

NATIONAL LIBRARY OF MEDICINE

**TOXICOLOGY INFORMATION
OUTREACH PANEL**

A REPORT OF THE 10th ANNUAL MEETING

*The Role of Information Technology in
Eliminating Health Disparities*

Bethesda, Maryland

October 23, 2000

Prepared for
Specialized Information Services Division
National Library of Medicine

Prepared by
Medical Education and Outreach Group
Oak Ridge Institute for Science and Education

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Attendees

CHAIRMAN: Dr. Bailus Walker, Jr., *Howard University*

PROJECT DIRECTOR: Ms. Cynthia Gaines, *National Library of Medicine*

PROJECT ADVISOR: Ms. Rose Foster, *Oak Ridge Institute for Science and Education*

Participating Historically Black Colleges and Universities (HBCUs) and Minority Education Institutions (MEIs)	Dr. Theodore Bates, <i>Texas Southern University</i>
	Dr. Mohamed Bayorh, <i>Morehouse School of Medicine</i>
	Ms. Kathy Block, <i>Hampton University</i>
	Dr. Robert Copeland, <i>Howard University</i>
	Ms. Margaret Hart, <i>Oglala Lakota College</i>
	Dr. Diogenes Herrezo-Sanchez, <i>University of Puerto Rico Medical School</i>
	Ms. Adrienne Hollis (for Dr. Henry Lewis III), <i>Florida A&M University</i>
	Dr. Alfred Nyanda, <i>Meharry Medical College</i>
Dr. Douglas Ray, <i>Drew University of Medicine and Science</i>	
Dr. Robert Taylor, <i>Howard University</i>	
Guest Speakers	Ms. Stacey Arnesen, <i>National Library of Medicine</i>
	Dr. Michael Ackerman, <i>National Library of Medicine</i>
	Dr. Max Lum, <i>National Institute of Occupational Safety and Health</i>
	Dr. Yvonne Maddox, <i>National Institutes of Health</i>
	Dr. Alexa McCray, <i>Lister Hill Center</i>
Guest Librarians from HBCUs/MEIs	Ms. Beverly Allen, <i>Morehouse School of Medicine</i>
	Ms. Gladys Smiley Bell, <i>Hampton University</i>
	Mr. Sekum Boni-Awotwi, <i>Howard University</i>
	Ms. Cynthia Burke, <i>Hampton University</i>
	Ms. Victoria Delgado-Aponte, <i>University of Puerto Rico Medical School</i>
	Ms. Cheryl Hamberg, <i>Meharry Medical College</i>
	Mr. Charles Hobbs, <i>Drew University of Medicine and Science</i>
	Ms. Yvonne Hull, <i>Xavier University of Louisiana</i>
	Mr. Obidike Kamau, <i>Texas Southern University</i>
	Ms. Juanita Roberts, <i>Tuskegee University</i>
Dr. Lauren Sapp, <i>Florida A&M University</i>	
Ms. Elaine Yates, <i>University of Arkansas at Pine Bluff</i>	

Attendees

(cont.)

Guest Staff from the National Library of Medicine

Ms. Cassandra Allen
Ms. Gale Dutcher
Ms. Jeanne Goshorn
Dr. George (Mike) Hazard
Mr. James Knobon
Dr. Donald A. B. Lindberg
Mr. David Nash
Mr. Julian Owens
Dr. Steven Phillips
Mr. Donald Poppke
Ms. Marti Szczur
Mr. Elliott Siegel
Mr. Kent Smith
Mr. Ronald Stewart

Agenda

9:00-9:15 a.m.	Opening Remarks	Dr. Bailus Walker , <i>Chairman, TIOP</i>
9:15-9:30 a.m.	Welcome	Donald A.B. Lindberg, M.D. , <i>Director, NLM</i>
9:30-10:00 a.m.	HBCUs Outreach to the Community	Yvonne Maddox, M.D. , <i>Acting Deputy Director, NIH</i>
10:00-10:15 a.m.	Break	
10:15-11:00 a.m.	Presentation: “ClinicalTrials.gov”	Dr. Alexa McCray , <i>Director, Lister Hill Center (LHC)</i>
11:00-11:30 a.m.	“Next Generation Internet”	Dr. Michael Ackerman , <i>NLM, LHC</i>
11:45-12:00 p.m.	NIOSH UPDATE	Dr. Max Lum , <i>NIOSH</i>
12:00-1:45 p.m.	Working Lunch: Opportunity for Further Discussion	TIOP <i>Conference Room B</i>
1:45-2:00 p.m.	Group Picture	TIOP (<i>HMD Reading Room</i>)
2:00-2:30 p.m.	SIS Update	Ms. Stacey Arnesen , <i>NLM</i>
2:30-3:15 p.m.	Video & HBCU Showcase	Xavier, Howard and FAMU
3:15-3:25 p.m.	Break	
3:25-4:15 p.m.	HBCU/MEI Roundtable Updates	
4:15-4:25 p.m.	Wrap-up, Closing	Steven Phillips, M.D. , <i>Acting Associate Director of Specialized Information Services Div., NLM</i>
4:30 p.m.	Adjourn	

TIOP: A Historical Perspective

Under the direction of Dr. Melvin L. Spann, former Associate Director of Specialized Information Services Division, the National Library of Medicine (NLM) undertook an initiative aimed at strengthening the capacity of Historically Black Colleges and Universities (HBCUs) to train medical and other health professionals in the use of toxicological, environmental, occupational, and hazardous waste information resources developed at NLM. This audience represents a group that might not otherwise get exposure to these valuable information resources. This outreach initiative has helped to educate many of the nation's minority health professionals who eventually established practices or work in areas that are disproportionately exposed to environmental hazards.

The first meeting of the Toxicology Information Outreach Panel (TIOP) was held at NLM on August 15 and 16, 1991. Nine HBCUs attended. Following an orientation to the Library's resources, the Panel discussed the strategies needed to optimally implement the objectives of this outreach initiative. Before concluding the deliberations, each institutional representative presented preliminary plans as to how the workstations would be used to maximize the exposure of the NLM resources to the institution's faculty and students. What began with the collaboration of nine HBCUs has rapidly spread, in terms of training, to nearly 80 HBCUs and other minority institutions.

A key element of this NLM program was the establishment of a PC-based multimedia workstation at each of the nine original participating institutions, through which they would receive free access to NLM's toxicology and environmental health databases. These workstations contained instructional software as well as access tools for the utilization of NLM resources. In addition, "train-the trainer" classes were conducted by staff from the Oak Ridge Institute for Science and Education in Oak Ridge, Tennessee, to thoroughly prepare each institution to effectively instruct students, faculty, and members of the surrounding community in the use of the NLM toxicology-related databases.

The TIOP project has had many positive impacts, not only on the schools, but also on NLM as well. Dr. Donald Lindberg, Director of NLM, has attested to the success of TIOP in 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, and defining a broader perspective of minority health. It is very timely in that NLM is now placing a new emphasis on community health. TIOP has served as a channel for the evaluation of the effectiveness of the training and health information dissemination services. Working together, the NLM and TIOP will ensure that minority communities have access to some of the world's best scientific, environmental, toxicology, and general health information.

Cynthia Gaines
Toxicology Information Outreach Panel Project Director
Specialized Information Services Division
National Library of Medicine



OVERVIEW, MEETING PRESENTATIONS,

AND

**WORKING LUNCH
DISCUSSION**

OVERVIEW

The 10th Annual Meeting of the Toxicology Information Outreach Panel (TIOP) was held October 23, 2000 at the National Library of Medicine (NLM) in Bethesda, Maryland. The theme of this year's meeting was "The Role of Information Technology in Eliminating Health Disparities."

Dr. Bailus Walker, TIOP Chairman since the Panel's inception in 1991, opened the meeting by emphasizing the far-reaching effects that have been realized as a result of the Library's initial investment in this project. The dividends are particularly evident in events such as Florida A&M's newly accredited Master of Public Health Program and the large number of informatics seminars being taught on the campus of Howard University. Benefits can be seen across the spectrum of teaching, research, and community service.

This year's meeting marked a major milestone, as the project celebrated its 10th year. The significance of this year's meeting was highlighted by the large number of attendees, which included 12 librarians from Historically Black Colleges and Universities (HBCUs) and Minority Education Institutions (MEIs) who attended the meeting by special invitation. Adding to the significance of the meeting was the addition of two new member schools to this distinguished Panel: Oglala Lakota College in Pine Ridge, South Dakota and the University of Puerto Rico Medical Sciences Campus in San Juan, Puerto Rico. There was also a large number of NLM staff who attended the meeting, including Dr. Donald A.B. Lindberg, Director of NLM, who was introduced by Dr. Walker.

Dr. Lindberg expressed his congratulations to the Panel and his pride in what has been accomplished, while acknowledging that there is still much to be done. He then introduced the keynote speaker, Dr. Yvonne Maddox, Acting Deputy Director of the National Institutes of Health (NIH), whose presence highlighted the significance of this year's meeting.

Dr. Maddox has provided valuable leadership in the areas of NIH's long range planning and NIH's response to the issue of health disparities in this country. Her keynote address centered around NIH's focus and activities in the area of health disparities.

