

Division of Medical Technology
 Department of Laboratory Medicine and Pathology
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TECH'S TALK

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This 1989 issue of Tech's Talk--the 43rd consecutive year of publication--marks the end of an era in the Department of Laboratory Medicine and Pathology, with the announcements of the death of Professor Ruth Hovde and the retirement of Dr. Ellis Benson as Department Head. During Dr. Hovde's tenure as Director of the Division of Medical Technology, the Division gained national prominence as one of the best and most innovative programs in Medical Technology in the country. Dr. Benson's leadership of the Department resulted in its recognition as one of the premier Laboratory Medicine and Pathology research, teaching and service units in the nation. We are thankful for the leadership these two dedicated individuals have provided.

RUTH HOVDE March 3, 1917 - February 9, 1989

Ruth Hovde, professor emeritus, former Director of the Division of Medical Technology, and a national leader in medical technology education, died February 9, 1989, of cancer.

Ms. Hovde earned both her undergraduate and graduate degrees from the University of Minnesota. She worked as a medical technologist at Abbott Hospital (now Abbott-Northwestern Hospital), Minneapolis, Tacoma General Hospital, Tacoma, WA, Hay Laboratory, Seattle, and in Grand Forks, ND, before joining the Department of Laboratory Medicine as an administrative laboratory technologist and instructor in 1945. She became an assistant professor in 1953, associate professor in 1958, and professor and Director of the Division of Medical Technology in 1964. She retired from the University in 1984.

Ruth Hovde served as president of the Minnesota Society of Medical Technologists from 1951 to 1952 and as president of the American Society of Medical Technologists from 1954 to 1955. She was the author of numerous scientific articles and was a member of several professional organizations. In 1983, she became the nation's first medical technologist to receive an honorary doctorate when she was awarded a doctor of science degree from Thomas Jefferson University, Philadelphia.

Professor Hovde was known for her gracious manner, her concern for faculty, staff and students, her standards of excellence and her unwavering loyalty to the University of Minnesota. During her distinguished career, she made many valuable contributions to both the Department of Laboratory Medicine and the profession of Medical Technology. According to Karen Karni, present Director of the Division, "Ruth Hovde was one of those unique individuals who, through her many leadership roles, changed medical technology from a technical field to that of a profession. She had vision, marvelous organizational skills, and was a master of the spoken word."

We dedicate this issue to Ruth's memory, with grateful recognition of her contributions to the profession of Medical Technology.

GOLD AND SILVER CLASSES HONORED

Each year we continue our tradition of honoring the 50th and 25th anniversary classes. This year, they include the following:

Class of 1939 (50th Anniversary)

Eleanor Work Anderson	Katherine Nelson Krause
**Marion Bell	*Frieda Kunze
*Anna Lacy Bergschneider	*Valerie Olsen Kutzler
Zita Pieper Brutzmann	*Jean Gerhardt Lembke
*Lois Bray	*Elaine Fiegel Miltich
*Josephine Schulz Brown	Helen Mules
Marion E. Stemsrud Burns	*Kathleen Nigon
Irma Koskella Coleman	*Geraldine Adkins O'Connor
*Hazel Lenhardt Dickson	Lilias Werner Opie
Doris Doeden	Marcella M. Peterson
*Lois Fenton	*Dorothy Naegeli Posselt
Genevieve Wood Forbes	*June Edson Robinson
*Mary Fagan Galloway	*Dorothy Ronning
**Betty Gorham	Avis Berge Schmidt
Doris Grambow	Elizabeth Ann Prince Seery
Rosemary Koskinen Hartung	*Lillian Williamson Sigford
*Opal Fiske Huffaker	*Beatrice Swanson
Marie Bohland Hutchinson	Patricia Taylor
Linneus G. Idstrom	*Clara Thuman
Anna Nelson Jensen	Georgia Boswell Tyson
*June Johnson	*Sylvia Brakke Vane
*Miriam Kess	Mary Lu O'Connell Wachter
Mary Theimer Knutson	Mary Jane Lohmann Wilson
Blanche Larson Kolstad	Vivian Bengtson Wooden

Class of 1964 (25th Anniversary)

Nancy Hale Bartosh	Jeanne Kiley Krumpelmann
Holly Hunt Bedbury	Jeanne Rice Licari
Linda Waters Bolyard	Mary Austin Mallory
Barbara Hanson Broberg	Donna Messerli Meyer
Nancy Mueller Coley	Rosalie Rocchio Michelich
*Antoinette Perko Collins	Barbara Ganz Miller
Joy Carl Dean	*Judie Mull
Gayle Fellingner Diehl	Judith Nelson Palernio
Carolyn Collins Donovan	Mary Sanford Parker
Mary Parker Frigstad	Joan Ekbohm Paymar
Patricia Skoog Frykholm	*Betty Homquist Razak
Carol Ott Gonzales	Janet Masonick Sills
Mary Mart Googins	*Sharon Ohrmann Stahnke
*Sandra Lee Gould	Phillip N. St. Louis,
*Nancy Carlson Grenier	Patricia Nevius Vaurio,
Kenneth D. Kerr	

*Address unknown

**Deceased

If you are a member of either class, make a special effort to attend the annual alumni banquet (reservation form on the last page). You and your classmates will be seated together, and will have the opportunity to renew friendships.

We like to keep track of our graduates, and you can do us a favor by sending us the addresses of any of the people with whom we have lost contact. Thanks.

DR. BENSON RETIRES AS DEPARTMENT HEAD

The University will lose an outstanding leader when Ellis Benson, M.D., head of the Department of Laboratory Medicine and Pathology (and its predecessor, Laboratory Medicine) for more than 20 years, steps down as chair on July 1, 1989. Dr. Benson has been instrumental in developing one of the largest and most distinguished medical school departments in the United States. Throughout the years he has always been a strong supporter of the profession of medical technology.

Ellis Starbranch Benson was born in Xuchang, China. His parents, originally from Connecticut, were missionaries of the Augustana (Swedish) Lutheran Church. Benson's middle name, Starbranch, is actually a literal translation of his grandfather's Swedish name, Starenquist. He, his sister, and his three younger brothers attended the American School of Kikungshan, a school for children of missionaries. During the civil war in China, the family temporarily moved back to the United States, but returned to China, where Benson finished high school. He received his B.A. degree from Augustana College, Rock Island, IL in 1941. He chose to attend medical school at the University of Minnesota because his uncle, the founder of Benson Optical Company, (and his closest relative in the US) lived in Minneapolis.

After graduation and a year's internship at Cincinnati General Hospital, Benson served as a member of the US Army Medical Corps in Germany, where he met his future wife Ann in an officers' club. Upon returning to Minneapolis, he took residencies in both internal medicine and pathology at the Veteran's Administration Hospital, and was the first resident to spend a full year studying clinical pathology. He had originally intended to return to China as a medical missionary, but since that was not possible after the communist takeover, he planned to enter private practice in internal medicine. A phone call from Dr. Gerald Evans altered his plans, and Benson joined the faculty of the University Medical School in 1950. He established a significant research program, and quickly rose through the academic ranks. Upon the retirement of Dr. Evans in 1966, Benson was appointed head of the Department of Laboratory Medicine.

