The 9th Annual Meeting of the Toxicology Information Outreach Panel (TIOP) was held November 14, 1999, in conjunction with the 1999 American Association of Pharmaceutical Scientists (AAPA) Annual Meeting and Exposition in New Orleans, La. The theme of this year’s meeting was "Consumer Health for the New Millennium," in honor of the National Library of Medicine’s (NLM) heightened focus on consumer health. The meeting revolved around assessing the strengths of the TIOP and how those strengths could be used to further the goals of the NLM, in alignment with NLM's Long Range Plan. All panel members received a copy of this plan.

The morning session consisted of presentations that provided background for the afternoon discussions and formulation of action plans. Dr. Melvin Spann, as outgoing TIOP Project Director, provided a historical perspective of the TIOP. Dr. Steven Phillips, Acting Associate Director, Specialized Information Services Division, NLM, following Dr. Spann’s retirement as of September 31, 1999, gave a special presentation highlighting the background and recommendations for NLM's consumer health initiative. Ms. Rose Foster, Oak Ridge Institute for Science and Education (ORISE), gave an overview of NLM's vast resources, while Mr. Julian Owens, Special Expert, NLM,
highlighted NLM's HIV/AIDS resources. Dr. Bailus Walker, panel chairman, presented NLM's Strategic Plan and Goals and charged the panel with the task of developing action plans to support the initiatives contained therein.

The remainder of the meeting focused on the development of action plans to support NLM's Long Range Plan. Suggested action plans were first discussed in small groups, followed by presentations of those plans by a spokesperson from each group. Dr. Bailus Walker, TIOP Chairman, and Ms. Cynthia Gaines, new TIOP Project Director, then facilitated the formulation of specific action plans to present to NLM.

In closing, Dr. Walker thanked the panel for a very productive meeting and noted the panel's appreciation for Dr. Phillips' attendance and his valuable contributions to the discussions.

**Opening Remarks**

Dr. Bailus Walker opened the ninth annual TIOP meeting, noting the historical significance of this year's gathering as marking the end of the "Spann Era." He applauded Dr. Spann's dedicated and committed leadership, also noting that the progress made since the panel's inception has been tremendous. He then stressed that the objective for the day would be to emerge from this meeting with a clear direction of where the panel is to go from here.

Following introductions of the attendees, Dr. Walker introduced Dr. Robert Thomas, Interim Dean, College of Pharmacy, Xavier University, who welcomed the attendees to New Orleans. Dr. Thomas noted that Xavier took a bold step in the 1990s to start a pharmacy program, and since its inception, the student and faculty have both almost doubled; Xavier now has the distinction of being a leader in the country for DPharm graduates. The key to this kind of excellence, he said, is information, and he thanked the TIOP and the NLM for their invaluable support.

Dr. Walker then outlined the important goal for the day: to build on the successes of the past decade and extend this effort into new areas, pointing to the NLM's Long Range Plan as a guide. The resulting recommendations and comments on the Long Range Plan would be presented to NLM. "We have reached a crossroads," he said, "and the target today is to come out with a clear direction of where to go from this point on to make maximum use of the rich resources of the NLM resources that are becoming richer daily."

Dr. Walker introduced Dr. Spann, who had "given birth" to the outreach program for this panel, asking him to give the attending panel members his historical perspective and suggestions for future development of the panel's activities.

**Meeting Topics**

**TIOP: A Historical Perspective**

**Dr. Melvin Spann**

Former Associate Director, Specialized Information Services Division
National Library of Medicine, Retired

Dr. Spann began by answering the questions, "How did this project actually get started?" and "Why did NLM feel the need to work with HBCUs?" He cited two publications he had come across in the late 1980s that sparked his interest. The first was Toxic Waste and Race in the United States (Commission for Racial Justice, United Church of Christ, 1987), which was the first national survey of toxic waste sites and their locations with respect to socioeconomic conditions. The basic conclusion of this report was that race is definitely a factor in the location of toxic waste sites and that people could not prevent these toxic waste sites from being located close to them. At somewhat the same time, the proceedings of the Conference on Community Toxic Pollution Awareness for HBCUs were published. This conference was held in Tallahassee, Fla. in August of 1987 to motivate HBCUs to become
more involved with their communities and to encourage government organizations to address the issue of hazardous waste sites and the adverse impact this was having on the health of minorities. Dr. Henry Lewis presented at this conference; he talked about the citizens' involvement with HBCUs and made the point that HBCUs have the technical expertise to help communities as well as the analytical instrumentation to identify the toxins to which these communities were being exposed.

