact with individual faculty."

"The departments are not in the least parochial. They have an almost unlimited interdisciplinary capacity. I return to this again because it makes so many things possible of accomplishment."

Turning his observations toward the Institute's role in continuing education, he stated, "In a very real sense, as far as continuing education is concerned, our mission is to find the best ways to help people develop goals and meet them. This includes high school and junior high students, senior citizens, 'professionals who haven't been back recently,' and a variety of people interested in science. In this process you have to reach out to totally different interest patterns."

He concluded by an obvious affirmation of the deep satisfaction he finds in dedication to his work, "High school and junior high students must be given increased opportunities to become interested in the Institute of Technology. We want them to see that science is as important to them as proper nutrition is. Science must be demystified and made attractive, particularly to women as well as men. Indeed, science belongs to the people."



Dean Roger Staehle

The new dean has authored more than 60 scientific and review papers and is the editor of the *Corrosion Journal*, the six-volume, *Advances in Corrosion Science and Technology*, and the chapter editor and chairman of the section on, "Stress, Corrosion Cracking, Hydrogen Embrittlement and Corrosion Fatigue," in Vol. 10 of, *The ASM Handbook on Failure Analysis.* Under the sponsorship of the Advanced Research Projects Agency he also edited, *A Handbook on the Stress Corrosion Cracking and Corrosion Fatigue of Metals*, published in 1978. Staehle also was translation editor of the book by M. Pourbaix, *Lectures on Electrochemical Corrosion*, and of *Metallic Corrosion in the USSR*.

His memberships in learned societies include The National Academy of Engineering, the National Association of Corrosion Engineers, the Electrochemical Society, the American Society for Metals, the Metalurgical Society of AIME and the American Nuclear Society.

At Ohio State Staehle served as Director of the Fontana Corrosion Center, one of the largest laboratories at the institution, that occupies a position of international leadership in research in stainless steel and corrosion.

A Most Useful Eighty-five Years

Unique, a word that frequently lends itself to abuse and is, therefore, used both sparingly and with some trepidation by serious writers, has in the instance of this ITems article, kept suggesting itself.

Before wandering out on the trackless sands of easy assumptions the writer reached for his copy of *Fowler's Modern English Usage* and upon reading, "A watertight definition or paraphrase of the word, securing it against confusion with all synonyms that might be suggested, is difficult to frame. In the first place it is applicable only to what is in some respect the sole existing specimen, the precise like of which may be sought in vain.

It then becomes possible, almost obligatory, to introduce a story about Izaak Mauritz Kolthoff with the statement that the many facets of I. M. Kolthoff all add to reinforce the applicability of the word to him.

Dr. Kolthoff will observe his eighty-fifth birthdate anniversary on Sunday, February fifth. It seemed an auspicious time for those who know of him, along with his many friends, to become reacquainted with his career. It also provides, for those in need of either an inspiration or an example, the opportunity to read and consider well a summary of his life and accomplishments.

In any event, enough reason is provided by simply wanting to wish one of the University of Minnesota's most distinguished and active "Emeriti" a very "Happy Birthday."

The remainder of the story will, for the most part, come from letters written by his former students. Much of the balance of it will draw heavily on information taken from an article written by James J. Lingane, a former Kolthoff staff member and Ph.D. holder, that appeared in *Talanta**, an international analytical chemistry journal that honored Dr. Kolthoff on his seventieth birthday anniversary by dedicating an issue to him consisting entirely of invited contributions from his former students. All quotations not directly attributed are of Lingane's authorship.

In 1911, upon graduation from "high school" in the Netherlands at seventeen, Kolthoff found himself barred from studying chemistry because he, "lacked the knowledge of Latin and Greek which at that time was a prerequisite." (He was fluent in English, French, German and Dutch.) He then transferred his interests to pharmacy at the University of Utrecht where Professor Nicholas Schoorl influenced him toward his true field of interest, analytical chemistry.