Throughout his distinguished career, Dr. Benson has been an active member of many University and national committees and boards. He was the founder and first president of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS). He is internationally recognized as an expert in pathology training, and serves as co-chair of the Joint Task Force on Pathology Manpower. Among the numerous awards Benson has received are the Outstanding Achievement Award from his alma mater, Augustana College, and an honorary doctorate from Midland College. Despite demanding administrative responsibilities, Dr. Benson remains actively involved in research. His many publications reflect the diversity of his interests, which include muscle physiology, hemoglobin kinetics, clinical laboratory utilization, and medical decision analysis. Benson will continue on as a professor at the University and he plans to increase his direct participation in research following his retirement as department chair.

Retirement will also give Dr. Benson more time to spend with his family. He and Ann have three children: Carol, who has one daughter, and lives in Philadelphia, PA; John, who has two sons and lives in Middlebury, VT; and Bronwen, who lives in Minneapolis and is expecting a baby in May. The Bensons have purchased lakeshore property near Moose Lake, MN, and plan to build a vacation home there. They also plan to continue traveling. In fact, they are presently in Haifa, Israel, where Dr. Benson is visiting the Rambam Medical School. Although they have had the opportunity to see many parts of the world, the high point of their travels was their trip to China in 1983, when Benson was able to visit his childhood home.

In recalling his career at the University, Benson modestly expressed his pride in the growth of the Department of Laboratory Medicine and Pathology. He recollected that in 1964, the Department had one research grant (which was his!). It now ranks fourth in the country in NIH grants awarded. He also said that the strength and reputation of the Department lies in its dedicated people, and its balance between research, teaching and service activities. He stated, "My respect for the profession of medical technology has been in a large measure dependent on the outstanding group of medical technologists who have worked in this Department during my tenure. The collegiality we have shared is one of my greatest satisfactions and joys over these many years."

APPRECIATION DAY TO BE HELD FOR DR. BENSON

The Department of Laboratory Medicine and Pathology of the University of Minnesota is planning an appreciation day to honor Dr. Ellis S. Benson on his retirement as Chairman. This will be part of the departmental celebration of the University of Minnesota Medical School Centennial Year. The events planned for the day will include a scientific symposium, a luncheon and a banquet in the evening. We hope you will join us on Friday, June 16, 1989 to honor Dr. Benson on this special occasion for his many years of distinguished service to this department, to the University of Minnesota, and to the national pathology community.

The symposium will be held in room 2-690 of Malcolm Moos Tower in the Health Sciences complex from 9:00 am to 4:45 pm. Luncheon will be served in the Campus Club. Cocktails and dinner will be held at 7:00 pm at the Hotel Sofitel in Bloomington. You may register for the symposium or dinner or both. If you wish to attend, please fill out and return the following registration card.

_____ attending Symposium

_____ attending Dinner

\$ _____ Amount enclosed (Symposium - \$10.00/person, Dinner - \$40.00/person; Cash Bar)

Make checks payable to LMP, P.A.

Name _____

Address _____

City _____ State _____ Zip Code _____

Please return this reservation form with payment by **May 1, 1989** to:

Jeffrey McCullough, M.D.
University Hospital and Clinic Blood Bank
Department of Laboratory Medicine and Pathology
Box 198 UMHC
Harvard Street at East River Road
Minneapolis, MN 55455

Menu selections and the Symposium program will be sent to you following receipt of the reservation card.

FACULTY NEWS

The Medical Technology faculty and staff continues to be a very active and mobile group. We said farewell and congratulations to **Marty Bazluke Fish** (urinalysis, clinical chemistry). She and her husband, Barry, are living in St. Albans, WV and are the proud parents of Megan Elizabeth, born January 19, 1989.

Congratulations also were extended to **Rebecca and Douglas Christie** (immunohematology). Their son, Seth James, was born November 5, 1988.

In November we welcomed **Nancy Brunzel** to our staff. Nancy, a West St. Paul native, will be teaching urinalysis and clinical chemistry. Nancy received her B.S. degree (a double major in biology and chemistry) from the College of St. Catherine and completed her medical technology training at St. Joseph's Hospital in Kansas City. While working at Avila College, Nancy helped develop that institution's 3+1 program. Nancy is very enthusiastic about teaching and enjoys the interaction with the students. In addition to her teaching responsibilities, Nancy is in the process of rewriting, upgrading and contemporizing the clinical chemistry laboratory manual.

Many of our faculty also maintain strong research programs and have presented their results at a variety of meetings and conferences. **Doug Christie** presented some of his research data at the National Heart Association Meeting in Washington, D.C. He was also an invited speaker at the second annual Midwest Platelet Conference in Milwaukee, WI, where the topic of his talk was "Advances in Detection of Platelet Antigens and Antibodies". Findings from **Helen Hallgren's** lab (immunology), whose research deals with immune function and aging, were presented at the American Society of Cell Biology in St. Louis, MO and also at a symposium in Vienna, Austria. Helen has also submitted an abstract to the International Congress of Gerontology meeting in Acapulco, Mexico. Aging and immune function was the topic of a fall, 1988 University of Minnesota Health Sciences Magazine article which featured Helen and her colleague, Dr. James O'Leary.

Phoenix, AZ was the site of the eighth Ross Conference on Medical Research at which **Carol Wells** (microbiology) presented a paper entitled "The Role of the Gastrointestinal Mucosa in the Development of Sepsis." Carol was also an invited participant at a symposium in Palm Springs, CA on immune system modulation, sponsored by the Sandoz Corporation. In November, Carol traveled to the University of Toronto, to present some of her research findings at grand rounds in the Department of Surgery. **Bob Jechorek** (microbiology) presented his and Carol Wells' work on the differing abilities of anaerobes and facultative gram negative bacteria to translocate out of an intact intestinal tract at the 88th annual meeting of the American Society for Microbiology in Miami Beach, FL. Bob will also be presenting at the 89th annual meeting in New Orleans, LA in May.

Cheryl Swinehart (coagulation) has written a chapter in the textbook Clinical Laboratory Science--Strategies for Practice entitled "Hemostatic Disorders". Cheryl is also working on a research project with Doug Christie involving the effect of aging on platelets. **Karen Lofsness** (hematology) presented a workshop at the ASMT national meeting in San Antonio, TX entitled "Lymphocytes, Monocytes and Other Mononuclear Cells." Karen is also the chair of the hematology section of the NCA Exam Council which meets twice yearly to develop, evaluate and monitor the NCA national certification examinations.