Dr. Spann said he then concluded that if the HBCUs could identify the toxins, then the databases at the NLM could identify the chronic and acute problems associated with these toxins. He felt that there was an opportunity to form a triangle between HBCUs, communities, and the government. He began writing a proposal wherein the Library would establish an advisory group with one representative from each named school. The University of Arkansas at Pine Bluff (UAPB) was included for two reasons: first, they had a nursing school and most of their health professionals stayed within the Mississippi Delta area, which was very poor, and they seemed to want to work with the communities. Second, the representative from Arkansas to Congress helped to support an outreach type of legislation in which NLM was given additional money to make everyone aware of the services they provided.

Dr. Spann commented that at the same time he had noticed that HBCUs were generally not getting much support in NLM's outreach initiatives-only Meharry Medical College in Nashville, Tenn., was receiving any support at this time. He said the next step was to look at the budget for the outreach for minority institutions. There was such a great disparity that he felt there was a need to do something more, so he started calling the Association of Minority Health Professions Schools (AMHPS). In talking to the administrators, he proposed that NLM would provide free training in the use of the environmental and toxicology databases and free access to the databases, as well as the resources to access them (computers, etc.). Through this process, he was able to get institutional representation from most of the schools. During this time he also met Dr. Charles Walker at the University of Arkansas at Pine Bluff (UAPB), who talked about the serious problems in the delta region and the need for Dr. Spann to push from his end because it would be much more effective.

Dr. Spann said he then talked with NLM management to try to obtain outreach funding. He was able to convince NLM to agree to a one-year model to see if it would work. The first meeting was held in August 1991. Subsequently, the Agency for Toxic Substances and Disease Registry (ATSDR) expressed an interest in joining the effort to assist with the training portion of the project and brought in more schools for training. Then the Office of Environmental Justice at EPA followed suit to involve the United Negro College Fund schools. What began with nine schools evolved in a very short time to 78 schools in terms of training and expanded to other minority institutions as well, including Puerto Rico. The effort is still going strong today.

Dr. Spann noted that this project has had positive impacts not only on the schools but on NLM as well, as Dr. Donald A. B. Lindberg, Director of NLM, has attested when highlighting this project at congressional hearings. The project is now transitioning-not away from toxicology and environmental health-but to augment the project by dealing with other health disparities and community access, defining a broader perspective of minority health. It is very timely in that NLM is now placing a new emphasis on community health. This transition is also very timely, Dr. Spann said, because of his decision to retire. He took this opportunity to "pass the baton" to Ms. Cynthia Gaines, who has worked with him closely over the years, and will continue to make this a very successful endeavor. Mr. Julian Owens has also been brought on board as a special expert to work with community-based organizations and faith-based organizations to do as much as possible to ensure that our minority communities have access to some of the world's best scientific, environmental, toxicology, and general health information.

**NLM's Consumer Health Initiative**

**Dr. Steven Phillips Acting Associate Director, Specialized Information Services Division**

National Library of Medicine Dr. Phillips expressed his pleasure to be with the panel, noting that he had read the summaries of the activities submitted by the institutions. He was very impressed by the tremendous amount of work that has been accomplished. He stated that he looked forward to his association with the panel.
Dr. Phillips introduced his presentation by saying that the traditional mandate of the Library is to collect, organize, and disseminate the world's published biomedical information, create and publicize NLM's information services, and conduct research in biomedical communications. Highlighting the NLM's outreach programs, Dr. Phillips recognized the work of the panel as a marvelous continuation of these initiatives.

He noted that NLM's goal is to improve the national infrastructure that supports the public's access to electronic health information. This infrastructure includes the intellectual organization, information technology, inter-institution arrangements, and training that will be needed to ensure that all people in the United States have a known, accessible, understandable, and affordable source of current, authoritative health information.

Dr. Phillips provided a brief history of some of NLM's products related to consumer health. In 1997, he said, access to NLM's MEDLINE database became free, largely due to the HIV/AIDS population's demand for information. The number of visits to the web site grew from 7 million in 1997 to over 200 million in 1999. Approximately 30% of these visits were from the general public, which indicates that consumers want information. NLM's goal is to ensure the availability of information they can trust.

In 1998, NLM began a formal program to promote consumer access to health information. Two projects were initiated: MedlinePlus and the Public Library Pilot Project.

On October 22, 1998, NLM launched the MedlinePlus Web site, its first major service designed primarily for the general public and those who provide health information to them. On September 22, 1999, NLM released its latest version of MedlinePlus.

Dr. Phillips stated that MedlinePlus is for anyone with a medical question. Both health professionals and consumers can depend on it for accurate, current, medical information. This new service provides access to extensive information about specific diseases and conditions. MedlinePlus also has links to self-help groups, consumer health information from the National Institutes of Health, clearinghouses, dictionaries, lists of hospitals and physicians, health information in Spanish and other languages, and clinical trials. There is no advertising on this site. MedlinePlus does not endorse any company or product.