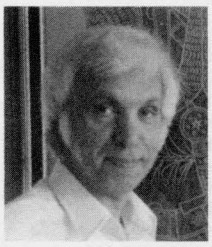
"Kolthoff's first degree was that of 'Pharmacist' " but Lingane reports ". . . the six year curriculum upon which it was based actually provided an education in chemistry as good as any available at that time . . . Schoorl's motto 'Theory guides; experiment decides.'+ has been the cardinal guiding principal of Kolthoff's scientific life."

By 1918 Dutch laws concerning language requirements had been changed and Kolthoff was awarded the Ph.D. in chemistry from Utrecht for a thesis entitled *Fundamentals of Iodimetry.* Prior to that he had published thirty-three papers between his first in 1915 and his graduation. All were on topics different from his thesis. During 1919 and 1920 he then published a series of nineteen papers on iodometric methods based upon his thesis.

"By 1927, not merely the amazing volume of his publications, but rather, their high degree of originality and importance in analytical chemistry had earned for Dr. Kolthoff an international reputation and he was invited on a lecture tour to Canada and the United States. Following this tour he accepted the position of Professor and Chief

Dr. I. M. Kolthoff in an informal campus Snapshot believed to have been taken in 1939. Courtesy University Archives

M.E. HEAD GETS ASME AWARD



R. J. Goldstein

Professor Richard J. Goldstein, head of the mechanical engineering department, was the recipient of the 1978 Heat Transfer Memorial Award given by the American Society of Mechanical Engineers. The award was presented at the Society's Winter Annual Meeting held in San Francisco from Dec. 10 through Dec. 15.

He received the award for "outstanding contributions to several fields of heat transfer, notably internal natural convection phenomena, film cooling and the development of optical interferometry and laser-Dopler techniques. His sustained research efforts in pursuing our basic understanding of the various phenomena have established him as a true leader in the heat transfer community."

He received his BME from Cornell with honors and Master's Degrees in both Mechanical Engineering and Physics from the University of Minnesota. He then spent several years with the Experimental Reactor Division of the Oak Ridge National Laboratory and served in the U.S. Army before earning a Ph.D. from the University of Minnesota in 1959.

Goldstein began his career at Brown University as an assistant professor from 1959 to 1961. In 1960 he went to the University of Paris as a NATO Fellow returning to the United States in 1961 to join the University of Minnesota Faculty.

He has acted as a consultant or summer employee of a number of firms including General Electric Lockheed Aircraft, Atomics International and the NASA Space Science Laboratory. From 1971 to 1972 he held a NSF senior-post doctoral fellowship at Cambridge University, England, where he taught in the Engineering Department and St. John's College. In 1976 he spent 3 months as a visiting professor and Lady David Fellow at the Technion in Israel.

In addition to ASME, Professor Goldstein is a member of the American Association for the Advancement of Science, the American Society for Engineering Education, the American Physical Society and the New York Academy of Science. A registered engineer in Minnesota, he is also a member of Sigma Xi, Tau Beta Pi and Pi Tau Sigma.

ITEMS

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of the Division of Analytical Chemistry at the University of Minnesota. During the next thirty-five years, under his influence, the University of Minnesota became reknowned as a leading research center in analytical chemistry. In June, 1962, Professor Kolthoff retired but for him this word was meaningless and his contributions to analytical chemistry continue unabated."

At the beginning of World War II Kolthoff undertook the direction of a research project for the Office of Rubber Reserve.

Lingane's paper states that the project did not alter the direction of Kolthoff's work as much as might be thought because the experimental study of the kinetics involved depends primarily upon analysis. From the "practical" standpoint, a major contribution was a new redox recipe for synthetic rubber at a low temperature. The rubber made by this recipe is far superior to the rubber prepared at a higher temperature.

According to Lingane, "At the end of the war Kolthoff again picked up the many irons he had had to let cool by the fire's edge although several years passed before the odour of styrene finally disappeared from the atmosphere of his laboratory."

Kolthoff is the author or coauthor of 915 papers, 100 of which have been published since his "so-called" retirement.

Since retirement his research interests have been in the area of denaturation of bovine serum albumin, (supported until 1977 by the U. S. Public Health Service), acid-base equilibria in nonaqueous media and application of macrocyclic compounds in chemical analysis. The National Science Foundation actively supports the latter two.

