THE NIH RECORD

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By Carla Garnett

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Accompanied by NIH director Dr. Elias Zerhouni, Carmona looked hail and hearty as he met for an hour with members of the corps — most in uniform — and other staff in Masur Auditorium. In his second official visit to NIH, the surgeon general — a former Special Forces medic in Vietnam who earned the Bronze Star, the Purple Heart and a combat service medal, and later held posts as a paramedic, registered nurse, surgeon and deputy sheriff — was given a hero's introduction by NIDCR deputy director and corps rear admiral Dr. Dushanka Kleinman.

"It's clear that Vice Admiral Carmona has led a non-traditional career path," she said, "and by so doing he has melted down the walls between the many sectors that society requires to maintain the nation's health."

Accompanied by NIH director Dr. Elias Zerhouni, the Surgeon General says he hopes to work with NIH on several public health projects.

Accepting the introduction with humor and humility, Carmona said his "many careers, which were viewed as somewhat schizophrenic prior to 9/11,

all of a sudden emerged and became very desirable traits after that time. It's allowed me entrée into many areas that people always somewhat disparaged, but are now obviously mutually dependent upon one another — law enforcement, EMS and so on. It's really served me well to be able to move now as your surgeon general into many of these areas and have some credibility already established."

Led by the surgeon general, the PHS Commissioned Corps — one of the seven U.S. uniformed services that include the Army, Navy, Air Force and Marines — is an all-officer organization consisting of about 6,000 health professionals, including dentists, scientists, physicians, nurses, engineers, veterinarians and dietitians. In a national emergency, the corps may be designated as a military service.

Currently, the nation's top doctor said, he is acquainting himself with the people and agencies he will work with in the PHS and elsewhere, as evidenced by his recent meetings with Pacific commanders in Hawaii, and corps groups at FDA and NIH. In addition, Carmona has in the last few months visited the U.S. naval base in Guantanamo Bay, Cuba, and represented the U.S. in meetings of public health officials in Santiago, Chile. He said that during such travel he witnessed an incredible global need for resources and information the U.S. can provide to help advance public health.

Carmona addresses Commissioned Corps at NIH.

"I'm desperately looking for ways to have my office and NIH work together on a lot of different things," Carmona said, noting that even a bout with acute appendicitis could not prevent his recent visit to NIH, which originally had been scheduled to include sessions with institute and center directors. A briefing with the HHS Secretary postponed his meeting with IC heads.

"Secretary Thompson is very passionate about strengthening the corps and overhauling the structure," Carmona emphasized, noting that one of the mandates of his new position is "to build and strengthen the corps to create parity with the other services. That's going to take a while. It's a big cultural change, but that's where we want to go."

In recent talks, he said he has heard an "overarching theme" from the administration. "The President and the Secretary are very supportive of the U.S. Public Health Service and all of the agencies we work in — NIH, CDC, FDA and so on," he explained. "There are a lot of opportunities to enhance our corps to be able to serve the agencies and to meet the Secretary's mandate that we act as one company with a single vision for the public health and well-being of the nation. The President as well wants us to act as a seamless system."

Briefly recalling the rich history of the PHS and proud tradition of corps

service prior to the Vietnam war, Carmona offered a broad outline for revitalizing the 21st century corps, parts of which he said may require legislation to restructure.

"The idea now is to bring us back to our core mission," he explained, "having a unified corps that still serves all of the agencies, but first and foremost presents our commissioned officers in the uniformed services with a distinct and unique mission that does not subtract, but adds to the value of NIH, CDC and every place else. We want to strengthen corps values and bring it back to the way it was," which means establishing equivalence across the board — pay, benefits, professional stature — with all uniformed services. In addition, Carmona wants to create mechanisms for leadership training for corps officers akin to war colleges offered by military branches, and to offer young people entering the corps well-defined career pathways.

As the leader of the Commissioned Corps, Carmona outlines broad themes for transforming the organization and enhancing its value to the nation.

He admitted that his plan is ambitious, but also acknowledged that the public health problems facing the world require bold innovation, and that the administration expects nothing less.