In the past year **Esther Freier** (clinical chemistry) has been working on expanding the methodology for catecholamine determination. **Naomi Hanson** has adapted chemistry methodologies to the Roche COBAS FARA Centrifugal Fast Analyzer. Presently, Esther and Naomi are collaborating on a field evaluation for the Instrumentation Laboratory of their new Phoenix™ 8-channel Chemistry / Electrolyte Analyzer. In March, Naomi traveled to Boston, MA for training on this instrument.

faculty news.....con't.

Larry Bowers traveled to Japan as an invited speaker at an international conference on the use of HPLC for monitoring cyclosporin levels. Larry was also elected to the Board of Directors of the American Association of Clinical Chemistry.

Karen Karni (program director) continues to study laboratory turnover, and with Joan Feickert, completed an investigation of job reinforcers in clinical laboratories. Last summer, Karen traveled to the Mideast to evaluate the medical technology program at the University of Kuwait. In February she presented a paper on the cost construction of various programmatic models of medical technology programs at the fifth annual Educators Forum in Williamsburg, VA. Karen also continues to serve as a consulting editor for the journal *Clinical Laboratory Science*.

NAACLS/CAHEA PROGRAM ACCREDITATION IN PROCESS

We have recently completed the Self Study document required for continued program accreditation with the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)/Committee on Allied Health Education and Accreditation (CAHEA). Submission of this document is the first step in accreditation renewal, and required our responding to 29 Essentials in such areas as program sponsorship, resources, curriculum, faculty, students, operational policies, and program evaluation. Our self evaluation document, compiled by Karen Karni and Pat Solberg, was submitted February 1, and included 232 single spaced pages, with back-up documents totaling 10 inches in depth.

This Self Study document will be reviewed by another medical technology program official, who will send a written evaluation to us for comment. We will respond to any questions raised in the paper review, as well as requests for additional information or documentation.

In early April, a two-day site survey by two evaluators, Dr. Sharon Ehrmyer of the University of Wisconsin, and Dr. Sally Rudman of the Ohio State University will be held. These individuals will verify information found in the Self Study as well as conduct interviews with students, faculty and staff, and visit our laboratories and those of affiliate institutions. These site surveyors will submit a report to the NAACLS Review Committee; any further questions or concerns will be answered by our program officials.

The Medical Technology Program Review Committee of NAACLS evaluates the program for "compliance" (compliance, marginal compliance or non-compliance) with the 29 Essentials. This Committee then forwards its recommendations for accreditation to the larger NAACLS Review Board. This Board reviews the recommendation made by the Committee and with approval, forwards the recommendation to CAHEA. CAHEA reviews the recommendation as received from the NAACLS Review Board. CAHEA either adapts the recommendation, or refers it back to NAACLS for reconsideration.

How long does this process take? Over a year. Is it complex? Yes. Is it confusing? Probably. Nevertheless, we believe strongly that the University of Minnesota's Medical Technology program will once again receive "high marks" and continued accreditation. In addition, the accreditation process has provided us with an opportunity to consider many aspects of the program, to update affiliation agreements, scrutinize the budget, and examine ways in which we can strengthen the education of medical technology students here at the University of Minnesota.

In next year's *Tech's Talk*, we'll let you know "just how we did."

MILDRED KING ROHWER ENDOWED PROFESSORSHIP

The University of Minnesota Division of Medical Technology has another first to add to its notable accomplishments--the establishment of the Mildred King Rohwer Professorship in Medical Technology. This is the first endowed chair in medical technology in the country. A lectureship commemorating its establishment will be held Wednesday, May 3, 1989.

Mildred King Rohwer was a 1933 medical technology alumna of the University of Minnesota. Following graduation, she worked as a medical technologist at the Gillette State Hospital for Crippled Children in St. Paul and the University of Minnesota (nights). For two and one-half years, she was the only technologist for the Department of Medicine, under Dr. C.J. Watson. She worked in the Dental School for Dr. C.W. Waldron, and later supervised the hematology laboratory at the University Hospitals. She also worked at Stephens College, Columbia, Missouri.

In 1951 Mildred King married Carl Rohwer in Wichita, Kansas. Mildred was an active supporter of medical technology through numerous contributions to our scholarship fund. She also attended her 50th class reunion here in 1983. She was in failing health for a year, and died of leukemia December 1, 1987. Carl Rohwer, in accordance with his wife's wishes, has provided monies toward the Mildred King Rohwer Professorship.

Esther Freier has been named as the first recipient of the Professorship, based on her many accomplishments in laboratory medicine. She also was instructed in hematology at the University, by Mildred King.

We welcome all alumni and friends of the University to join us in this celebration on May 3. The program will begin at 4:30 in 2-690 Moos Tower. A reception will follow at the Campus Club. Mr. Rohwer will be with us as well.

On behalf of the University, we thank the Rohwers for their significant contributions to our program.

MEDICAL TECHNOLOGY ALUMNI SOCIETY SPRING MEETING AND BANQUET

The annual Spring Meeting and Banquet for Medical Technology alumni and friends is planned for Wednesday, April 26, 1989, at the Woman's Club of Minneapolis, 410 Oak Grove Street (see reservation form for details). This event is once again planned to coincide with the Spring MSMT Meetings for any persons who want to include the alumni banquet with the professional meetings.

This banquet traditionally honors the 25th anniversary class (from 1964) and the 50th anniversary class (from 1939) in Medical Technology from the U of M. As was done last year, students in the current graduating class in Medical Technology will also be honored at this banquet. These students will be invited to be the guests of the alumni society for this dinner and meeting. The Medical Technology Alumni Society Board of Directors is making every effort to make this a special evening for these students.

This banquet event is one for reminiscing in general and a display of photographs, correspondence or other memorabilia received from any alumni who provide them will be available for everyone's enjoyment. We encourage all alumni to send in any interesting information for this purpose (see "Let's Keep in Touch"). The Woman's Club provides a fine atmosphere for this gathering of colleagues and friends and is also well known for its excellent food. We look forward to a wonderful evening.

SHORTAGE OF MEDICAL TECHNOLOGISTS AFFECTS HIRING

During the past year, many articles in professional newsletters and journals have documented the shortage of medical technologists nationwide. At last spring's annual banquet of the Medical Technology Alumni Society, Karen Karni presented an analysis of the shortage created as training programs have closed and numbers of students in remaining programs have dropped. There are many reasons for this phenomenon, which affects other health care professionals as well.

