

National Library of Medicine Specialized Information Services





1998 Toxicology Outreach Panel Report

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8th Annual Meeting of the Toxicology Information Outreach Panel

November 8, 1998 Lake Buena Vista, FL

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Introduction

The 8th Annual Meeting of the Toxicology Information Outreach Panel (TIOP) was held November 8, 1998, in conjunction with the 1998 American Medical Informatics Association (AMIA) Annual Fall Symposium, in Lake Buena Vista, Florida. Continuing the tradition set in 1997, the panel explored additional opportunities in the telehealth and telemedicine arena. A special presentation, entitled "Distance Learning in the 21st Century," by Mr. Derrick Knox of D&A Integrated Solutions, provided the focus for further discussion in this area. In addition, three presentations during the morning session dealt with environmental justice. Dr. Reuben Warren, of the Agency for Toxic Substances and Disease Registry (ATSDR), reflected on the history of the environmental justice movement and its impact today; Mr. Michael Hubbard, of the Minority Health Professions Foundation (MHPF), updated the panel on the progress of the Mississippi Delta Project; and Ms. Croscina Crockett, of Xavier University of Louisiana's Deep South Center for Environmental Justice (DSCEJ), spoke on "A Partnership for Environmental Justice."

During this year's meeting, a special presentation was conducted to honor Dr. Melvin Spann, TIOP Project Director, whose vision led to the establishment of the TIOP in 1991. This panel continues to serve as a forum for the exchange of information regarding the use of NLM's Toxicology and Environmental Health Information Program databases, as well as a vehicle for collaboration and coordination among Historically Black Colleges and Universities and Minority Institutions (HBCUs/MIs) and as a channel for the evaluation of the effectiveness of its

services. In recognition of all these achievements, a special proclamation was written to Dr. Spann and read during the presentation.

The latter part of the meeting focused on reports from the parcticipating HBCUs relating to new activities and existing project developments since the last meeting.

In closing, Dr. Bailus Walker, TIOP Chairman, noted that the panel is very appreciative of Dr. Spann for the strong leadership he has provided to the panel since its inception in 1991.

Opening Remarks

Dr. Bailus Walker

Chairman, Toxicology Information Outreach Panel

Dr. Walker opened the eighth Annual TIOP meeting, noting that many accomplishments have evolved from this effort. He cited as examples the computerization of the entire library system at the University of Arkansas at Pine Bluff and the opening of an Institute of Public Health at Florida A&M.

Dr. Walker then introduced Dr. Henry Lewis III, Dean of Pharmacy and Pharmaceutical Science, Florida A&M University, who welcomed the attendees to Florida. Dr. Lewis noted that Florida has ten public universities, of which Florida A&M is the only HBCU [land grant] institution; three private HBCUs in Florida are Florida Memorial, Everett Waters, and Bethune Cookman College.

Dr. Walker then asked each attendee to introduce him or herself. He also welcomed Dr. Alfred Nyanda, Department of Pharmacology, Meharry Medical College, who replaces Dr. Maurice Knuckles on the panel.

After the introductions, Dr. Walker welcomed Dr. Reuben Warren, Associate Administrator for Urban Affairs, Agency for Toxic Substances and Disease Registry (ATSDR), as the first speaker, stating that Dr. Warren is a real credit to the area of environmental justice and has brought environmental justice to the agenda in both the Centers for Disease Control and Prevention (CDC) and ATSDR.

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Meeting Topics

Environmental Justice or Else! Dr. Reuben Warren Associate Administrator for Urban Affairs Agency for Toxic Substances and Disease Registry

Dr. Warren began his discussion by defining environmental justice as "a movement comprising civil rights activists and environmentalists working to ensure the rights of low-income and minority communities to clean and healthy environments." He noted that the environmental justice movement began in the small, predominantly African-American rural community of Warren, North Carolina, in 1982. Dr. Warren said he had been in that area in 1971, when he had worked with Congresswoman Eva Clayton and civil rights activist Floyd McKissick in Soul City to improve health for rural, black North Carolinians.

Dr. Warren noted that the U.S. General Accounting Office study that was conducted in Alabama, Florida, Georgia, Kentucky, Mississippi, North and South Carolina, and Tennessee determined a historical correlation between the location of hazardous waste landfills and the racial and economic status of surrounding communities. Three-fourths

of the landfills were located in minority communities. He also stated that, in 1987, the Commission on Racial Justice showed that the most significant factor in determining the siting of hazardous waste facilities nationwide was race.

Further, in the mid-1990s, ATSDR conducted a search that indicated that African Americans and Hispanics were two to three times more likely to live within a one-mile radius of uncontrolled hazardous waste sites.

All of these findings led to Executive Order 12898 on environmental justice, which was signed on February 11, 1994. This order directed federal agencies to develop an environmental justice strategy for identifying and addressing disproportionately high and adverse environmental effects of their programs, policies, and activities on minority and low-income populations.

Dr. Warren explained that the environmental justice movement has as its core social justice, which forms the basis for civil rights, human rights, and the black power movement(and that social justice is the foundation for public health. He stated that it is up to those in public health to fully join the environmental justice movement, both in theory and practice, "or else" we will have . . .