"Every time I meet with the President, I'm more inspired," Carmona confided. "He said to me, 'Rich, I'm relying on you guys to think outside the box, to challenge the norms, to really push the envelope.' Secretary Thompson too says, 'If you're not pushing the envelope, then you're taking up too much space.' He's challenging all of us to do great things. They're both saying, 'You're here for a limited amount of time. Create a legacy that we can all be proud of when we leave.' Once we leave here, there must be a sustainable legacy that has transformed our public health culture and made it better. I know I can't do it without all of you.

"My agenda is prevention," Carmona continued. "I see the same data that you do, as far as the economic and disease burden on our society. It is unsustainable. It's really a sin that we are spending so many resources on things that are largely preventable. In spite of the wonderful clinical research and basic science research — both are necessary and we need to do them — the other part of the equation is prevention. That's everything, including the obesity epidemic that we have now, with its tangential negatives of diabetes and cardiovascular disease. We're looking at about half a dozen items that, if we were truly able to prevent, we wouldn't have a healthcare crisis. We need to become a prevention-oriented society — one that accepts social responsibility, makes good decisions. Things like not smoking, increasing physical activity and eliminating risky behaviors are very simple, cost-

effective measures that can have a huge impact on our society. After all, the lifestyles that we are creating today are what our children and grandchildren will inherit."

A relaxed Surgeon General responds to questions from the audience.

For their part, NIH'ers took the gathering as an opportunity to pose questions about a wide range of topics, including whether the corps would be called upon to lead the way in smallpox vaccination, and the possibility of PHS participation in war efforts.

"The other thing that I've been tasked with is preparedness," Carmona responded, reminding the audience about the corps' role as back-ups to the military during conflicts and to provide humanitarian assistance in war-torn regions. "We're all interested to see how the new agency [Department of Homeland Security] takes shape, and I've been told that I need to be very involved in that, in educating the public and interfacing with local and state agencies regarding preparedness activities for all hazards...bioterrorism being one small part of a much larger hazard that we all face."

Addressing queries about research's place in his agenda, Carmona said he highly prizes the research components of the PHS and will rely on NIH and other science-based agencies to help him prioritize areas for emphasis.

"I am still a bit dismayed by the fact that much of the work that is done here and around the world by our Commissioned Corps and civil servants goes on anonymously," Carmona said, noting that one of the most effective roles a surgeon general plays is as chief global health advocate. "The public doesn't realize the huge unparalleled asset it has. From turning on clean drinking water every day to the advances your doctor provides when you have an illness or disease that was incurable a decade ago — it's taken for granted. One of the things I want to do is make sure the public does understand the enormous contributions that all of you make."

NIDCR deputy director Dr. Dushanka Kleinman introduced Carmona (c) at the hour-long meeting; Dr. Richard Wyatt (r) served as emcee.

Among those forming a line to greet Carmona following his remarks is Dr. Mary Dufour, NIAAA deputy director.

Following the meeting, Carmona takes individual photos with several corps members.

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There can't be many workplaces in the world where, eight to 10 times a year, a world-class string quartet entertains for free during the lunch hour, playing thematically coherent programs of classical music masterworks in an acoustically decent and capacious hall, introduced by a friendly cellist who goes out of his way to make listeners feel exactly like he does — as if he's playing for friends in his living room.

Continued...

But that's precisely the fringe benefit NIH'ers have enjoyed in Masur Auditorium since 1988, when the Merck Company Foundation began sponsorship of a series by the Manchester String Quartet. The MSQ, all of whose members also play in the National Symphony Orchestra (NSO), is essentially an NIH-specific entity — they perform rarely in any other venue. Named, on the spur of the moment, after the street on which one of their members lived (Granite Creek Lane and Hobart Street flunked the ear test), the MSQ exists almost solely for the listening pleasure of NIH employees. And that suits the members just fine.

"We're the envy of all of our colleagues in the NSO," says Glenn Garlick, cellist and founding member of the MSQ, along with first violinist Hyun-Woo Kim. "Having a program of your own is a hard situation to find — I appreciate it every time I think about it."