How has the shortage affected Twin Cities hospitals? January 1989 conversations with laboratory managers who do hiring for Twin Cities hospitals identified some areas of consensus:

- 1) The shortage of medical technologist is real, but not yet as severe in the Twin Cities as in some other areas of the United States. During the last four years, hospital closings and mergers in the Twin Cities have led to some layoffs, providing additional experienced technologists in the applicant pool. This seems to be ending now.
- 2) Lab managers agree that numbers of applicants are down, positions are remaining vacant longer before being filled, and sometimes new employees are not as highly qualified as in the past. Only one Twin Cities hospital has instituted a sign-on bonus (\$1000).
- 3) As might be expected, the shortage of applicants has made it even more difficult to fill the generally less desirable evening and night positions, sometimes at the same time that increased patient acuity has increased the workload on those shifts. A number of laboratory managers are trying to improve shift differential. University Hospital recently increased the differentials for permanent night technologists to \$1.29/hour. (Note: Abbott Northwestern recently offered night nurses \$4.00/hour shift differential).
- 4) A number of laboratories are re-evaluating scheduling practices: using more part-time staff in order to retain or attract technologists who do not want to work full time; experimenting with 10 or 12 hour shifts. Sometimes part-time employees are imposed upon (or offered the opportunity) to fill extra shifts when positions are vacant. "Creative" scheduling has limits in addressing a true shortage, however.
- 5) Because the numbers of MLT applicants are also down, few laboratories have tried to address the shortage by substituting MLT's for MT's. As yet, the shortage is not severe enough to force consideration of using on-the-job trained personnel.
- 6) Many laboratory managers and other technologists hope that the shortage will result in increased compensation and recognition for clinical laboratory scientists--not dramatically evident thus far.

Many laboratory managers are apprehensive that the shortage will worsen before it gets better. Professional societies have begun to step up recruitment efforts at high school career days and science fairs. We can only hope that the pendulum will begin to swing soon!

DID YOU KNOW?

In 1983, there were 638 CAHEA-accredited programs in medical technology in the country. As of November 1988, this number had decreased to 409, reflecting the closure of 229 programs. The number of medical technology graduates in this same period of time decreased from 5,318 to 3,432.

ESTHER FREIER FEATURED PROMINENTLY IN U OF M ALUMNI MAGAZINE

The July-August, 1988 issue of *Minnesota*, the magazine of the University of Minnesota Alumni Association featured "Women at the Top," a photo-essay on seven women who held top U of M faculty and administrative positions in 1988. These women included: Shirley A. Swain, Assistant Vice Chancellor, UMD, Ellen T. Fahy, Dean of the School of Nursing, Mary E. Heltsley, Dean of the College of Home Economics, Betty Robinett, Associate Vice President for Academic Affairs, Barbara B. Wolfe, Assistant Vice President for Information Systems, Elizabeth Stanton Blake, Vice Chancellor, UMM and Esther F. Freier, Co-Director, Clinical Chemistry Laboratories, UMHC. Professor Freier, a member of the Division of Medical Technology, Department of Laboratory Medicine and Pathology was cited not only for her administrative and faculty accomplishments, but also for her 38 years of tenure, the longest tenure service record for a woman in the University, a distinction she shares with Barbara J. Stuhler of Continuing Education and Extension.

As reported in the article, "Freier started as a junior scientist in the Division of Medical Technology at the University and has held positions as instructor in the Department of Laboratory Medicine, instructor and hospital chemist, and assistant and associate professor and professor. She earned a B.S. in Medical Technology with distinction, and an M.S. in Physiological Chemistry from the University of Minnesota."

Esther became an instructor in Medical Technology in 1951. Since that time, and according to our records, 1,465 medical technology undergraduates have been taught and influenced by her. In 1958, together with Verna Rausch, she published the seminal article "Quality Control in Clinical Chemistry," in the American Journal of Medical Technology. The paper won five awards at the 1958 ASMT convention. In 1977, they were awarded the Professional Achievement Award by the American Society for Medical Technology for this landmark paper and their subsequent career accomplishments. She has also advised and mentored innumerable numbers of graduate students, physicians, and clinical chemistry staff. In 1980, she was awarded the G.T. Evans Award from the Academy of Clinical Laboratory Physicians and Scientists for her many contributions to Laboratory Medicine. She has not only been the only non-M.D. to win this award, but also the only woman.

The July/August issue of *Minnesota* was devoted almost entirely to the status of women at the University. We, of the Division of Medical Technology are delighted that Esther Freier was selected as one of the top seven women within the entire University system. She has brought us pride and vision, and surely visibility. Congratulations, Esther Freier!

GRADUATION FOR CLASS OF 1989

The Graduation and Oath Ceremony for the class of 1989 is scheduled for Saturday, November 18, 1989. With the new curriculum, seniors will complete their clinical rotations during the summer and fall of 1989. Since they will not finish until December of 1989, graduation, traditionally held in June, has been moved to the fall. A reception for families and friends will follow the ceremony.



WHAT EVER HAPPENED TO.....???

Lorraine G. Bardslay Dahl has MASH experiences to tell from her years as an active medical technologist. Graduation in 1938 gave her the background necessary to train Army personnel at Camp Hahn, Riverside, CA, to do laboratory work on the front lines. She then worked at Letterman Hospital in San Francisco and the Veterans Hospital in Minneapolis for a time. After the war, she married a medical staff sergeant in the Army and they moved back to California. Her husband had equipped and worked in laboratories on the front lines during the war. In 1948 she obtained a Bioanalyst Certificate and together she and her husband opened their own Physicians Medical Lab in Santa Rosa, which they ran for 30 years. It employed seven individuals and ran the usual variety of tests. In 1980 Lorraine, now a widow, sold the laboratory. Interestingly, the laboratory equipment was sold to a local winery. This past September, Lorraine visited Minneapolis for the reunion of Central High School.

Mildred O. Oswald Zumwalt has had a wide variety of experience in medical technology following her graduation in 1941. Moving from her Fresno, CA job (1942-46) to St. Louis, MO, Mildred served as Assistant Director of Medical Technology at Barnes Hospital from 1946-51. After her marriage, she accepted a position as Head Tech at Kenmore Mercy Hospital, Tonawanda, NY for a year and a half. Following a temporary retirement until her two daughters became college students, the family moved to Indianapolis, IN. Mildred worked at a small clinic associated with Methodist Hospital in Indianapolis from 1976-87. Now that she and her husband are both retired, their hobby is touring Europe. Mildred has served as a volunteer at the Ronald McDonald House in Indianapolis and also for the Literacy Guild.

Virginia Dunn Johnston, class of 1952, held a variety of jobs working up to current position of Program Director, Department of Medical Technology, University of Kansas Medical Center, a position she has held for five years. She earned her master's degree and doctorate in education at the University of Missouri in Kansas City. Ginny and her husband, Lewis, are the parents of three children and the proud grandparents of six grandchildren. Active in the field of medical technology, she expresses her concerns about the lack of distinction between MTs and MLTs. She states that the competition for medical technology students is keen. Ginny and her husband still keep their ties to Minnesota. They maintain a cabin in northern Minnesota where they come to unwind.

