

Member Spotlight: Morgan State Professor Named 2008 Henry C. McBay Outstanding Teacher



Dr. Alvin P. Kennedy was recognized at the Philadelphia Annual Conference as the 2008 Henry McBay Outstanding Teacher. As chronicled in the NNOL August 2005 issue, Professor Kennedy's Chemistry Department at Morgan State University in Baltimore has produced a plethora of winners in NOBCCChE's Undergraduate Poster Competitions. His students have placed in the top three finalist positions in that competition in each of the past 5 years. His "CURE" (Continuous Undergraduate Research Experience) to undergraduate research was described in his award seminar that was presented during the Monday afternoon *Chemical Education Technical Session*. Two additional presentations augmented his description of Morgan's program. A key element of their program involves working to instill in students that learning is a continuous process in both the academic and research realm. Challenges associated with that endeavor are: the transfer of information from the classroom to the research environment; and a mechanism to reinforce this process throughout the academic year. These challenges are being addressed by coupling interdisciplinary research projects with the devel-

opment of critical thinking skills. Critical thinking (CT) skills are essential for a student's intellectual growth and can be seamlessly incorporated in a variety of activities throughout the summer and academic year. The framework for the undergraduate research development program consists of three elements: critical thinking and literature, critical thinking and research, and critical thinking and peer review. Students involved in the program are required to give several poster presentations of their research efforts at various stages of their work. By the time they arrive at of poster competitions, their students are well seasoned. Hence, the high performance that we observe is an indication of the success of his program. During his tenure at Morgan, his students have won numerous awards at various meetings including NOBCCChE. This includes the highly memorable NOBCCChE 2004 meeting when Morgan students swept the NOBCCChE undergraduate research awards, winning the NOBCCChE Poster and the Rohm & Haas Undergraduate competitions. That feat was accomplished again this year.



Dr. Alvin Kennedy® receives the Henry McBay Outstanding Teacher Award from Dr. John Harkless, Howard University, the 2007 award winner.

The Undergraduate Research Development Program at Morgan is developing inquiry-based laboratories in its summer research program. The purpose is to integrate critical thinking skills into laboratory research. In an inquiry-based laboratory setting, students are given a simple description of the goal of the project. They are divided into several groups and are engaged in a discussion of the nature of experimental design and analysis. Each group comes up with two different experimental designs towards the goal, and proceeds with their experiments. The groups then report their results and openly discuss and evaluate each experimental design's strength and weakness. They then return to their groups and refine their designs and finish the experiment. After the experiment, the Critical Thinking module "Post Experiment Analysis" is applied and laboratory reports are written. They are currently implementing one inquiry-based experiment in their General Chemistry Laboratory course in an attempt to encourage students to take an active role in laboratories and to engage them in critical thinking activities.

Professor Kennedy received his undergraduate education at Grambling State University. While at Grambling he had a very rich undergraduate research experience. He was a participant in cooperative and summer internships at Brookhaven National Labs, Dow Chemical Company, Dowell and AT&T Bell Laboratories. He received his bachelor's degree in 1978 and was awarded an AT&T Bell Laboratories Cooperative Research Fellowship. He matriculated to the University of California at Berkeley where he did his graduate work with Professor George C. Pimentel, and he received his PhD in Physical Chemistry in 1985.

Upon completion of his PhD, Dr. Kennedy joined Dow Chemical and became a Project Leader in the Advanced Electronics Materials Division in Central Research. He received several patents for his work in dielectric polymers and was awarded "Outstanding Paper" at the 7th Annual International Microelectronics Conference. While at Dow he began to mentor high school and college students and had the privilege of one of his stu-

dents being a finalist in the Westinghouse Competition.

In 1991 Dr. Kennedy joined the Chemistry Department at North Carolina A&T as an Assistant Professor. His research focused on the development of in-situ dielectric monitoring of polymerization reactions and processes in microgravity, and he was awarded a NASA/ASEE Research Fellowship to conduct research at Marshall Space Flight Center. He also served as Program Coordinator and mentor for the NASA Sharp Plus High School program for several years. He once again experienced the privilege of one of his students receiving 1st place in the International Space Olympics in Moscow, Russia.

In 2000 Dr. Kennedy became Professor and Chair of the Department of Chemistry at Morgan State University. He immediately began to build the research infrastructure necessary for creating a program that would serve as the foundation for developing a Continuous Undergraduate Research Experience (CURE). He has been very successful in receiving internal and external funding to develop the infrastructure needed for teaching and research. Dr. Kennedy has established a research collaboration at Morgan whose focus is the development of Sensors for BioEnvironmental Research (SenBER). He is PI of two grants which support this research, NSF Research Infrastructure for Science and Engineering (RISE) and DOE Biosensors for Environmental Toxicology (BET).

Dr. Kennedy is currently serving as Director of Morgan's NSF HBCU-UP Undergraduate Research Development Program. Despite his numerous administrative duties, Dr. Kennedy is still very active in his true passion as a researcher and mentor. He has served as research mentor for over 50 graduate, undergraduate and high school students in a variety of programs including ACS-SEED, NASA SHARP-PLUS, NIH MARC, NIH MBRS, NSF LSAMP, NSF HBCU-UP, NSF RISE and the Ronald McNair Post-Baccalaureate Program.

The NOBCCHE Undergraduate Scholarship Awards were sponsored by Colgate – Palmolive Company. The recipients were **Mr. Leethaniel Brumfield**, Langston University, Stillwater, OK, and **Ms. Reaya Richardson**, Benedict College, Columbia, S.C.



Dr. Sharon Kennedy (center), Technical Associate, from Piscataway, NJ, presented the awards.

Colgate – Palmolive also co-sponsored the Undergraduate Poster Competitions. There were 32 undergraduate posters entered into the 2008 competition. The awards for posters related to Bioapplications in Chemistry /Materials were presented for first place to **Ieashia Lewter** from Morgan State University, for second place to **Oluwadamilola Oladeru** from Yale University, and for third place to **Walter Lewis** from Cheyney University of Pennsylvania.

The awards for posters related to General Chemistry topics were presented for first place to **Evelyn Ntam** from Morgan State University, for second place to **Oyebola Oladeinde** from Morgan State University, and for third place to **Reba Scott** from Texas Southern University. This was the third time in four years that Morgan State undergraduates finished first and second in the chemistry division of the poster competitions.

The **Rohm and Haas Company Research Award** for outstanding undergraduate researcher was presented to **Ms. Racquel Jemison** from **Morgan State University**.



From left: Dr. Jeremy Venter (R&H), **Mr. Leethaniel Brumfield** (Langston University), **Mr. Weslee Glenn** (Norfolk State University), 2008 winner **Ms. Racquel Jemison** (Morgan State University), and **Mr. Rashidi Butcher** (Community College of Philadelphia).