The MSQ began in the early eighties when Garlick, who joined the NSO in 1980, began playing around town with Kim and two other orchestra members, Holly Hamilton and Lynn Edelson Levine. "The four of us played together in various places, including some house concerts, and we didn't need any name. We sounded pretty good together, so we stayed at it. After one of the shows, we were approached by someone who ran a music series downtown," Garlick recalls. "He asked us to play, and asked us our name. We quickly huddled in a corner and searched for a name. Holly lived on Manchester Rd., and that sounded better than the others, so we picked it. We were going to use it for awhile then decide if we wanted to keep it. Within 2 years, we had played enough, and had been reviewed enough, that it was too late to change."

The Manchester String Quartet includes (clockwise from lower left) violist Daniel Foster, violinist Hyun-Woo Kim, cellist Glenn Garlick and violinist Marissa Regni. All are also members of the National Symphony Orchestra.

What few personnel changes there have been over the years "have been largely child-inspired," Garlick recounts. While the Chicago Symphony claimed one violinist and the San Francisco Symphony recruited a violist, four other MSQ members "loved the quartet but had kids and couldn't fit everything into their schedules — it was too much to juggle." Today's lineup has been stable for more than 5 years, and includes, in addition to Garlick and Kim, violinist Marissa Regni and violist Daniel Foster.

As NSO musicians, they are employed full-time. This means 20 hours a week with the orchestra at the Kennedy Center — their practice and performance site — and an equal amount of time in private preparation, Garlick explains. Many orchestra members are also involved in outreach and teaching programs; some are, like Garlick (who is also a lawyer and ex-Marine gunnery sergeant), adjunct faculty at the University of Maryland.

For the MSQ, a typical NIH performance season begins in early summer, when the quartet meets to decide on a theme. "It's a very democratic process," Garlick says. "The string quartet is the last true democracy." For 2002-2003, members adopted "Dawn of the String Quartet" as their topic. They invented a mythological character — Jacob Andreas (a conjoining of the names of two famed instrument-makers of antiquity) — and gave him a 100-year lifespan in the cradle of the string quartet, Vienna, Austria. "We gave him a birth date of 1781 and selected pieces he would have heard in

Vienna. We also made him a member of a publishing family, so that he would have had access to the compositions we picked."

"We think of our NIH audience not just as the 400 people at a given show, but also another 500 people who come occasionally," says Glenn Garlick.

One MSQ season was devoted solely to Mozart ("He wrote 10 string quartets in his last years of life, and we wanted to do all of them," says Garlick. "These were his golden years — the most wonderful music he wrote.") and another coincided with Merck's 100th year as a company, so MSQ picked a pair of quartets for each show, each separated by 100 years. The colorful posters announcing these MSQ seasons have themselves become collectors' items; all are the work of Connecticut graphic artist Peter Good, who so admires the musicians that he not only has frozen his design fee at the first year's rate, but also travels to Bethesda to see the quartet about once a year, reports Garlick.

Although the quartet occasionally takes requests for the music of more difficult composers such as Alban Berg, Leos Janocek and Béla Bartók, the musicians generally "try to avoid the really spiky programs," said Garlick. "The NIH audience is fully up to that kind of music — they have their concentration there when they come in — but we're conscious of the fact that it's the lunch hour, and most people want to relax."

Attendance at the shows, which begin promptly at 12:30 p.m. with a brief introduction of the program by Garlick (who also produces color brochures explaining the music for every performance), has climbed steadily over the years. "For a long time we were one of those well-kept secrets," says Garlick. "We started in the days before email, when there wasn't a good way to advertise. But with email, the crowds began to pick up."

"We think of our NIH audience not just as the 400 people at a given show, but also another 500 people who come occasionally."

Sometimes, the material on a given program will attract listeners. Oddly enough, beautiful weather lures larger audiences indoors; Garlick speculates that it's easier for employees to walk to Bldg. 10 on sunny days. He calculates attendance by how many of his flyers disappear at each performance. He used to get away with printing 300 or so, but the press run has jumped to about 450.

It's perfectly okay with the quartet if people come and go during a performance, Garlick says; "We've never minded people leaving — they may have a test tube boiling over." But he is always amazed at the courtesy and learnedness of the audience. "Oh yes, very much so. They are musically

sophisticated. People will come up to us afterwards and say, 'I've never played that particular quartet,' and we'll say 'Whoa!' Some know (our repertoire) intimately. A whole bunch know the music very well, and many have heard us play it before. Some ask us for the best available recordings of a particular piece."

