

CELEBRATING



**75th ANNIVERSARY
Marquette University
College of Health Sciences
Clinical Laboratory Science
1938 - 2013**

Program History, Administrative Structure and Program Directors

Marquette University was a true pioneer in the development of the Clinical Laboratory Science profession. At its roots it existed as a collection of “lab girls” who were trained on the job by pathologists to perform tests on human specimens, thereby freeing the pathologist to focus on anatomical pathology (autopsies, evaluation of tissue biopsies, etc.) The Marquette University School of Medicine offered non-credit courses in Medical Technology (later named Clinical Laboratory Science) to women as early as 1917. These courses, under the direction of Dr. Bernard McGrath, continued until 1925 when the School of Hospital Administration was organized and medical technology became one of the elective programs in the school. During this time a program leading to a certificate in medical technology was conducted at the medical school and Trinity Hospital. The School of Hospital Administration closed in 1928 which was the same year that the Board of Registry for Medical Technologists of the American Society for Clinical Pathologists was formed. In order to qualify for the registry students took two years of college work and a year of internship in an approved hospital. In 1928 Dr. John Grill of the Department of Pathology of the medical school was in charge of the program. No degree was granted and the clinical work took place at St. Joseph’s Hospital and the Milwaukee County Hospital. Student enrollment averaged about six per year during this era.

In 1938 a four year program, while still directed by Dr. Grill, was officially placed under the jurisdiction of the College of Nursing and the first degree, a B.S. in Medical Technology was granted in 1939. After Dr. Grill’s death in 1945 the program was directed by Dr. W. A. D. Anderson, then chair of the Department of Pathology. He appointed Dr. S. B. Pessin to be the Medical Technology coordinator in 1949 and the program was officially placed under the jurisdiction of the Medical School.

Dr. John S. Hirschboeck who was dean of the Medical School recognized the need for having a curriculum in medical technology but for administrative reasons returned the program to the College of Nursing in September 1950. Then in 1954 the Medical Technology Program was transferred back to the Department of Pathology in the School of Medicine, and Miss Marianne

V. Schaaf was named director of the Medical Technology curriculum in September of that year. By this time enrollment had increased significantly, and Miss Schaaf was responsible for the 113 students enrolled in the four-year curriculum. During her tenure the tradition of “lab girls” ended. In 1956 the first male, Stavri Joseph, graduated from the program. By 1968 five more males had graduated and today approximately a third of the Clinical Laboratory Science majors are male.

Miss Schaaf also was responsible for a certificate program in histology that was introduced in 1954. This was a yearlong technical training course that did not carry academic credit, and enrollment was limited to approximately four students per year. The preclinical course was taught in the Department of Pathology of the Marquette University School of Medicine. The histology laboratories at Milwaukee County Hospital and the Veterans Administration Hospital were used for the clinical component of the course. Students who completed the program were eligible to sit for the histology certification examination. That program ended with its last class in 1971.

In October 1957 Miss Schaaf resigned to join the Catholic Mission Sisters and Miss Eileen Esser, a faculty member, served as acting director during the remainder of the 1957-58 academic year.

Miss Alice M. Semrad was appointed program director on August 1, 1958 and continued in the position until her retirement in 1996. During Alice’s tenure at the University, the administrative structure changed several times, new courses were added to the curriculum, and student enrollment reached all-time highs. However, the 1980’s brought major changes in hospital regulations and structure which resulted in hospital laboratory consolidations and closures. This limited the number of available clinical placements and contributed to a declining trend in student enrollment in Medical Technology programs nationwide.

Alice Semrad served on many professional committees and advisory boards at educational institutions. She was dedicated to medical technology education and believed programs should exist at public institutions. In 1963, UWM inaugurated a program for the training of medical technologists, using the combined facilities of UWM and local hospitals. Dr. Ed Berge, a local pathologist, was instrumental in designing the program. As a result of this new program the laboratories of local hospitals were divided between Marquette and UWM students for their 12 month clinical rotation. Marquette retained affiliations with Evangelical Deaconess Hospital, Milwaukee County General Hospital, St. Joseph’s Hospital, St. Mary’s Hospital, St. Michael Hospital and the Veterans Administration Hospital.