Dr. Alexa McCray, Director of NLM's Lister Hill Center, gave a presentation and demonstration on ClinicalTrials.gov, NIH's recently released database on clinical trials, designed to provide patients, family members, and members of the public current information about clinical research studies.

Dr. Michael Ackerman, Chief of NLM's Office of High Performance Computing and Communications, spoke to the group about the advances in the World Wide Web in his talk entitled "Next Generation Internet."

Dr. Max Lum, National Institute for Occupational Safety and Health (NIOSH), gave an update on the activities of NIOSH related to the Panel and asked for direction as to how NIOSH could provide more assistance.

Following a working lunch, during which the Panel discussed options for future activities, Ms. Stacey Arnesen, of NLM's Division of Specialized Information Services (SIS), updated the Panel on the activities of SIS.

A key component of the afternoon session was a showcasing of three of the member universities, Howard University (Washington, D.C.), Florida A&M University (Tallahassee), and Xavier University of Louisiana (New Orleans). Each presentation centered around some of the special activities they have undertaken to expand the outreach initiated by the TIOP. Short updates were then provided by the remaining schools on the Panel and introductory comments were given by the two new schools who have just joined the Panel, Oglala Lakota College (Pine Ridge, South Dakota) and the University of Puerto Rico Medical Sciences Campus (San Juan).

Dr. Steven Phillips, Acting Associate Director of SIS, closed the meeting, thanking everyone for attending and contributing to the success and productivity of the day. He commended the Panel on the addition of Oglala Lakota College and the University of Puerto Rico to the Panel, as well as the addition of the librarians, which he sees as being the link between the academic centers and the community.

Following the meeting, a special presentation was made to Dr. Bailus Walker in recognition of his 10 years of service as Chairman of the Panel.

HBCUs OUTREACH TO THE COMMUNITY

Dr. Yvonne Maddox

Acting Deputy Director, National Institutes of Health

Dr. Yvonne Maddox, Acting Deputy Director of NIH, addressed the Panel and described HBCU outreach to the community. Dr. Maddox discussed how an NIH Planning Panel, chaired in 1999 by former NIH Director, Dr. Harold Varmus, determined that the NIH needed to determine how to be more proactive in eliminating some of the disparities that existed in the health status within minority populations. He charged the Department of Health and Human Services (DHHS) to develop a strategic plan for eliminating these differences in health status between minority communities and the majority community. DHHS determined that it was necessary to focus on specific areas and began the assigned task by looking at six specific areas: (1) cardiovascular disease, (2) cancer and cancer screening, (3) Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS), (4) infant mortality, (5) diabetes, and (6) immunizations.

The NIH strategic plan for resolving health disparities has been completed in draft form and is on the NIH Web site at <http://www.nih.gov/about/hd/strategicplan.pdf>. The draft plan includes three areas: (1) the strategic research agenda for the agency, (2) infrastructure development, and (3) community outreach.

Dr. Maddox described community outreach as NIH and its Institutes working with the community so that the community will have input into the institutes' initiatives and, therefore, have a better understanding of those initiatives. At the same time, this will make the Institutes better teachers and givers of the information in terms of what NIH stands for. She stated that it is important to encourage the lay community to participate in clinical trials and to let them know that this is an opportunity for them to get some of the best medical attention that the world has to offer. Although NIH has had partnerships with HBCUs, Hispanic serving institutions, and tribal colleges, and these partnerships have been successful, Dr. Maddox expressed her belief that NIH can and should do more. One way to enhance these relationships is to bridge more proactive partnerships with foundations, other communities, industry, and corporations.

Dr. Maddox was asked to chair the initiative on infant mortality. Although the infant mortality rate in the United States has dropped, the country is still ranked 26th in developed countries, according to Dr. Maddox. The national average infant mortality rate is 7.2 per 1000 live births, but the infant mortality rate in the African American community is 14.4 per 1000 live births.

While the study demonstrated that there were disparities in health care, not only within various racial and ethnic populations, but also in underserved areas, socioeconomically deprived areas, and between men and women, the group decided to concentrate on eliminating the racial and ethnic differences in health status in minority populations. Minority populations were defined as: (1) African Americans, (2) Hispanics/Latinos, (3) Native Americans, (4) Alaskan Natives, and (5) Pacific Islanders and Asian Americans.

Recognizing that socioeconomic status cannot be overlooked, the focus of this group is health service provided to minority populations in general.

One of the first steps in investigating health disparities in minority populations is to recruit and train minority investigators. NIH has several programs to recruit, train, and retain minority investigators, and several programs have been used to add supplements to existing grants to bring minorities into the larger research community.

Another focus of this plan will be community outreach and enhancing public awareness of these disparities. Too little has been done in getting the community involved in scientific initiatives. More attention has been paid to community outreach in the past year, and partnerships with HBCUs and other MEIs have been established. The next step is to extend those partnerships to foundations, other communities, industry, and corporations. Dr. Maddox pointed out that, of the budget NIH planned for this entire initiative, nearly a third of the funding has been identified for the community outreach and public awareness effort.

NIH is conducting regional workshops with HBCUs/MEIs to explore various means for the institutions to gain access to a greater portion of the available NIH grant money. For example, it may be possible for HBCUs/MEIs to work with corporations or majority institutions through contract mechanisms such as Small Business Innovative Research (SBIR) grants or the Small Business Technology Transfer (STTR) program.

Finally, several of the Institutes, including the National Institute of Allergy and Infectious Diseases, the National Institute of Arthritis and Musculoskeletal Diseases, the National Institute of Neurological Disorders and Strokes, the Dental Institute, and the National Institute of Child Health and Human Development, have established what they call “community outreach health partnerships,” focusing on some of the health concerns —African American concerns initially—and how the community can be enlisted to help increase public awareness.

CLINICALTRIALS.GOV

Dr. Alexa McCray

*Director, Lister Hill National Center for Biomedical Communications
National Library of Medicine*

Dr. McCray, who directs the ClinicalTrials.gov project at NLM, gave a slide presentation and two search demonstrations of the ClinicalTrials.gov Web site. Dr. McCray explained that the primary goal of the project, which was developed at NLM in close collaboration with all the NIH Institutes and the Food and Drug Administration (FDA), is “linking patients to clinical research.” The project is an outcome of the *FDA Modernization Act*, which was passed into law in November 1997.

ClinicalTrials.gov provides patients, family members, health care professionals, and members of the public easy access to information on clinical trials for a wide range of serious or life threatening diseases or conditions. Although the majority of the trials in the database are sponsored by NIH and other federal agencies, additional studies from the pharmaceutical industry are also included, and new features and designs will be incorporated as they are developed. The data are provided by the institutes, agencies, or companies who are conducting the trials and data are updated nightly. In addition, the Web site goes a step further by providing links to many other health resources, including NLM’s *MEDLINE plus*.

Dr. McCray described a “clinical trial” as a research study that asks specific questions about new therapies, diagnostic tests, screenings, and disease prevention. Each clinical trial goes through three phases. A Phase I trial, for example, may be studying the safety of the drug or appropriate dosage, and usually has a small number of individuals participating. By the time a trial gets to Phase III, it is often comparing the particular new therapy being studied to standard therapies, and there are potentially hundreds of subjects participating.

Information contained in the database about each clinical trial includes the title, recruiting status, sponsor, purpose of the trial, condition(s) under study, treatment or intervention, study phase, study type and design (i.e., randomized control or observational), and related topics with links to other information sources. Details of the study are also provided, as well as eligibility criteria, and location/contact information. Dr. McCray stressed that no matter who calls or when the call is made, there will be a live person at the other end of the telephone to answer any question the caller may have.

Additional information is listed at the bottom of the Web page to include publications, administrative data, study ID numbers, NIH grant number, name(s) of the principal investigator(s), and optional supplementary information. Literature references provide complementary or background information pertinent to the trial or, if the trial has been completed, information about the results —available even 5 years after completion of the trial. Dr. McCray stressed that the system does not enroll patients —it is an information system that gives the location of clinical trials and the contact person.

When the system was launched in February 2000, it contained information on approximately 4,400 trials. The site currently contains approximately 5,200 clinical studies representing almost 50,000 locations around the country and the world. As of the date of this meeting, there have been approximately 13.7 million page hits, which represents about 5,000 unique Internet protocol accesses per day, or about 1.5 million hits per month.

NEXT GENERATION INTERNET

*Dr. Michael Ackerman
Chief, Office of High Performance Computing and Communications
Lister Hill National Center for Biomedical Communications
National Library of Medicine*

Dr. Ackerman, who serves on the Large Scale Networking committee, an integral part of the national High Performance Computing Communications (HPCC) effort, gave a brief history of the Internet and described the implications of the “Next Generation Internet” (NGI) and how it will impact the practice of medicine and facilitate the exchange of medical information in the future.

Dr. Ackerman explained that the Internet originated as a research tool in the late 1960s, initially for government defense contractors. Later, universities were added because of the military research being conducted at these institutions. After several more iterations, it finally became a non-government, public-access resource.