- more neurological and behavioral disorders due to lead,
- more reproductive disorders due to mercury ingested from the fish we eat,
- more kidney and hepatic disorders due to arsenic used to make pesticides,
- more cancers from PCBs,
- more mutations in the genetic pool due to chemical challenges, and on and on and on

Dr. Warren offered five principles that have come out of his public health experience to enhance the environmental justice movement:

- nutritional and dietary issues;
- physically taking care of our bodies,
- interpersonal and social skills,
- respecting and protecting the environment, and
- spiritual grounding (global planning and believing in a divine order to the universe).

He also offered a broadened definition of public health as a "dynamic relationship focused on the physical, social, psychological, and spiritual well-being of individuals and groups and their interaction with the social and physical environment." He suggested that if we attend to these principles in our teaching, our research, and our service activities, we can be healthy, and we have the responsibility to assure the public health in each of these areas:

- physically, by maintaining physical structures and functions related to health;
- socially, by assuring that the individual or group can function reasonably well in this complex society;
- psychologically, by serving to enhance self-respect and self-esteem in all people, regardless of their race, gender, or economic or educational status; and
- spiritually, by helping the individual or group find meaning or purpose in life.

Dr. Warren referred to several authors, all well-versed in both the biomedical and behavioral sciences, whose books offer guidance to health professionals in fulfilling their responsibilities in these areas. They are: Deepak Chopra, M. D. (*Creating Health*); Tom Peck, M.D. (*The Road Less Traveled*); and psychologist Dr. Dennis Bloodworth (*Key to Yourself*).

In conclusion, Dr. Warren stated that ATSDR provides leadership in three areas: Minority Health, Environmental Justice, and "Brownfields." In his travels across the country responding to environmental justice concerns, he has heard the same message from the people(that they are sick and our public health science and/or ethical standards

need to catch up with their public health reality.

Dr. Warren's thought-provoking presentation initiated a lively discussion among the panel members.

Mississippi Delta Project, Phase II Mr. Michael Hubbard Director of Community Services and Outreach Minority Health Profession Foundation

Mr. Hubbard began his presentation by noting that the theme of the MHPF is to "bring health within reach and promote the optimum healthcare and health of poor and minority populations.

The Mississippi Delta Project, Hubbard stated, has as its goal "to demonstrate that partnerships between government, academia, private-sector organizations, and community residents can identify key environmental hazards, promote environmental quality, and reduce and prevent, where possible, these hazards from impacting negatively on the health of individuals and the environment." This project is involved with the seven states (220 counties) that surround the large Mississippi Delta Region.

Phase I of the project was conducted at Meharry Medical College, where Dr. John Maupin and Dr. Maurice Knuckles submitted four profiles of needs assessments to MHPF and ATSDR. Out of those needs assessments, Mr. Hubbard stated that they have been able to determine five broad areas of concern: environment, morbidity/mortality, health, asthma in children, and water contamination.

The focus of Phase II, which is in its initial stages, is to select specific needs identified in Phase I and develop intervention strategies appropriate for preventing negative impacts on health and the environment. Priority will be given to projects on occupational safety and health, environmental health, hazardous and toxic materials, and health prevention. In 1998, the MHPF created the Division of Community Service and Outreach to facilitate Phase II of the project. The objectives of Phase II include broadening the awareness of the Mississippi Delta Project at the local, regional, and national levels, and expanding cooperative relationships between federal agencies, state and local health and environment departments, the local community, and educational institutions.

Upcoming events during Phase II include the evaluation of needs identified in Phase I, selection of responsive health prevention and environmental impact strategies, selection of specific demonstration initiatives, proposal review, selection and announcement of subawardees, technical assistance, and proposal writing workshops for subawardees to help them better prepare themselves to produce proposals to seek other funding and to be able to better serve their communities.

Hubbard highlighted the importance of the Mississippi Delta Project through the story of one six-year-old boy who survived the hardships of living in the region, who worked in the cotton fields to earn enough money to buy the bicycle he wanted, who never forgot what he learned and where he came from, and who later in life served his government. Today, he is Rodney E. Slater, Secretary of Transportation and one of the most successful secretaries in Cabinet history. This, Hubbard stated, is the key for all children living in the Delta area: to survive childhood, to be productive adults, and to be able to realize their dreams. The Mississippi Delta Project is trying to make those dreams possible.

In closing, Mr. Hubbard invited panelists to visit the MHPF's web site at http://www.minorityhealth.org.

Communiversity: A Partnership for Environmental Justice Ms. Croscina Crockett

Deep South Center for Environmental Justice Xavier University of Louisiana

Ms. Crockett introduced her topic by describing the work of the DSCEJ. She explained that the term

"communiversity," coined by Dr. Beverly Wright, director of the DSCEJ, emphasizes the "true partnership" that exists between the community and the university. Her slide presentation outlined the Center's mission, objectives, and projects.

Mission Statement

The Deep South Center for Environmental Justice (DSCEJ) was developed in collaboration with community environmental groups and other universities within the region to address issues of environmental justice. Founded in 1992, the DSCEJ Community/University Partnership at Xavier University in New Orleans, Louisiana, provides opportunities for communities, scientific researchers, and decision makers to collaborate on programs and projects that promote the rights of all people to be free from environmental harm as it impacts health, jobs, housing, education, and a general quality of life.