Another volume of the *Treatise on Analytical Chemistry* which he still actively coedits appeared in 1978. According to a Chemistry Department news letter, the "*Chemistry Communicator*," "Upon invitation, Dr. I. M. Kolthoff delivered on November 13, [1978] the first lecture at a Symposium in Hollywood, Florida, organized by the Academy of Pharmaceutical Sciences. Three other Kolthoff Medalists (one, the Nobel Laureate, Martin) finished the program.

Thus, the association begun some fifty-two years ago between Izaak M. Kolthoff and the University of Minnesota continues remarkably unaffected by the passage of the years to the benefit of his discipline, his adopted country and the University.

Comments by Former Students and Friends

"It was my great good fortune to serve as a private research assistant to Professor Kolthoff for four years (1931 to 1935) while I was an undergraduate. This master — apprentice relationship was of inestimable value in launching me on a scientific career and is why I affectionately regard Kolthoff as my scientific father." *James J. Lingane, Professor of Chemistry Emeritus, Harvard University.*

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Izaak Maurits Kolthoff

An introduction to an address by Dr. Kolthoff when he received the William Gibbs award in 1964. The introduction was made by *H. A. Laitinen, Graduate Research Professor, Department of Chemistry, University of Florida.*

"Immer Moietzaam Klimmend — freely translated 'Ever Struggling Upward'." This was the motto engraved on a bookplate designed in his youth by our Gibbs Medalist — and never was a motto more appropriate.

"Referring to the writings of J. Willard Gibbs, F. H. MacDougall a good friend and former colleague of Professor Kolthoff at the University of Minnesota said in the preface of the first edition of his book on Thermodynamics: '[They] will always be the admiration (and sometimes the despair) of the student of thermodynamics on account of the extreme rigor and completeness with which he discusses the subject.' Likewise, I and many others have found the writing of Professor Kolthoff to be an admiration and a despair. A few years ago I wrote a book consisting of 27 chapters, and I found that in 23 of these chapters I had made extensive references to Kolthoff's work. An admiration indeed, because it could be relied upon; but also a despair, because how can a student emerge from such an awesome shadow?

"Last February [1964] the international analytical chemistry journal, *Talanta*, published an Honor Issue for Professor Kolthoff on the occasion of his 70th birthday. It contains, among other things, a complete list including titles and coauthors of the 823 papers he has published since 1915. It also contains a biographical sketch by Professor J. J. Lingane that includes many personal tidbits as well as a general description of the scientific work and career of our medalist. By now, I believe everyone is aware that Kolthoff was a native of Holland, that his early training was in pharmacy, and that he has been at the University of Minnesota since coming to America in 1927.

"It occurred to me that it might be of interest to glean from my nearly thirty years of direct and indirect association with Professor Kolthoff some incidents and experiences that will highlight his personal and scientific attributes."

A 1975 photograph of University President C. Peter McGrath, right, and Dr. Kolthoff, left, at a luncheon following the awarding of an honorary doctoral degree to Dr. Kolthoff by the Hebrew University of Jerusalem.
Courtesy University Archives.

"I was asked to give the origin of his nickname, 'Piet.' I decided to make a direct inquiry, and here is his reply. 'I have been asked this question about a hundred times and cannot answer it. All I recall is that in kindergarten one of my intimate pals always came up to me and said in Dutch, 'Hey, Pietje, tell me something.' He adds 'Very unsensational and uninteresting for an audience!' On the contrary, I think it is most revealing to find that already in kindergarten, his colleagues had learned to seek him out for information, because he is a born teacher.

"It is this theme that I should like to pursue this evening. Naturally, we tend to think of someone with a prolific record of publication as primarily a research worker. But as former student, I think of him primarily as a teacher, for what teacher-student relationship is as close as that of a professor and his research students? I shall illustrate some of Piet's characteristics by giving examples of what he tried to teach us (although I must add, not always successfully)."