As it has evolved, the Internet we know today does not have the capability to serve the research community because it is too slow and hackers are always a threat. So, in the mid-1990s, a group of people representing university research called for a second Internet to replace the research tool they had lost. A Presidential bi-partisan initiative followed shortly thereafter, which led to the passing of the Next Generation Initiative Research Act of 1998, providing guidelines for the initiative and authorizing the funding to support the initiative. Five agencies, including NIH/NLM, were designated to share the funding to build this new network.

The questions for NLM were how could the new network be used and for what? NLM determined that the NGI, which will be 100 to 1000 times faster than today’s Internet, will make a number of things possible for healthcare applications, including high resolution imaging for cat scans, magnetic resonance imaging (MRIs), and echocardiograms; transmission of data in “real time;” and the existence of a “personal electronic health record” so that a physician would be able to review a patient’s medical history online in order to make a diagnosis. These are the areas, Dr. Ackerman explained, in which health care will have a stake on this future high-speed network.

NLM commissioned the Computer Science Technology Board of the National Research Council to conduct a study which was called “Networking Health: Prescriptions for the Internet.” The study determined the characteristics needed in the network so that it would be useful in health care.

Dr. Ackerman referred the Panel to the report of this study, which can be found on the Web at http://books.nap.edu/catalog/9750.html?onpi_newsdoc022300.

The requirements that are needed include:

- **High bandwidth** – The ability to transmit large digital files —such as an echocardiogram that may consist of 40 gigabytes of data—quickly and accurately.
- **Bandwidth reservation** – The ability to set aside and use only the 5 -10 minutes of bandwidth needed to transmit the echocardiogram.

- **Nomadcity** – The ability to send critical medical data, including patient files, from the source to wherever the patient or physician may be traveling.
- **Real time** – Transmission priorities, so that the physician can determine whether information must be transmitted immediately or an hour or two later without loss of critical patient care.
- **Strong security** – Security should be built into the network.
- **Adaptable net management** – This is an option that allows medical professionals to determine whether data must be sent at a high resolution at the risk of extended transmission times versus lower resolutions and quicker transmission times.
- **Multicasting** - Multicasting is broadcasting one signal for multiple terminals to receive. In the current network, multiple streams of data tend to overload the network.

The current Internet is a passive, unintelligent network, which is not good enough for medicine. The NGI will be active, intelligent, and provide a guarantee. Specific characteristics of the network may include selectable options, which may come with a surcharge to get the guarantee of quality, timely transmission.

NLM then set out to engage the health care community about “Next Generation Internet,” or Internet 2 as the university projects are called. The first task was a 9-month planning project. Twenty-four \$100,000 9-month contracts were awarded that funded a professor and two graduate students to engage in a “thinking” exercise.

As a result of these studies, it was determined that only some health care applications require high bandwidth—most do not. Therefore, access to bandwidth for large file applications would be most economical if provided on an as-needed or on-demand basis. The main issue is quality of service guarantees.

The second phase of NLM’s assessment is in progress and will continue through fiscal year 2002. This effort will seek to define needed NGI capabilities in health care, public health, health education, and biomedical research. NLM has solicited proposals to create test beds that would show how to use the NGI in ways that cannot be accomplished in any other way except on a private line.

Approximately a year ago, NLM awarded contracts totaling nearly \$45 million to 15 institutions to implement the suggested capabilities through demonstration systems. Several of the systems under development are described below.

PING – Boston Children’s Hospital is testing the Personal Internet Network Notary and Guardian (PING), which is intended to provide both access to personal medical information and security for that data. For example, this capability will allow parents to have secure access to their children’s medical records through a normal Web site so that both the parents and clinician can look at the infant’s records without having to travel to the doctor’s office.

Radiation Oncology – Cancer patients go to Johns Hopkins, Baltimore for oncology radiation treatment planning and then to Peninsula Regional Medical Center in Salisbury, Maryland for treatment. Using the NGI, there is an opportunity to complete the treatment planning in Salisbury while the staff at Johns Hopkins consults with the technician in Salisbury as the treatment is given. This process would result in more accurate treatment and save transportation time. However, a reliable network is required to control the machine and conduct the treatment planning.

Pathology Images at Yale – If a laboratory technician has an unidentified pathology image, the technician could scan the image into the network and ask the network to access a database providing matching, identified findings.

Real Time Simulation in Teaching – Stanford is investigating the use of advanced computer simulation to give medical students realistic, three-dimensional anatomical images. It may be possible to simulate how different organs and tissues feel using the computer. The student would put on a glove or hold on to a pair of forceps that disappear behind a curtain. A computer-controlled device behind the curtain would provide accurate tactile sensations of whatever is displayed on the screen.

Transporting patients – Using the NGI, it may be possible to diagnose, for example, a stroke from an ambulance en route to the hospital. In this case, a video signal is transmitted from the ambulance to the neurologist at the hospital so the paramedic could do the neurological workup in the ambulance. In this case, the NGI uses cell phone technology to transmit the images. This also has applications in rural communities where it may take half an hour to get to the hospital.

The successful projects will be given a designation of Phase III. Current projects are being tested on simulated networks because fully functional networks are about 2 years in the future. Phase III funding will be used to test these concepts on a real commodity network.

The NGI ideally fits in with the way medicine should be practiced —good healthcare using better tools.

NIOSH UPDATE

Dr. Max Lum

Associate Director for Health Communication

National Institute for Occupational Safety and Health

NIOSH is an Institute within the Centers for Disease Control and Prevention (CDC). The primary mission of NIOSH—75 to 80%—is research. CDC's function is disease and injury prevention. NIOSH's role, by law, is to do research in occupational safety and health and deliver the results of that research to the Occupational Safety and Health Administration (OSHA). OSHA then makes appropriate regulations based on a joint assessment of the two agencies, based on the research. Currently, NIOSH is working mainly with Fortune 200 companies, and setting up mechanisms for partnering and sharing its research agendas.

The National Occupational Research Agenda (NORA) project is an activity that engages 400 to 500 partners to develop a national research agenda. Research partners are targeted so that the research topic (e.g., ergonomics) coincides with an institute that has a demonstrated interest in that field or topic. For example, the National Institute on Deafness and Other Communication Disorders (NIDCD), a part of NIH, is a partner in an effort to prevent noise-induced hearing loss. NIDCD is an Institute concerned with communication disorders and hearing, and NIOSH is concerned with hearing in the workplace. The partnership between CDC and NIH is powerful. This association uses CDC connections through NIDCD to reach partners that would not be reached otherwise.

NIOSH focuses on “occupational” issues. However, most “occupational” issues have an environmental component—this could include toxicology or any other environmental issue encountered in the workplace. For example, consider the issue of noise-induced hearing loss. NIOSH is concerned with noise as an occupational issue, but it is also an environmental topic. NIOSH has attempted to integrate the two—occupational and environmental—to benefit the partnership.

A significant amount of NIOSH's research agenda crosses over into environment issues. This may not be limited to chemicals, but rather larger environmentally induced issues that do not address specific chemicals. NIOSH has attempted to make research studies more usable for the occupational setting.

For example, NIOSH produces brochures, called “ALERT,” that are distributed to appropriate occupational settings. One such ALERT was issued to hospitals about allergies to latex gloves. It was determined that 30% of the hospitals' staffs did not recall the ALERT. NIOSH used this event to reexamine the way that materials were being disseminated. As a result, it was also determined that 30% of the people in key hospital settings received the materials, even though it was not sent directly to them, but rather they received it through their stakeholders. Consequently, NIOSH has also begun to reexamine how it works with its stakeholders and how it can improve delivery of information by using its stakeholder mechanisms.

NIOSH has also improved how ALERTs are delivered so that they are more easily recognized, and therefore more easily noted and remembered. NIOSH now uses a clear envelope so the cover shows through “ALERT” is prominently displayed on the back of the envelope. The result is that now 60% of people remember receiving them.

Another example of NIOSH research and reporting is its congressional responsibility to report all firefighter deaths in the country on a quarterly basis. In reviewing the data, it was discovered that there were recurring injuries. NIOSH produced a report describing similar cases across firefighting units and various recommendations for each case based on the surveillance reports.

NIOSH has also updated its Web site. The presentation and display of research information is an important part of NIOSH's objectives, and the goal was to capture overall worker safety and health information in a visual format. This led to changes in the Web site to make it more interactive and reach larger audiences. These major changes have made the Web site more useful and information more accessible.

NIOSH has continuous fellowship opportunities and is looking for additional opportunities for fellows to work during summers or at other times in its research laboratories in Cincinnati and Morgantown. NIOSH is working to improve explaining and promoting its fellowship opportunities.

NIOSH would like to explore the possibility of developing minimal standards for distributing Web information to targeted audiences. Specifically, there is an opportunity for NIOSH to work with TIOP to discuss what is available on the Internet in terms of electronic information, and what are the minimal standards for toxicological information. This could also include discussion on reaching a particular target audience, including academics, community-based organizations, origin institutions, and/or other federal agencies.

There are other opportunities to make occupational information more easily obtainable. NIOSH is doing just that for Hispanic audiences and it is anticipated that NIOSH will start translating materials into Spanish. There is also the need to format NIOSH information into a teaching format that could be easily adapted into courses.

