

## A History of the Department of Chemistry



The Department of Chemistry began to flourish in 1949 when Dr. Ezra L. Totton was hired as Professor of Chemistry and Head of the Department. Prior to this he had become the first African American to earn a Ph.D. in Biochemistry from the University of Wisconsin. He joined Mr. James R. Butts, who had earlier come to North Carolina College at Durham from the University of Michigan. In those days, Chemistry occupied two laboratories on the top floor of the Robinson Science Building on Fayetteville Street.

Dr. Totton was able to convince the best faculty members at neighboring universities to teach their specialties – analytical, inorganic, physical, and biochemistry – to his students while he and Mr. Butts taught the organic and general chemistry, respectively. Undergraduate students were able to earn a B.S. degree in Chemistry or in Chemistry, Secondary Education.

During the 1950s, Dr. Totton also began developing a Master of Science degree program in Chemistry, and in 1961, Mr. William E. Payton, one of Dr. Totton's early M.S. students, joined the faculty to teach general and organic chemistry courses. During this period, Dr. Totton was able to garner research funding from the National Science Foundation, the North Carolina Board of Science and Technology, and Wright Patterson Air Force Base. Dr. Totton also spent a year in a postdoctoral research associateship appointment at Stanford University. His theme for M.S. students was "Mastery" of the subject, and he often spoke of the ladder his students climbed. The ladder was long enough to reach below ground level, if necessary, to let students climb onto the ladder. They did not have to jump up into the air and catch onto the ladder to begin climbing. But the top of the ladder, where the student completed the climb, was right beside the tops of ladders of other universities. He expected his students to "master" the subject in order to be directly competitive with chemistry graduates – B.S. or M.S. – from other institutions. During the summers, Dr. Totton joined other faculty from Biology, Physics, and Mathematics to teach in NSF-funded summer programs for teachers.

Dr. Totton was one of the faculty who taught a Sunday school class for men on the campus, and rumor has it that he was prone to recruit students for his chemistry program from that class.

In the mid-60s, Dr. Totton engaged grants personnel of NSF in Washington, D.C., in conversations about "building" the degree programs in chemistry at our University, and in 1969 the Hubbard Chemistry Building was erected on NCCU's campus with over \$1,000,000 in funding from NSF with the remainder from the State of North Carolina.

On moving into the Hubbard building, Dr. Totton hired Dr. Stephen F. Lin, a physical chemist from the University of Illinois, and Dr. James M. Schooler, Jr., a biochemist from the University of Wisconsin. The following year, he hired Dr. John A. Myers, an organic chemist from the University of Florida, and Dr. Robert A. Izydore, an organic-analytical-inorganic chemist from Duquesne University. With this nucleus of doctoral faculty covering the disciplines of chemistry, Dr. Totton applied for certification of his B.S. degree program by the American Chemical Society, the professional organization which oversees accreditation of degree-granting programs in chemistry in the United States. In Washington, DC, Dr. Totton was asked, "Why do you require so many laboratory hours for your B.S. chemistry students at NCCU?" and he described the need to ensure that his students had just as much laboratory experience when they finished college as students of other universities who may have begun college with laboratory experiences from high school. He was asked, "But do you have any good students who have graduated from your program?" Dr. Totton said that he turned to Dr. Henry Bent from North Carolina State University and said, "Dr. Bent, you had one of our students in your graduate program, how was he?" Dr. Bent replied, "Best we ever had!!" The Committee on Professional Training of the American Chemical Society immediately voted approval, and the Department of Chemistry has maintained ACS Certification of its B.S. degree program in Chemistry since 1972. Incidentally, the graduate student at North Carolina State University was Dr. Clifton Woods, who is Professor of Chemistry at the University of Tennessee and who recently completed a term as Vice President for Research.

It is significant to note that twenty-two of Dr. Totton's students earned the Ph.D. degree in Chemistry at a time when the National Science Foundation published figures showing that fewer than twenty African Americans earned Ph.D. degrees in Chemistry in the nation each year. For example, an NSF publication revealed that 19 African Americans earned Ph.D. degrees in Chemistry in the nation in 1994, and at Howard University that year, three African Americans from North Carolina Central University earned their Ph.D. degrees in chemistry on the same day – Dr. Gregory Clark, Dr. Cosmas Okoro, and Dr. Vida Farrar – all students of Dr. Ezra L. Totton.

Dr. Totton “officially” retired from the University in 1976 and was named Professor Emeritus in the Department in 1977. He continued to teach and direct B.S. and M.S. research for another 15 years. Dr. Totton was succeeded as chair by Dr. Schooler who served from 1976-1991. Subsequent Chairs/Interim Chairs of the Department were Dr. Myers (1991-1997), Dr. Izydore (1997-1998), Dr. Wendell W. Wilkerson (1998-2004) and (2006-2007), and Dr. Saundra DeLauder (2005-07). Currently, Dr. Shawn C. Sendlinger and Dr. Tonya M. Gerald are serving as Co-Chairs.