"He taught us independence. My first research assignment, as a research assistant in the summer of 1936, was handed to me by Jim Lingane in the form of a half-sheet of paper torn from a tablet and covered with hieroglyphics in the Dutch-English handwriting of the good Professor, who had long since departed for a four-month trip to Europe. In those days, an exchange of letters to and from Europe could be expected to take three or four weeks. When I asked Jim to translate the instructions, he handed me a reprint of a related paper and told me I was supposed to figure it out for myself. In due

course I figured out that KJ was the Dutch way of writing potassium iodide and that I was supposed to make a study of the absolute accuracy of this material as a primary standard. He had included an outline of suggested experiments in the form: (a) do thus and thus; (b) as (a) except 30°; (c) as (b) except 1 molar acid, and so on. Jim Lingane took one look at this outline and said, "Oh, that's his 'c' as 'b' as 'a' experiment — you don't have to be able to read his handwriting — figure those out for yourself.' Then, as now, the new students learn from the old."

"He taught us to stress fundamentals. A very characteristic expression he used, when confronted with a totally unexpected observation, was 'why on earth did it happen?' The next step was to design an experiment to answer why.

"He taught us respect for both theory and experiment. The motto 'Theory guides, experiment decides'* originated with him, a was a byword in the laboratory.

"He taught us respect for truth, not authority. Not 'who is right,' but 'what is right' prevails.

"He taught us to be cosmopolitan. In the 1930's before international travel became commonplace, he traveled widely in Europe each summer. In exchange, we enjoyed the visits of many European scientists and learned the truly international character of science.

"He taught us the importance of citizenship. At a time when most scientists carefully avoided any implications of political conscience, he did not hesitate to state his convictions clearly, loudly, and publicly.

"He taught us the values and pleasures of non-technical pursuits — the enjoyment of good music, the thrill of a hard-fought victory in tennis, the enjoyment of the post-game glass of beer.

"He showed us courage. In January 1943, I saw him in a hospital in Minneapolis, recovering from a serious operation on his spine, with one leg so incapacitated that he could barely wiggle a toe. Just two months later, I saw him in New York, at a synthetic rubber research conference. He had gone directly from the hospital to the airport and was hobbling on crutches at the meeting. He told me 'These crutches are a nuisance — I must get rid of them.' And he did, first progressing to a cane and then throwing that nuisance away also.

"Above all, he taught us the joy of the pursuit of knowledge and the thrill of discovery by joining with us in the victories and disappointments of research.

"These, and many other things, he taught us. Through his research, his writings, his teaching, and indirectly through the research and teaching of his students, and of his students' students in turn, it is safe to say that he has influenced analytical chemistry throughout the world as no other man has. This is the surest and most evident immortality, the influence a man has on humanity here and still unborn.

"Ladies and Gentlemen, I give you Isaak Maurits Kolthoff — Immer Moietzaam Klimmend!"

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"Although aware of Professor Kolthoff's high reputation in the field of analytical chemistry, particularly through his well-known textbook, I did not begin serious study of his work until I became involved in the government's synthetic rubber program in 1942. I was then a chemist in a synthetic rubber manufacturing plant and used analytical methods developed by Professor Kolthoff to help in controlling the chemical reaction which produced the rubber molecules. His research was concerned not only with the development of these methods, but also with the fundamental physical chemistry and mechanism of this reaction. I was impressed and intrigued by this work, so much so that when the war was over, I entered graduate school at the University of Minnesota and did my Ph.D. thesis in this field under Professor Kolthoff's direction. He was always very accessible and his clear insights were indispensible to me in helping to solve the many problems I encountered. I learned more in those few short years than in any comparable period of my life. Professor Kolthoff was both friend and adviser, and I will always be grateful to him for the excellent start he gave me in my subsequent career." *F. A. Bovey, Head, Polymer Chemistry Research Department, Bell Laboratories.*

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University of Minnesota Regent's Professor Emeritus Maurice B. Visscher is a long-time friend of Kolthoff. In a telephone conversation with Visscher we asked him questions about his association of many years with Kolthoff and about his contributions to medicine and biology.

His initial response was, "Kolthoff's contributions were valuable to medicine as well as to chemistry. It wasn't simply the analytical procedures he developed but also his way of looking at chemical problems.