WORKING LUNCH: FURTHER DISCUSSION

Members of the Panel

During the working lunch session, the discussion focused on specific directions the member institutions of the Panel could take to further assist the NLM in carrying out its mission while also enhancing the quality of education at the institutions represented on the Panel. Dr. Taylor suggested that the Panel integrate its activities with NLM's strategic plan and look for issues in the six identified health disparities on which to focus and perhaps these issues could also be translated into toxicology issues. All of these issues, Dr. Lindberg suggested, impact equal access to health information.

One of the questions to be considered is "How do we go beyond academics and into the community?" One of NLM's goals is to reach out to consumers to help them understand the health system and how to find the information they need to make informed decisions. Dr. Phillips suggested that the institutions could give NLM feedback on education technologies gathered in their communities from focus groups or town hall meetings, for example.

Dr. Walker brought up Xavier University's successful community Drug Information Center, which has been successful in reaching professionals as well as patients and consumers in New Orleans. This is a project that other member institutions could replicate across the country.

Howard University is doing more collaborative work with the public libraries and has found that they have much to share and that this is an excellent way to get information out to the people. Dr. Copeland explained that this first came about when people were looking for toxicology and environmental health information at the public libraries and couldn't find it.

At Meharry College, Dr. Nyanda made presentations on medical rounds using the information at the school's Toxicology Reference Center and was able to show physicians at Meharry how to retrieve the information they wanted. These doctors were previously unaware that this kind of information was available at Meharry and were impressed.

Dr. Lum (NIOSH) expressed his interest in providing support to the Panel and asked what role NIOSH should play. In response, Dr. Walker suggested the possibility of NIOSH supporting the development of occupational health programs at the institutions. This would be an opportunity to educate workers in the community about a wide range of occupational health issues based on resources available from NLM.

Hampton University, represented by Kathy Block, has several community outreach activities that are already working well, including "Wellness Fridays." In conjunction with health fairs conducted in the community each year, one group of seniors each semester is required to provide assistance distributing packets of information to three sites in three days —students can be helpful in disseminating information. Ms. Block also mentioned an incident that occurred in the emergency room involving a toxic chemical in which she was able to show personnel how to find the information about the chemical on MEDLINE *plus*. This is another example of community outreach.

Dr. Bates (Texas Southern University) frequently involves high school students in programs relating to drug abuse, AIDS, and a new initiative on teenage smoking and suggested more efforts in that direction. Along the same line, Ms. Block (Hampton University) suggested partnering with vocational schools.

Health fairs are an excellent example of community involvement. At Hampton, the health fair project has been so successful that it now has a dedicated staff, and sometimes the community requests a health fair years in advance. A mobile unit makes it possible for them to be out in the community. Also, local health agencies provide access to the community. Health fairs have also been successful at Florida A&M University (FAMU). Ms. Hollis reported that the College of Pharmacy and Pharmaceutical Science requires students to participate. Another example at FAMU is the birth defects registry in the Institute of Public Health, in existence since 1995. The Institute began accepting students in 1997 and is now looking for funds to do more community outreach.

Marti Szczur (NLM/SIS) made the point that information needs to be made more relevant to the public. Find out what questions the public is asking and find a way to feed it back to them to make sure we understand what they want. It would also help to have an evaluative component to gauge the impact on the community and objects that could be qualitatively measured.

Rose Foster, of Oak Ridge Associated Universities (ORAU), suggested that they could help NLM to develop more culturally sensitive fact sheets and use panel members for input on those fact sheets, making sure it is readable and understandable. Dr. Taylor suggested putting together a core group of subjects in the target audience to send information to for feedback and help in revising the information. Dr. Hollis (FAMU) mentioned that with their brochures they get input from the community and state/local health departments. Another issue is location —what are the best locations for distribution? Brochures are currently available in supermarkets —would churches, for example, be better?

One major area that has not been reached is the mental health community. Dr. Walker noted that the Surgeon's report contains little information on neurotoxic effects and that these exposures, on the prenatal and childhood levels, can cause effects even 20 to 30 years later.

One last area mentioned is that of lead levels and the importance of getting this information out rapidly to the public.

SIS UPDATE

Ms. Stacey Arnesen

Technical Information Specialist

Specialized Information Services Division (SIS), National Library of Medicine

Ms. Arnesen described some of the new activities initiated by SIS in the past year and then demonstrated the new interface for the TOXNET databases and several of SIS's new and improved products.

One of the most important new developments in SIS this year was the recent addition of a new Office of Outreach and Special Populations (OSP). It is believed that the TIOP was the precursor to the formation not only of this office, but all of NLM's outreach activities. The creation of this office clearly defines the importance of this issue to NLM and NLM's commitment to working with special populations.

SIS has a long history of outreach in the areas of toxicology and environmental health information, but has also have spent the past 10 years working with community organizations and the HBCUs in the area of improving access to HIV/AIDS information, as well. Ms. Gale Dutcher has led NLM's initiatives in outreach to HIV/AIDS community-based organizations by funding over 100 projects over the past 7 years to increase awareness and access by community-based organizations (CBOs) to HIV/AIDS information. In addition, SIS has conducted a number of training classes at HBCUs and conferences such as the National Association for Equal Opportunity (NAFEO) and Research Centers in Minority Institutions (RCMI) to increase the ability to access HIV/AIDS information by researchers, health professionals, health educators, and the community.

This year, SIS initiated two new major international outreach projects. The first is in the area of Arctic Health. The United States is a member of a multi-lateral organization called the Arctic Council. The countries that are members of this council are those that have some territory above or at the Arctic Circle: the U.S., Denmark, Canada, Russia, Iceland, Finland, Norway, and Sweden.

At the request of the NIH Office of Intramural Research, Office of the Director, SIS agreed to undertake a project on Arctic Health information. SIS is creating an Arctic Health Information web site to collect and organize information about issues of health in the arctic. The populations of these countries, including their indigenous, have to cope with extreme climactic conditions, and are subject to a unique set of health and environmental challenges. Threats from environmental contaminants, particularly persistent organic pollutants and metals, and their potential bioaccumulation in the food supply play an important role in the dietary health of countries where hunting and fishing are widespread. Issues relating to indigenous populations of that area are included, such as cancer, liver disease, and alcoholism. Emerging infectious diseases are an ever present danger, and the thinning of the ozone layer over the Northern Hemisphere puts people's skin and eyes at increased risk.

This Web site will also include an arctic health project reporting system to enable NIH and other agencies to make available information about projects being funded in or related to that area. A preliminary design for the web site and a sample project report were developed and briefly shown at the most recent meeting of the Arctic Council in Barrow, Alaska in October 2000. As part of this project, SIS staff are working to coordinate an Arctic Health information workshop to be held in Alaska during the summer or fall of 2001.

The second international project involves several Central American countries including Costa Rica, Nicaragua, and Honduras. Central America is a region hard hit by a variety of disasters. They are plagued by hurricanes, volcanoes, and earthquakes, as well as by man-made disasters such as releases of hazardous materials from chemical plants. In addition, these are very poor countries that are ill-prepared to deal with disasters, especially environmental health concerns, such as clean water, sanitation, and disease. Honduras and Nicaragua are two of the poorest countries in this region and the least prepared and most vulnerable to disasters.

Nearly 2 years ago, Dr. Melvin Spann spoke about NLM's programs at a disaster prevention, preparedness, and mitigation meeting in Costa Rica. Since that time, Dr. Spann and several others have been working on a mechanism for NLM to help these countries. It is clear that access to information is vital for the development of plans to reduce the damage caused by disasters.

Costa Rica hosts an important information center that provides access to a wealth of documents on disaster preparedness and response for Central America and the Caribbean. Unfortunately, many people do not have easy access to this information and still rely on phone calls and snail mail to obtain much needed documents. For the past year, Dr. Spann has worked with Costa Rica's Regional Disaster Information Center (CRID for its Spanish name) to develop a plan for improving access to health-related information on disasters to Nicaragua and Honduras.

In the fall of 2000, NLM signed a 2-year contract with CRID. This contract provides funding for the technical infrastructure (Internet access and computers) for Nicaragua and Honduras as well as for extensive training of staff from the participating centers, which are all based at public universities. In addition, funds will be used by CRID to upgrade their technical infrastructure and allow them to electronically store several disaster-related documents and develop a thesaurus of disaster-related terms.

Ms. Arnesen spent a week visiting each of the participating centers with Dr. Spann and Dr. Phillips in October 2000, and expressed her feeling that it is clear that the success of this Panel can be used as a model for other outreach projects. Dr. Spann sees many parallels between the Panel and this new initiative. She anticipates further progress on this project by the next time the Panel meets.

SIS has also been working on expanding access to the information resources available from SIS's Toxicology and Environmental Health Information Program (TEHIP). Over the past year, SIS has added resources to its Web site and significantly revised and improved the interface to search its databases, such as the Hazardous Substances Data Bank (HSDB), TOXLINE, and ChemID*plus*.

SIS is also developing new databases and services. A database to be called "HAZMAT" will allow cross-referencing of illnesses and diseases with chemicals encountered in the workplace. Another database that may be developed will focus on household chemicals. Finally, SIS anticipates producing a satellite broadcast program devoted to environmental health concerns for children. The concept of the satellite broadcast is not new for SIS, having produced a satellite broadcast on HIV and AIDS information resources in February 1999.

