

Annual Report 2007-08 Summary

During academic 07-08, the Department of Laboratory Medicine continued to enjoy steady planned expansion in all three of its core missions. Such expansion is particularly timely in light of the recent CDC commissioned federal report entitled "Laboratory Medicine: A National Status Report" (<http://wwwn.cdc.gov/dls/bestpractices/>). In that document, issued in May 2008, the critical importance of the discipline to overall health care, its intrinsically evidence-based nature, its rapidly expanding presence, and the need for continued work at the cutting edge of genomic, proteomic and cellular diagnostics were all emphasized. Of particular note, however, was the admonition that, by their own assessment, most physicians are ill-prepared to interpret the results of laboratory tests and, therefore, "expanded [laboratory medicine] consultation services to clinicians would contribute to improved patient care and outcomes." Moreover, "the primary barriers to interpretive consultations in clinical pathology [laboratory medicine] reports are lack of reimbursement for such consultations and the shortage of subspecialty expertise." While the Department can only work through national organizations to correct the reimbursement issues, it continues (a) to work regionally and nationally to create a new, expanded generation of Laboratory Medicine specialists; (b) to develop and promulgate procedures for delivering more effective and higher level medical consultation through modern electronic means; and, (c) to advance the field through basic, translational and clinically applied research.

In the research arena, our overall grant and contract funding increased by 10%, to total funding (direct plus indirect costs) of just under \$ 9 million. Most of the increase was in NIH grants, which demonstrated a very healthy 14.7% increase in total dollars and 21.7% increase in total awards. This increase, in a time of relatively flat NIH budgets and no change in the number of our total investigative faculty, is a great credit to those faculty, who continue to demonstrate that their work is carried out at the highest scientific levels.

In the clinical arena, there were a number of notable changes this year. First, we have selected a new Laboratory Information System (LIS) that will replace our venerable home-grown system. The latter was one of the first laboratory computer systems in the country, bringing electronic test resulting to the clinical enterprise at a time when the vast majority of academic medical centers were still pasting slips of paper into charts. The new system will similarly represent a quantum leap forward and is simultaneously being adopted at other major institutions such as Johns Hopkins, Mayo Clinic and University of Michigan. It includes state-of-the-art molecular and flow cytometry reporting modules and a rules-based structure that will allow needed flexibility that will carry the laboratory well into the 21st century. Implementation will begin in fall, 2008 and is expected to go live before January, 2010. While this is a very aggressive schedule, we are confident that our superb YNH and YUSM faculty and staff will rise to the occasion.

Second, the design of the new Laboratory Medicine clinical home in the "55 Park Street" Building has been completed. The new building, directly across from, and connected to, the equally new Smilow Cancer Hospital, should be ready for occupancy in June, 2010. We will occupy the top 4 ½ floors of that building, with all of our clinical units moving

there except for the Apheresis and Stem Cell / Cell Therapy Service which will be moved to the Smilow. This opportunity has given us the ability to redesign the clinical laboratory to meet its rapidly changing nature and will create new efficiencies as well as new possibilities for more rapid implementation of molecular, proteomic and cell based diagnostics. Again, this has been a monumental effort by many. The actual move of a 24/7/365 service that cannot be halted for even a few minutes will be challenging and, along with the LIS implementation, will represent our major clinical challenges for the next two years..

Third, our community outreach activities have significantly expanded. With drawstations at several locations in New Haven as well as in North Haven, Guilford, and Madison and opening in Branford and Hamden in the next fiscal year, we are in a position to better serve all our physician practices in greater New Haven. Moreover, this provides a wonderful opportunity for implementation of state-of-the-art consultative laboratory medicine as alluded to earlier. Our new LIS will also hopefully provide improved connectivity to other hospitals and institutions in southern New England, allowing us to meet demands for high technology reference testing in our region and for our partners as far away as Puerto Rico.

Our educational endeavors have also modestly expanded this past year. We were fortunate to receive ACGME accreditation for extra fellowship slots in both Transfusion Medicine and in Hematology and these positions have been generously funded by Yale New Haven Hospital. Recruitment into all our residency and fellowship positions was quite successful and our house staff remain some of the best in the country. At the 2008 Academy of Clinical Laboratory Physicians and Scientists meeting in Philadelphia, the major academic organization for our discipline, four Yale CP residents received Young Investigator Awards, more than any other Pathology program in the country. Moreover, two of these awards were given “with Distinction”, out of a total of only four such awards. Two other Yale CP residents have received prestigious “Starter” grants from the College of American Pathologists; thus, Yale CP residents continue to be recognized nationally in clinical and bench research. Medical student teaching, including both the required Core Microbiology course in the 2nd year as well as the Laboratory Medicine Course, continued to receive kudos from the students. Both the Virology Pre-doctoral Research Training Program (T32) and the Immunohematology Post-graduate Research T32 continued to thrive. Of note, we have begun to establish greater ties with the Department of Biomedical Engineering for the benefit of some of our post-graduate research trainees

Faculty changes included the promotion of Henry Rinder, MD, an internationally renowned clinical pathologist and hematologist, to Professor. His investigative work in non-invasive assessment of platelet production and function and in the role of platelets in the inflammation-coagulation interface, along with his well-established role as a leader in education in our field, have made him a prominent figure in Laboratory Medicine. Yan Yun Wu, MD, was promoted to Associate Professor. Dr. Wu, in addition to major clinical responsibilities in the Transfusion Medicine and Cell Therapy section, is engaged in research on the role of emerging pathogens and their risk to the blood supply. This work

has led to her involvement in major international forums devoted to blood safety. Ann Haberman, PhD, an expert in B cell memory, was promoted to Research Scientist. She has recently made observations that are radically changing our view of the lymph node germinal center, specifically discovering that, in contrast to accepted dogma, germinal center B cells do not routinely migrate between the dark and light zones but instead circulate within these individual compartments. Our evolving faculty profile also included the retirement of one of our joint appointees who has played a major role in Microbiology teaching over the years. Frank Bia, MD, MPH, a primary appointee in Internal Medicine, retired from the Yale faculty and has moved on to a leadership position in AmeriCares, a major philanthropic organization delivering health care and food to the world's needy.

We are saddened to report that Gueh-Djen (Edith) Hsiung, PhD, Professor Emeritus, passed away this year. Dr. Hsiung, an international leader in virology for over fifty years, was the first to describe the use of plaque morphology and a spectrum of cell culture techniques for the characterization of polio-virus, Coxsackie virus and echoviruses. She discovered and characterized viral infections in guinea pigs that facilitated studies of disease pathogenesis and treatment in humans. Her demonstration of transplacental transmission of cytomegalovirus (CMV) in the guinea pig correlated with congenital CMV in humans and provided an important model for this infection. Dr. Hsiung was the quintessential translational clinician-scientist. She was the first director of the Diagnostic Virology Laboratory at Grace-New Haven Hospital in 1960, wrote the textbook "Diagnostic Virology" that became the standard treatise, and trained countless professionals in the field. In 1984, she established the National Virology Reference Laboratory at the Veterans Administration (VA) Medical Center in West Haven, Connecticut, to serve VA hospitals nationwide, and became its first director. She will be sorely missed.

In summary, the Department is at an early stage of carefully planned incremental growth, reflecting both our role regionally in the medical center but also internationally as a leader in the discipline. We look forward to gradual recruitment of several more faculty and continuing to work closely with all of our other colleagues in the University and Hospital to build our research and clinical enterprise in a fashion that melds with programmatic directions of the institutions as a whole.

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