"His first contribution medically was his development of understandable theoretical explanations of Hydrogen ion concentrations in living systems. Again, his way of looking at chemical problems assisted very greatly in the training of young people in the theoretical field.

"Cyrus P. Barnum, Ph.D. '40 did his thesis work under Kolthoff although his field was actually physiological chemistry. Kolthoff was also the major advisor for Harry P. Gregor who was involved in the development of macromolecules and membranes with electro positive or electro negative charges. This work has also been very important to biological science.

A clue from Lingane's *Talanta* article, as well as remarks Visscher made, brought a question about Kolthoff's willingness to speak out firmly on various issues and Visscher added, "Early along he objected to the tactics of Senator Joseph McCarthy and recognized how poisonous they were. He knew the terrible price that individuals and the whole country had to pay for allowing people to make such unsupported charges as Joe McCarthy made.

"He contributed repeatedly to the organization for the protection of the foreign born. He realized the terrible cost humanity pays for allowing paranoids to gain power in a country. His own family was nearly exterminated in Holland during the Hitler period.

"Kolthoff has always been a dedicated 'liberal' in politics. He has opposed authoritarianism in all of its forms."

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Vernon A. Stenger, Ph.D. '33. Stenger's entire professional career was spent in research with the Dow Chemical Co." When I applied for a graduate assistantship at Minnesota (largely for family sentimental reasons), I had never heard of a man named I. M. Kolthoff. However, he apparently was attracted by my transcript showing many analytical courses and a thesis on titrations in glacial acetic acid, and he offered me an opportunity to work in his analytical chemistry division under his direction. (Incidentally, I never dared show him that thesis.) I arrived while Kolthoff was still in Holland for the summer, so I spent a lot of time in the library looking up references he had sent on coprecipitation. There I met other assistants in the School of Chemistry, one of whom said, "You had better have all your social life now before Kolthoff returns, for there won't be any time for that afterwards.

"However, I did not find 'Piet' to be a hard taskmaster. He allowed me plenty of time to play in the university concert band and to attend church services and youth activities where I met and courted the girl who later became my wife.

"Upon learning that Kolthoff had returned, I knocked at his office door not knowing what to expect. A rather boyish looking young man with a pleasant round face opened the door and I inquired whether Dr. Kolthoff was there. He said, "Yes, come in." Nobody else was visible and I was just about to ask, "Well, where is he?" when a sudden flash of discretion prompted me to introduce myself. He said, "Oh, my new assistant and we immediately got down to business. I still marvel at how young he has always seemed. . . .

"We had pleasant lives as students of Kolthoff, knowing that he always looked after our best interests and also that if our work was at all worthy it was sure to be accepted for publication. One of our jokes was that if the papers were turned down Piet could start his own journal; our proposed name for it was "Annalen der Slaven des Kolthoff.

Among our privileges was the opportunity to meet the distinguished foreign visitors whom our professor attracted. One was Otto Hahn, who later with Lise Meitner, discovered fission. I recall some feeling of disappointment over Hahn's seeming to be more impressed by Piet's unusual command of English than by the importance of the research that was being done. Another visitor was J. Heyrovsky, the originator of polarography. After his talk, Kolthoff remarked to me, "Either this man is crazy, or his new technique will revolutionize analytical chemistry." Neither alternative seems to have been strictly true, but we are still finding new industrial applications.

"James Lingane was Kolthoff's private assistant at the time performing any tests requested. Following Heyrovsky's visit, Jim's work turned to trials of polarography and he continued to become more heavily involved in that field. . . .

"In 1938 Lorne A. Matheson and N. Nichols of the Dow Physical Research Laboratory described a novel polarographic apparatus in which the dropping mercury electrode was subjected to increasing voltage scans at a rapid rate and the current was followed with a cathode ray oscillograph, thus producing a visual image of the responsive curve. Dr. Kolthoff visited Midland on a lecture tour around that time and was taken to see the instrument. He perceived its capabilities forthwith and commented that it might be used in a titration to show when a reducible compound has entered or been removed from solution. I think that this may have lead to his concept of amperometry, the first papers on which were published in 1939. . . .