MedlinePlus integrates information generated by various NIH institutes and clearinghouses with the MEDLINE database to provide a rich array of information. By the year 2000 this will be expanded to 300 major diseases and conditions. The number of "hits" to MedlinePlus continues to increase. In October 1999 a new record of one million visits was reached.

Dr. Phillips described a pilot project to test the use of public libraries and the Internet to provide health information to the general public. This project began October 22, 1998, and marked the first time that NLM had interacted directly with public libraries, through the use of kiosks and training librarians. Thirty-nine public libraries and 173 branch libraries were involved in the initial project, supported by the NLM and the National Network of Medical Libraries. NLM has been actively gathering feedback on MedlinePlus from public librarians and their users through focus groups and audio teleconferences, and also directly from users of the MedlinePlus Web site. Preliminary data indicate that many people are learning to use their local libraries to access medical information.

Dr. Phillips said that it is a fact that when a patient with an illness takes an active role in the management of that illness, the complications are far reduced, as well as the costs. Encouraging this type of behavior has been a major focus for NLM and Congress has been very interested in it as well.

To complement feedback received from users, Dr. Phillips said that NLM convened the Ad Hoc Group on Consumer Health Information on Diabetes to obtain advice from experts. Recommendations from this group include:
Organize selected authoritative electronic information that is available at low or no cost, with an emphasis on science-based, nationally applicable resources.

Develop easy-to-use access and delivery mechanisms that promote the public's understanding of health information, drawing on research in lay terminology, graphical and multimedia presentation, etc.

Publicize reputable electronic health information services, including those available from NLM and other sources.

Assist those providing health information to the public to make effective use of electronic services through Internet connections, training, and other means, with an emphasis on providing those services to minority groups, low-income populations, and seniors.

Promote integration of NLM services with other electronic services covering regional, state, or local health information.

Refer members of the public to regional, state, and local sources of reference assistance and document delivery and continue to serve as the national backup.

Conduct and support research, development, and evaluation on the public's health information needs, information seeking behaviors and learning styles, information systems that meet the public's needs, and the impact of access to information.

These and other efforts by NLM will continue so that all people in the United States have a known, accessible, understandable, and affordable source of current, authoritative health information.

A brief question-and-answer period followed.

**Overview of NLM's Resources**

**Ms. Rose Foster**

**Oak Ridge Institute for Science and Education**

Ms. Foster provided an overview of NLM's online resources. She began with a demonstration of MEDLINE and MedlinePlus, pointing out the page's clean new look, which makes it much easier to find information. She mentioned that the "Library Services" link on this page is an excellent source of information on grants available from the NLM-some in partnership with other organizations. She recommended that this site be checked frequently. This page can be accessed directly from NLM's home page at [http://www.nlm.nih.gov](http://www.nlm.nih.gov) by clicking on the box that says, "Go to MedlinePlus Health Information."

Ms. Foster explained that MedlinePlus allows anyone to search for information on a wide range of health topics. The information comes from the journal Articles in MEDLINE as well as all of the other NIH Institutes, so users are actually connecting to information resources from those two key areas. She reiterated that the number of topics would grow to 300 during the year 2000.

Most of the information comes from NLM and other federal agencies; topics include information on children and information on conditions, as well as aspects of those conditions. Information is also available in Spanish for most topics.

Dr. Walker interjected that this is a great resource for community outreach.

Ms. Foster also demonstrated the Toxicology and Environmental Health Information home page, noting the new range of chemical information available; users will eventually be able to look at molecular structures here. In addition, she stated that there is a free software program that users can download to manipulate and rotate some of the chemical structures. She also pointed out the tutorials that are accessible from the home page (see the button labeled "Tutorials"). The tutorials have been expanded by the addition of Toxicology Tutor II and Toxicology Tutor III, which have a wide variety of topics geared to the college freshman level. To access this page, go to the Specialized Information Services (SIS) Division Home page ([http://www.sis.nlm.nih.gov/](http://www.sis.nlm.nih.gov/)) and choose "Toxicology Information."
In closing, Ms. Foster pointed out the "Outreach" link on SIS's home page. This site offers information on the outreach projects sponsored by SIS, including the TIOP, as well as an overview of NLM's outreach projects. Previous TIOP meeting reports can be accessed from this page as well.

NLM'S HIV/AIDS Resources
Mr. Julian Owens, Special Expert
National Library of Medicine

Mr. Owens began by giving his background and affiliation with the outreach program at NLM. He currently works in the area of outreach, specifically around health disparity. He outlined for the attendees the Library's four primary HIV/AIDS-related databases: AIDSLINE, AIDSSTRIALS, AIDSDRUGS, and DIRLINE. He also pointed out that AIDS is a consumer health topic that can be accessed through MedlinePlus. "HIV/AIDS is, of course, a very serious problem in our communities," Mr. Owens said, adding that it is very important for the member institutions on this panel to serve as conduits to minority communities to make them aware of the information that is available.