Faculty in Marquette’s program participated in a Peace Corps Training Program for Brazil. A pilot course was offered in summer 1964, and the complete training program was offered during the summers of 1965 and 1966. Trainees studied parasitology, basic hematology, and urinalysis in preparation for their volunteer work in South America.

In 1967 when the Medical School separated from Marquette to become the Medical College of Wisconsin, the Medical Technology Program answered administratively to both MCW and Marquette. Another change at MCW in 1970 resulted in the Medical Technology Program being removed from the Department of Pathology and established as an independent program reporting directly to the Associate Dean for Allied Health and Continuing Education of the Medical College and to the Associate Vice President of Academic Affairs at Marquette University. The administrative umbrella of MCW ceased in 1975, and Medical Technology remained an independent program within the University until the College of Health Sciences was formed in 1996.

Marquette University was awarded an Allied Health Professions Basic Improvement three-year grant beginning with the 1967-68 academic year. Funds were used to purchase laboratory equipment including new microscopes for each student enrolled in the Medical Technology program and to develop appropriate teaching aids to assist in the instruction of medical parasitology and hematology. Total expenditure over the three-year period was \$69,457.

Alice Semrad was editor of the *Comprehensive Review for Medical Technologists* published in 1975. Contributing authors included Ph.D's, pathologists, educators and senior medical technologists from area hospitals. All royalties were used to provide continuing education for practitioners in the field.

In fall 1978 Marquette began an \$8 million renovation of the Cramer Building (the old Medical School building) to expand the teaching facilities and offices for the programs in Medical Technology and Physical Therapy. During the construction period, Medical Technology offices were temporarily located in the Physics building and teaching laboratories were housed in both the Physics and Chemistry buildings on campus. In 1981 the program moved into its renovated offices and laboratories in the newly-named Walter Schroeder Health Sciences and Education Complex, and it remains in that space to this day.

Just as the administrative structure and location of the program changed over the years so did its name. Originally known as Medical Technology, and its practitioners referred to as medical technologists, the name of the program was changed to Medical Laboratory Technology in 1990. This was done primarily to distinguish the practice of laboratory diagnostic medicine from all the other "medical technology" monikers of the day. However, the abbreviation for this new name, MLT, was confusing for the practitioner because by this time there were laboratory personnel with associate art degrees referred to as MLT (technicians) employed in clinical laboratories. In 1998 the name of the program changed from Medical Laboratory Technology to Clinical Laboratory Science. This change was prompted by the renaming of the professional organization (from American Society for Medical Technology to American Society for Clinical Laboratory Science) to reflect the scientific aspect of laboratory diagnostic medicine.

In 1996 Alice Semrad retired from Marquette University, and as a tribute to her the University established the Alice Semrad Endowed Scholarship. It provided an opportunity for alumni and friends to show their appreciation for her dedication and service to the students, Marquette and the profession. Scholarship awards have been granted to students in the program for nearly thirteen years, and with regular contributions from alumni this legacy will hopefully continue for years to come.

Mrs. Linda M. Milson, a faculty member from 1970-73 and then again beginning in 1976, was named program director for the 1996-97 academic year. She served in that capacity until her retirement in 2009. During her tenure clinical sites were expanded to include laboratories in large physician office practices and the BloodCenter of Wisconsin which provides transfusion services for the laboratory at Children's Hospital. This was an opportune time to initiate accreditation of the program at the university level, and in 2001 the program received an initial five-year accreditation from the National Accrediting Agency for Clinical Laboratory Sciences. The only clinical site to retain independent NAACLS accreditation was the Zablocki VA Medical Center.

Even though Linda Milson served in an administrative capacity, she continued to teach courses for students from freshman through senior year. In 2002 she was awarded the Marquette University Robert and Mary Gettel Faculty Award for Teaching Excellence. Linda was actively involved in professional organizations at the local, state, and national levels. She served as

President of both the Milwaukee Society for Medical Technology (MSMT) and Racine/Kenosha Society for Clinical Laboratory Science. Linda was President of the American Society for Clinical Laboratory Science-Wisconsin (ASCLS-WI) and was named the organization's Member of the Year in 2008. She was responsible for bringing the national Clinical Laboratory Educators Conference (CLEC) to Milwaukee in 2004, bringing recognition to the university and city. In 2008-09 she served as Co-Chair of the ASCLS State Revitalization Task Force.

