6th Annual Meeting of the Toxicology Information Outreach Panel
June 10, 1996
National Library of Medicine

Agenda

Welcome
Remarks
Medical Informatics at Howard University
SIS Web Server
Internet Grateful Med Tutorial
Making the Connection Work
Film: Your Key to Medical Information

HBCU Updates

Opening Remarks

Dr. Melvin Spann
Associate Director of Specialized Information Services
National Library of Medicine

Dr. Spann opened the Seventh Annual Toxicology Information Outreach Panel meeting, noting that Dr. Bailus Walker, Chair of TIOP, could not attend. Dr. Spann traced the history of TIOP, which began with the National Library of Medicine (NLM) reaching out to nine medical schools at Historically Black Colleges and Universities (HBCUs) to show the benefits of accessing NLM's toxicology and environmental health databases. He continued by describing the expansion of the effort to involve the Agency for Toxic Substances and Disease Registry (ATSDR), the Environmental Justice Office of the Environmental Protection Agency (EPA), and now 66 HBCUs.

Dr. Spann explained that this original effort has been used as a basis for the Mississippi Delta initiative.

He also mentioned his hopes that the outreach effort can continue to grow next year with a possible HBCU symposium that would illustrate future plans in telehealth and telemedicine.

Dr. Spann concluded by describing the process the HBCUs need to follow in order for the National Institutes of
Health (NIH) to donate previously loaned computers to the schools. The new equipment just received by the HBCUs may also be donated to them after the five-year loan period is completed.

Dr. George Hill  
**Director, Research Center of Excellence in Cell Molecular Biology**  
**Meharry Medical College**

Dr. Hill welcomed the panel and its guests to Nashville, the home of three HBCUs: Fisk University, Tennessee State University, and Meharry Medical College. After acknowledging other Meharry TIOP participants, Dr. Maurice Knuckles and Michael Hubbard, he discussed the advantages and importance of NLM’s resources to Meharry. Dr. Hill looked to the future, anticipating that the classroom in the year 2000 would create a very different learning environment, one in which each student would have a computer and would interact with other institutions both nationally and internationally through the Internet and teleconferencing. This technological growth would also allow the HBCUs to provide greater services to rural communities and to expand curricula and research to address the specific health needs of the African American population.

Dr. Hill concluded by outlining the Meharry Medical College Information Technology Strategic Plan, which is being developed to help the college and its staff prepare to take best advantage of future technology. The five goals of the plan are:

1. develop and implement the physical and organizational infrastructure to provide integrated, user-friendly and cost-effective information technology,
2. implement effective use of information technology to advance the educational mission of the institution,
3. improve health care delivery by providing the capability to deliver clinical services remotely,
4. improve the research capability, productivity, and stature of the college through the effective use of information technology, and
5. improve the effectiveness of administrative and support services through the use of information technology.

**Meeting Topics**

**Association of Minority Health Professions Schools (AMHPS)/HBCU Telehealth Initiative**

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

Dr. Lewis summarized the telehealth/telemedicine initiative for AMHPS and other institutions by first bringing the panel up-to-date on the progress. He reported that all HBCUs represented at the meeting had been visited and assessed as to their current capabilities, the types of technology available, and the personnel available to operate the technology. The next step was a meeting in Bethesda, Maryland, in February 1997 to discuss how to help institutions move into the telemedicine arena.

Dr. Lewis then described the plans for Phase III of the initiative. The group is currently in the proposal development stage and is determining the needs of the institutions. The schools will be re-visited to complete this analysis, and a baseline of what each should have as a minimum will be set. The proposal will address not only the infrastructures needed but the training component and capacity building. Dr. Lewis expects the final stages of proposal development to be underway by June 1998. Once the proposal is complete, he said the group will begin presenting it to various agencies.

Dr. Lewis explained that the ultimate goal of the telehealth initiative is for HBCUs to position themselves to take full advantage of the most current technology in order to ultimately provide better health care to poor and under served...
communities. Dr. Lewis also said that the group has contracted with the National Center for Minority Health to assess 15 smaller HBCUs that are setting up or expanding offices for sponsored research. These schools are two phases behind the other AMHPS institutions, but they bring the total of participating schools to 27, which is 25% of the country's HBCU community.