In 1972, two faculty research projects in chemistry were part of the first five projects funded at NCCU by the NIH Minority Biomedical Support (MBS) Program of NIH, the forerunner to the Minority Biomedical Research Support (MBRS) Program. Chemistry faculty joined with faculty from Biology and Psychology to obtain funding from the Minority Access to Research Careers (MARC) Program, also from NIH. Drs. Totton (1972-1978), Myers (1972-1993), and Izydore (1979-2001) continued to receive MBS/MBRS funding over a thirty-year period. This funding was invaluable to supporting the M.S. program and its students. It also enabled the faculty to obtain significant research results and to publish many papers in scientific journals.

In 1985, Dr. Myers obtained a U.S. patent on his research. This was followed from 1988-1993 by five more patents obtained by Dr. Izydore. These represent the first six patents obtained by NCCU faculty in the history of the University. In 1998 one of Dr. Izydore’s patents was licensed by Japan Tobacco, Inc. for \$500,000. The research publications and patents obtained by the faculty allowed the Department to be successful in obtaining funding for major research instrumentation. In the 1990s, instrumentation grants from the Office of Naval Research and MBRS allowed the Department to purchase high-field NMR, GC-MS, FTIR, and HPLC instrumentation as well as computers for both the teaching and research laboratories. Additional instrumentation and computers were purchased in 2000 and beyond. In 1998 on the occasion of what would have been Dr. Totton’s 90<sup>th</sup> birthday, the Hubbard Chemistry building was re-dedicated as the Hubbard-Totton Chemistry Building.

During the period from 1985 through 2005, the Department increased its involvement in interdisciplinary research which had been initiated with the MBRS and MARC programs. Support from the North Carolina Biotechnology Center provided funding for additional equipment and supplies for the Department. During this entire period, the Department of Chemistry has provided instruction for the chemical basis of several other departments which produced graduates who earned doctoral and professional degrees, including the Departments of Biology, Human Sciences, Nursing, and Physical education.

Since the mid-1990s, additional faculty have joined the Department. These include Dr. Shawn C. Sendlinger, Dr. Saundra F. DeLauder, Dr. Wendell W. Wilkerson, Dr. Darlene C. Taylor, and Dr. Tonya M. Gerald. Faculty from the Julius L. Chambers Biomedical Biotechnology Research Institute (BBRI), which was established in 1997, have also held joint appointments in the Department. In 2005 the Department moved from the Hubbard-Totton Chemistry Building to the new Mary M. Townes Science Complex (MTSC), occupying the 3<sup>rd</sup> Floor laboratory wing with additional offices across the atrium.

The Department of Chemistry will continue to provide students with an educational, environment that will stimulate their intellectual curiosities, enhance and develop academic and professional skills in chemistry, promote a sense of self-assurance and discipline, and instill a dedication to the advancement of science. Maintaining certification by the American Chemical Society, the faculty will conduct significant research with students, promote collegial exchanges of ideas, encourage diversity, and demonstrate that the B.S. and M.S. degree programs are capable of developing chemistry graduates who are thoroughly trained in the fundamentals of chemistry and their applications to modern life.

A sampling of accomplishments for Chemistry graduates is shown below:

#### NCCU B.S. Graduates who have earned Ph.D. Degrees

Dr. Gregory D. Clark: Ph.D. in Chemistry, Howard University  
Dr. Vida A. Farrar: Ph.D. in Medicinal Chemistry, Howard University  
Dr. David Mitchell, Ph.D. in Chemistry, Emory University  
Dr. Dwayne L. Daniels, Ph.D. in Chemistry, Clark Atlanta University  
Dr. Amanda Bryant, Ph.D. in Natural Products Chemistry, Univ. of Heidelberg  
Dr. Karla Mark, Ph.D. in Pharmacology, Boston University  
Dr. Misha Johnson, Ph.D. in Pharmacology, Duke University  
Dr. Tonya Gerald, Ph.D. in Pharmacology, University of Maryland at Baltimore  
Dr. Isaiah J. Hill, Ph.D. in Chemistry, Georgia Institute of Technology

#### NCCU B.S. Graduates who have earned Professional Degrees

Dr. Michael J. Cotton, D.V.M., University of Florida  
Dr. Jean E. Zula, M.D., University of North Carolina  
Dr. Stacey M. Heath, M.D., East Carolina University