MSQ shows used to be routinely recorded for later broadcast on public radio, Garlick says. "There was an engineer with two microphones on poles, and he would tape every show. At the end of the season, we would pick six or eight for broadcast on the radio. But we finally had to put the squash on that. It was too inhibiting. We take (musical) risks, and the mics made us too careful. It robbed the joy of it, and was affecting the quality of our performance."

Garlick says the MSQ is just as happy to play for 100 people as a full house. "It's like walking out into your living room now for us," he says. "I wish we could take this audience to other shows. They're so appreciative and such great fun...Anybody would love to play at NIH."

The MSQ's (from l) Regni, Kim, Garlick and Foster gather in Masur Auditorium prior to their Jan. 13 performance of the Mendelssohn Quartet in E flat Major, opus 12. The musicians return to Masur for concerts on Feb. 3, Mar. 31, Apr. 28 and May 19.

To prepare for their NIH performances, the quartet meets, usually at the Kennedy Center, for half a dozen practice sessions, even for material the musicians know well. A final run-through takes place in Masur just before each concert. "Practices last 2 ½ to 3 hours each," Garlick said, "and even longer if we're doing something by someone like Bartók. By the end of the last one, we're all pretty comfortable with the piece."

Garlick says the series will continue as long as Merck supports it. "We're willing to play as long as there's interest there. We've become an important part of peoples' lives (at NIH). And for us it's very important. It's wonderful. We think of our NIH audience not just as the 400 people at a given show, but also another 500 people who come occasionally."

In addition to NIH'ers, the audience typically includes a large contingent from a nearby retirement home, who come early and claim the best seats, and a smattering of Clinical Center patients, some requiring wheelchairs and IV poles. Garlick says they're all just one big audience, but allows "it feels nice to us to provide escape from worries or concerns."

While the MSQ has played at such venues as the Phillips Collection, the

Terrace Theater, the University of Maryland, and has even premiered composer Jon Deak's string quartet "The Headless Horseman of Sleepy Hollow" with the NSO under Mstislav Rostropovich (a performance that was commissioned by Merck in celebration of its 100th anniversary), NIH remains "where we really live," Garlick says.

Those wishing to indulge in the MSQ experience at NIH are invited to attend one of the four remaining performances on this season's schedule — Feb. 3, Mar. 31, Apr. 28 and May 19. For more information about the series, or for reasonable accommodation, contact Sharon Greenwell, 496-4713.

Up to Top

Nobelist Nirenberg Honored at NHLBI Symposium at Natcher

By Miriam Sander

Photos by Bill Branson

It is often said that scientific discoveries are made by a collective process that moves forward in many small incremental steps. But it is also said that the exception proves the rule. At a recent symposium honoring Nobel Prize-winning NIH scientist Dr. Marshall Nirenberg, NIH director Dr. Elias Zerhouni pointed out that some scientific discoveries are more important than others. He was referring to Nirenberg's discovery of the universal genetic code, which was described by symposium cochair Dr. Samuel Wilson of NIEHS as "a monumental step forward which is now an essential part of the intellectual framework of modern medical investigation and practice."

Dr. Marshall Nirenberg

National Academy of Sciences president Dr. Bruce Alberts said the impact and implications of Nirenberg's discovery were so immediately obvious that he remembers to this day exactly where he was and what he was doing when he learned of Nirenberg's seminal result.

Nirenberg's prize-winning work began in the early 1960s when he was a newly appointed research biochemist at the National Institute of Arthritis, Metabolic and Digestive Diseases (NIAMDD, later NIDDK). His laboratory was working on one of the major scientific problems of the time: how does DNA and/or possibly RNA direct the synthesis of proteins? How can a polynucleotide composed of the four deoxyribo- or ribonucleotide bases (G, C, A and T or U) be decoded by the cellular protein synthesis machinery to produce a protein composed of up to 20 different amino acids? Unlike other scientists who were trying to understand protein coding, Nirenberg took a biochemical approach. According to Dr. Thomas Caskey, now with Cogene, Inc., Nirenberg "saw the opportunity to take biochemistry to an extremely elite level" by breaking the genetic code. Nirenberg told the symposium audience that one of his colleagues cautioned him that his experimental approach to this question "was suicidal." Despite this warning, he "went ahead and did it anyway!"