### Texas Southern University (TSU) Toxicology and Environmental Health Information Program (TEHIP)/AIDS Training

**Dr. Ted Bates and Ms. Rose Foster**

**Texas Southern University**

**Oak Ridge Institute for Science and Education (ORISE)**

Rose Foster first described ORISE's efforts to train faculty in using and accessing NLM's databases. To date, 74 schools have been trained, and recently, the effort has reached out to the Hispanic community in the Caribbean as well. With the University of Puerto Rico Medical School as host, ORISE trained faculty from the Catholic University of Puerto Rico, the University of Sacred Heart, and Ponce School of Medicine in 1997. Many of the schools are also from the Mississippi Delta region of the country, a special area of emphasis.

Ms. Foster discussed the growth in training in the HIV/AIDS area. ORISE has worked with the National AIDS Minority Information and Education (NAMIE) Program of Howard University and the National Association for Equal Opportunity in Higher Education (NAFEO) to train 42 schools to date in accessing and using the free NLM databases that focus specifically on HIV/AIDS. Texas Southern University was one of the sites trained in 1997 as part of a dual training session co-hosted by ORISE and TSU. The first three-day course addressed the environmental health/toxicology databases, and a one-day session focused on the HIV/AIDS databases. Most participants were from the Mississippi Delta region. Under such an arrangement, ORISE coordinates hotels and transportation, while the host institution selects the hotel and provides refreshments. The host institution's training site must also have a minimum of hardware and software, which Dr. Bates detailed for the panel.

Dr. Bates described the advantages to a school that hosts these types of training sessions: (1) it allows faculty who have not been previously trained but who are doing research in minority health to participate, (2) participants from other areas of the school, such as the law program, can participate, (3) previously trained staff can receive updated training, and (4) useful interaction is provided between the host institution and guests from the Mississippi Delta region.

Dr. Bates also provided a written summary of Texas Southern University's progress in using NLM's resources. Highlights include:

- The modem-equipped, computer workstation provided by NLM is centrally located in the College of Pharmacy and Health Sciences Pharmacy Reading Room. All College of Pharmacy and Health Sciences faculty have on-line access to the two NLM literature search computer systems from their office computers.
- All faculty, student research-faculty advisors, research personnel, and research students are provided copies of NLM's literature search (MEDLARS) training software for installation on their own computers. Each also receives copies of TOXNET and ELHILL reference guides, pocket cards for MEDLINE and MESH, and the pamphlet "TOXNET: A Brief Guide to Searching its Files".
- Dr. Bates offers introductory and advanced training classes on the use of NLM's On-Line Literature Search Databases to College of Pharmacy and Health Sciences faculty and undergraduate and graduate pharmacy student researchers. Internet Grateful Med training became part of a new required undergraduate course offered to 130 students in the new six-year entry-level PharmD program.
- NLM's resources are also important in the three-year-old master's and doctoral environmental toxicology programs. The graduate students receive advanced training as they progress through the program, and faculty are encouraged to incorporate on-line literature searches into their courses.
- TSU's community outreach programs related to HIV/AIDS continue to use the NLM databases.
The written report also provided details on the two NLM training sessions hosted by TSU and conducted by ORISE in 1997. The College of Pharmacy and Health Sciences' computer-assisted instructional laboratory was used for these sessions. Dr. Bates provided a checklist of responsibilities for potential host institutions:

- Select a hotel convenient to training site.
- Provide round-trip transportation between the training site and hotel.
- Provide refreshments during breaks of the sessions.
- Provide an on-campus facility for lunch.
- Have a suitable computer network with at least 20 workstations and Internet access.
- Provide equipment capable of computer image projection.
- Install software on network computers for (1) full-featured telnet client software package, (2) Grateful Med for DOS, and (3) Grateful Med for Windows.