HBCU SHOWCASE: HOWARD UNIVERSITY WASHINGTON, D.C.

*Dr. Robert Copeland
Associate Professor of Pharmacology
College of Medicine*

Dr. Copeland described how the Department of Pharmacology has been heavily involved in the toxicology outreach program over the past 10 years. The 6-station informatics laboratory, which is the unit from NLM, is still housed in the Department of Pharmacology, but there are other areas as well. The department uses its home page on the Internet heavily, posting handouts for students at all levels and plans to go completely paperless.

When Dr. Copeland returned from his initial training in Oak Ridge, he took on the project of training faculty members first, then staff, then students. It was difficult at first to get people to move from paper to the computer, but gradually they began to come around.

About a year after that, Dr. Copeland offered to host training in the university's learning resource room, pointing out that it would be appropriate for HBCU training to take place at an HBCU. The offer was gladly accepted and training was held there over the next several years. At least 10 to 15 schools were represented at any one time. This training led to further training, including HIV/AIDS workshops and training connected with the Mississippi Delta Project.

The Learning Resource Center (LRC) has been upgraded and now contains about 30 computers. Open 24 hours a day, it is one of the busiest rooms in the School of Medicine and now includes a long list of multimedia aids from different departments. The Center was established for the academic curriculum of the College of Medicine through the use of instructional technology. This lab has led to the creation of other informatics laboratories, including a 30-computer lab in the dental school.

Within the department, the connection with the NLM project has led to several new initiatives, including a course in medical informatics. There are now two courses; one is for medical students and one is for the graduate component. This has led to the formation of a Division of Informatics, created through the vice president, and a Telemedicine Office.



Dr. Robert E. Taylor, Chairman of the Department of Pharmacology, is the representative for Howard University on the Panel. He gave a brief introduction, describing how Dr. Copeland has been involved in this toxicology outreach project from the very beginning and was the first representative from Howard to be trained on accessing the NLM databases at the outset of the project. He described an incident that occurred right after Dr. Copeland had received his training involving a chemical spill during a move of one of the laboratories in the chemistry building. As a result of his training on the NLM databases, Dr. Copeland was able to immediately find the information he needed and the issue was resolved quickly and without incident. Dr. Taylor asked Dr. Copeland to make this presentation to the Panel.

The Division of Informatics is a service-oriented organization more so than an academic arm and offers a broad range of information-related technologies. It supports the multimedia needs of undergraduate as well as graduate medical education curriculum of the College of Medicine. One of its initiatives is to educate students, administrators, faculty, and staff on how to use basic computer programs, particularly the new Microsoft programs such as Word, Excel, and PowerPoint.

The initiation of a Telemedicine Division at Howard resulted in a hardwire connection between Howard University Hospital and the Roy Schneider Hospital in St. Thomas, Virgin Islands, where Howard also has staff. This makes possible daily CME conferences and medical consultations are also conducted, usually on a weekly basis. Additional sites will be added in the future.

Howard University has also been using the Geographical Information System (GIS) to map environmental exposure as related to community health issues. One example of how this was used is in the Washington, D.C. metropolitan area, which has one of the highest rates of breast and prostate cancer. By mapping where the "hot spot" areas are, those particular areas can be investigated for environmental contamination.

One of the major features on the Howard campus now is the Louis Stokes Health Sciences Library, a \$20 million dollar construction project nearing completion. As Dr. Copeland shared pictures of the Library, he explained that this state-of-the-art facility will increase their space from about 27 thousand square feet to approximately 80 thousand square feet, not only for Howard University College of Medicine, but for health professionals and researchers in the community as well. Community involvement was a focus from the beginning of this project, when community leaders were invited to sit at the table during the planning stages so that the project leaders would have an understanding of what the community would need in terms of medical information. A major mission of the Library will be to develop a database and provide health care information to people of color worldwide.

Dr. Copeland described some of the main features of the new library, including an open skylight to bring in a lot of natural light, quiet study areas, classrooms, and a medical informatics laboratory. Half of the entire second floor will be devoted to medical informatics alone.

An example of the College of Medicine's commitment to community involvement is its partnership with the D.C. Public Library system, which had been receiving requests for medical information from the community but did not have the information. The College had the information but had no efficient way to get it out to the public. In this partnership, designed to increase the public's access and use of medical information, the D.C. Public Library system will provide the T1 lines and the College of Medicine will provide the information.

Dr. Copeland stressed that the NLM toxicology outreach project was essential to stimulate the interest in informatics at Howard University and has changed the way in which they teach and do research.

HBCU SHOWCASE: FLORIDA A&M UNIVERSITY TALLAHASSEE, FLORIDA

*Dr. Adrienne Hollis
Associate Professor
Masters in Public Health Program*

Dr. Hollis discussed registering and enrollment, utilization of technology, utilization of NLM technology for research and services, and the school's Master of Public Health (MPH) program's accreditation by the Council on Education for Public Health (CEPH).

FAMU currently has the highest number of graduate students to date, 102 students, 18 of which are in the natural science program in the College of Pharmacy, 35 Ph.D. students, two foreign Ph.D. students and 47 students in the MPH program. The M.S. and Ph.D. programs are broken up into specialty areas covering pharmacology and toxicology, environmental toxicology, medicinal chemistry, and pharmaceuticals. Environmental toxicology, for example, has 10 students, two of which have just become candidates and will be graduating with their Ph.D.s in December.

The MPH core areas are epidemiology, biostatistics, occupational health, health policy and management, behavioral science, and health education.

FAMU has increased its use of technology in a number of ways since its initial involvement in the toxicology outreach project.

Dr. Lewis has now established a 35 -station prescription practice laboratory where the pharmacy students learn a variety of prescription practices. They also have access on these computers to the Internet and to the NLM to do their data gathering and drug and information research. FAMU has also re-equipped the original 20 -station laboratory, which provides the main access to NLM's databases. All faculty, staff, and students now have access to the local area network, which is a major achievement. In addition, the Silicone Graphics Modeling Laboratory has been established, where students can access the databases for high -speed molecular modeling and 3 -D structure analysis.

In the Institute of Public Health, a 14 -station GIS and Spatial Analysis Laboratory has been established. The GIS had already been used to identify and address areas of high infant mortality in the state of Florida, because Florida's birthplace registry is housed in the Institute.



*Dr. Henry Lewis, III Dean,
College of Pharmacy and
Pharmaceutical Science, is
Florida A&M University's
representative on the Panel.
However, his duties made it
impossible for him to attend
this meeting. He asked Dr.
Adrienne Hollis, from
FAMU's Institute of Public
Health, to make this year's
presentation in his place.*

In addition, one of the students is currently using the GIS to determine the demographic breakdown of communities that are near facilities that transfer stored explosive hazardous waste. Ms. Hollis has been able to obtain from the Department of Environmental Protection of the state of Florida the listing of these facilities, most of which are located in minority communities. The College of Pharmacy also has a Patient Assessment Center, where the students learn how to do basic things such as blood pressure checks and gathering a complete history, temporarily located in the Science Research Center.

Dr. Hollis reported that plans are underway for a new College of Pharmacy building and shared schematic drawings of the new building with the group. Construction will be completed in two phases. Phase I is 162 square feet to be completed by the end of 2001. Phase II, which is 67 thousand square feet, will begin shortly thereafter. On the first floor will be an auditorium and a variety of classrooms of different sizes. The second floor will house a large computer lab and molecular modeling center as well as student study areas where small groups of students can study together and access computers and computer support services. The third floor, which will be largely dedicated to the faculty, will include faculty offices, a student counseling center, an additional student study area, and a large laboratory for patient assessment.

FAMU is particularly proud of its new Institute of Public Health, which was created by the Florida legislature in 1995 specifically to address disparities in health care. The goals of the Institute are to provide education, training, and research in diseases and health problems that affect disadvantaged people, especially those in Florida and in the general vicinity of the campus. The Institute focuses on acute and chronic diseases, environmental pollution, and violence, including juvenile violence and domestic violence and sexual assault on college campuses. Environmental pollution efforts focus on hazardous waste sites. FAMU is involved in the establishment of a Southeast Center for Community Environmental Health, and staff have already participated in environmental justice activities in both Florida and Georgia.

The Institute's MPH program was established in 1997 and in June 2000 received a full 5-year accreditation by CEPH. The number of students in the program has increased each year and many have gone on to further their education; other former students are now employed in federal, state, or local health agencies. A Ph.D. program in public health is anticipated for the future.

HBCU SHOWCASE: XAVIER UNIVERSITY OF LOUISIANA, NEW ORLEANS, LOUISIANA

***Ms. Rose Foster
Project Advisor, TIOP
Manager, Medical Education and Outreach
Oak Ridge Institute for Science and Education***



Ms. Foster introduced Yvonne Hull from Xavier University, one of the guest librarians at the meeting, and encouraged any questions to be directed to her. Ms. Hull was one of the original trainers to go through the initial training on accessing NLM's databases in Oak Ridge about 10 years ago.