"N. Howell Furman of Princeton University had translated several of Dr. Kolthoff's books, including the first edition of *Volumetric Analysis,* from the German. I was pleased to meet him after working on second English edition, and found him to be a very fine person as well as a great teacher and analytical chemist. Having had the same experience of collaborating with Kolthoff, a man capable of working endlessly, we found much in common. Furman remarked to me that whenever he read through a copy of the "Saturday Evening Post" he always felt guilty knowing that Kolthoff probably wrote several papers in that time . . ."

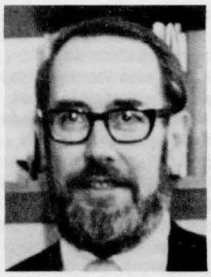
* *Talanta*, 1964, *11*, 65-73

+ The attributing of the now widely known motto to Professor Schoorl is thought to be correct. Certainly Dr. Kolthoff was the major contributor to its wide useage.

ALUMNITEMS

Anthony F. Yapel, Jr., President, I.T.Alumni Society

FROM DEAN JOHNSON'S DESK



With Roger Staehle's arrival as Dean on Feb. 1, 1979, I will be returning to the School of Physics and Astronomy to resume research and teaching. This is, therefore, my last ITems column, and with it I want to indicate my thanks and appreciation to a large number of persons who made the task of being acting dean this last year one that was possible and, in most instances, even pleasant. The space I have is too short to name everyone individually so I will only be able to acknowledge a few persons who have provided major contributions.

First, the Dean's office staff have been of great assistance in the operation of I.T. Associate to the Dean Clarence Berg has managed the I.T. budget with skill and tact. Dick Jordan who was lured back to I.T. from retirement after 27 years as Head of the Department of Mechanical Engineering to serve as acting associate dean, has provided a stability and historic perspective that has been very helpful. Arnold Cohen, Assistant Dean for Industry and Professional Relations, has developed, through the I.T. Alumni Society and the I.T. Advisory Council, a very effective contact with our neighbors in the Minnesota technical community. Specific educational and curriculum efforts in I.T. have been coordinated by Assistant Dean for Student Affairs, Paul Cartwright and his staff. Dean Cartwright, who will retire at the end of this academic year, not only conducts these tasks with great effectiveness but also provides the humor which relieves long staff meetings.

All of us realize that the office is held together by an efficient secretarial staff. In our case this staff is Dorothy Trapp, Louise Shea and Fran Shirmers. Each has contributed beyond the call of duty but particularly I want to thank Dorothy Trapp for her understanding tolerance of my idiosyncrasies.

Finally, the Department Heads and Chairmen in I.T. have been very helpful and constructive in the difficult circumstances of decreasing budgets and increasing enrollment. I look forward to great things for I.T. under the leadership of Roger Staehle working with this group of heads and chairmen.

I thus give my sincere thanks to all who have contributed to the operation of the Institute. The strength of a college is not so much in buildings and equipment as it is in people. I.T. is a great group of people and I am proud to be a part of it.

Walter H. Johnson

A REPORT FROM THE I.T. ALUMNI PRESIDENT

It is with great enthusiasm and expectation that I assume the presidency of the I.T. Alumni Association (ITAS) for 1979. As an I.T. Alumni Board member the past several years have been especially exciting for me as I've witnessed ITAS develop into an extremely dynamic organization. Recent past presidents who have nurtured this growth include Jim Lenarz of Honeywell, Horace Davis of 3M, Ev Dale of Fingerhut and Dave Hagford of Fluidyne.

During the past several years, for example, our ITAS sponsored Science and Technology Day at the University has steadily grown in participation and prestige. This year's event on Nov. 10th, was no exception. More than 300 students, faculty, engineers and scientists attended the afternoon seminar program, "Emerging High Impact Technologies," in the Coffman Memorial Union Theatre. In addition, a record crowd of nearly 700 alumni, friends of the University and guests, attended a banquet program at the Radisson South Hotel. Mr. William C. Norris, chairman of the board and chief executive officer of Control Data Corporation, was the evening's featured speaker. Banquet attendees also had the pleasure of hearing Alan K. Ruvelson, president of the Minnesota Alumni Association, Dr. Roger Staehle, Dean-designate of I.T., and Willis K. Drake, Chairman of the I.T. Advisory Council.