### Howard University's Telehealth Activities

**Dr. Robert Taylor**  
**Chairman, Department of Pharmacology**  
**Howard University**

Dr. Taylor presented Howard's activities in telehealth as well as provided a written summary. He sees informatics as crucial to the medical profession of the future because it allows management of the large volume of medical information available. Highlights of Howard's accomplishments and activities, many of which are tied to NLM's assistance, include:

- The Medical Informatics Program initiated a telemedicine effort, using equipment provided by Telemedicine Solutions, Inc. This has resulted in a hardwire connection between Howard University Hospital and Roy Schneider Hospital in St. Thomas, Virgin Islands, where Howard has staff, so that daily departmental CME conferences as well as medical consultations are sent to the Virgin Islands. Other proposed sites include medical schools in South Africa and the Washington, D.C. jail.
- A $20 million Health Science Library has been approved and is currently under development. It will provide state-of-the-art information technology capability and is expected to be completed by 2000.
- The university has provided ISDN connection to each faculty member and is nearing complete distribution of computers to faculty.
- The Vice President for Health Affairs has created a Division of Informatics; Mr. Bryant Logan was named director.
- Within the Department of Pharmacology, which houses the Toxicology Outreach Panel work, there is a six-station informatics laboratory. The department also continues to upgrade its home page (http://www.med.howard.edu/pharmacology/), which has numerous hyperlinks to useful resources as well as department handouts and exam questions.
- Howard has received a $10 million grant from NIH to reopen a wing of its hospital. It will become a state-of-the-art General Clinical Research Center.

### Hampton University's Environmental Justice Technology Center

**Kathy Block**  
**Director, Institutional Research**  
**Hampton University**

Ms. Block highlighted the activities of the Environmental Justice Technology Center, located in downtown Hampton, Virginia. Its mission is to empower the community at-large through technical support, education, and various outreach activities. The Center does a lot of technical support, has given certificates to participants that have helped with welfare to work issues, provides data support, and gathers and produces documents on best practices to use in community investigations. Staff continue to work on a household vulnerability index and perform environmental characterizations, as well as conduct informational seminars, community training, and workshops. Ms. Block cited several community partnerships: the Norfolk’s Homeowners Resident Association, which abuts factories, shipyards, etc., where lead toxicity and water pollution are the big issues; Northside River Association, a neighborhood that's competing for space; and the American Lung Association, which is interested in...
doing a community investigation of the Blackwell section of Richmond. The Center also works with local high schools, and with good support from the EPA to help with the student projects, the Center depends heavily on the students. The Center also works with the Candy Network, which is a home for AIDS families.

Due to a lack of funding, Ms. Block said the Center had to restructure and eliminate the office manager position. She is an independent consultant to the Center. An open house for different funding agencies resulted in the extension of several contracts rather than having to go through research proposals, and she said there is a potential contract to do business education with a youth group.

Informatics Fellowships

Dr. Milton Corn
Acting Associate Director, Extramural Programs
National Library of Medicine

Dr. Corn described a new fellowship being offered by the National Library of Medicine. Its focus is on informatics, and it is designed to help interested participants learn how to apply computers and telecommunication to some component of health. The participant will learn the system, then return to his/her institution, which will then apply for the fellowship on the applicant's behalf. The application goes through a peer review and if granted, the applicant may take one to three years to gather the information desired.

Dr. Corn said that NLM does not specify which aspect of informatics the applicant learns; what is learned is decided between the fellow and the mentor at the institution. NLM also does not require the fellowship to lead to a degree, but it may if the institution and applicant desire. Dr. Corn explained that NLM will replace up to $58,000 of whatever salary is lost by the applicant and welcomes salary supplements by the institution. NLM does not cover health insurance for the applicant but does provide up to $3,000 for travel expenses. A recommended list of mentors can be provided, and, upon request, Dr. Corn will review an application before it goes through the formal review process.

HBCU Updates

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

Dr. Bayorh presented a summary of Morehouse's accomplishments as well as provided a written report. During his presentation, he stated that the current emphasis at Morehouse is clinical research and strengthening basic sciences. The school is also trying to integrate medical informatics into its curriculum.