The most important point, Ms. Crockett stated, is the collaboration with communities(community people as well as other universities. The Center's activities emphasize community assistance and educational programs and use the definition of environmental justice as stated by Ben Chavis:

Environmental Justice is the fair treatment of people of all races, cultures, and income with respect to development, implementation, and enforcement of environmental laws, regulations, programs, and policies. Fair treatment means that no racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from the operation of industrial, municipal, and commercial enterprises, and from the execution of federal, state, local, and tribal programs and policies.

Ms. Crockett pointed to the key word in this definition as "disproportionate," elaborating that all are impacted by environmental pollutants to some extent, but that the groups they are concerned about are those who receive a disproportionate impact. The Center is financially independent, operating solely on grants with no funds from the university. Funding agencies include the Environmental Protection Agency, the Public Welfare Foundation, the Alton Jones Foundation, the United Negro College Fund, the National Institute of Environmental Health Sciences, and the Department of Housing and Urban Development.

Ms. Crockett then briefly described the Center's current programs.

<u>New Orleans Environmental Justice Education Teacher Training Program</u>: Provides environmental justice education for grades K-6, with the main goal of infusing environmental justice into their science curriculums.

<u>Mississippi River Avatar: Communiversity Along the River</u>: Strengthens the ability of citizens' groups in the Mississippi River corridor to parcticipate effectively in decisions affecting the emission of toxic chemicals, through programs for community leaders.

<u>Xavier Triangle Community Worker Training & Construction Company</u>: Trains Xavier Triangle Community residents in basic construction skills and hazardous material abatement, as well as academic and life skills, resulting in employment. This project is partnered with Xavier University.

<u>Minority Worker Training Project</u>: Prepares residents in impacted communities to be able to do some work in environmental remediation.

<u>Opening Doors of Communication for Pollution Prevention</u>: Promotes the development of pollution prevention strategies among community residents and strengthens the ability of citizens' groups in the Mississippi River

Corridor to parcticipate effectively in decisions affecting the emission of toxic chemicals by promoting better channels of communication between community residents, environmental groups, and local, state, and federal agencies. Actually brings them together.

<u>Lead Education Project</u>: Trains community residents to become trainers in lead education, focusing on the identification, prevention, and intervention of lead poisoning in at-risk communities.

<u>Public Parcticipation in Restoration Advisory Board Development</u>: A Model for People of Color Involvement: Strengthens the ability of communities near military bases to parcticipate effectively on restoration advisory boards without feeling intimidated.

<u>Environmental Justice Partnership Project</u>: Communiversity Along the River: Assists community groups along the Mississippi River Chemical Corridor to efficiently address environmental justice issues through an active partnership with the Deep South Center for environmental justice. Specifically, the project will address the environmental research, education, and outreach needs of the DSCEJ Mississippi River corridor community partners.

<u>BES (Building Environmental Sustainability) Student Campus and Community Outreach Project</u>: Promotes infusion of environmental justice sustainability into the current curriculum at the university and also to the community outreach in that area.

<u>Mississippi River Chemical Corridor Small and Disadvantaged Business Profile</u>: Aims to identify small and disadvantaged business clusters in close proximity to other polluting facilities (i.e., brownfields, Toxic Release Inventory facilities, and Superfund sites).

<u>Alton Jones Community Health Surveying Initiative</u>: Provides assistance to the Tulane Environmental Law Clinic for its legal efforts in the communities, especially those near facilities with high toxic air releases.

Ms. Crockett displayed a map showing the 90-mile stretch between Baton Rouge and New Orleans, where over 100 plants are located. This stretch is called the "Chemical Corridor" and is also known as "Cancer Alley" because of the many different kinds of cancers that are found in the residents of these communities. The leaders from each of these communities (the community partners) serve on the DSCEJ community advisory board, which meets monthly to discuss current issues in the communities, upcoming grants, and strategies for various activities.

Activities include community education and training workshops, community research and health surveying, and student activities (the students, Ms. Crockett emphasized, "are a part of everything we do."

In closing, Ms. Crockett recounted some of the communities' experiences that illustrate how deeply they are affected and some of the results the DSCEJ has seen in working with them. More information is available on the Web at http://www.xula.edu/dscej.

Special Presentation for Dr. Melvin Spann

Dr. Bailus Walker

Dr. Walker began this special tribute to Dr. Spann by reading the following resolution:

Resolution of Commendation

Dr. Melvin Spann

WHEREAS, Dr. Melvin L. Spann, Associate Director of the National Library of Medicine's Specialized Information Services Division, is a champion for the nation's minority and socioeconomically deprived communities that are being adversely affected by toxicological,

environmental, occupational, and waste hazards and which are at risk for disease and dysfunction that may be caused or exacerbated by exposure to toxic agents;

WHEREAS, Dr. Spann recognized the need for the health professionals serving these at-risk communities to receive more information about the exposures and health impacts of these hazards so that preventive and early intervention strategies could be implemented.