Carol K. Johnson Johnson has lived and worked in the California area for 20 years. After graduation in 1968 and a job in the microbiology labs at the U of MN Hospital, she spent from 1969-78 at UCSF Moffitt Hospital in San Francisco as the supervisor of Automated Chemistry. It was there that she initially worked with Technicon instruments. She next became SMAC operator at Western Labs in Oakland, and then SMAC Supervisor at ICL labs in Dublin. Today Carol is the Sales Support Technical Specialist at Technicon Instruments Corporation in Tustin. She sells instruments in the South California area to hospital, clinic and doctor's office laboratories. She has found that working with the many different types of labs is an interesting challenge. She and her husband enjoy sailing their 38 foot boat in the Naples-Long Beach area in their leisure time. Their favorite vacation is to sail in the Caribbean. Carol's class of '68 keeps in touch via their own newsletter, *COSEN* (Class of Sixty-Eight Newsletter). Occasionally Carol travels to Minnesota to visit her parents who are still living in Minneapolis.

Janice Koepke Ringer, class of 1972, worked eight years as a medical technologist before returning to school to earn a masters degree in public health/health education. She is currently on the staff of UMD, planning health education programs. She finds her education and experience as a med tech valuable background for her present job. Janice and her husband, Alan, live in Brimson, Minnesota, where they raise sheep in their spare time and find time to spin yarn and weave. Future plans are to try to raise sheep and angora goats together, something not normally done.

whatever happened to.....con't.

Terese Sandkamp Shearer, class of 1981, spent two years working in the outpatient laboratory at UMHC before entering medical school. She graduated in 1987 and is currently a resident in family practice at St. Joseph's Hospital in St. Paul. Her target date to finish is July 1990. Terese and her husband, John, live in Woodbury with their 3 1/2 year old son. When not burdened with educational or family matters, both Terese and John have been busy teaching English to the Hmong. There is a great need for interpreters at the Bethesda University Family Physicians Clinic where, Terese says, they see many health conditions encountered infrequently in our regular population.

MEDICAL TECHNOLOGY STUDENTS WIN NATIONAL HONORS FOR UNDERGRADUATE RESEARCH

Four medical technology students; **Ann Sullivan**, **Charlotte Wetzel**, **Lori Wischnack**, and **Janice Putnam**, along with a faculty advisor, **Naomi Hanson**, attended the second annual National Conference on Undergraduate Research at the University of North Carolina at Ashville, North Carolina, on April 21-23, 1988. The purpose of this conference is to allow undergraduate students in both the arts and sciences to present their research, thus allowing students to develop an understanding and appreciation of the diversity of undergraduate research. More than 1000 students from 180 colleges and universities in 40 states attended the conference, with 50 of these students being from the University of Minnesota and four from our Division of Medical Technology. These four students were the only individuals in the nation representing Medical Technology.

Charlotte Wetzel presented a poster, "Avoidance of Interferences in the Assay of Urine Catecholamines by Capillary Gas Chromatography," and **Ann Sullivan** presented a poster on "Investigation of a New Medium in the Chromatographic Separation of Urinary Catecholamine Metabolites." Their faculty advisors were **Esther Freier** and **Naomi Hanson**. **Lori Wischnack** presented a paper "Mechanism of Murine Drug-Induced Thrombocytopenia;" **Douglas Christie** was her faculty advisor. These students' research was supported by the University of Minnesota Undergraduate Research Opportunities Program (UROP). In addition, **Janice Putnam** presented a paper, "A Microplate Technique for Confirmatory ABO and Rh Typing." Her research was done as an honors project in blood banking with **Susan Corby** as an advisor.

The National Conference on Undergraduate Research is the only forum in the United States where undergraduate researchers in both the arts and sciences can present their original findings; the forum included such diverse areas as molecular physics, computer sciences, astronomy, ecology, political science, earth science, philosophy, psychology, literature, history, fine arts, and others. The Conference also offered a variety of speakers and a forum for discussion by university faculty interested in undergraduate research.

In addition, three of these students, **Ann Sullivan**, **Charlotte Wetzel**, and **Lori Wischnack**, presented their research at the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) for its Annual Meeting June 8-10 in Cincinnati, Ohio. **Esther Freier** was the faculty sponsor for **Sullivan's** and **Wetzel's** poster session; **Karen Karni** sponsored **Wischnack's** work. **Ann Sullivan** and **Lori Wischnack** also were selected to receive ACLPS Young Investigator Awards--the first ever to be awarded to undergraduate students.

We are certainly proud of these students. Their work reflects favorably on undergraduate research projects conducted within the Division of Medical Technology.

MEDICAL TECHNOLOGY ALUMNI SOCIETY

The Medical Technology Alumni Society is a constituent society of the Minnesota Alumni Association (MAA). When graduates of the Medical Technology program join the MAA, they become members of the Medical Technology Alumni Society. The MT Alumni Society Board of Directors functions actively to conduct the affairs concerning Medical Technology alumni. These include the following:

- Assist in the recruitment of high ability students to the University of Minnesota (specifically to the program in Medical Technology) and to generally improve the student experience at the University of Minnesota,
- Support college and University fund-raising activities,
- Encourage membership in the MAA,
- Promote the professional interests of Medical Technologists and to cooperate with other professional organizations (especially the Minnesota Society for Medical Technology) in promoting a high standard of professional service,
- Work to benefit the program in Medical Technology at the University of Minnesota where possible.

The Board of Directors meets bimonthly and plans two main events each year--the Annual Fall Program and the Spring Banquet and Meeting (both events are described elsewhere in this publication). They offer tours of the clinical laboratories for freshman and junior medical technology students. Beginning in 1988, graduating seniors are invited as guests of the Alumni Society to the Spring Banquet and Meeting. The Board, under the direction of Karen Karni, Jean Linne and Betsy Swanke, prepared the MT/MAA membership brochure which is included in this issue of *Tech's Talk*. Board members serve for a period of three years (or more) beginning in June/July. The vice president is president-elect.

The current Board of Directors and Officers are:

Karen Munson Ringsrud, '62 BS	President
Billi Herranen Juni, '70 BS	Vice President
Karen Wrabeck Kok, '58 BS	Secretary
Jean Jorgenson Linne, '58 BS	Past President
Sarah (Salli) Hastings Clysdale '68BS	
E. Mary Skerik Damron, '34 BS	
Becky Green	Student Representative
Dolores Gullickson Harvey, '45 BS	
Karen Soderberg Karni, '63 BS, '83 Ph.D.	Ex-Officio
Eileen Leipus Rogers, '71 BS	
Monica Lee Rosin, '80 BS	
Elizabeth (Betsy) Swanke, '83 BS	

MEDICAL SCHOOL CELEBRATES 100th ANNIVERSARY

The University of Minnesota Medical School celebrated its 100th anniversary in 1988. In the past 100 years, the Medical School has produced more than 12,000 physicians, many of whom have gone on to positions of national and international prominence. About 50 percent of Minnesota's medical doctors are graduates of the School. The current Dean of the Medical School is Dr. David M. Brown, who was director of clinical laboratories in the Department of Laboratory Medicine and Pathology for several years. Several events marked this special occasion, including the placing of large posters in the hallways of the Phillips-Wangensteen building describing the mission and activities of each department.