Dr. Linda J. Laatsch, a faculty member in the program since 1976, was named program director in 2009. Linda's success as a faculty member was recognized early in her career at Marquette. In 1984 she was named Outstanding Young Educator by the Milwaukee Jaycees. In 2007 she was awarded the Marquette University John P. Raynor, S.J. Faculty Award for Teaching Excellence. In early 2000 Linda conceived of and developed the course, Public Health, and received a Marquette University Urban-Directed Curriculum Enhancement Grant to assist in course development. The course is available to all Marquette students and serves as an elective in the Biomedical Sciences major. In recognition of this course Linda received a Distinguished Service to Public Health Award from the Wisconsin Public Health Association in 2011. Linda served as President of MSMT and ASCLS-WI, was the ASCLS-WI Member of the Year in 2007, and currently serves as Chair of the ASCLS Promotion of the Profession Committee.

When looking at the longevity of Alice, Linda and Linda at Marquette, it is apparent that a level of consistency for the students has been maintained for over fifty years.

Curriculum

Since a college degree was not required for certification as a medical technologist in the early years of the profession the curriculum years ago was quite different from what it is today.

The original four-year program was designed as a 3+1 curriculum where students took courses on campus for three years and then served a 12-month clinical internship at a local hospital in Milwaukee. The pre-clinical component was structured to include a sound balance of non-science humanities, basic science courses and those deemed as pre-clinical professional courses. The non-science component included two semesters of English, a course in speech, four courses in philosophy, five semesters of theology, two courses in history, a sociology course, non-credit physical education and a non-credit orientation class. The basic science courses included six courses in chemistry (general chemistry, organic chemistry, quantitative analysis and biochemistry), six courses in biology (general zoology, biological technique, elementary bacteriology, parasitology and histology). The pre-clinical professional courses included anatomy and physiology, hematology, medical bacteriology, and clinical pathology. During these first three years students had the opportunity to select two electives. Courses in the clinical internship year included hematology, chemistry, microbiology, immunology and serology, blood bank, urinalysis and histological technique as well as non-graded courses in basal metabolism, electrocardiography and medical records.

When the program was transferred to the Medical School in 1954, a third English course was added and the sociology course was dropped from the curriculum. The courses taught in the College of Nursing (anatomy and physiology, hematology and clinical pathology) were transferred to the respective departments in the Medical School. The biochemistry course also changed from the biology department in the College of Liberal Arts to the biochemistry department of the Medical School.

During the 1955-56 academic year, a survey of mathematics course was added to the curriculum and the choice of electives was reduced to one. In 1956-57 anatomy and physiology was separated into two courses and the clinical pathology course was dropped from the curriculum. These changes increased the number of electives available for Medical Technology majors. The physical education requirement was dropped from the curriculum beginning with the 1962-63 academic year. In the 1964-65 academic year the non-credit orientation course during the freshman year was discontinued. In 1965 the anatomy and histology courses were combined and the non-graded courses in basal metabolism, electrocardiography and medical records ceased that same year.

As technology advanced and automation became prominent in diagnostic laboratories a course in laboratory instrumentation was added to the curriculum in 1969-70. By this time the number of required theology courses was reduced to three to make room in the curriculum for additional pre-clinical courses. Several curriculum changes were made in 1971-72. The hematology course was moved to the freshman year creating an integrated four-year curriculum that continues today. Its content was eventually expanded to include basic immunology and immunohematology, kidney structure and function and selected topics in clinical chemistry. The histological technique course offered senior year was dropped and replaced with clinical hemostasis. Lastly, the requirement for a speech class was deleted.

Curriculum decisions during 1973-74 included changes in course sequencing, additions and departmental offerings. The biochemistry and general microbiology lecture courses were moved from the Medical School to the Biology Department in the College of Liberal Arts. Lectures in the medical microbiology course continued to be given by Medical School faculty, but the laboratory component was under the direction of Medical Technology faculty. The immunology course offered by the Biology Department was added to the junior year and the philosophy requirement was reduced to three classes.

Changes in the humanities occurred in 1975-76. The requirement for theology and philosophy courses was combined to total fifteen credit hours. Students had to take two theology courses and two philosophy courses (philosophy of man and ethics) and could then choose either a philosophy or theology course as their fifth required course. The requirement for History of Western Civilization (HIST 1 and HIST 2) was changed, and students could select any two courses in the social sciences which included sociology, psychology, anthropology, etc. in addition to other history classes.