Fellow NIH Nobel laureates Nirenberg and Dr. Julius Axelrod, scientist emeritus at NIMH, share a moment at the Dec. 16 symposium.

In collaboration with postdoctoral scientist J. Heinrich Matthaei, Nirenberg set up an *in vitro* protein synthesis system using synthetic polynucleotides as templates and a mixture of the 20 amino acids, one of which was radioactively labeled. The now famous "poly U experiment" led to the momentous discovery in 1961 that runs of U direct the synthesis of polyphenylalanine. From 1962 to 1966, Nirenberg and his colleagues at the National Heart Institute deciphered the code for all 20 amino acids. This work led to many insights about the genetic code, demonstrated that the genetic code is degenerate and universal, and earned him the 1968 Nobel Prize in Physiology or Medicine, which he shared with Robert W. Holley and Har Gobind Khorana. Symposium cochair Judith Levin of NICHD described the atmosphere in Nirenberg's laboratory at the heart institute as "exhilarating and intense."

Dr. Thomas Caskey

Nirenberg's discovery was a major step in the path from classical genetics to molecular genetics, from biology to molecular biology and into the age of genomics and functional genomics. The sequencing of the human genome, which will reach completion in 2003, has also played a huge role in the recent transformation of biological science. NAS's Alberts described the conceptualization of the Human Genome Project (HGP) in the late 1980s. He chaired an NAS committee whose charge was to reach consensus on the value of pursuing such a project. Consensus was reached with great difficulty; but in the end, Alberts said that the committee "got it right" when they recommended that the entire human genome, including both gene and intergenic regions, should be sequenced. The committee also made a remarkably accurate prediction of how long it would take to complete the human genome sequence, estimating in 1988 that it would take approximately 15 years.

Dr. Francis Collins, NHGRI director, pointed out that the genome era has just begun and that there is still much to discover about the human genome. Ongoing projects at his institute include comparative genomics, the HAPmap project, analysis of the mammalian gene collection and continuing study of the ethical, legal and social implications associated with genomics information and technology; projected initiatives include characterization of

the proteome, identification of environmental risk factors for human disease and development of animal models of human disease.

Dr. J. Craig Venter of the Center for the Advancement of Genomics emphasized the importance of technology development to the success of the HGP and many other sequencing efforts. He and his colleagues developed EST mapping and shotgun DNA sequencing, two critical technologies that have enhanced the rate of DNA sequencing and analysis considerably.

Dr. Eric Lander of the Whitehead Institute at MIT addresses the gathering.

The universal genetic code deciphered by Nirenberg and his colleagues is the best known code in biological systems. However, Dr. Eric Lander of the Whitehead Institute at MIT suggested that the genetic code is one of several important biological codes. He proposed that genes, gene regulation, genetic variation and biological function all have their own distinct codes. Lander also thinks one of the key challenges facing researchers in genomics is to understand the significance of the large number of non-coding DNA sequences conserved between the human and mouse genomes. When the functions of these sequences are understood, the code of gene regulation and gene regulatory networks may begin to unravel.

Dr. Leroy Hood of the Institute for Systems Biology also emphasized the importance of higher levels of biological organization including gene regulatory networks. He contrasted traditional hypothesis-driven biological research with discovery-based approaches, which produce large datasets that can be used to describe an entire biological system. Systems biology, a method he promotes, interrogates an entire biological system and "ascertains the relationships between all its parts." Hood said systems biology is only possible now that genomic sequences are available, and that the development of systems biology depended on discoveries such as the genetic code, which allow us to decipher the information contained in DNA sequences.