During 1978, the I.T. Alumni Board expanded its activities into two new areas with the objective of providing better service to both I.T. alumni and students. For the benefit of alumni, several of lunch-hour seminars were organized by I.T. Board members Richard Barker and Russell Heinselman. Seminar topics discussed to date have included, "How to Survive Company Politics," and, "How Can You Influence Your Career?". For I.T. students, ITAS has organized a series of on-campus lunch hour seminars which have given students the opportunity to meet with industrial scientists and engineers for the purpose of discussing career paths and job responsibilities. ITAS has also been instrumental in setting up a career advisory service for students involving scientists and engineers at the 3M Company. This program provides I.T. students with an opportunity to meet 3M technical people on a "one-to-one" basis to discuss career opportunities and choices. ITAS will expand this service to other high technology companies in the Twin Cities area during the coming year.

What about the future? Your I.T. Alumni Board is examining several new potential areas of activity. Among them are participation in graduation ceremonies, better methods of increasing technology transfer from I.T. laboratories to industry and scientific entrepreneurs, the formation of advisory groups of technical specialists for each department within I.T., joint sponsorship of programs with the Business School and an expanded membership campaign.

ITAS now numbers approximately 2,800 members, an impressive figure until one realizes that this is only about 10 percent of the potential membership based upon the number of students graduating from I.T. over the years. An increase in membership would help your I.T. Board expand its services to the University, alumni and students. It would be of benefit to all concerned if current ITAS members would encourage their non-member classmates to join our dynamic organization.

I'm sure most readers of ITEMS would be interested in knowing who the I.T. Alumni Board members are for 1979. Their names are listed below, along with their I.T. departmental and company affiliations.

Aerospace — Floyd W. Hagen, Rosemount, Inc. Ag. Engineering — Philip W. Manson, retired. Architecture — John W. Lackens, Architectural Alliance. Chemical Engineering — Michael R. Carroll, Deltak Corporation. Materials Science — Leonard Laskow, Paper, Calmenson & Co. Chemistry — Albert C. Holler, Twin City Testing & Engineering Laboratory, Inc. Civil & Mineral Engineering — Jack Meyer, Meyer, Borgman and Johnson, Inc. Computer and Control Sciences — Charles Purcell, Control Data Corp. Electrical Engineering — Charles Seashore, Honeywell, Inc. Geology and Geophysics — Graham R. Ford, Dept. of Transportation, State of Minnesota. Mathematics — Joseph R. Schumi, St. Paul Fire & Marine Insurance Co. Mechanical Engineering — Charles D. Christopherson, FluiDyne, Incorporated. Physics & Astronomy — Ernest J. Torok, Sperry-Univac. At Large — Everett H. Dale, Fingerhut Corp. At large — Norman C. Silver, Silver, Morken & Associates. Student representative — Thomas Christensen, I.T. Student board president. Past President — David E. Hagford, FluiDyne Corp. Secretary-Treasurer — Russell Heinselman, Sperry-Univac. Second Vice President — Leigh E. Nelson, 3M Company. First Vice President — George A. Champine, Sperry-Univac. President — Anthony F. Yapel, Jr., 3M Company.

We will be running short biographical sketches on I.T. Board members in future issues of ITEMS so you can get to know them better. If you have any comments or questions on current ITAS activities or have suggestions for new activities, please be sure to contact me (733-6215) or any of the other board members. Your input will be greatly appreciated.

While writing this article, I was informed by the editor of ITems that the current issue is being dedicated to distinguished I.T. Professor Emeritus of Chemistry, I.M. Kolthoff. I'm sure that nearly every I.T. graduate is familiar with the great contributions Professor Kolthoff has made in the field of chemistry, particularly that of analytical chemistry, over the years.