In 1976-77 faculty in the Biology Department began teaching the human physiology course and a non-credit course in Clinical Education and Management was added to the senior year. Both the lecture and laboratory components of the medical microbiology course were taught by the faculty in Medical Technology.

A course in microanatomy replaced the combined anatomy and histology course in 1982-83, and a course in data interpretation (descriptive statistics) was added to the curriculum. Then in 1988-89 the Clinical Education and Management course was separated into two courses. Management was changed to a 1 credit course while education remained a non-credit offering. The credit status of the Clinical Education course was changed in 1997-98 to 1 credit hour.

Due to the consolidations in laboratory education, some of the clinical sites lost physical space for their student laboratories so the amount of time spent at the clinical sites was reduced from twelve months. As a result, all the clinical sites combined resources and provided a consolidated summer course (Combined Clinical Core Curriculum – CCCC) of instruction on the Marquette

University campus with clinical faculty teaching the course content. Because hospital programs were closing it was necessary for the University to hire faculty to teach the clinical content formerly taught by hospital personnel. Thus began another curricular revision. In 1994-95 a course in cell biology was added to the required pre-clinical courses. Statistics became the mathematics required course and data interpretation was deleted from the curriculum. All lecture and laboratory courses in microbiology became the sole responsibility of the Medical Technology faculty. In 1995-96 a Medical Technology faculty member was hired to teach the clinical hematology course in the junior year and in 1996-97 another faculty member was hired to teach a course in analytical chemistry which replaced the long-standing chemistry course in quantitative analysis.

After the formation of the College of Health Sciences in 1996-97 other changes occurred. A course in anatomy replaced the microanatomy course and the physiology course was transferred from the Biology Department to the Biomedical Sciences Department in the College of Health Sciences. And, in 1999-2000 the cell biology requirement was deleted.

Marquette University instituted a University Core of Common Studies (USSC) for the 2003-04 academic year which changed the required courses needed for graduation. Although this was a major change for many of the units within the University, it had little impact on the Clinical Laboratory Science major. The new core required 6 credits in Rhetoric (English) which the CLLS majors already had. The CLLS majors had a statistics course which fulfilled the Mathematical Reasoning core requirement. Three core credits in Science and Nature were fulfilled by a required biology course. Three credits in Individual and Social Behavior and three credits in Histories of Cultures and Societies were easily obtained from the options the students currently had in their two elective courses. CLLS majors had the required theology course as well as a course option in Literature and Performing Arts. New core requirements included Diverse Cultures and a Medical Ethics course that was required for all the students majoring in the health sciences. During this time the course in human anatomy was discontinued.

Molecular diagnostics, a combined lecture and laboratory techniques course, was developed by Dr. April Harkins and added to the curriculum in 2007-08. The course is required for Clinical Laboratory Science majors but is open to other university students if space permits. The following year the biochemistry course changed from an offering in the Biology Department to the Biomedical Sciences Department in the College of Health Sciences, and a combined anatomy and physiology course offered by that department was substituted for separate courses in each of those disciplines. The second semester of organic chemistry was deleted as a requirement for Clinical Laboratory Science majors. However, for students intending to pursue advanced degrees the curriculum was modified to include prerequisite courses for graduate educational programs.

As one reviews the curriculum over the years, it is apparent that the fundamental requirements have remained fairly consistent over the years with most of the changes occurring in which departments offer the courses. Courses involving totally new content were easily added at the expense of deleting courses whose content no longer had direct application to the practice of clinical laboratory medicine.

Young Scholar Program

The Young Scholar Program, a three-day course in Clinical Laboratory Science, offers college credit to talented high school juniors and seniors. It was first offered in the 1986-87 fall semester as an innovative recruitment strategy to address declining enrollments in university programs. Using diabetes as the focused case study students learn the pathophysiology of the disease process and perform laboratory testing in chemistry, hematology, microbiology and urinalysis. Currently enrolled students in the major assist in the laboratory instruction and supervision during the three Saturday program. This arrangement provides an opportunity for the high school students to interact both academically and socially with college students at Marquette University. To date more than one thousand students have completed the course and approximately 5% have chosen Clinical Laboratory Science as their college major.