Ms. Foster explained that Xavier University's main focus in their outreach activities extend in the following areas. Xavier has built a strong collaborative effort with Tulane University through the Drug Information Center. The Center uses NLM resources, which are easily accessible by faculty, health professionals, students, and the medical staff of the Tulane and Louisiana State University Medical Centers, and the Veterans Administration Medical Center.

*Dr. Ann Barbre,
Associate Professor in
the Xavier University's
College of Pharmacy,
could not be present,
so Rose Foster from
ORISE, who is the
Panel's Project
Advisor, gave this
presentation.*

The NLM databases are also used in the compilation of the quarterly Xavier University Drug Information Newsletter that goes out to the community. Other outreach activities include the provision of drug information services to health care providers, members of the lay public, and drug wholesalers. Grants have been helpful, especially because of access to NLM's resources and they've been typical in the competitiveness of the faculty's success for research programs. These grants have been focused on environmental issues such as the Applied Toxicology Program funded by the Agency for Toxic Substances and Disease Registry (ATSDR) for over \$3 million and the Center for Bio-Environmental Research supported by the U.S. Department of Defense (DOD) and the U.S. Department of Energy (DOE) for an excess of \$8 million from the years 1995 through 1999.

The Deep South Center for Environmental Justice (DSCEJ) is housed at Xavier University and is a collaboration of community environmental groups and regional universities to address issues of environmental justice and to promote the rights of all individuals to be free from environmental harm in health, jobs, housing, and education. The DSCEJ has used a number of NLM's resources in pursuit of its objectives and NLM has supported several training sessions conducted by ORISE staff members to help the Center meet its goals.

Dr. Walker, TIOP Chairman, added that Xavier and Tulane have an outstanding collaborative effort in environmental health. It is an excellent example of an HBCU and a majority institution linking arms and linking hands to develop a research program. They also publish papers jointly.



HBCU ROUNDTABLE UPDATES

HAMPTON UNIVERSITY HAMPTON, VIRGINIA

Ms. Kathy Block
Director, Office of Institutional Research

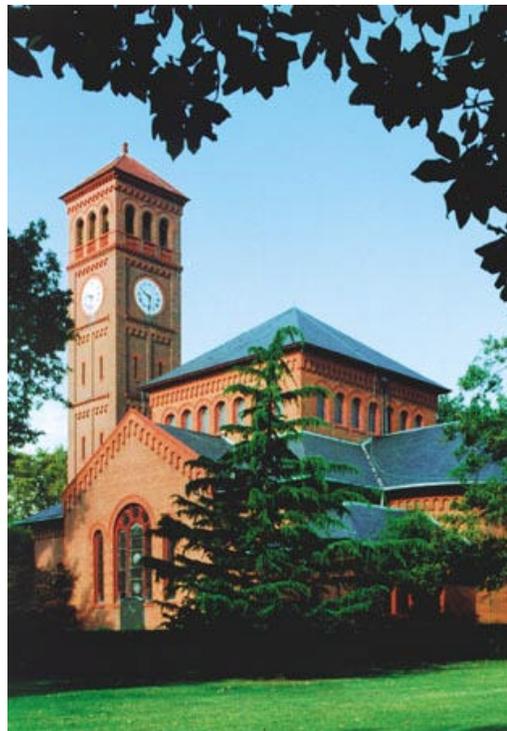
Hampton University and Hampton University School of Nursing have had an active year in their efforts to address domestic and international issues surrounding environment and health, elimination of ethnic and racial disparities, and narrowing the digital divide.

The Hampton University School of Nursing recently received \$627,941 from the Department of Health and Human Services, Division of Nursing. The award will be used to fund a pre-entry program for children in grades K-12.

The Hampton University Pre-Entry Program (HU-PREP) is designed to increase opportunities for persons from disadvantaged backgrounds to graduate from a professional nursing program. The project will focus on students in grades K-12. Approximately 75 students (25 elementary students, 25 middle school students, and 25 high school students) will be selected to participate in the program annually. The students will be selected based on teacher recommendations, the individuals' disadvantaged background/ethnic minority status, and the students' and parents' willingness to participate in HU-PREP.

The project will stress the importance of college preparatory activities to improve skills in science, math, writing, reading, language arts, and computer technology. Students in the program will participate in field trips, career fairs, plays, standardized testing skills building, shadowing professionals, and a summer enrichment program entitled HU Nursing Academy. As part of the HU Nursing Academy, students will receive instructions on the use of several NLM databases using a case-study approach to solving an environmental challenge.

Internationally, Hampton University's Department of Chemistry recently received a grant for \$669,552 from NIH to expand its research and study abroad opportunities for students and faculty. The grant is payable over 4 years and will allow Hampton to increase the number of participants from 6 to 12 per year in the summer research program, add an environmental health component, and establish a second research program based at Egerton University in Njoro, Kenya. Established in 1994 with a grant from NIH, the research and study abroad program is a research training activity designed to take a small group of students and faculty to the University of Dares Salaam in Tanzania for 10 weeks where they receive training in biomedical research by participating in a natural products research program. Hampton's involvement of its students in this type of research program has provided them a unique opportunity to work with biomedical materials that are indigenous to tropical ecosystems and are commonly used in traditional medicine.



Since its inception, 27 students and faculty have participated in Hampton's research and study abroad program to Tanzania. Students are selected based on their academic interests and performance, personal interest and motivation, future career goals, and willingness to spend the majority of their summer abroad. Selected students and faculty attend orientation workshops on campus before their departure. Students and faculty are assigned research projects, often working with Tanzania graduate students. The group participates in field trips into the rainforest and, at the end of the program, presents its work before an audience of Tanzanian scientists.

The expanded program adds a new dimension to the research and learning opportunities available for those with an interest in environmental issues. Environmental health research in developing and predominantly agricultural countries such as Tanzania presents a unique case of investigation and study to the student from an industrialized country. There is a direct link between environmental health issues and agricultural activity that can provide a unique learning experience. The use of pesticides and other agricultural chemicals and heavy metals such as mercury, whose use in small-scale mining has been on the rise in recent years, poses a serious threat to water quality, public health, and the environment as a whole throughout the developing world.

Hampton University and Hampton City Schools have developed a community-campus partnership that is designed to narrow the digital divide.

The partnership will initiate a technology training and application certification program designed to provide essential life skills to a specified population of high school students as part of their continuing education curriculum. Four hundred Hampton University students will serve as mentors to 200 at-risk youth in the community. The youth will receive valuable instruction in the use and application of standard office technologies. Those include hands-on training in labs equipped with the latest interactive multimedia technologies and will include paper-based, computer-based, and Web-based materials. Participants will have opportunities to directly apply acquired technology skills and knowledge in a controlled setting through campus-community work-study programs.

The Hampton University and city partnership is one of 20 community-campus partnerships awarded by WorldCom and Brown University in support of educational technology programs for youth in underserved communities. The \$5 million Making a Civic Investment grant program will benefit thousands of K-12 school children nationwide during the next 5 years.

The Hampton University Technology Conference 2000: Closing the Digital Divide will be held November 8th through 10th on the campus of Hampton University. Over 300 participants are expected to attend.

The conference will focus on access to computers and the Internet and the ability to effectively use this technology at colleges and universities and at primary and secondary schools. Invited guest speakers include Tony Brown, commentator of the PBS series *Tony Brown's Journal*; Treopia Washington, White House Initiative on HBCUs; Bill Graves, chairman and founder of Eduprise; and Darrol G. Roberts, president and COO of Africana.com. The sessions will focus on the following topics: E-Business Solutions for Higher Education, Network Infrastructure and Information Access, and Distance Education Initiatives. The conference will also address campus connectivity. Mrs. Kathy Block will be one of the session presenters.

MEHARRY MEDICAL COLLEGE

NASHVILLE, TENNESSEE

Dr. Alfred Nyanda
Director, ToxMed Reference Laboratory
Department of Pharmacology

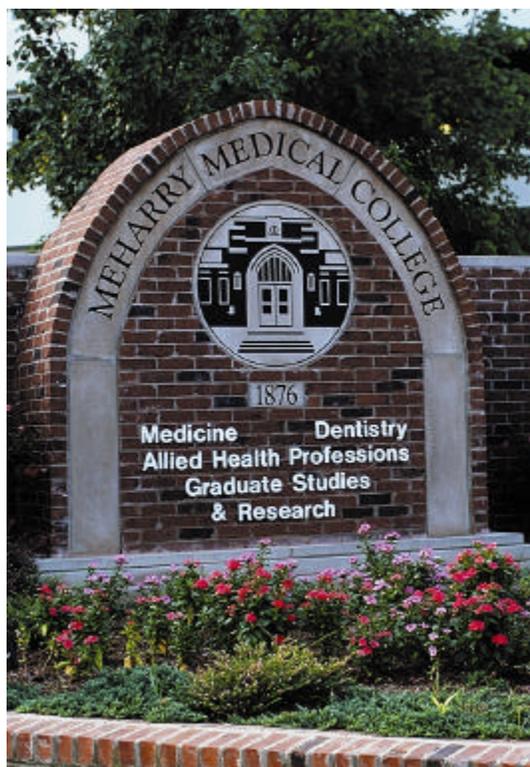
The Toxicology Information Outreach Project at Meharry Medical College is an important program that is currently assisting graduate students to search for articles, journals, and topics related to toxicology. Meharry never anticipated this would have such a great impact on its students in terms of ease of access to toxicology informatics, specifically before preliminary examination and after oral examination for graduate students. Meharry's main objective was therefore to further expand this program during the 1999 -2000 academic year to encompass the following objectives:

- Introduction of medical, dental, and graduate students to toxicology databases
- Use of the toxicology databases in the campus health and safety program

The program's initial success was noticed when large numbers of students and health professionals and local residents preferred to use the Meharry facility rather than spending time in the library. Meharry decided to advertise by distributing flyers, and presenting seminars in the community and for health professionals. Recently, a librarian from Meharry Medical College was also involved in TOXNET training on the Web sponsored by the SIS Division of NLM.