Dr. Elias Zerhouni

The scope of the NHLBI-sponsored symposium (formally titled "The Genetic Code Revisited: The Impact of Functional Genomics in Medical Research," also cochaired by NCI's Dr. Dolph Hatfield) was broadened by the remaining five speakers, who, with the exception of Dr. Susan Taylor of the University of California, San Diego, were former Nirenberg lab members. Taylor, an expert on protein kinase A and related kinases, discussed structure, function and regulation of this protein kinase family. She emphasized that protein covalent modifications are a non-linear function

that is critical to cell signaling. She also pointed out the importance of understanding protein kinases as structurally dynamic proteins.

Dr. Philip Leder of Harvard Medical School pioneered the study of cancer-susceptible strains of mice, in part based on the concept that an oncogene is "necessary but not sufficient" to produce cancer. He used cancer-susceptible mouse strains and an assay based on functional genomics to identify a range of cancer protagonists.

Dr. Edward Scolnick of Merck Research Laboratories discussed the emerging role of functional genomics in drug discovery. He said the challenge of the genomic era is to facilitate identification of therapeutic targets. Several hundred validated therapeutic targets have been identified in the past two decades, but many putative targets fail during clinical validation; functional genomics has the potential to reduce the rate of failure significantly. Recent drug success stories that depended on genomic information include statins, antidepressants, Gleevec, Herceptin and Cox-2 inhibitors.

Nobel laureate Dr. Joseph Goldstein of the University of Texas Southwestern Medical Center demonstrated that sterol regulatory binding proteins (SREBPs) play a key role in controlling the fluidity of the plasma membrane. SREBPs monitor and control production of cholesterol and fatty acids by salvage and *de novo* synthesis pathways. Dysregulation of these cellular functions plays a role in important human diseases including heart disease, diabetes and obesity.

Nobel laureate Dr. Joseph Goldstein (r) of the University of Texas Southwestern Medical Center pauses to chat with NHLBI scientist Dr. Earl Stadtman, head of the enzyme section in the Laboratory of Biochemistry.

The last speaker was Dr. Sidney Pestka of the University of Medicine and Dentistry of New Jersey, who demonstrated that fluorescence resonance energy transfer (FRET) enables scientists to look inside living cells. FRET can be used to demonstrate protein-protein interactions and to measure intermolecular distances. Pestka emphasized that FRET can be used for high-throughput screening and has the advantage that it works with a single cell.

All of the speakers at the symposium strongly asserted that Nirenberg's discovery of the genetic code is a seminal scientific achievement that has had enormous impact on modern science. In addition, Nirenberg's colleagues and former postdoctoral fellows uniformly acknowledged that he is an excellent mentor with extraordinary scientific vision as well as a wonderful friend. NICHD's Levin added that Nirenberg inspired his fellow scientists because he "taught, by example, how to be a true scientist." By the end of the gathering, it was clear that NHLBI director Dr. Claude Lenfant was correct

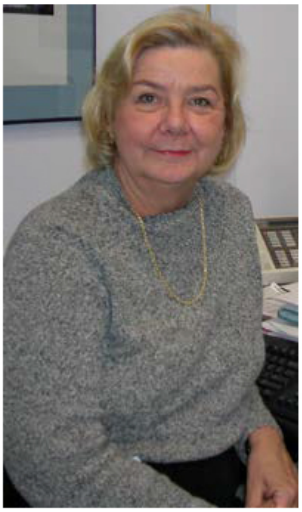
in stating that "people like Marshall Nirenberg make the NIH the great institution it is today."

Up to Top

Deputy Director Wendy Baldwin Heads for Kentucky

By Carla Garnett

How did a 2-year assignment as an NIH health-scientist administrator become — seemingly overnight — a 30-year federal career? That's only the latest tough question for Dr. Wendy Baldwin, NIH deputy director for extramural research since 1993. At the end of 2002, she retired from a challenging 3-decade career at NIH and headed for a new career as vice president for research at her alma mater, the University of Kentucky (UK).



Dr. Wendy Baldwin

Baldwin arrived at NIH in 1973, fresh from a 4-year stint as a research assistant at UK. Her 2-year appointment as a health-scientist administrator in the National Institute of Child Health and Human Development blossomed into a 20-year stay there. She served as chief of the Demographic and Behavioral Sciences Branch at its Center for Population Research from 1979 to 1991; she then became NICHD deputy director in 1991.