In addition to this recruitment strategy for high school students, two other course offerings were introduced by the Clinical Laboratory Science faculty. These courses not only provided exposure to the Clinical Laboratory Science major at Marquette University but also provided elective options for all students at the University. A course in forensic science was introduced in the 1998-99 academic year and a course in public health began in 2001-2002. Both courses use experts in the field to present lectures along with departmental faculty.

Alpha Delta Theta

Alpha Delta Theta, the first national medical technology sorority was founded on February 1, 1944, at the University of Minnesota. It was spearheaded by the members of Alpha Delta Tau, the medical technology sorority at the University of Minnesota and Tau Sigma at Marquette University. As a founding chapter, Marquette was designated the Alpha chapter. The Beta chapter at the University of Minnesota was honored to act as hostess for the first national convention in November 1944. Seven new chapters were founded by October 1948, and the organization continued to grow. The official publication of the sorority, the *Scope* was published four times per year and attendance at national conventions included members from all chapters. In December 1974 the Alpha chapter at Marquette University became inactive. In order to continue their service work, especially in healthcare settings, the Medical Technology students organized an active organization within the professional society enabling them to live out Marquette's mission.

Professional Dedication

In 1958-59, the junior Medical Technology students came to realize that their decision to enter a health profession impacted both their lives and those of the people they would one day serve. Accepting this great responsibility and meeting the challenges of the profession requires someone to be dedicated. It is this dedication that motivates one to become technically competent and professionally capable.

The first professional dedication for the students entering their final year of education took place on May 17, 1959. From the very beginning, because of the Catholic nature of the University, students wanted the center of their dedication to be a religious (spiritual) experience. Originally called the "ASCP Badging Ceremony," the event began with celebration of the Mass in the Medical School Auditorium followed by senior students pinning badges on the white uniforms of

the juniors. At that time the ceremony was only open to the junior students and their families. An Honors Banquet and Awards Ceremony, open to the entire student body and their guests, followed later in the day at the Astor Hotel.

The 54th annual Professional Dedication was celebrated on April 13, 2013. The students continue to gather as a community with family and friends and make an act of dedication during the spiritual part of the ceremony. Each student is given a pin representing their profession. Another part of the Junior Professional Dedication Day is an open house in the Department's teaching laboratories. Students have an opportunity to show family and friends the type of work performed by the Clinical Laboratory Scientist. To recognize the commitment that students have made to this profession, a reception is given in their honor. It is a time to acknowledge their hard work as well as the encouragement from their families and friends. This latter event has replaced the Honors Banquet. The students' motto is stated below:

BY OUR MINISTRY OF CARING, SHARING, GIVING –
WE MAKE THE HEALING TOUCH OF CHRIST PRESENT

2013-14 University Faculty and Staff and Clinical Affiliations

Marquette University Clinical Laboratory Science Department

Department Chair and Associate Professor	Linda Laatsch, Ph.D., MT(ASCP)SM
Assistant Professor	April Harkins, Ph.D., MT(ASCP)
Assistant Professor	Fang Yao Stephen Hou, Ph.D., CA CLS, MB(ASCP)QCYM
Clinical Assistant Professor	Cecelia Landin, Ed.D., MLS(ASCP) ^{CM}
Laboratory Technician	Guangzhi (Grant) Yuan, M.S.
Office Assistant	Dawn Robinson

Clinical Affiliations

Affiliate	Education Coordinator
ACL Laboratories	Jennifer Savage, M.S.Ed, MT(ASCP)
BloodCenter of Wisconsin	Susan Johnson, MSTM, MT(ASCP)SBB
Dynacare Laboratories	Chris Naczek, B.S., MT(ASCP)
Froedtert Health Medical Group	Peggy Kressin, B.S., MT(ASCP)
Moreland Medical Center	Suzanne Fraser, B.S., MT(ASCP)
ProHealth Care Laboratories	Tujama Kameeta, MBA, MT(AMT)
QuadMed Laboratory	Amanda Young, B.S., MLS(ASCP)
Zablocki VA Medical Center	Mark Maticek, B.S., MT(ASCP)
Wheaton Franciscan Healthcare	Mary Ertl Dettmann, M.A., CLS, MT(ASCP)