Dr. Bayorh described several significant accomplishments and initiatives. In 1996, Morehouse was chosen as the drug-testing center for the Olympics in Atlanta; his department was involved with that effort. Dr. Bayorh said that the school also has received money from NIH and the Olympics Committee to build a clinical center, which will house the neuroscience institute, a clinical research center, and a National Aeronautics and Space Administration (NASA) space research center. The school also has a major grant of $3 to $5 million to look at the adverse effects of lead in the different environmental settings in Atlanta. Researchers are also studying neurobehavioral effects of lead in children.

Dr. Bayorh's written report highlighted the school's Multi-Media Center, which serves as a resource library for the Network of National Libraries of Medicine (NN/LM) Southeastern/Atlantic Region. NN/LM and Morehouse Medical School share a common mission: to provide information to health care professionals in rural, inner city, and other areas that do not have access to medical library resources. Morehouse's Multimedia Center includes a TOXNET workstation, which is an integral part of the Toxicology Information Outreach project at the school. Dr. Bayorh wrote that the system has been extensively used for training students, faculty, and staff and has provided much-needed access to NLM's databases. The workstation also allows viewing of a growing number of CD-ROMs. Morehouse Medical School staff have also provided workshops for students, faculty, and staff in use of the databases and the
TUSKEGEE UNIVERSITY

Dr. James Webster Chairman, Department of Biomedical Sciences

Dr. Webster provided a written and oral summary of Tuskegee University's initiatives. He spoke of the recent reorganization of the university, which has resulted in the number of schools being reduced from seven to five. In the College of Veterinary Medicine, the number of departments has been decreased from six to three; he oversees anatomy, physiology, pharmacology, and toxicology. Ninety-one staff positions were eliminated during the reorganization. Dr. Webster said the university, which had previously admitted any student regardless of ability to pay, is changing its focus to admit only those who can pay.

Despite the consequences of such a reorganization, Tuskegee still has numerous successes, which Dr. Webster highlighted in both his written and oral presentations:

- TOXNET is available in the Veterinary Medical Library every day of the week. It is also taught to junior veterinary students each spring semester.
- TOXNET is taught during the summer to high school students visiting Tuskegee through a program called VET-STEP. The students are shown the availability of information about certain chemicals that might be in the home or the community.
- Faculty have used TOXNET in preparing proposals for the second cycle of the Agency for Toxic Substances and Disease Registry (ATSDR) Substance Specific Program. Of the five proposals that were submitted, two were accepted and one was referred to NIH's microbiology section, a sign that the toxicology and pathology system is expanding to include microbiologists.
- A graduate student used TOXNET to write a thesis, and two additional graduate students are expected to complete studies by August 1998. These students used TOXNET to prepare abstracts for a poster presentation and application for travel fellowship at the next annual meeting of the Society of Toxicology.
- The Schools of Veterinary Medicine, Nursing, and Allied Health have received a three-year, $10.1-million grant from the Department of Health and Human Services to make additions to the veterinary library. This is expected to increase faculty and staff access to biomedical information.
- The Ford Motor company has pledged $1.5 million to modernize the main campus library with computers and Internet capabilities. The grant includes placing computers in all dormitories.
- A $250,000 planning grant was awarded to establish a biomedical center for biomedical research.

Dr. Webster also wrote about Tuskegee's outreach efforts. He stated that TOXNET has been the stimulus for many HBCUs to write and obtain grants that allow them to acquire up-to-date hardware and software, which is then used in workshops and seminars for the public. With these resources and trained personnel, these outreach efforts can be tailored to the specific needs of each group.

Dr. Webster called for the creation of a minority affairs section within NLM to further the outreach effort. He explained that students are conditioned to learn by visual observations, and the availability of NLM's resources allows HBCUs to build upon this learning method while showing students rewarding career possibilities. The minority affairs section could also coordinate outreach initiatives that include expertise beyond just toxicology.