"The work was always exciting," Baldwin recalled. "We were in on the early stages of some of the most controversial topics, such as adolescent reproductive behavior and behavioral aspects of AIDS transmission. Behavioral research in the context of AIDS was a very sensitive topic. We had to deal with a lack of understanding about what causes behaviors to change. It was a big challenge."

For a generation now accustomed to openly addressing contentious aspects of sexual health and behavior, the titles of Baldwin's articles from the early 1970s and 1980s, such as "Adolescent Pregnancy and Childbearing — Growing Concerns for Americans," "Early Teen Pregnancies," and "Trends in Adolescent Contraception, Pregnancy and Childbearing," may seem simply like good, fundamental research on which to base informed discussions. At the time, however, the substantive focus of Baldwin's published work had not received extensive attention by the scientific community.

"We assessed what was known and unknown about the health consequences of sexual behavior for mothers, fathers, children and families," Baldwin noted. "We also launched new programs of research on childcare. Before our studies, there were limited, if any, data on these issues."

NICHD director Dr. Duane Alexander said Baldwin played several roles at his institute and that she had a tremendous impact on the direction of research in many areas. Her ability in handling the fallout associated with controversial scientific topics inevitably launched her into the uppermost echelon of NIH leadership.

"Wendy firmly established social and behavioral research as an important component of overall research at NIH," he noted. "She became the most knowledgeable federal official with regard to teen pregnancy and sexual behavior, and was frequently called upon by Congress and the administration to provide data and evidence on these topics as well as suggested approaches to dealing with the concerns. The increased attention to the problem of teen pregnancy in the 1980s and the declining rates in the 1990s are outgrowths of her research program, expertise and testimony. After testifying on these sensitive issues, representing NIH on other topics was relatively easy."

NICHD's Dr. Christine Bachrach, who took over for Baldwin as chief of the Demographic and Behavioral Sciences Branch, recalled some of the more interesting — and lighthearted — times that Baldwin had experienced.

"At NICHD, Dr. Baldwin oversaw the development of two major new studies of sexual behavior related to the emerging HIV epidemic — one on teens and one on adults," Bachrach said. These surveys had not yet been made public when Baldwin took her family to visit the new park at Great Falls. "A *Washington Post* reporter accosted her there and interviewed her about the park. She apparently almost gave [Dr.] Alexander a heart attack when she called and told him that she'd been quoted at length in the *Post* — until she told him the subject matter.

"I remember that Wendy was always getting hate mail because of her program in the teen sex area," Bachrach continued. "One such letter started off with 'Dear Permissive Windy.'" According to Bachrach, Baldwin's sense of humor is well-documented and will be sorely missed around NIH. While at NICHD, she was famous for participating in elaborate productions for the annual institute holiday party.

In 1993, the late Dr. John Diggs suggested to then-NIH director Dr. Bernadine Healy that Baldwin replace him as deputy director for extramural research. Unwilling to leave her position at NICHD, she eventually agreed to come to the Office of the Director on a detail assignment, at the request of Healy. It was the next NIH director, Dr. Harold Varmus, who convinced Baldwin to take the job permanently.

In more recent years, Baldwin's work went well beyond the substantive areas she covered in NICHD. One important and exciting activity involved creating and leading the bioengineering consortium known as BECON, which brought together representatives from NIH ICs, worked with the bioengineering scientific community and launched new initiatives such as the bioengineer research partnership grants that have helped the NIH bioengineering investment grow.

"Working with Wendy since the beginning of BECON has been a real challenge," said Dr. Jeff Schloss of NHGRI, who in 2001 succeeded Baldwin as BECON chair. "Regardless of how much enthusiasm BECON members brought to the table, or what great new ideas we came up with, Wendy was more passionate, or cranked up the creativity a notch, to make this new initiative succeed. Get ready, UK."

Looking back over her career as director of the Office of Extramural Research at NIH, Baldwin said there are several projects she is most pleased

to have implemented, chief among them being the Human Subjects Research Enhancement Program. "Human subjects research is instrumental and fundamental to the NIH mission," she said. "It was absolutely essential that universities be able to meet demands for protecting human subjects. The enhancement program put pressure on institutions to better educate their investigators and deal with adverse events."