The toxicology outreach project is also playing a major role in students' research and dissertations. The department of pharmacology has graduated 6 students with a Ph.D. in pharmacology in the past year. Meharry believes the increased peer -reviewed publications (6) for 1999 -2000 could be a result of the ease of access to information necessary to write a manuscript.

The TOXMED Reference Laboratory at Meharry was awarded contracts by the State of Tennessee to conduct testing for dioxin levels in fish.



**MOREHOUSE SCHOOL OF
MEDICINE**
ATLANTA, GEORGIA

Dr. Mohamed Bayorh
Department of Pharmacology and Toxicology



Dr. Bayorh expressed the gratitude of Morehouse School of Medicine (MSM) to NLM for its support in advancing access to online medical and toxicological information. This program has been of use not only to the MSM community, but also to faculty and students of the Atlanta University Center and the community at large.

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, journal collection, audiovisual titles), the MMC uses information technology to improve accessibility to the NLM databases (i.e., MEDLINE, PubMed, Spaceline, TOXLINE), the Internet, the World Wide Web, and TOXNET. The MMC provides instructional classes on the use of PubMed and TOXNET for all faculty and students; hands-on training is specifically recommended for Ph.D. and MPH students along with group classes and one-on-one interaction.

One of MSM's goals for the year 2000 and beyond includes making significant progress towards introduction of computers in teaching, small group learning, and readiness for OSCEs (Objective Structured Clinical Examinations). An extension of the above will be in line with TIOP's intentions to educate the community at large and health professionals on issues related to minority health. In addition, the Clinical Research Center will be engaging in clinical trials involving several diseases that disproportionately affect minority populations, especially cardiovascular disorders and HIV. Data from these studies will be a starting point for a database that can later be made public to all concerned.

This year, MSM celebrates its 25th Anniversary and is undergoing a continuing period of restructuring and reorganization with a vision toward becoming pre-eminent in the education of minority M.D., Ph.D., and MPH students, emphasizing primary care and community service. In addition, we seek to become leaders in defined areas of research addressing, in particular, diseases that disproportionately affect minority populations.

In 2001, as the NLM continues its enhancements, the MMC looks forward to providing ongoing instruction as well as implementing new instruction on the NLM gateway and clinical trials databases.

TEXAS SOUTHERN UNIVERSITY HOUSTON, TEXAS

Dr. Theodore R. Bates
College of Pharmacy and Health Sciences



Dr. Bates reported that access to NLM's online databases has facilitated the preparation of research proposals and the conduct of research for the following continuing or newly funded research projects at Texas Southern University (TSU).

- A 5-year RCMI/NIH grant to establish an "Institute for Research into Health Issues of the Disadvantaged." The Institute is a research infrastructure that aids the faculty in the study of diseases that disproportionately affect disadvantaged populations and ethnic minorities. Research projects are currently underway in atherogenesis, hypertension, diabetes, and vascular complications of diabetes, environmental toxicology, and HIV/AIDS. The Institute also supports an emerging Ph.D. program in Environmental Toxicology.
- A 7-year National Heart, Lung, and Blood Institute (NHLBI)/NIH grant to establish a new "Cardiovascular Research Center."
- A 5-year ATSDR/Minority Health Professions Foundation (MHPF) grant to perform "Mechanistic Studies on the Neurotoxic Effects of Lead."
- A 2-year State of Texas, Minority Health Research and Education grant to conduct a "Tobacco Outreach Program for Teenagers in the African American Community."
- A 2-year M.D. Anderson Cancer Center grant to study the "Pharmacokinetics of Nicotine and Cotinine After Cigarette Smoke Inhalation."

Dr. Bates continues to include training on the use of Internet Grateful Med to 105 first professional year Doctor of Pharmacy students enrolled in his course entitled "Computer Applications in Pharmacy." The search databases covered are: MEDLINE, PreMEDLINE, MEDLINE*plus*, AIDSLINE, AIDS DRUGS, ChemID*plus*, and TOXLINE. He also offers introductory and advanced training classes to faculty, staff, undergraduate, and graduate researchers in the College of Pharmacy and Health Sciences. The recent additions to MEDLINE*plus* of extensive information on brand name and generic drugs, and on drug-drug interactions have been well received by TSU students and faculty.

Ms. Norma Bean (Associate Director, Robert Terry Library) continues to provide a program of bibliographic instruction (covering primarily the TOXNET databases) to students and faculty in the Departments of Chemistry and Biology. The program reaches graduate students enrolled in our Ph.D. program in Environmental Toxicology as well as undergraduate and graduate students enrolled in chemical and biological sciences programs.

NLM online database training will begin shortly for practicing B.S. pharmacists enrolled in the TexPharm distance learning Pharm.D. educational program jointly offered by Texas Southern University, the University of Houston, the University of Texas, and Texas Tech.

Dr. Bates and Ms. Bean recently attended the 1.5 -day NLM training course on TOXNET on the Web held at the Minority Health Professions Foundation/Spinn Learning Center in Atlanta, Georgia on October 9-10, 2000). Ms. Rose Foster and Ms. Sheri Hester of ORISE were excellent instructors. This new way to access NLM's toxicology and environmental health information databases will be incorporated into the College of Pharmacy's training sessions during the Spring Semester of 2001.

NLM's databases have been used in the following community outreach programs:

- HIV Prevention Education Program: Community Planning, Leadership and Orientation Training
- American Red Cross sponsored training of African American HIV/AIDS community instructors
- Providing community teenagers with toxicological, motivational, and culturally sensitive information about the dangers of tobacco product exposure. Our community partner organization in this outreach program is "Saving Life Through Alternate Means" (SLAO).

TSU's Drug Information Center provides the community with drug - and health -related information via telephone interactions.

TUSKEGEE UNIVERSITY

TUSKEGEE, ALABAMA

Dr. James Webster
Chairman, Department of Biomedical Sciences
School of Veterinary Medicine



TUSVM has experienced much positive growth as a result of its involvement with NLM's TIOP. This growth has been primarily in the areas of graduate student training, funded research grants, recruitment of research faculty, and expansion of the core veterinary curriculum to include the TOXNET databases. The veterinary environmental sciences program has grown from one research project (multigenerational effects of mercury in rats and mice) with two faculty and two technicians to two projects (multigenerational effects of zinc and chlordane) with four faculty members, two post-doctoral fellows, and two technicians. TOXNET has been the primary information resource for preparing these proposals and preparing six master degree theses. Each year since the beginning of the program, 3rd-year veterinary medical student classes have been required to prepare a 4- to 5-page paper on a given toxicant.

In addition to the availability of NLM's databases at the T. S. Williams Veterinary Library, the databases are easily accessible at the Hollis Burke Frissell Library, which is the main library on campus. The Director of the libraries at Tuskegee has received training on the TOXNET databases, with the understanding to train all staff. The NLM databases have also been used to supplement existing courses in both toxicology and pharmacology.

TUSVM has also promoted the use of TOXNET in the community. An agreement was made with the locally owned pharmacy to install a computer for the availability of information on health issues as related to the minority population. CVS has now purchased the pharmacy and the agreement has not been re-established.

Health information through NLM's databases has been made available through the college by placing kiosks in the school of nursing and allied health sections. These kiosks are connected to the library making the NLM databases available.

Toxicological information has been provided to 9th and 11th graders through VET-STEP program. These students come to campus for a two-week period for a synopsis of the life of a professional health provider. During this period, students are presented with pictures of chemical effects in fish, rodents, and toxicological information by exploring the TOXNET database in the veterinary library.

Tuskegee University has received approval from the Southern Association of Colleges and Schools for a doctoral program in integrated biomedical sciences. The environmental sciences program is a major component of the integrated biomedical sciences. The availability of the TOXNET database for graduate studies had an impact on the Master of Science program, serving as the foundation for the doctoral program. Online searches of the NLM databases will be a requirement for the doctoral program.

A faculty addition has been made to include a veterinarian toxicologist, the only one in the state of Alabama. This person also has a doctoral degree in pharmacology. This addition will allow TSUVM to expand its environmental sciences program.