He also expressed the need for educating children in minority communities on the availability of health information. Such an outreach effort would teach ideas such as the consequences of malnutrition, how to communicate the need for health improvements to community leaders, and the true consequences of current minority health situations. Dr. Webster placed responsibility with the HBCUs to expand NLM's outreach to the churches, community teachers and principals, social organizations, physicians, and lawyers.

University of Arkansas at Pine Bluff

Mr. Edward J. Fontenette
Library Director
The University of Arkansas at Pine Bluff (UAPB) is the only public HBCU in Arkansas and serves an immediate population of 80,000 who are bound to the southeast portion of the state by sociology and economics. Mr. Fontenette stated that the school, which has 3,000 students and 150 faculty members, receives a tremendous amount of community support and has recently received $3 million from the state and $4 million from the community. The school is home to a National Center for Toxicological Research and is in the beginning stages of developing a fundamental community education program. They recently established an agreement with the Pine Bluff Arsenal to create educational videos to educate the community on safety measures and disasters; they hope to broaden this effort to address water quality also.

Mr. Fontenette noted that Pine Bluff is undertaking a $3 million renovation and total computerization of its library, along with a $5 million expansion of the library. The school has a state-of-the-art laboratory that can hold 25 people. They have borrowed NLM's training ideas to conduct training sessions for regulatory science students and faculty and hope to train the entire institution.

Through NLM, UAPB has received numerous ideas and resources. Mr. Fontenette highlighted a few in his written report:

- Received ideas with little or no cost for implementing poison treatment activities.
- Been a part of collaborative efforts to attract funds from private and public agencies.
- Maximized local resource assessment and use.
- Allowed students, faculty and concerned citizens in regulatory sciences, fisheries/aquaculture, and agricultural access to NLM databases.
- Provided staff with training to facilitate research and community education programs relating to toxicology and environmental management.
- Provided opportunities for minority medical professionals to obtain information about health care for victims of toxicological elements (average patient load for black MDs in the area is approximately 10,000 per year).

UAPB wants to expand its community outreach efforts, Mr. Fontenette said. To do so, partnering with the following elements is crucial:

- The Pine Bluff Federal Arsenal (which has extended its resources for community education)
- The International Paper Company (a community business that strives to maintain good air and water quality)
- The Jefferson Regional Medical Center (which provides medical care to southeast Arkansas)
- Minority medical professionals
- Small businesses and the Jefferson County Alliance (which are concerned about the health of their constituents)
- ACORN and other community-based organizations concerned about the citizens health
- Faculty and students in the local school systems as well as UAPB
- Farmers interested in water, soil, and air quality
- The National Center for Toxicological Research (which engages in poison research)

Charles R. Drew University of Medicine & Science
Dr. Isaac Reese
Professor Emeritus of Radiology
Dr. Reese, who has retired after 25 years of service, provided a written summary of King-Drew's accomplishments.

Dr. Reese wrote that the, "Toxicology Information Outreach Panel is an excellent example of a small investment reaping tremendous rewards", and cited numerous examples for his school:

- The computer workstation provided by NLM/TIOP was the first in the school's library available to faculty,
Institutional and extramural grants have allowed the library to expand holdings, increase hours of operations, hire staff, purchase 12 networked computers, begin the process of 24-hour electronic access to health sciences information databases for hospital networked computers, and expand training sessions to students, residents, faculty, staff, and the community.

The Learning Resources Center was redesigned and moved to a larger location in the Cobb Medical Education building, including a network of 10 new computers. A 13-session informatics curriculum was implemented for faculty, and customized training is available to departments or individuals in the Center. The Center staff also assists student in primary care computer and information training as well as presentation and research projects related to primary care.

The library offers courses in the use of bibliographic search and medical database management. The library also participated in the course "Informatics and the Physician of the Nineties".

The school's academic plan calls for Internet access to all faculty, and Drew has a Web page at http://www.c drewu.edu.

The NLM workstations are available in the Medical Sciences Library, the Department of Radiology Library, the Research Office, the Internal Medicine Office, the Department of Pathology Hospital Pharmacy, the Learning Resources Center, and the Imperial Heights Clinic (which is operated by the Department of Family Medicine to train medical students).