UNDERGRADUATES IN RESEARCH

Once again, several undergraduate Medical Technology students were successful in competing for awards from various agencies that sponsor and encourage students to conduct research at some time during their undergraduate training. Typically, this consists of a short term (120 hours to 3 months) research project that is performed under the guidance of one or more members of our faculty. Two students, **Janice Putnam** (1988) and **Phil Korkowski** (1989), obtained funding from the University's 1988-1989 Undergraduate Research Opportunity Program (UROP). In addition, **Ry Rybar** (1989) obtained funding from the Minority Scholars Development Program (MSDP) that provided a sizeable stipend and supply budget sufficient for a 10-week summer project. Both the UROP and MSDP programs sponsor students to attend national meetings for undergraduate research. Such meetings provide students with an opportunity to present their research findings in either a short (10 minute) slide seminar or in a poster session.

Faculty sponsors for these students included **Hank Balfour** (virology), who is advising Phil in an investigation of the mechanism of bone marrow toxicity that is provoked by an antiviral agent used in the treatment of AIDS; and **Doug Christie** (immunohematology), who advised Jan in her studies on using a new monoclonal antibody-antigen capture method coupled to an enzyme-linked immunosorbent assay to identify new platelet-specific antigens. Doug also advised Ry in her investigation of antigens associated with drug-induced thrombocytopenia. The research of both Jan and Ry will be part of two separate papers soon to be submitted for publication to journals such as Blood and Transfusion, so keep your eyes open for these interesting articles.

JOANNE HILDEN HONORED

Joanne Hilden, a 1979 U of M Medical Technology graduate, received her M.D. degree from the University in June, 1988. As part of the Medical School Recognition Day ceremonies, Joanne was presented with the Minnesota Medical Foundation Undergraduate Research Award for the most meritorious paper on a research topic. The title of her paper was: "DQ-beta sequences in HLA-DR4 haplotypes." Joanne was also one of four recipients of the Ruth Boynton Memorial Scholarship Award given for academic excellence.

During her undergraduate years, Joanne was already demonstrating her research abilities in laboratory science. As a senior student in Medical Technology, she successfully completed an honors project on an indirect radioactive antiglobulin test for platelet antibodies. Later, as a medical technologist in the University Hospital's Blood Bank, Joanne participated in research projects concerning bone marrow transplantation. She also spent a post-sophomore medical school fellowship in the Department of Laboratory Medicine and Pathology.

Joanne is currently in her first year of a pediatric residency at the University of Minnesota Hospital and Clinic. Congratulations, Dr. Hilden!

KAREN KARNI HONORED BY ASMT

The Professional Achievement Award in Education was presented to Karen Karni at the 1988 Annual Meeting of the American Society for Medical Technology. These awards are only given to one person per year for excellence in the candidate's area of specialization. There were 21 nominees for the award. Dr. Karni has become nationally and internationally recognized as an authority on medical technology education, and has published and lectured extensively on the subject. The Professional Achievement Award attests to Dr. Karni's many contributions to the field. We congratulate her on her achievement.

HOVDE-O'BRIEN SCHOLARSHIP FUND

Each year, several Hovde-O'Brien Scholarships are awarded to deserving Medical Technology students. These awards have become increasingly important in recent years due to the steady decline in federally funded student loans. This year, four senior students each received an award of \$800 and one junior student received \$300. All students in the Medical Technology professional program are eligible to apply and the recipients are chosen on the basis of financial need, scholarship, and future potential. The four senior recipients are as follows: **Becky Green** from New Prague, MN; **Deanna Heil** from Apple Valley, MN; **Philip Korkowski** from St. Paul, MN; and **Ry Rybar** from Rochester, MN. **Jennifer Subra**, the junior student, is from Duluth, MN. The range of GPAs for these recipients was 3.03 to 4.00, with a mean of 3.50.

The amount of these scholarship awards varies from year to year, depending on the on the availability of funds and the number of deserving applicants. The available funds represent the interest generated by the principal in the scholarship fund. It is hoped that this principal will continue to grow in future years. This year, we were all saddened by the death of Professor Ruth Hovde, former Director of the Division of Medical Technology. The Hovde family has requested that memorial donations be made either to the American Cancer Society or to the Hovde-O'Brien Scholarship Fund. Those interested in contributing to this scholarship fund can send their donations directly to the Division of Medical Technology, Box 198 UMHC, University of Minnesota, Minneapolis, MN 55455.

NEW CLINICAL LAB ORIENTATION COURSE

This year senior medical technology students were able to acclimate themselves to courses ahead as well as to their future careers as medical technologists with a NEW one week course titled, "Introduction to Clinical Laboratory Science." The course was a Division-wide effort to introduce students to those principles of medical technology that are fundamental and common to all disciplines. Faculty believed that when students spend a week orienting and applying the foundation elements of medical technology, the quality of the professional year coursework and clinical rotations can be enhanced significantly. This course provided a uniform background for all students and helped to eliminate duplication of topics that previously were included in more than one discipline.

Using a combination of lecture, demonstration and "hands-on" laboratory exercises, students covered the following subjects:

Safety and Biohazards	Blood collection
Glassware, pipettes and balances	Centrifuges
Photometry	Microscopy
Quality control	Math calculations
Reagent preparation	pH and titration

As an example, the first day started with Safety and Biohazards. Using a film, lecture and lab tour, all aspects of these areas were included to make the laboratory a healthy and safe working environment. The day finished with a lecture and laboratory exercise on glassware, pipettes and the uses and types of balances.

The week was an intense one; however, students and faculty did well and culminated their work with a pizza party. The get-together provided a time to sit back, breath easy and get to know one another a little better. All in all, it was a fine way to start the year, and to gain those skills and knowledge necessary to continue in the Fall Quarter curriculum.

FIFTH ANNUAL ALUMNI SOCIETY FALL PROGRAM REVIEW

"Trends in Clinical Laboratory Science" was the topic of the fifth Annual Fall Program sponsored by the Medical Technology Alumni Society of the Minnesota Alumni Association, held on October 5, 1988. The Minnesota Society for Medical Technology co-sponsored the program as part of a continuing partnership which has benefited both organizations.

The meeting attendance was approximately 135; 77 enjoyed the pre-program dinner, and the rest joined the group later to hear the program. In keeping with the tradition of supporting the student experience at the University of Minnesota, medical technology students attended the program as guests of the Alumni Society.