Mr. Owens summarized each of the Library's primary HIV/AIDS-related databases as follows:

AIDSLINE is a database of HIV/AIDS-related citations and abstracts, which are extracted from MEDLINE, HEALTHSTAR, and BIOETHICSLINE, which are also other databases available at the NLM. The benefits of AIDSLINE include quick and reliable access to the latest biomedical research Articles regarding prevention, diagnosis, and treatment of HIV/AIDS as well as related illnesses.

AIDSTRIALS is specifically dedicated to clinical trials, facts, and references. This database provides access to information on clinical trials of substances being tested to treat HIV/AIDS infections and other opportunistic diseases. The benefits of this database include the ability to search for available trials in areas of specific interest, to identify trials using specific drug names, to identify the trials' specific eligibility criteria, and to examine the design of clinical trials. This is an area in which there is a lack of involvement in the minority community; it would be very helpful to have more minorities participating in clinical trials. He encouraged everyone to examine this database and market it in the communities they serve.

The third database, AIDSDRUGS, is a database dictionary of drugs and other agents currently being evaluated in the AIDS Clinical Trials. Each record in this database includes the generic, trade, and manufacturers' names; physical and chemical properties; and adverse reactions. The benefits of this database include the ability to learn more about a drug that's being tested, to identify all of the trials used for a particular drug, and to identify the specific drug name when only the acronym or trade name is available.

The final database, DIRLINE, is a dictionary file of information on more than 15,000 health and biomedical information resources, including references to groups with specific interests in the field of health. The information in DIRLINE includes basic information on the organization, including the name, address, telephone number, contact name, etc., as well as the organization's activities and services. The benefit of DIRLINE is the ability to quickly identify resources that provide HIV/AIDS-related information and services as well as other health-related information.

Mr. Owens noted, in closing, that there is tremendous opportunity within this group to identify projects for collaboration and that he looks forward to working with them.

When Dr. Walker called for questions or comments, Dr. Henry Lewis (Florida A&M University) brought up a point that piqued the interest of everyone there. He said that through the Association of Minority Health Professions Schools (AMHPS) organizations, they are doing a series of 12 national HIV town hall meetings. Each meeting is
"webcast" and linked to NLM's HIV/AIDS databases through the school's Web site. During the first meeting, which was held in Miami, 2,200 people logged on. Each webcast is archived and can be accessed on the Minority Health Professions Foundation (MHPF) Web site at http://www.minorityhealth.org/ and select "Click here to go to the HIV/AIDS Campaign site."

### Strategic Plans and Goals

The remainder of the meeting focused on how the panel's member institutions could collaborate to assist NLM in implementing its Long Range Plan.

Dr. Walker announced that the group would divide into two small groups, charging them with the task of identifying key areas in which the TIOP could assist NLM in its mission. He asked that they keep in mind the TIOP mission statement as they reflect upon a new direction in the panel's goals as a result of progress already achieved and guided by the principles of the NLM's Long Range Plan.

The mission of the Toxicology Information Outreach Panel is to develop strategies to better enhance the capability of HBCUs to use the toxicological, environmental, and occupational resources developed by the National Library of Medicine.

Following the breakout sessions, the panel reconvened to discuss the ideas brought to the table by each small group. The conclusions reached by the panel for each goal's objective are outlined below.

#### Goal 1. Organize Health-Related Information and Provide Access to It.

**Objective 1.1. Acquire, Organize, and Preserve Biomedical Information.**

HBCUs have the capability to compile information on drug interaction, with emphasis on acquiring group-specific data. For example, there are not enough data on drug interaction in minorities because there have not been enough clinical studies on minority populations. HBCUs can get involved in the research and make it available to NLM. NLM's role would be to make the data available to the public.

The Institute of Medicine (IOM) has recommended that research is needed on drug interaction and has issued a report that gives a good basis for the types of research in which the schools need to be engaged. The panel suggests that NLM support this research in order to expand the databases; TIOP's member institutions can use the databases to help educate the public as well as the professionals (also supports Objective 1.2).

More topics could be added to MedlinePlus in the area of environmental justice, such as cancers that were related to exposure to environmental toxins. TIOP members would assist in providing this information.

Town meetings are one way of helping NLM acquire information on minorities. HBCUs can hold town meetings in their own geographical regions; this would allow NLM to gather data on minorities in different parts of the country, as needs are different from region to region.