Several courses at King-Drew draw on the NLM resources: Introduction to NLM Databases (first-year students); Internal Medicine Third Year Clerkship Informatics Workshop; and Computers in Medicine (fourth-year students). All medical students are now required to have a computer.

The College of Medicine continues to sponsor workshops on informatics in medicine. ORISE also provided training in accessing and using NLM's databases to the College of Allied Health Faculty and to students in the Medical Assistant Program.

Meharry Medical College
Dr. Maurice Knuckles
Director, Division of Environmental Health

Dr. Knuckles noted several activities and initiatives related to environmental health at Meharry, including the upcoming opening of a new hospital, the former General Hospital of Nashville, on the school's campus. Dr. Knuckles' division is striving to build an infrastructure that will allow better response to communities in need of help. These communities, he said, often seek help from federal agencies but don't receive what they need or any response at all. The sole focus of the division's effort is on developing an environmental training center. Through this center they hope to reach several groups, including middle managers at programs throughout the state of Tennessee who need education in environmental health. They would also target small business owners, who need an increased awareness of Occupational Safety and Health Administration (OSHA) regulations. Obtaining funding for this center will be challenging, Dr. Knuckles explained, because it will have to come from outside Meharry. Also crucial to the success will be links with other organizations. Meharry has already built a good relationship with the Tennessee Environmental Council, an umbrella organization for 75 grassroots organizations, and the State Minority Health Coalition.

Dr. Knuckles also described the eight-state pilot of the Meharry Small Business Environmental Advisory Program. The states are Tennessee, Kentucky, Mississippi, Alabama, North Carolina, South Carolina, Georgia, and Florida, mirror OSHA's and the Small Business Administration's Region 4. Meharry will work with HBCUs in these states to develop consulting, advising, training, and workshops for small businesses in their respective regions. The focus will be on occupational and environmental compliance issues. Federal agencies targeted for involvement include the Environmental Protection Agency, the National Institute for Occupational Safety and Health (NIOSH), and the Centers for Disease Control and Prevention (CDC). NIOSH is providing the initial support, and the pilot is affiliated with the Morehouse School of Medicine in Atlanta. NIH's Research Centers in Minority Institutions program is providing the infrastructure support. Contact Michael Hubbard at Meharry for more information (615-327-5686 or mhubbard@ccvax.mmc.edu).
Dr. Knuckles said Meharry also continues to train all pharmacology Ph.D. students and public health masters students in the toxicology databases. NLM recently presented a second computer to the Division of Environmental Health, allowing division faculty and staff increased access to NLM's information resources.

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

Dr. Lewis began by thanking the panel for acknowledging that Florida A&M University was selected as Time magazine’s College of the Year. In addition to this honor, the school has had many accomplishments throughout 1997, as were discussed by Dr. Lewis:

- Neared completion of the 65,000 net square foot science research facility, which includes a 10,000-square-foot paperless library and 100 stations to access medical information, research, and other data on-line. This facility is expected to move the school into a new realm of biomedical research and is set up to reward people for research productivity.
- Neared 40% completion of campuswide fiber optic backboning. All new buildings are built with fiber and older buildings are being retrofitted. This million dollar initiative is primarily funded by Sprint and has allowed the school wide access to Internet and intranet capabilities.
- Began a pilot of three courses in which half of the class uses CD-ROM technology while the other half is taught using the traditional lecture format. The two models will be compared to see which allows the students to retain more information and whether CD-ROM technology offers the chance for greater retention of pharmacology, micro, and anatomy information.
- Implemented the Master of Public Health degree program.
- Implemented the Ph.D. program in pharmaceutics.
- Placed several computers in the Bond Community Health Center in Tallahassee. This has allowed on-line training of more than 200 lay citizens in how to access HIV/AIDS information on the computer.
- Received a $270,000 grant for Predoctoral Training in Environmental Technology.
- Developed a distance learning degree program to be offered in Tallahassee, Tampa, and Miami.