WHEREAS, Dr. Spann was earnestly interested in assuring that faculty and students in Historically Black Colleges and Universities and Minority Institutions be effectively educated in using the vast resources of the National Library of Medicine to improve the health and environment of at-risk communities;

WHEREAS, Dr. Spann's interest and vision led to the establishment in 1991 of the National Library of Medicine's Toxicology Information Outreach Panel as a forum for the exchange of information regarding the use of the National Library of Medicine's Toxicology and Environmental Health Information Program databases;

WHEREAS, Dr. Spann has been a vital link in the provision for training Historically Black Colleges and Universities and Minority Institutions offering degrees in medicine, environmental health sciences, veterinary medicine, and pharmacology in the use of said databases, which has resulted in the training to date of 78 colleges and universities;

WHEREAS, Dr. Spann's involvement with the panel has assured its continued service as a vehicle for collaboration and coordination among Historically Black Colleges and Universities and Minority Institutions and as a channel for the evaluation of the effectiveness of the training and related information dissemination services;

BE IT RESOLVED that the members of the Toxicology Information Outreach Panel, both past and present, and the National Library of Medicine commend Dr. Spann and express their appreciation for his dynamic vision, leadership, and commitment that have led to the success of this program.

Dr. Donald A. B. Lindberg, Director of the NLM, made a special appearance at the meeting because of this tribute to Dr. Spann, and was the first to congratulate him on this "well-deserved honor," noting Dr. Spann's extensive education and background in all of the disciplines relating to toxicology and environmental health, as well as his scholarship, good judgment, common sense, and sense of humor.

Each attendee then spoke briefly about his/her personal experiences working with Dr. Spann, acknowledging his many accomplishments with the panel and his many contributions to the nation in science. A special presentation by Ms. Rose Foster, Group Manager at the Oak Ridge Institute for Science and Education (ORISE), traced the history of the panel and the training activities that have been a focus of the panel's mission. A special scrapbook, containing pictures highlighting the successes of the TIOP program and letters of thanks and commendation from current and past panel members, compiled by Ms. Cynthia Gaines of NLM, was presented to Dr. Spann. Dr. Henry Lewis then presented Dr. Spann with an eagle award, stating that the eagle appropriately exemplifies Dr. Spann's singular leadership, and thanked him for his leadership and vision, and his tenacity in helping HBCUs achieve where they are today. He cited as an example the HBCU Minority Institutions' Telemedicine Training Program, which has furthered the implementation of HBCU access to the information highway.

Dr. Spann expressed his appreciation for this honor, humbly accepting the praise with the note that this has been his opportunity to do what he can for people living in unacceptable, unhealthy environments.

Distance Learning in the 21st Century Mr. Derrick Knox

Founder, D&A Integrated Solutions, Inc.

Mr. Knox began by introducing D&A Integrated Solutions, Inc., which provides videoconferencing, network support, and software development services to businesses, universities, corporations, and government agencies. Education is the key for someone to succeed(and not having access to education is especially a problem in the minority community.

D&A's goal, Mr. Knox stated, is "to raise educational standards, especially in remote areas, urban areas, and rural areas." D&A accomplishes this through communication, specifically D&A's videoteleconfer-encing system, which provides voice and data communication over Internet Protocol. D&A teams with Lucent Technologies to provide this service.

A video describing the system and how it works was then shown. Mr. Knox also provided an actual demonstration of the videoteleconferencing system with someone on a cell phone. Someone on a regular phone can join a conference by "streaming audio" without having to pay for a long distance call unless the receiver is on a cell phone and would has to pay for incoming calls. The computer makes the call, he explained. In this way, D&A has been able to reduce its telephone bills by 45%. "When using this system properly," Mr. Knox said, "you can increase profit margins and reduce cost at the same time." This makes it possible to provide services to remote locations at a reasonable cost.

Minimum requirements to use the system include:

- Pentium 200 MHz system
- Lucent Collaborative Video Board
- Microsoft Windows NT with Service Pack 3
- 64K RAM
- Mini Tower Case
- External Speakers
- Internet Connection: ISDN (slowest), Frame Relay, Cable Modem, T1, T3, or ATM (Optimal performance on T1 or higher)

Mr. Knox noted that one possibility relative to toxicology needs is to provide collaborative environmental support for colleagues and groups. Other applications for this system include distance learning, teleco-op mentoring programs, environmental history compliance consulting, and specialty information services. Information such as documents and applications can also be shared over the server. Productivity is increased through the use of "Virtual Private Offices" because travel expenses can be eliminated; meetings and conference calls can be held wherever you are, even from the beach or the golf course.

Telemedicine is another very important area, including services such as Internet teleconsultation and telemedicine symposiums, as well as observing operations over the Internet. Bringing telemedicine and medical distance learning to the desktop makes it possible to provide services to urban, rural, and remote areas. Howard University, for example, has used this system to provide telemedicine services in Tanzania, the Virgin Islands, and Haiti, with doctors on staff who can provide radiology and psychology services. As another example, the Veterans Administration Hospital in Louisville, Kentucky, will be providing medical distance learning services for that area.

Howard University has also provided operation observation over the Internet with this system. As the doctor was operating, other doctors were observing from the National Institutes of Health, as well as the medical schools at Howard and Duke Universities; they could also see the X-rays.

HBCU Updates

University of Arkansas at Pine Bluff Mr. Edward Fontenette Director, Watson Memorial Library

The University of Arkansas at Pine Bluff (UAPB) trains and assists students pursuing a degree in regulatory science by securing basic information relative to toxic substances. Teachers and researchers promote investigative projects towards a better understanding of pollution and toxicology.