There is not enough information regarding the contributions of minorities in NLM's History of Medicine database—such as geographical locations and discoveries by minorities in the fields of medicine. HBCUs can contribute to this database. For example, one of the panel members is creating a database of minority information on the history of pharmacy because none exists currently. This information can be shared with NLM for the History of Medicine database.
Objective 1.2. Provide Access to Biomedical Information.

HBCUs can expand access to health information, particularly in areas that service minority groups. One way is by placing kiosks and electronic retrieval systems in health clinics where minorities tend to go for their health services.

There is a need for greater access to biomedical information on diseases that affect the minority community and for that information to be culturally sensitive and easy to understand and read. This information can be provided through MedlinePlus.

HBCUs can also use the NLM databases (particularly MedlinePlus) to provide drug interaction information to the lay public, who can click on drugs they're taking and get the interaction information. "MedlinePlus can be expanded to include pharmacokinetics/dynamics as well and help the health professionals in the HBCU communities.

Kiosks can be placed in pharmacies located in low income and minority communities to encourage and promote issues of self-care among minorities and the underserved.

Goal 2. Outreach to the Professional and Lay Publics.

Objective 2.1. Improve the Usefulness of NLM Products and Services and Increase Awareness of Them Among Health Professionals.

Many HBCUs have not been content to confine their interests to students, but have reached out to the practicing professionals in their communities as well as to the lay public. To continue this outreach, TIOP's member HBCUs can use the NLM databases to (1) create an awareness of clinical trials in minority communities and (2) increase minority participation in clinical trials by helping minorities understand the importance of clinical trials in the development of drugs and the value of clinical trials to their health and the health of the whole country. This is important because, for example, there is not enough information on drug interaction in minorities; there have not been enough clinical studies on minority populations.

Institutions in this group can lend the credibility of their names to increase participation and to help take away the fear people have in participating in clinical trials. TIOP's members can also serve as resources through outreach activities at the schools, such as work in public housing projects, disease screening for diabetes and hypertension, etc.

TIOP's member institutions can take what information is available in the IOM databases and relate it to drug interaction and pharmacokinetics and pharmacodynamics and help educate the community at large and the health professionals in their respective areas.

Objective 2.2 (No recommendations)

Objective 2.3. Outreach to the General Public.

HBCUs can get the NLM data into the communities where people can use it. As in Objective 1.2, TIOP's member HBCUs can use the NLM databases to (1) create an awareness of clinical trials in minority communities and (2) increase minority participation in clinical trials by helping minorities understand the importance of clinical trials in the development of drugs. The institutions can also help to take away the fear minorities have and erase the stigma associated with participating in clinical trials. These institutions can lend the credibility of their names to increase minority participation in clinical studies.
TIOP's members can also serve as resources-if they are able to get the populations they serve to participate in clinical trials-through outreach activities at the schools, work in public housing projects, disease screening for diabetes, hypertension, etc.

HBCUs can lead the way in incorporating toxicology information into other health information databases.

HBCUs can hold information sessions periodically to create an awareness of the expanse of the NLM's databases; the frequency would be determined by the HBCU. For example, periodic discussions/meetings could be held in the communities in which TIOP member institutions are located. Panel members hold leading positions in their institutions, which enables them to provide leadership in their communities.

Objective 2.4. Enhance Global Health Activities.

Some of the member institutions on the panel already have global connections and can provide outreach for NLM through these connections.

Goal 3. Promote the Use of Advanced Computer and Communications Technologies in Research, Practice, and Education.

The member institutions on this panel are on the front line of teaching, research, and community service in their respective communities and have built a wealth of experience in the use of computers and information technologies.

Objective 3.1. Build Health Applications for Current and Future Internet Environments.

HBCU faculty members that are in either computer science departments or information science departments can contribute to the research in this area.

Objective 3.2. Further Medical Informatics Research and Training.

Based on the experience of the TIOP members, they can help NLM shape its efforts in Medical Informatics Research and Training by identifying what the needs/gaps are and how the institutions can work with NLM to fill those gaps.

Objective 3.3. Foster the Education and Training of Health Sciences Librarians.

This is another area in which the TIOP member institutions can play an important role; using the library resources in their academic institutions, they can help NLM help librarians keep up with advances in health sciences. For example, TIOP's member HBCUs can place interactive kiosk units in the science libraries in their communities to provide hands-on, visual learning.

HBCU Updates

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

The NLM workstations at Drew University are located in the Medical Sciences Library and are available during library hours; an additional workstation is also located in the library. The computers have printers for hard copy. Additional sites from which the databases can be accessed include: department libraries; a Learning Resources Center (LRC), which currently houses 14 computers that are in a local area network; the offices of faculty members;
and the Imperial Heights Clinic, which is operated by the Department of Family Medicine and used to train medical students.