**XAVIER UNIVERSITY**  
**Ms. Rose Foster of ORISE for Dr. Ann Barbre**  
**Associate Professor, College of Pharmacy**

Ms. Foster briefly mentioned Xavier's Deep South Center for Environmental Justice, which truly practices the passing on of NLM's resources to the community. This point was further illustrated in Dr. Barbre's written report, which Ms. Foster provided to the panel. A summary of this report follows.

The Deep South Center for Environmental Justice was founded by its current director, Dr. Beverly Wright, in collaboration with community environmental groups and other regional universities to address environmental justice issues. The need originated because the communities along the Mississippi River from near Baton Rouge to New Orleans are some of the most environmentally polluted in the country; the area has even been termed "cancer alley". The community/university partnership that has resulted from the Environmental Justice Center allows communities, researchers, and decision makers to work together on programs and projects that promote the rights of all people to be free from environmental hazards as they impact health, jobs, housing, education, and general quality of life. Specifically, the Center strives to produce:

1. paradigms to address environmental justice,
2. curricula that can be replicated,
3. a demonstrated approach to integrative research and policy, and
4. a sound and effective model of a community/university partnership.

The Center has relied on a number of NLM resources in pursuit of its objectives. Information has been effectively
used in proposals seeking funding for the center's efforts or in Articles reporting the Center's work. Students, particularly environmental justice scholars, receive training in the use of NLM's systems, and students and staff use the information in their interactions with government agencies or in litigation.

In reaching out to the community, the Center has begun offering workshops and courses, such as Pollution Prevention 101. This course covers the range of pollution prevention information, techniques, and strategies that empower communities to influence decisions affecting the emission of toxic chemicals in the area. It also offers guidance on reviewing site-specific information on pollution sources and prevention. NLM's resources, specifically TRI, are integral to this course.

**Discussion and Conclusions**

A roundtable discussion concluded the meeting. A private consultant, Dr. Delbert Flowers, reiterated the need to reach those who are in responsible positions throughout the states but who know little about environmental health issues. He questioned whether the state minority health organizations are tied to the federal minority health effort at the Department of Health and Human Services, but no one knew. He suggested other resources, including an 800 number that provides a wealth of information on minority health issues. He also mentioned contacting the Wastewater Management Association, the Air Pollution Association, and the American Industrial Hygiene Association; these organizations typically have local efforts and meetings and are willing to work with the schools regarding environmental and occupational health issues. He mentioned that the Safety and Industrial Hygiene Committee has accredited several programs at the master's and Ph.D. levels and is exploring the possibility of accrediting programs at the undergraduate level.

Kenneth Seymens, a participating guest observer, announced that he is planning to start a fellowship at the Stanford School of Medicine in the Geriatrics Department. In January 1998, Stanford is also hosting a Cultural Competency and Managed Care Conference. Currently, he said, no HBCUs are represented. An honorarium as well as travel are involved. Mr. Seymens also stated his concern that many people are not aware of the efforts of the HBCUs and NLM in telemedicine, telehealth, and informatics. He encouraged the documentation of these efforts in some format that would help conference planners across the country to be aware of these areas of expertise. He later also mentioned the non-profit organization, the National Medical Informatics Association, which addresses the needs of under served populations in the country and their medical providers. He promised to send each person a packet of information on this.

Dr. Spann agreed and encouraged all HBCUs to submit their summary reports to him so that the information can be incorporated into various reports that NLM produces and circulates. He then asked the panel a series of questions to determine whether the Toxicology Outreach Project should continue as is or change in some way. The group responded emphatically that the project was still needed. Some stated that the current effort has not reached its full potential in terms of helping the actual communities (e.g., churches, schools, etc.). They discussed using the term "environmental health" as a more encompassing concept than simply "toxicology" and expanding the group beyond just the universities to include consumers, practitioners, and the private sector. Dr. Spann asked that all comments be forwarded to him within two weeks, so that he could use the information in planning his budget. He expressed his appreciation to the panel for their efforts.

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