The format of the program was a panel discussion covering three areas of current concern to medical technologists: reentry into the field, health care facility mergers and other opportunities available to medical technologists. **Kathy Shields** served as the moderator. Panelists included **Nancy Coley**, **Patricia Solberg**, and **Jacqueline Swoyer**, fielding questions concerning reentry perspectives. **Linda Clark**, **Judith Grout**, and **James Stephens** answered questions and shared their personal experiences with mergers. **Susan Gallo** and **Kathleen Miller** responded to questions regarding use of their skills and background to enter fields other than laboratory medical technology, and offered insights into myriad opportunities. The panelists' backgrounds varied from a successful reentry medical technologist to a director of laboratories, and included a manufacturing quality assurance coordinator. Questions were invited from the audience and a lively, informative discussion ensued. The program, which had to end with many questions still to be answered, demonstrated that many complex issues and challenges face today's medical technologist.

We plan to continue with a sixth Annual Fall Program in 1989, providing a forum for current issues facing our profession.

A LOOK AT THE SENIOR CLASS

It might be enlightening for alumni to compare the demographics of their own graduating class with that of the present day Medical Technology senior class at the University of Minnesota. A first observation might be the diverse backgrounds of students within this class, totaling twenty-nine students. Approximately 30% of the class have previous degrees, e.g., four Biology degrees (three B.S., one M.S.), one Biomedical Science, one B.S. in Nursing, one B.S. in Genetics and Cell Biology, one B.S. in Microbiology, and one D.D.S. Another student has a medical laboratory technician certificate.

The average age of our student population is twenty-five. There are ten male students, who comprise 34% of the class. Eighty percent of the students are employed, averaging fifteen to twenty hours per week during the academic year. Sixty-eight percent of these employed students obtain clinical or research laboratory work experience. The international diversity of the senior class includes such home places as: Hong Kong, Korea, Indonesia, Nigeria, Egypt, United Arab Emirates, and Dar-es-Salaam (Tanzania.) The professional Medical Technology program requires an average of twelve to fifteen credits per quarter. The tuition per year is approximately \$2900 for a resident and \$7500 for a non-resident.

In the last few years, there has been a larger influx of transfer students. Forty to sixty percent of recent classes are transfer students from the following schools: University of Minnesota - Duluth and Morris campuses, Rochester Community College, Normandale Community College, St. Cloud State University, College of St. Scholastica, Iowa State University, Michigan Technological University, University of Houston, and Cairo University.

In summary, the most dramatic changes are in the diversity of the class in age, sex, and academic and geographic backgrounds. Alumni who graduated in the 1970s will also note the difference in class size.

ALUMNI CONTRIBUTIONS

Thank you to all the generous alumni who have contributed to the University of Minnesota Foundation. In 1988, 387 individuals contributed a total of \$16,640. Minnesota faculty and staff also contributed to a separate fund, the Minnesota Campaign.

We wish especially to recognize and thank the following individuals who, according to available records, contributed \$100 or more to the University of Minnesota Foundation during 1988.

Brauer, Ruth Bienhoff
 Budge, Marilyn Tucker
 Canfield, Lorna Henderson
 Cavanaugh, Marilyn Scovil
 Church, Elise Andreassen
 Claussen, Frieda
 Coleman, Irma Koskella
 Cooke, Yvonne Chenowith
 Duffell, Dorothy Carlson
 Ederer, Grace Mary
 Galvani, Mary Moriarity
 Grewe, Mary Alice Johnson
 Glen, Kathryn Hammer
 Hoeft, Janet Smith
 Hovde, Ruth
 Huff, Karen Kloss
 Jacobson, Mary Lunzer
 Klein, Marilyn

McClintock, Dora Jean
 Miller, Aldora Loe
 Misjuk, Florence
 Patty, Diane Muir
 Rausch, Verna
 Robinson, Ruth
 Samuelson, Joanne
 Snively, Suzanne Agnew
 Spanjers, Ella
 Stewart, Lorraine Gonyea
 Swain, Portia
 Trach, Dorothy Bennett
 Warwood, Nettie Conser
 Weiss, Phyllis Hanson
 Wengler, Lila Wicklund
 Wian, Joyce Clarke
 Yamaguchi, Mitsue Yanagita

These donations have been used in various ways. The Division helped defray the expenses of students who presented results of their research at the National Conference on Undergraduate Research at the University of North Carolina in Asheville, NC, and at the annual meeting of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) at the University of Cincinnati, Cincinnati, Ohio. The monies were also used to refurbish laboratory equipment for the teaching laboratories, to purchase texts for our students' use in the library, and to upgrade our computers. Part of the money was added to the scholarship fund for Medical Technology students.

If you have made a donation of any size this year, we thank you. Your donations certainly attest to the loyalty of our alumni. Our drive will continue, with students attempting to reach all of our graduates by phone. When you receive your call, please consider a gift. Private support from alumni is invaluable to our Medical Technology program, allowing us to do the "extras" which set our program apart from many others.

GONYEA-STEWART SCHOLARSHIP AND EMERGENCY LOAN FUND

In 1986, Lorraine Gonyea-Stewart established an emergency loan fund for the students in Medical Technology. The purpose of this fund is to provide short term loans for students who may need them for a variety of reasons, e.g. students awaiting the arrival of other loan funds. Each year, this loan fund helps several students continue their education in a timely manner. Lorraine's generosity is also responsible for the existence of the Gonyea-Stewart Scholarship Fund. This year, two deserving senior students, **Denise Anderson** and **Linda Johnson**, each received a \$300 scholarship from this fund. Both the faculty and the students in the Division of Medical Technology wish to express our appreciation to Lorraine Gonyea-Stewart for her generosity in establishing these two sources of funding that are available exclusively to students in Medical Technology.

HEALTH SCIENCES STUDENTS' FINANCIAL AID SURVEY--1988

In February, 1988, a Financial Aid Survey was conducted for all Health Sciences students at the University of Minnesota. The primary purpose of the survey was to gather information for the Minnesota legislature, with the hope that tuition would not be increased further. Of 47 Medical Technology students, 35 completed the questionnaire; we believe the data are interesting enough to present to our alums.

Analysis of the responses from Medical Technology junior and senior students indicated some revealing facts and trends. The average age of Medical Technology students had increased by a year (to 23.9 years), and the percentage of those married risen to one-third. Females outnumbered males 3:1, a ratio similar to that seen nationwide in Medical Technology.

Only 31.4% of the students had no loans. The percent of total financial support for Medical Technology students showed "loans" comprising 19.4%, "parents" 14.6%, and "self," 37.2%. Two-thirds of them considered themselves financially independent of their parents.

Medical Technology students had the second lowest financial indebtedness at current level (\$8,809), and projected level upon graduation (\$12,652). Still, 97.1% (the highest percentage of the groups surveyed) reported "some" or "considerable" anxiety over financial concerns. Of all Health Science students surveyed, Medical Technology had the highest percentage of students who were self-supporting. This figure was reinforced by the number of part-time hours worked per week, averaging 20.6 hours. In a companion questionnaire to this survey, we found that Medical Technology students held 29 part-time laboratory positions within the University--as phlebotomists, laboratory assistants, research technicians and the like.