Mr. Fontenette first described how the assistance from the NLM through the TIOP put the university in a position to be able to lobby for even greater computer access for the faculty and students. As a result, they have now received about a \$3 million upgrade to totally computerize all of the library's functions. They had received a few computers, data, training, and hookups from NLM. They now have 20 state-of-the-art computers connected to the Internet, as well as CD-ROM towers and about 24 CD-ROMs. It is notable that this computerization was done by a minority contractor, who has done an outstanding job. There are future plans for a \$2-million upgrade on learned resources that include video productions.

An added bonus during the upgrade was the addition to the Library of replicas from the Inca Exhibit and a Louis XIV tapestry (African motif).

Mr. Fontenette also mentioned that, since the University has been involved in the TIOP, they now have a number of faculty members and "program heads" in the nursing department and the technical schools, as well as the School of Nursing at the University of Arkansas at Monticello, that are graduates of UAPB.

Howard University Dr. Robert Taylor Chairman, Department of Pharmacology College of Medicine

Dr. Taylor reported that they had been very busy at Howard. The Department of Pharmacology is actively maintaining the workstation located there, and the medical library recently installed several more computer workstations that have access to the NLM databases.

Dr. Taylor also announced the groundbreaking ceremony for a new health sciences library, the Lewis Stokes Health Sciences Library, in November [1998], which would be modeled after some of the finest new age medical libraries in the United States. The University is moving toward a totally computerized library.

Dr. Robert Copeland, Director of Information at Howard's College of Medicine and a staunch supporter of the panel's initiatives at Howard, continues to teach the medical and graduate course electives in bioinformatics and medical informatics. In addition, Dr. Copeland was recently appointed to the Scientific Review panel that reviews the data which goes into the Hazardous Substances Data Bank; he is also on NLM's Library Operations Committee that reviews the journal selections for MEDLINE (information related to toxicology and pharmacology).

Dr. Taylor reported that the Department of Pharmacology, within the College of Medicine, ranked second in the University in the number of grants submitted for external funding for the 1997-1998 school year. The School of Engineering had submitted the most grants. Howard's Department of Pharmacology has four U.S. Army Grants for research on breast cancer. The Department of Pharmacology is moving towards requiring Ph.D. candidates to apply for NIH pre-doctorate fellowships.

Dr. Taylor was parcticularly pleased to report that Howard University has been chosen to parcticipate in a five-year collaborative grant, "Ethnic Factors Among African Americans and Alcohol Abuse," funded by the National Institute on Alcohol Abuse and Alcoholism, the Alcohol Institute, and the Office on Research on Minority Health. This grant

comprises seven projects and an administrative core. Howard has been asked to join the study as the seventh site for the Collaborative Study on the Genetics of Alcoholism. The other six sites are all majority universities and they have realized the importance of including more African Americans. "This is a program," Taylor said, "that's been in operation for about 15 years and represents the best science in the Alcohol Institute."

Meharry Medical College Dr. Alfred Nyanda

Director, ToxMed Reference Laboratory of the Department of Pharmacology

Dr. Alfred Nyanda, the newest panel member, replaces Dr. Maurice Knuckles as the representative from Meharry Medical College. He directs the toxicology section of the new Department of Environmental Health, previously the Environmental Toxicology subdepartment of the Department of Pharmacology.

Dr. Nyanda was pleased to announce the establishment, during the past year, of a toxicology reference laboratory at Meharry Medical College as a part of the Pharmacology Department. The ToxMed Reference Laboratory is a fully federal- and state-accredited clinical toxicology laboratory with emphasis in training African-American students in the area of clinical toxicology. The laboratory also collaborates with other HBCUs, providing necessary research support and clinical services. The only reference laboratory in Nashville or the surrounding areas that performs toxicological testing, the ToxMed Reference Laboratory specializes in heavy metal testing for lead, mercury, arsenic, aluminum, cadmium, chromium, etc., as well as blood alcohol testing, testing for drugs of abuse, and therapeutic drug monitoring.

In closing, Dr. Nyanda was very pleased to report that the Pharmacology Department graduated six Ph.D. students last year, the highest number ever to be graduated in one year.

HAmpton University Ms. Kathy Block Director, Office of Institutional Research

Ms. Block brought greetings from Dr. William R. Harvey and announced that Hampton has embarked on a campaign to raise their current endowment to \$200 million. As part of the fundraising efforts, \$10 million has been earmarked for technology.

Ms. Block also reported that the Hampton University Environmental Justice Technology Center has changed location and fiscal control while continuing its goals. It is now a nonprofit corporation, the Environmental Equity Information Institute (E2I2) under the leadership of Dr. Babafemi Adesanya. The university's School of Nursing continues collaboration with E2I2 to address environmental justice issues. The new address is:

Environmental Equity Information Institute 53 Wythe Creek Road Suite B P.O. Box 189 Hampton, Virginia 23669 Fax: (757) 766-8492

E-mail: e2i2@eeii.org

The institute's fiscal and personnel support has been augmented by REMSA, Inc. Continued collaboration with EPA Headquarters, EPA Region III, Virginia Department of Environmental Quality, Virginia Space Grant Consortium, and National Aeronautics and Space Administration (NASA) has also supported environmental justice initiatives.

Activities at Hampton in 1997-98 included the following: Collaboration with the Southeast Rural Community Assistance Project to characterize the impact of non-point sources of pollutants, such as agriculture on shallow, private wells.

Collaboration with the DSCEJ at Xavier University in New Orleans to provide GIS (Geographic Information System) support for the analyses and pollution profiles for Convent, Louisiana, as part of the environmental justice analysis for the proposed \$600 million Shintech facility.