UNIVERSITY OF ARKANSAS AT PINE BLUFF (UAPB)

PINE BLUFF, ARKANSAS

Mr. Edward Fontenette
Director, Watson Memorial Library



The TIOP was of monumental assistance in the design and implementation of courses in pharmacology for a special cooperative program between UAPB and the University of Arizona Medical School (UAMS) to train minority professionals in the field of pharmacology. This is an NIH-funded program, and 5 black students are enrolled in the program this year. Twenty-five black students in pre-medicine have been assisted in UAPB's pre-medicine curriculum. The Department of Nursing has a highly specialized course in pharmacology, and all nursing majors use the NLM databases to access toxicology information.

Special bibliographic instructions are provided to pre-medical and nursing majors by Mrs. Georgia Watley and Ms. Elaine Yates, who have both received training to access NLM's databases. Students in the UAPB regulatory science program receive bibliographic instruction about toxicology information sources. The library director has kept deans and chairpersons briefed on the availability of NLM/TIOP resources for new program planning purposes. The nearby Food and Drug Administration's National Center for Toxicological Research (NCTR) and the Pine Bluff Arsenal have informed the local citizenry and the Pine Bluff community about toxicology information sources. Local private industries, such as the International Paper Company, have also been helpful.

The greatest challenge is in the area of agricultural and farm-waste toxic water. Ms. Elaine Yates is active with the medical community regarding possible medical problems resulting from agriculture and fish toxic diseases. However, the farmers need direct access to toxicity problems resulting from the use of agricultural pesticides. The Pine Bluff Wastewater Company has begun to test city wastewater for toxic substances to identify sources of toxic pollution. The next step is to work with the sources to prevent such pollution.



NEW MEMBERS AND REPRESENTATIVES

**CHARLES R. DREW UNIVERSITY OF
MEDICINE AND SCIENCE
LOS ANGELES, CALIFORNIA**

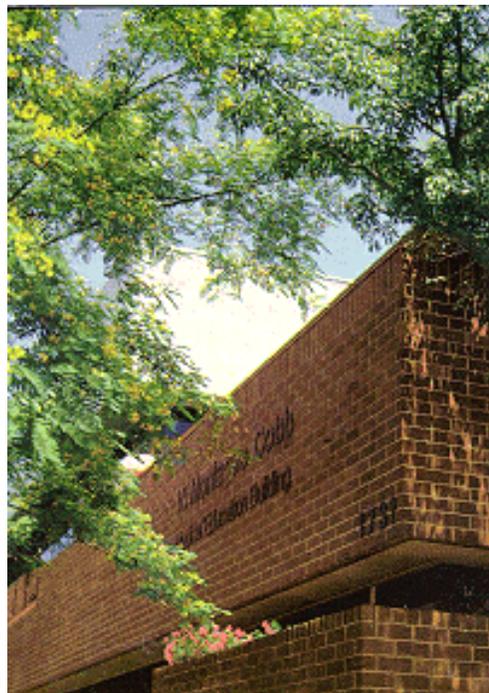
Dr. Douglas Ray
Director, Pharmacy Technology Programs

Drew University was conceived in 1966, primarily as a health care services venture in joint action with the Martin Luther King General Hospital after a gubernatorial commission cited poor health status and diminished access to health care among factors fomenting the 1965 civil unrest in Watts, California.

During the late 1980s and early 1990s, the Drew University Administration and the Board of Directors emphasized the importance of health-related research as indispensable to achieving the goals of its intended mission. As a result, the University shifted its priority to enhance Drew's research capability through the expansion of its research infrastructure by designating additional research space, supporting institutionalization of research cores, engaging in the recruitment of research faculty, and emphasizing an increased collaboration with research-intensive institutions.

Drew University is located in South Central Los Angeles. The culturally diverse patient base of Drew Medical Center offers a unique opportunity for biomedical research and biotechnology. Drew is the only minority medical education program in a county of over 11 million residents and a state with more than 30 million residents. Being the only traditional minority institution and major medical center west of the Mississippi River and serving a uniquely diverse population, Drew is in an excellent position to study factors that contribute to the poor health status of minority populations. It is contingent upon Drew to take the lead in creating culturally and socio-economically sensitive and reproducible strategies for increasing recruitment and retention of disadvantaged minority and women participants in biomedical and clinical research.

The mission of the university is "to conduct medical education and research in the context of service to a defined population and to train persons to provide care with competence and compassion to this and other underserved communities" that embraces the needs and problems of society's most disadvantaged and neglected communities.



Dr. Douglas Ray was invited to join the panel as a replacement for Dr. Isaac Reese (retired). Dr. Ray is the Director of the Pharmacy Technology Programs at Drew. His joining the TIOP will be of great help to the panel as NLM attempts to reduce the nation's health disparities by disseminating health information to those in special need.

OGLALA LAKOTA COLLEGE PINE RIDGE, SOUTH DAKOTA

*Ms. Margaret Hart
Director and Chairperson, Nursing Department*



In celebration of the 10th anniversary of the TIOP, it was recommended that a representative from a tribal college with a strong nursing curriculum be added to the Panel. TIOP is expanding its efforts beyond toxicology and environmental health and is focusing its efforts to work not only with HBCUs, but also with tribal colleges in serving Native American health professionals and consumers to aid in eliminating health disparities.

Oglala Lakota College (OLC) was one of the first tribally controlled colleges in the United States. The concept of a tribally controlled college is that it be sanctioned by an Indian tribe, be governed by an Indian tribe and its governing body be made up of tribal members, and that it meet the needs of reservation people in their pursuit of higher education.

There are 32 tribal colleges founded by Native Americans to fight high rates of poverty, educational failure, and cultural loss. About 85% of tribal college students live at or below the poverty level. The 32 colleges serve a total of about 30,000 students, including non-Indians, who make up an average of 15 to 20% of the enrollments. The schools are located mostly on poor, isolated Indian reservations and operate in trailers, converted warehouses, and abandoned buildings.

From its inception as “Oglala Sioux Community College” in 1971, the mission of OLC has been to provide educational credentials to its students so that they could compete for employment opportunities on the Pine Ridge Indian Reservation. As a result of having a college on the reservation, Lakota people are employed in teaching, nursing, human services, business, computer, and vocational educational positions on the Pine Ridge reservation.

The OLC nursing program supplies nursing health care providers to the rural and Pine Ridge/Rosebud Indian reservation areas of the northern plains. The nursing curriculum is conceptually organized around Lakota traditional beliefs and values, and augmented by state-of-the-art computer and distance learning technology. The Lakota people have one of the lowest levels of health of any group in the country. Many factors contribute to this poor health status, such as income and an unemployment rate of 75 to 80%. One significant problem is that there are few Native American registered nurses.

OLC is a North Central Accredited college, and its credits are transferable.

Ms. Margaret Hart holds an M.S. in Nursing with a major in Psychiatric Nursing and is currently enrolled in the Ph.D. nursing program at Barry University, Miami, Florida. She has served on numerous boards, including the Bureau of Indian Affairs School in Pine Ridge, South Dakota and has served as a Psychiatric Nurse Case Manager in Elliot City, Maryland. She has also written articles for several publications, including Nursing Spectrum.

**UNIVERSITY OF PUERTO RICO
MEDICAL SCIENCES CAMPUS
SAN JUAN, PUERTO RICO**

Dr. Diogenes Herre Zo-SaJnz
Department of Pharmacology and Toxicology

In celebration of the tenth anniversary of the Toxicology Information Outreach Panel (TIOP) meeting, it was recommended that a representative from a Hispanic colleague be added to the panel. Dr. Diogenes Herre Zo-SaJnz, from the Department of Pharmacology and Toxicology at the School of Medicine in the University of Puerto Rico represents the school. The Department offers graduate programs leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Pharmacology and Toxicology.



Dr. HerreZo is an Associate Professor at the Department of Pharmacology and Toxicology on the Medical Sciences Campus. His research interests are in the following areas: molecular and biochemical pharmacology/toxicology and risk assessment studies. The research also includes structure-activity relationships and molecular mechanism of action; chemical and biological interactions of xenobiotics (drugs, chemicals) with cellular macromolecules; and regulatory toxicology. In addition, Dr. Herre Zo has published and co-authored numerous publications.

The mission of the University of Puerto Rico, School of Medicine is to transmit, enrich, and increase knowledge in the medical sciences through technology, research and clinical services. The school is committed to providing students with the formal rigorous education based on an interdisciplinary model of health services, with strong emphasis on primary medical care.

The faculty of the School of Medicine fulfills its instructional responsibility of educating physicians of the highest professional and moral standards through its doctor of Medicine Program and generating component biomedical scientists through its masters and doctoral programs.

The University of Puerto Rico School of Medicine is often in collaboration with other professional programs at the Medical Sciences Campus or other distinguished universities from the United States and abroad.

The National Library of Medicine will supply the University of Puerto Rico, Medical Sciences School with PC workstation that will increase the division's capability to access the Library's toxicology and environmental health resources. The computer, part of NLM's Toxicology and Environmental Health Information Outreach Program (TEHIP), will be used to train faculty, graduate students, and other consumers of health information.



NATIONAL LIBRARY OF MEDICINE
TOXICOLOGY INFORMATION OUTREACH PANEL

MEMBERSHIP DIRECTORY

2000-2001

Toxicology Information Outreach Panel Membership Directory 2000-2001

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