The library now has access to several databases besides those of NLM and subscribes to a number of electronic journals. Access to these resources is automatic when the user is on the Drew campus or the Southwest Cluster clinics. Access is available to faculty, staff, and students from home via the Internet using passwords issued by the medical library. The library catalog is also available on the Internet.

The library offers courses in the use of bibliographic searching and medical database management. Individual assistance on an as-needed basis is always available. The library and LRC work closely together to define areas of responsibility and maximize use of computers and staff for educational development.

In the library, a librarian is available during library hours to assist persons needing help in using the library-based workstations.

As a result of retirements and staff accepting positions at other institutions, there is presently no one at Drew with formal training in the use of the toxicology databases. Access to the databases is now different from the early 1990s when instruction was first received. It is time to provide instruction for the persons now responsible for training faculty and students in the use of the toxicology databases.

Florida A & M University
Dr. Henry Lewis, III
Dean, College of Pharmacy and Pharmaceutical Science

This report summarizes the activities of the Florida A&M University (FAMU) College of Pharmacy and Pharmaceutical Sciences. The 1998-1999 school year witnessed significant growth and expansion. The largest grant in the history of the university was awarded to the College of Pharmacy and Pharmaceutical Sciences from the National Institutes of Health. Over $11 million was awarded through the Research Centers in Minority Institutions Programs to develop and expand a Pharmaceutical Research Center. The Florida Legislature appropriated $15.9 million for Phase I of a new 125,000-net-square-foot pharmacy building. The additional $15 million needed to complete Phase II is anticipated to be appropriated in the spring of 2000. It is our goal to complete the facility by the fall of 2003.

The college installed three state-of-the-art teleconference classrooms in Miami, Tampa, and Tallahassee, Fla. Through the network of telecommunications, the college implemented the university's first distance learning degree program—the "Executive PharmD or ExDoc" Program. This program is designed for the baccalaureate pharmacists who want to enhance their education to receive the PharmD degree.

The Institute of Public Health graduated its first class of seven M.P.H. degree recipients in the spring of 1999, and U. S. Surgeon General, Dr. David Satcher, was keynote speaker. A second class of nine completed their degrees in August of 1999. Current enrollment is 46 students. The institute became the home of the State of Florida's Birth Defects Registry in 1999. This is the first time Florida has had a mechanism for chronicling all birth defects in the state.

The college has developed an outstanding Science Research Library. With a complete fiber-optic backbone, the Library affords faculty and students unlimited research and information technology support.

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

Hampton University (HU) School of Nursing's outreach activities have continued through its nursing center, mobile
unit, and community partnerships. The focus of this year's update describes changes that have occurred in the past year that will provide more opportunities for outreach.

HU School of Nursing is pleased to announce the fall 1999 inaugural class of the Doctor of Philosophy program. This is the first nursing doctoral program at a historically black college or university. Only three other universities in the commonwealth of Virginia—the University of Virginia, Virginia Commonwealth University, and George Mason University—offer the Ph.D. in nursing.

The Ph.D. in nursing program will build upon and expand a five-year collaborative relationship between HU's School of Nursing and the University of Pennsylvania School of Nursing, referred to as the Hampton-Penn Initiative. This formal relationship between the two schools was designed to contribute to faculty development at HU and increase minority permanence at the University of Pennsylvania. The two schools of nursing worked jointly to develop the doctoral program at HU.

In addition to changes in School of Nursing program offerings, the curriculum has been modified to take a community-based focus. The new curriculum includes an undergraduate informatics practicum each semester beginning the second semester of the sophomore year. The first course will be piloted spring 2000 with remaining courses introduced over the next two years. The use of NLM databases will be included in all informatics courses.

The School of Nursing librarian has submitted an information systems grant to NLM. The purpose of the project is to enhance student and faculty use of NLM databases. The aim is to go beyond a demonstration of competency in NLM database search skills to demonstrate incorporation of evidence-based and problem-based nursing into clinical and class assignments.

The School of Nursing has a major training role in the Hampton University Career Advancement Resiliency Empowerment (HU-CARE) welfare-to-work project. This project is a comprehensive empowerment model designed to address the needs of participants in a one-stop approach to the delivery of services. HU-CARE is a job-creation project that develops "sustainability" in its participants. The project has established collaborative partnerships with businesses in growth industries to create career opportunities at livable salaries.

The School of Nursing will be able to expand its outreach activities through the Pediatric Nurse Practitioner Specialty Project. This $646,739 three-year grant project is to establish a pediatric nurse practitioner program at HU. The project is needed to increase the supply of pediatric nurse practitioners that will have advanced knowledge and clinical skills in child health care, enabling them to provide a broad range of health care services to children from infancy through adolescence.

The best description for the past year is technology and change. There have been several changes at Hampton University impacting on technology including completion of campus wiring; free e-mail accounts for all students, staff, and faculty; and the hiring of Mrs. Debra White as Chief Information Officer.