Completion of a phase of the "Balloon Project" with the Virginia Space Grant Consortium in which a low-altitude digital camera was deployed to investigate the potential of augmenting ground truthing efforts.

The School of Nursing has received 20 computers, a portion of those given to the University by the General Services Administration (GSA), which means that each faculty member now has a computer workstation. In addition, funding from the Teagle Foundation for infrastructure for students has made it possible to provide a new computer lab for the students at the University.

The next phase for the School of Nursing is to look for infrastructure funding for its library, which has very limited resources.

Morehouse School of Medicine

Dr. Mohamed Bayorh

Department of Pharmacology and Toxicology

Dr. Bayorh noted the workstations and other contributions from NLM that were made to enhance research activity at Morehouse School of Medicine (MSM). He also thanked the MHPF and the ATSDR for the lead grant awarded to MSM.

Needed facilities are being completed and/or being built. Construction of a Research wing was started last summer and is nearly completed. The new wing will house the Cardiovascular Research Center, NASA program, the Department of Pharmacology and many other important components of the school's research effort. Plans for the National Center for Primary Care, which was funded by a \$15-million federal grant, are proceeding as scheduled. A Health Promotion and Disease Prevention Research Center was also established using funds provided by the CDC.

The TOXNET workstation at MSM continues to be an integral part of its Toxicology Outreach Program. Efforts in the same direction were recently expanded by an Enhancement of Institutional Capability Supplement grant (\$249,715) awarded to MSM through the Minority Biomedical Research Support program.

Finally, the Department of Pharmacology is developing a pharmacology course to introduce the concept of toxicology to undergraduates. This course will be available to all students at the Atlanta University Center, which is the largest consortium of HBCUs. It is hoped that this will be a start to bring the awareness of environmental toxicology to undergraduate students and to help them prepare for jobs in industry.

Texas Southern University

Dr. Theodore R. Bates

College of Pharmacy and Health Sciences

Dr. Bates continues to offer introductory and advanced training classes on the use of NLM's online databases to the faculty, undergraduate, and graduate researchers at the College of Pharmacy and Health Sciences. In 1997, he introduced the use of Internet Grateful Med to undergraduate students, using MEDLINE, AIDSLINE and AIDSDRUGS. This year, he has incorporated the ChemID and TOXLINE online databases into the training.

Ms. Norma Bean, associate director of the university's main library, provides the same training for students and researchers outside the College of Pharmacy and Health Sciences. Of parcticular importance is her training of the six master's candidates and 13 Ph.D. candidates in the environmental toxicology program. Dr. Bates was also pleased to report that the library has now been equipped with 40 new computers and access to the Internet.

Texas Southern also continues to use the databases in community outreach programs for AIDS education.

Xavier University of Louisiana Dr. Ann Barbre College of Pharmacy

Dr. Barbre reported that Xavier University of Louisiana continues to incorporate the bibliographic retrieval systems made available through the TIOP at NLM in its teaching, research, and community outreach programs. This year's report will focus on the research activities of investigators involved in the Center for Bioenvironmental Research (CBR), a joint effort between Tulane University and Xavier.

The CBR, created in 1989 with Department of Defense funds, represents "a solidly established and well- developed collaboration between a major research university and one of the nation's leading historically black universities." Faculty and students at the CBR are drawn from disciplines as diverse as anthropology, biochemistry, computer science, disease prevention, ecology, economics, engineering, English, epidemiology, geology, mathematics, molecular biology, pharmacy, philosophy, and toxicology, and engage in multidisciplinary basic and applied environmental research and education. "A strength of the partnership between Tulane and Xavier is its ability to leverage funds and optimize investments in minority institutions by combining the research capabilities of Tulane University with the educational resources at Xavier University." The value of this partnership has been recognized through numerous grants and cooperative agreements funded by many federal agencies including the U.S. Departments of Energy, Defense, and Agriculture; the National Institute of Environmental Health Sciences; the National Science Foundation; and the National Aeronautics and Space Administration.

Xavier's specific arm of the CBR, the Center for Environmental Programs, has formed a wellspring from which both research and educational activities continue to flow. Both faculty and students have parcticipated in agency-funded research. The Center has also provided funds to support the involvement of about 38 LIFE (Living Intelligently to Foster Earthcare) scholars and interns in research activities through full tuition scholarships and stipends. LIFE scholars and interns are actively involved in bioenvironmental research in laboratories at both Tulane and Xavier and have presented their research at scientific meetings throughout the country. One significant offshoot of the Center's activities has been the development of minors in both Environmental Studies and Environmental Science at Xavier during the fall of 1998.

Outreach efforts of the Center include:

- visitations at the Tulane/Xavier CBR for about 40 Upward Bound students, who learned about professional opportunities in the environmental sciences through presentations by and interactions with CBR scientists,
- partnerships with other schools to develop educational programs and provide advice on environmental pollution to Native American communities,
- partnerships to develop educational materials for use by Native American students through Internet based programs, and
- the provision of information to African-American communities proximate to DOE installations regarding the effects of environmental pollutants on health."

All of the activities associated with or resulting from the efforts of Xavier's Center for Environmental Programs are facilitated through our access to the NLM's toxicological and environmental sciences databases. We at Xavier, and throughout our extended communities, continue to reap great benefits from the opportunities afforded us by parcticipation in the TIOP program."