As anyone familiar with the U. of M. Minneapolis campus knows, the new Chemistry Building was named after him. As an I.T. student and a Ph.D. graduate in physical chemistry, I personally owe Professor Kolthoff a debt of gratitude for his innumerable contributions which have advanced the state of knowledge in my choosen field. As ITAS president, I know I speak for the entire I.T. Alumni Society in congratulating Professor Kolthoff on his many scientific achievements and in wishing him many more happy years of productive scientific research.

Anthony F. Yapel, Jr.
President, I.T. Alumni Society

CEES

Morris E. Nicholson, Director, Continuing Education in Engineering and Science

Coming Programs . . .
CONTINUING EDUCATION FOR ENGINEERS

27th Annual
SOIL MECHANICS AND FOUNDATION ENGINEERING
February 2
Friday

This year marks the inception of an annual lecture series honoring Miles Kersten, Professor Emeritus of the Dept. of Civil & Mineral Engineering. The Kersten Lectures will feature eminent speakers on soils and foundation topics. The first will be given by Prof. George Sowers of Atlanta, Ga. on "Geotechnical Aspects of Dam Failure." William Wahler of Palo Alto, Cal. will then speak on, "Inspection of Earth Fill Dams." The afternoon session will deal with frost action focusing on problems experienced in the past two winters in this region.

FEE: $42.00

For further information call Seminar Administrator, 612/373-3157.

SPECIAL PROBLEMS in DYNAMIC DESIGN

The schedule for this short course, offered on successive Mondays at 3 p.m. is:

Feb. 5 — Design of Foundations for Vibrating Machinery.
Feb. 12 — Wind-Induced Vibrations of Slender Machinery.
Feb. 19 — Floor Vibrations: Human and Machine Induced.

FEE: $45.00

For further information call Seminar Administrator, 612/373-3157.

For Engineers & Designers
PLASTICS TECHNOLOGY FUNDAMENTALS
February 6 through 8
Tuesday — Thursday

A complete package — all the rules, secrets and techniques that enable you to lower design costs, improve product appearance and save manufacturing time and money. You get ideas you can put to work at once.

FEE: $425. A 10% discount is available if 3 or more enroll from the same organization.

For further information call Seminar Administrator, 612/373-3157.

DISTRIBUTING WAREHOUSING—
ORDER PICKING & PACKING
February 12-14
Monday — Wednesday

No need to search, worry or wonder how to fill orders accurately and quickly while cutting costs and improving productivity in distribution warehousing. This seminar offers hundreds of tried-and-true methods and ideas you can use immediately.

FEE: $425. A 10% discount is available if 3 or more enroll from the same organization.

For further information call Seminar Administrator, 612/373-3157.

WASTE ENGINEERING
Friday — Saturday
February 23-24

This conference is directed toward registered professional engineers or engineers in training who are specializing in the environmental engineering field.

FEE: $45.00

For further information call Seminar Administrator, 612/373-3157.

MANAGING THE RESEARCH & DEVELOPMENT FUNCTION
March 7-9
Wednesday — Friday

All the how-to's of R & D management will be covered at this seminar. How to balance the needs of creative and individualistic scientists, engineers and technicians within the constraints of budgets and priorities. How to avoid the use of organizational strategies that usually alienate typical R & D staff members . . . How to minimize disruptive conflicts.

FEE: $395. A 10% discount is available if 3 or more enroll from the same organization.

For further information call Seminar Administrator, 612/373-3157.

SPECIAL PROBLEMS—
MATERIALS DESIGN
Three Successive Wednesdays

March 7 — What Not To Do With Masonry Construction.
March 14 — Stability of Steel Structures; Buckling, Torsion and Rotational Failure.
March 21 — Avoiding Problems in Timber Design

FEE: $45.00

For further information call Seminar Administrator, 612/373-3157

PREVENTIVE MAINTENANCE
PROGRAM MANAGEMENT
March 12-14
Monday through Wednesday

A seminar designed to save your company time and money. A must for those who want a P/M program or need to modernize their current program.

Explore in depth how to start and implement a P/M system, how to develop labor standards, how to record feedback, obtain management cooperation and how to computerize your system.

FEE: $395. A 10% discount is available if 3 or more enroll from the same organization.

For further information call Seminar Administrator, 612/373-3157.

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