The percentage of 1987-1988 MT students who responded that "repaying financial aid loans will be a factor when deciding type of employment upon graduation," had more than doubled (to 73.1%) in a year. This student response probably reflected both indebtedness and an awareness of the job market. New graduates with debts may be increasingly attracted to those jobs offering higher salaries. We found this situation to be true with 1988 graduates, more of whom accepted positions in industry and commercial laboratories.

Of all Health Science students, Medical Technology students had the lowest projected education-related debt--\$4,144 for 17 respondents with Guaranteed Student Loans. These figures probably reflect part-time work, as well as an attitude of independence and "pay as you go," that we have long seen associated with our students.

Finally, for those of you who are interested in comparative information, we are enclosing the summary of the final report, including data for all Health Sciences students. This summary will help readers provide information to prospective students, to assist them in realistically assessing the costs of completing a program in the Health Sciences at the University of Minnesota. And, of course, if any of you wish to help reduce the indebtedness of Medical Technology students, we enthusiastically accept contributions to our two scholarship programs.

Health Sciences Students' Financial Aid Survey
Selected Comparison Statistics by Program
1987-88 Academic Year

Program	Response Rate	Average Age	Percent Married	Percent No Loans	Percent of Total Fin Support		Estimated Entry	Total Finan Debt*		1987-88 Liv Exp.	Avg Hrs Worked	Anxiety**
					Loans	Parents		Current	Proj.			
All Disciplines	49.9% 1410/2826	26.1 yrs	32.8%	21.0%	46.4%	16.7%	\$13,601	\$26,717	\$38,603	\$13,727	14.4 hrs	86.8%
Dental Hygiene	95.3% 41/43	22.6 yrs	14.6%	41.5%	25.9%	34.2%	\$ 9,857	\$ 6,555	\$ 8,039	\$ 6,842	12.7 hrs	75.6%
Dentistry	57.5% 214/372	25.0 yrs	28.8%	12.1%	60.5%	18.0%	\$12,090	\$27,604	\$44,564	\$12,652	10.8 hrs	89.2%
Medical Technology	74.5% 35/47	23.9 yrs	31.4%	31.4%	19.4%	14.6%	\$ 8,713	\$ 8,809	\$12,652	\$ 9,531	20.6 hrs	97.1%
Medicine Duluth	75.3% 73/97	25.9 yrs	19.4%	17.8%	54.6%	14.5%	\$ 7,469	\$17,857	\$43,339	\$12,843	8.7 hrs	82.2%
Medicine-Twin Cities	44.0% 422/959	27.0 yrs	41.9%	12.1%	56.2%	15.9%	\$12,744	\$35,188	\$48,367	\$16,505	9.0 hrs	83.6%
Nursing	36.2% 108/298	24.7 yrs	23.6%	35.2%	23.8%	19.7%	\$ 9,636	\$11,852	\$19,673	\$10,776	18.6 hrs	91.7%
Occupational Therapy	70.0% 42/60	24.5 yrs	28.6%	35.7%	27.8%	24.6%	\$19,058	\$13,856	\$18,832	\$ 9,579	13.8 hrs	87.8%
Pharmacy	28.0% 90/321	24.3 yrs	18.9%	28.9%	33.9%	22.4%	\$13,502	\$18,828	\$26,899	\$10,946	15.8 hrs	84.3%
Physical Therapy	86.4% 51/59	25.5 yrs	41.2%	31.4%	29.9%	21.9%	\$14,974	\$17,367	\$20,429	\$15,100	10.9 hrs	86.3%
Public Health	28.4% 82/289	31.7 yrs	49.4%	56.1%	18.5%	4.0%	\$26,845	\$32,926	\$31,259	\$16,430	25.9 hrs	79.3%
Veterinary Medicine	89.7% 252/281	26.2 yrs	30.7%	14.7%	52.0%	13.4%	\$15,220	\$28,659	\$42,959	\$13,188	11.6 hrs	93.3%

*Includes only persons with specific reported debt

**Includes responses of "some" or "considerable" anxiety over financial concerns

ANNUAL BANQUET NEWS

For Alumni and Friends

This year's Annual Banquet will be held at the Woman's Club of Minneapolis, a lovely setting noted for its exceptional cuisine.

- Date:** Wednesday, April 26, 1989
 Social Hour (with cash bar) 5:30 p.m.
 Dinner with program to follow 6:45 p.m.
- Place:** Woman's Club of Minneapolis
 410 Oak Grove
 Minneapolis, MN 55403
 Please note: Parking is complimentary at this Club
- Menu:** Boneless Breast of Chicken with Champagne Sauce
 or
 Roasted Prime Ribs of Beef au Jus
 Dinner includes: Woman's Club Salad
 Oven-browned Potatoes
 Fresh Harvest Blend Vegetables
 French Silk Pie
- Cost:** M.A.A. Members \$17.95
 Nonmembers* \$19.95
 (Gratuity and tax are included in price)

Program: *"Does Quality Count?"*
 Donna Meyer, a member of the 1964 class, will speak. She is immediate past president of ASMT and is currently Assistant Administrator for Marketing and Planning for St. Joseph's Hospital in Houston, Texas.

Special recognition will be given to the classes of 1964 (25 years), 1939 (50 years), and to the 67th graduating class of 1989.

Deadline for reservations: April 17, 1988. Send your reservations in early as seating is limited.

*Become a member of the Minnesota Alumni Association and save \$2 on your reservation for this event. See membership brochure enclosed.

.....
 Please reserve _____ places for me at the Medical Technology Alumni Dinner.

I enclose \$ _____ as payment. Chicken _____ Beef _____

Please reserve _____ seats for me at the 1939 table.

Please reserve _____ seats for me at the 1964 table.

Signature _____ Class _____ M.A.A. # _____

Mail by April 17, 1988, to: Medical Technology Alumni Society
 100 Morrill Hall
 100 Church Street S.E.
 Minneapolis, MN 55455

LET'S KEEP IN TOUCH

Have you often wondered whatever happened to the classmates you haven't seen since graduation? Once again, there will be a display at this year's Medical Technology Alumni Society Annual Banquet which will give you the opportunity to find out what they are doing.



Last year, the "Let's Keep in Touch" display was a big success and was enjoyed by all. Please help us continue this tradition by contributing some personal information about your life since graduation. (Even if you sent information last year, please contribute again this year---we'd like to hear from you again.) Submitted information will be displayed at the banquet. Whether you attend the banquet or not, we would like to hear from you.

It is not necessary to limit the information you submit to that requested on the form. Letters and especially pictures would be greatly appreciated, and the pictures will be returned if you wish.

.....

Name _____ Year of Graduation _____

Address _____ Career Info _____

Family Info _____ Special Interests _____

Please mail to: Medical Technology Alumni Society
100 Morrill Hall
100 Church Street S.E.
Minneapolis, MN 55455