In closing, Dr. Barbre noted that their NLM database training still is largely one-to-one, parcticularly in the courses in the College of Pharmacy, where the students are required to use the system.

Tuskegee University

Dr. James Webster

Chairman, Department of Biomedical Sciences

Dr. Webster reported that Tuskegee conducted its first off-campus (distance learning) course, a course in pharmacology, during the period January through April of 1998. This course was presented to Tuskegee's nursing students, who were on affiliation in Atlanta, Georgia, at Grady Hospital. The Videoconference Training, Research and Education Center at Clark University received the signals and was used as the electronic classroom. The transmission permitted discussions between the instructors at Tuskegee and the students in Atlanta, maintaining the "human element" in teaching.

Tuskegee is continuing the development of its infrastructure, building on its existing telecommunication fiber optic backbone and installing cable modem capability.

Tuskegee has received two grants through the use of technology to acquire background research information. Dr. Webster announced that the ATSDR project has been expanded to include two grants to investigate the multigenerational effects of zinc and chlordane. The background information for this work was acquired through NLM's TOXNET database.

In addition, the Ford Foundation presented the University the first installment on a grant to install fiber optic communication and computers for dormitories and the library. Such technology will permit electronic access to library information on a continuous basis.

The Kellogg Foundation provided funding to establish a center, the Kellogg Conference Center, for continued application of the life-long learning practices of Washington and Carver. The Kellogg Center has been awarded tax-exempt status; as a result, it is now easier to communicate and conduct symposia and workshops throughout the year.

Tuskegee has accepted eight graduate students for the new doctoral program in material sciences and engineering. This program has been funded by the National Science Foundation and NASA.

Florida A&M University

Dr. Henry Lewis, III

Dean, College of Pharmacy and Pharmaceutical Science

Florida A&M University (FAMU) continues to use the initial workstations that NLM provided to the school in the College of Pharmacy Library. These workstations have been incorporated into the new Science Research Library in the new Science Research Building. This new facility, which is approximately 65,000 square feet, serves as an additional research facility focusing on pharmaceutical research, environmental sciences, public health, physics, math, and computer information sciences. The new library occupies two floors in the new facility. The school went from seven workstations in the pharmacy library to 60 workstations. By this time next year, FAMU anticipates completion of a Computerized Biomedical Science Laboratory for conducting laboratory teaching exercises in anatomy, physiology, pharmacology, and toxicology.

The toxicology outreach training has been incorporated into the drug information and drug literature resources course for third-year pharmacy students. An outgrowth of that training is a new drug information residency. The first resident has been graduated and is now on the faculty at the University of Georgia.

Dr. Lewis reported that FAMU now has the sixth largest college of pharmacy in the nation and currently has 52 Ph. D. students enrolled in four tracks in the College of Pharmacy, Environmental Toxicology, Medicinal Chemistry, Pharmaceutics, and Pharmacology/Toxicology. In addition, there are 38 students enrolled in the Master's of Public Health degree program in the Institute of Public Health, and a new Ph.D. program in environmental sciences was approved in September 1998 by the Florida Board of Regents through Florida A&M's Institute of Environmental Sciences.

Through a grant received from the Coca-Cola Foundation, FAMU is working with Michigan State to start a Ph.D. class in packaging. The objective is to find a way to enhance the shelf life of Coca-Cola's products. Coca-Cola has funded a fellowship in the graduate program at the College.

The faculty at the College of Pharmacy has been extremely productive, publishing a total of 68 publications; this represents approximately one-and-a-half publications per faculty member. All faculty are encouraged to publish their findings and their research in journals as well. In addition, the faculty is leading the Southeast for the third year in a row in research funding from the National Institutes of Health (NIH). As a result, FAMU's College of Pharmacy is now ranked fourth nationwide among all of the 81 colleges of pharmacy in terms of research funding. The college publishes a research capability document listing a biography of each faculty member, information about his or her lab, and how they can be contacted. This document should be available soon on the Web at http://www.famu.edu.

FAMU also received a grant from NIH to add a wing to the new Science Research Building. Groundbreaking is being planned for February 1999 for the new wing, which will be an additional 11,000 square feet on four floors and will be named in honor of Dr. Charles A. Walker, former TIOP member and original FAMU representative on the panel. It also honors Dr. Walker's work at FAMU. "We're hoping," Dr. Lewis said, "that because this is an interdisciplinary building, it will also spawn interdisciplinary research."

A new branch campus in Tampa houses all of the College of Pharmacy's clinical programs and will be the framework for the new distance learning effort that will begin in the spring of 1999. It will offer the Doctor of Pharmacy degree via the Internet and through interactive classrooms, first in Florida, and then throughout the country. The focus of this project is to provide a channel for any pharmacist who would like to upgrade his or her degree from a B.S. to a Pharm.D. and will be a fee-based enterprise, generating its own dollars.