Howard University
Dr. Robert Taylor
Chairman, Department of Pharmacology, College of Medicine
The Department of Pharmacology is actively maintaining the workstation located in the departmental informatics laboratory. In addition, the Health Sciences Library recently installed several more computer workstations that have access to the NLM databases.

Considerable progress has been made on the construction of the new $20-million Lewis Stokes Health Science Library. This library has been modeled after some of the finest new medical libraries in the United States. The facility will be totally computerized.
Dr. Robert Copeland, Associate Professor of Pharmacology and Director of the department's informatics program, continues to teach the medical and graduate course electives in bioinformatics and medical informatics. In addition, Dr. Copeland is a member of the Scientific Review panel that reviews 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).

For the second consecutive year, the Department of Pharmacology ranked first in the entire university in the number of grants submitted for external funding for the 1998-1999 school year. Howard's Department of Pharmacology has four U.S. Army grants for research on breast cancer, as well as two NIH RO1 grants. The Department of Pharmacology is moving towards requiring Ph.D. candidates to apply for NIH pre-doctoral fellowships.

Dr. Taylor serves as principal investigator on two NIH grants. The first is a $3.5-million five-year grant entitled, "Ethnic Factors Among African Americans in Alcohol Abuse," funded by the National Institute on Alcohol Abuse and Alcoholism and the Office on Research on Minority Health. This grant comprises seven projects and an administrative core. One outcome of this grant is that Howard has been asked to join the "Collaborative Study on the Genetics of Alcoholism" (COGA). The COGA study is a seven-site study comprising mostly non-HBCU universities; the Howard University site is the only HBCU participant. Dr. Taylor has recently received an NIH RO1 award entitled "Novel Phenotypes for the Genetic Analysis of Alcoholism." This five-year award of over $4 million will concentrate on the definition of neuropharmacologic and neurophysiologic heritable factors that lead to alcoholism in an African-American subject cohort.

An interdisciplinary component of the College of Medicine was successful in securing $7 million in NIH funds to support the establishment of an Academic Neuroscience Center. The university recently signed a three-year "Preferred Partnership" agreement with the Eli Lilly Pharmaceutical Company. This agreement funds a variety of activities between Howard and Eli Lilly including research, training, student scholarships, and recruitment.

Meharry Medical College
Dr. Alfred Nyanda
Director, ToxMed Reference Laboratory of the Department of Pharmacology

Graduate Students Update
By December 1999, we expect four to five graduates will receive a Ph.D. degree in pharmacology. Last year we had a record of six students who received their Ph.D. from our department.

Information System
All faculty members, staff, and students are linked to the Internet system. The School of Medicine has established a computer laboratory accessible to all students and faculty members. The Department of Pharmacology is currently preparing to offer its computerized examination to pharmacology students.

Enhancement of Environmental Health and Toxicology Core Faculty
The objective of establishing a strong Environmental Health and Toxicology Core Laboratory is to provide investigators at Meharry Medical College and other HCBUs state-of-the-art equipment to support training, research, and service activities for the environmental health scientists and other scientists. This core facility is also intended to provide training on less sophisticated equipment for long-term users-faculty, staff, and students.

The Environmental Health and Toxicology Core Facility provides services in (1) analytical, (2) inhalation, (3) clinical, and (4) developmental toxicology. The equipment available in these areas enhances the research capabilities of investigators at Meharry Medical College and other associated investigators. The core laboratory is used in research involving the study of potential adverse health effects resulting from exposure to various environmental agents. Based in the Department of Pharmacology, the environmental health and toxicology research is currently directed by Dr. Alfred M. Nyanda, who is assisted by faculty and staff. Dr. Nyanda and core facility personnel help train...
faculty, staff, and students on the use of the equipment. He also currently directs ToxMed Clinical Laboratory, which is involved in toxicological clinical samples testing.

**Morehouse School of Medicine**  
**Dr. Mohamed Bayorh**  
**Department of Pharmacology and Toxicology**

In 1999, Morehouse School of Medicine (MSM) ranked number one in the percentage of students entering primary care specialties according to the American Medical Students Association Foundation. The school was awarded the 1999 Community Outreach Award by the Atlanta Business Chronicle as well as a $1.25-million grant from CIGNA for the National Center for Primary Care facility (including a state-of-the-art conference center and a clinical skills training laboratory) and the Managed Care Institute. An additional 40,000-square-foot Research Wing will be completed in the spring of 2000 to house the Cardiovascular Research Center, the Space Medicine and Life Science Research Center, faculty offices, and research laboratories.