Dr. Jalal B. Fatehi, D.D.S., University of North Carolina  
Dr. Donna D. Bellamy, Pharm.D. , Florida A & M University  
Ms. Varnell McDonald-Fletcher, P.A., Duke University  
Dr. Simbrashe Jaravaza, D.D.S., University of North Carolina  
Dr. Brenda D. Smith, Pharm.D., Mercer University  
Dr. Frank G. Garcia, M.D., East Carolina University  
Ms. Crystal R. Ward, M.A.T. Chemistry, University of North Carolina  
Ms. Ronda G. Davis, J.D., North Carolina Central University  
Dr. Sherrilynn D. Bray Campbell, M.D., East Carolina University  
Dr. Sharon D. Allison, M.D., East Carolina University  
Ms. Coleen G. Crespo, M.L.I.S. program, North Carolina Central University  
Dr. Edey Lewis, Pharm.D., Virginia Commonwealth University  
Dr. Kakneka Dixon, Pharm.D., Virginia Commonwealth University  
Dr. Sharla Evans, Pharm.D., Florida A.& M. University  
Dr. Anita Smith, Pharm.D., University of South Carolina  
Dr. Latarshia Y. Boone, Pharm.D., Mercer University  
Dr. Kizzy Thompson, Pharm.D., Hampton University  
Dr. Kristina Thornton, Pharm.D., Hampton University  
Dr. Treva Stephens, Pharm.D., Campbell University  
Dr. Hazel Ogugua Richardson, Pharm.D., University of North Carolina  
Dr. Kimberly Y. Moseley, Pharm.D., Howard University

#### NCCU B.S. Graduates who completed other graduate degrees

Ms. Ramone D. Givens, M.S. in Chemistry, University of North Carolina  
Dr. Derek A. Brown, Chemistry Ph.D., University of Pittsburgh  
Dr. Jill Robinson, Nursing Ph.D., University of North Carolina  
Dr. Kara L. Larkin, Chemistry Ph.D., Rutgers University  
Dr. Patti L. Thompson: Doctor of Podiatry program, Pennsylvania College of Podiatric Medicine  
Dr. Kim Y. Moseley, Pharm.D., Howard University  
Dr. John J. Chapman, Chemistry Ph.D., Wake Forest University

A brief listing of students and the positions they hold is shown below:

#### Current Employment of NCCU M.S. Students

Dr. Gregory D. Clark: Senior Research Chemist, M Corporation, St.Paul, MN  
Ms. Helen O. Orhue: Water Quality Chemist, City of Houston, TX  
Mr. Philip J. Francis: Senior Chemist, Lord Corporation, Cary, NC (deceased)  
Ms. Felicia E. Frazier: Chemist, Parke-Davis Pharmaceuticals, Michigan  
Mr. Christian O. Williams: Chemist, Webb Technical Group, Cary, NC  
Ms. Debra Lanier: Chemist, IEA in Cary, NC  
Dr. Brenda D. Smith: Clinical Pharmacist, Erie, PA  
Dr. David Mitchell: Senior Development Chemist, Eli Lilly and Company in Indianapolis  
Dr. Frank G. Garcia: Physician in private practice, Lynchburg, VA  
Dr. Michael J. Cotton: Assistant Professor of Biology, Bennett College in Greensboro, NC, and Doctor of Veterinary Medicine in private practice  
Ms. Crystal R. Ward: High School Chemistry Teacher, Wilson County Schools, Wilson, NC  
Mr. Randy A. Harrison: Chemist, ManTech Environmental Services, RTP, NC  
Mr. Stacy Ethridge: Chemist, Reichold Chemicals in RTP, NC  
Mr. Carson E. Wise, Chemist, E.I. du Pont Company in Wilmington, DE  
Ms. Arnetta S. Downing, Chemist, Roche CompuChem Labs in RTP, NC  
Ms. Lisa Yarborough: Forensic Chemist, N.C. State Bureau of Investigation, Raleigh  
Mr. Anthony L. Poole: Hazardous Materials Chemist, Rollins Environmental Services  
Ms. Kimberly D. Smith: Chemist, Merck Labs in Wilson, NC  
Mr. Jarwin Hester, Hazardous Materials Inspector, NC  
Dr. Karla Mark, Pharmacologist, Buck Institute on Aging, CA  
Tavia Boston Webbley, Chemistry Teacher, Riverside High School, Durham, NC

Prepared by John Myers, Ph.D. whose memories of discussions with Ezra L. Totton, Ph.D. and Mr. James R. Butts provided invaluable information for the early years. For more recent decades, Dr. Myers was assisted by Robert A. Izydore, Ph.D., Walter H. Pattillo, Ph.D. and James N. Schooler, Jr., Ph.D.

Sources: Chemistry Department Records  
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