Dr. Lewis was also very excited about the activities going on in the Master's in Public Health degree program. With six full-time faculty on board, they plan to hire three additional faculty during this year. The Institute of Public Health has been instrumental in working through the school's community partners grant with the Macon, Georgia, community to train the community on environmental matters. The Institute has also been selected, through the Governor's office and the March of Dimes, to house the birth defects registry for the state of Florida, in which every birth defect in the state will be registered. Dr. Perry Brown heads this project. In a contract with the State Department of Health, the Institute operates the Stroke Education Council, which will change the practice guidelines for stroke treatment in the state of Florida. FAMU has secured the services of two people from the ATSDR for this initiative: Dr. Cynthia Harris, who is the director of the program, and Dr. Adrienne Hollis.

Drew University of Medicine and Science Dr. Isaac Reese (Retired)

Dr. Reese began by noting the progress that has been made at Drew since the beginning of the TIOP program. Before, there was only one computer for online use, and it was for library staff only. Now, there are about 12 stations in the library for all to access and 10 to 12 more nearby. The library's card catalog and other materials are on a network and accessible via the Internet. In addition, the library has subscribed to a number of online journals that can be accessed from anywhere on campus, as well as accessed from home with the correct password (faculty and students all have passwords). Each department library has been supplied with a computer that is connected to the Internet as well as the Intranet. Dr. Reese attributes this progress to the placement, through the TIOP program, of the first computer with open access in the library. That created the demand and Dr. Reese thanked Dr. Spann for that beginning.

In the area of telemedicine, there are currently two projects: one in radiology and one in ophthalmology. Other projects are temporarily on hold pending resolution of staffing changes. There is a new president, a new Dean of Allied Health; Drew has lost the Dean of Medicine, so that position will also be filled.

Discussion and Conclusions

Dr. Walker first opened the floor for questions to Ms. Crockett relating to her presentation on the work of the Justice Center at Xavier.

Dr. Max Lum, Associate Director for Health Communications, asked how many people have been through the medical waste training at the Center. Ms. Crockett said that training has been ongoing for about one year and they have trained 53 young people. Fifty-two of these were certified in most of the offered courses at the training site in Lavonia, Louisiana, and a large number of these are regularly employed in waste abatement. "These young people are not university graduates," Ms. Crockett explained. "They're persons from the community that's impacted who may not have completed high school. They get the basic educational training at Xavier, but they're bolstered in math and communication skills and life skills. They go on to the training site in Lavonia to get the hands-on training, and then they come out certified in all of these different areas. And we have a person on staff who sees to them getting employment."

Dr. Walker remarked that this program is a prime example of the fact that an informed community is better able to parcticipate in the discussion of a whole range of issues that impact that community.

Mr. Delbert Flowers, consultant to the panel, asked to what extent the Center had been involved with professional societies, such as other health agencies, nurses, engineers, etc. Ms. Crockett replied that they do bring in professional experts on each topic to present the workshops to the students, adding that each of the panel members would be hearing from her regarding their areas of expertise. TIOP members would also be invited to parcticipate in an upcoming symposium, the National Environmental Justice Advisory Council (NEJAC), which will meet in Baton Rouge (the first time in Louisiana). At this symposium, attendees can hear about what is happening nationally and give their input.

On the subject of lead, Dr. Walker called the Panel's attention to a study by Lynnette Stokes at ATSDR that has addressed the question of whether exposure to lead in childhood can have neurobehavioral effects years later. Stokes, who is an African-American epidemiologist and toxicologist, looked at populations that had been exposed when they were 3 to 6 years old. Twenty to thirty years later, there were neurobehavioral effects. Interested panel members should contact Dr. Reuben Warren at ATSDR for a copy of this study.

Dr. Walker then asked Dr. Spann to wrap up the meeting, remarking that it had been a very productive day and that the panel was especially pleased to be able to honor Dr. Spann.

Dr. Spann agreed that it had been a productive meeting and that it demonstrated how much has been accomplished. He noted that TIOP had begun in 1991 as a one-year project, and the panel is still continuing in 1998. "But it's really the contributions of the individual organizations here," Dr. Spann emphasized, "that has pushed this project along." He added that they still have a long way to go, and that was why he had invited Mr. Knox to talk about his capabilities at this meeting and how these capabilities could be used within the member institutions, in the training arena, and in interaction among the panel members to discuss projects, grants, etc.

The televideoconferencing system, as discussed by Mr. Knox, has been installed at NLM and is now operational at Dr. Spann's PC. Plans are to have the software and the camera installed at each of the ten institutions represented on the panel so that it will be possible to get together more often than as issues arise. Cynthia Gaines will be more involved in setting up the conferences and developing the issues.

Dr. Spann also mentioned that the National Institute of General Medical Sciences had a request for proposals out for infrastructure support for those institutions that already have Minority Biomedical Research Program Support (MBRS) or Research Center on Minority Institutes (RCMI) grants; this is a supplemental \$2.5 million. Any institution

needing money for infrastructure should submit a letter of intent. This is an example of information that should be shared among the members.

Another focus for the panel is further work in the AIDS area. President Clinton has announced an offering of \$150-million targeted towards African Americans and Latinos, and Dr. Spann encouraged the members to apply for some of this money to help them to do more on this front.

In closing, Dr. Spann encouraged everyone to push even harder to accomplish their objectives. He recognized the influence of Dr. Warren and his inspirational comments at a parcticular environmental justice meeting he had attended. He also thanked Dr. Lewis for his inspirational materials and a speech he had heard Dr. Lewis present that had helped him get some materials together to garner support for the HBCUs in the environmental arena. He thanked the speakers for their presentations and thanked everyone for coming and giving their input.

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