The Multi-Media Center (MMC) at MSM employs multiple strategies to ensure that the students and faculty at all sites (i.e., on and off the main campus) have access to a broad range of learning and research resources. In addition to its traditional library (including an extensive monograph collection, audiovisual titles), the MMC uses information technology to improve accessibility to the National Library of Medicine databases (i.e., MEDLINE, PubMed, Spaceline, TOXLINE), the Internet, the World Wide Web, and TOXNET. The MMC provides ongoing orientation for all faculty and students-group classes and one-on-one interaction. MSM has also invested over $2 million in a Division of Information Technology (including personnel, computers, servers, inter-connectivity and other information technology infrastructure) to meet the school's increasing educational, administrative, and research needs.

Morehouse School of Medicine is very grateful to the NLM and Dr. Melvin Spann, former Project Director of TIOP, for their support in advancing our access to online medical and toxicological information. This program has been of use not only to the Morehouse School of Medicine community, but also to faculty and students of the Atlanta University Center and the community at-large.

**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 particular importance is her training of the 6 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.

**Tuskegee University**  
**Dr. James Webster**  
**Chairman, Department of Biomedical Sciences**

During the past year, approximately 57 students used TOXNET in preparing papers on various toxins. In addition, the system was used by two graduate students to complete their theses for the master of science degree in veterinary science, majoring in environmental toxicology. A third student has submitted a draft of the research with a completion date of May 2000.
For this year again, the junior class will prepare papers on toxins that can be found in dump sites near neighbors. The various databases will be used to determine the effects on animals and man, and indicate the possible pathways that these chemicals can reach man.

Tuskegee University is now accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award doctoral degrees. The College of Veterinary Medicine, Nursing and Allied Health and the College of Agriculture, Environmental and Natural Sciences are combining their strongest programs to offer the doctoral degree. The TOXNET program will become an important component of the doctoral program.

UNIVERSITY OF ARKANSAS AT PINE BLUFF (UAPB)
Mr. Edward Fontenette
Director, Watson Memorial Library
The support of the NLM through the Toxicology Information Outreach Panel has strengthened the ability of the University of Arkansas at Pine Bluff to meet the challenges presented by a program to dispose of chemical agents and munitions stored at the Pine Bluff Arsenal (Arkansas). Through the TIOP, Ms. Elaine Yates, who received training, has been able to assist medical personnel and the citizens in learning about the importance of proper treatment and prevention of toxic poisoning. She holds the position of Arkansas African American Environmental Justice Coordinator and President of Pine Bluff for Safe Disposal. The Watson Memorial Library (UAPB) is a depository for toxic information relating specifically to the Pine Bluff Arsenal Program.

The bachelor's degree program in regulatory science now has options in pollution and waste management, environmental biology, and industrial health and safety. These programs rely heavily on the resources provided by NLM's resources. UAPB is the primary supplier of bachelor's degree nurses for southeast Arkansas. The nursing program is accredited by the Arkansas and the National League of Nursing. The nursing faculty and students also rely heavily upon the NLM resources. The safe handling of agricultural pesticides and the effects of these pesticides on marine life have promoted a surge of requests for information.

There is no doubt that the leadership extended by NLM and the TIOP deserves credit for the advances made by UAPB in providing access to medical information to the citizens of southeast Arkansas. The TIOP has allowed us to sift through the cobwebs and red tape and provide immediate and affordable access to life-sustaining information.

Xavier University of Louisiana
Dr. Ann Barbre
College of Pharmacy
This past June, Xavier University was honored to serve as the site for the Toxicology and Environmental Health Information Resources on the Web training session developed and conducted by the Medical Education and Outreach Group of the Oak Ridge Institute for Science and Education and co-sponsored by the National Library of Medicine and the Deep South Center for Environmental Justice at Xavier. The course was attended by 27 participants who traveled from as far away as New York, N.Y., and San Jose, Costa Rica and represented a wide range of backgrounds-directors/presidents of environmental justice organizations, librarians, college faculty, and community activists involved in environmental health and justice issues in the Mississippi Delta Region. The one-and-a-half-day training session was specifically tailored for the TEHIP Web interface and included hands-on exercises reflecting environmental problems associated with the Mississippi Delta Region. The course was extremely well received by these participants, who indicated a thorough appreciation for the program as well as wide applicability of its content in their individual endeavors.

Discussion and Conclusions

In closing, Dr. Walker commented that the discussions had been very productive that both of the groups during the breakout sessions had given careful attention to the charge and had been able to identify key areas where the TIOP
could assist NLM in its mission. He emphasized that a very strong base had been developed in this group and that base has been strengthened to the point where the panel can now assist NLM in carrying out its objectives. The member institutions have done a good job exposing students to NLM resources-and using those resources to teach various courses. "We are well on our way to interacting with a broader spectrum of the community," he said.

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