In addition, Baldwin is also pleased to have had an opportunity to streamline the grants administration and communication processes. Computer-based information systems significantly improved efficiency, data quality and management. CRISP, electronic research administration (eRA), and iEdison were created or strengthened in OER during Baldwin's tenure.

Acknowledging that all her posts at NIH have required patience, dexterity and the ability to work on more than one task at a time, Baldwin said two other essential factors made her job easier and successful. "It is absolutely essential that you have a sense of humor in this job," she advised. "That and a capable and flexible staff. I have been lucky to have worked with the most wonderful people. I believe I have the greatest staff.

"NIH is a place where you can do things that you can't do anywhere else," Baldwin continued. "The people are wonderful. The mission is compelling. It's a place that makes people's lives better. You can see programs go from ideas to outcomes. However, NIH is not the only thing in the world that one can do. When my alma mater came tapping on my door with an irresistible offer, I decided that the time was right."

Working with new UK president Dr. Lee Todd, Jr., Baldwin has pledged to strengthen interdisciplinary programs and clinical work. She will oversee a burgeoning scientific enterprise that increased its grants and contracts awards by 22 percent from 2001 to 2002. In July 2002, UK announced it had for the first time broken the $200 million mark in research funding.

"Being NIH deputy director for extramural research gave me exposure to absolutely everything — from basic to applied research, dealing with the press and Congress as well as working with researchers," Baldwin concluded. "It's a little hard to leave at a time when NIH is poised to do a lot more under its new director, Dr. Elias Zerhouni. He has so many qualities that are ideal for NIH. From his experiences at Hopkins, he has a real appreciation for how a university runs and exactly what happens when NIH supports research in these settings. However, I'm looking forward to life on a university campus again, to devising research strategies for one setting versus the larger scientific community and to just doing something new."

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Henderson To Give Second FIC Global Health Lecture

By Irene Edwards

Dr. D.A. Henderson, distinguished service professor at Johns Hopkins University and director of research and development for the Office of Public Health Preparedness, will deliver a lecture entitled "Dreams and Realities in Disease Eradication," on Tuesday, Jan. 28 at 3 p.m. in Masur Auditorium, Bldg. 10. The lecture is the second in a year-long series on global health issues sponsored by the Fogarty International Center to commemorate its 35th anniversary.

Dr. D.A. Henderson

A giant in the history of the fight to eradicate disease, Henderson has been on the front lines of this effort over the life of his career. From 1966 to 1977 he directed the World Health Organization's global smallpox eradication campaign. The disease was then endemic in Africa, Brazil, the Indian subcontinent and Indonesia and caused several million deaths a year. After a massive effort masterminded by Henderson, smallpox was declared eradicated as a naturally occurring disease in 1980. During this period, he founded the WHO Expanded Program on Immunization, which is now providing six vaccines to children throughout the world and which served to launch the global program for the eradication of poliomyelitis.

A graduate of Oberlin College, Henderson received his M.D. from the University of Rochester and an M.P.H. from Johns Hopkins School of Hygiene and Public Health. In 1955, he joined the Centers for Disease Control and Prevention, tracking disease outbreaks for the Epidemic Intelligence Service and began his lifelong interest in infectious diseases.

From 1977 to 1990, after directing the smallpox eradication campaign, Henderson was dean of the faculty of Johns Hopkins School of Public Health. After 5 years of federal government service, in which he served initially as associate director of the Office of Science and Technology Policy and later as deputy assistant secretary and senior science advisor for the Department of Health and Human Services, he rejoined the Hopkins faculty in 1995. From 1998 to 2001 he served as founding director of the Johns Hopkins Center for Civilian Biodefense Strategies, which was established to increase national and international awareness of the medical and public health threats posed by biological weapons.

Most recently, Henderson has been called upon to help coordinate a national response to public health emergencies, including the spectre of a bioterrorist attack with smallpox or other biological agents. From November 2001 to May 2002, he was director of the HHS Office of Public Health Preparedness, of which he is now director of research and development; last August he was named by HHS Secretary Thompson as chair of the Council on Public

Health Preparedness, which advises the agency on appropriate actions to prepare for and respond to public health emergencies, including those related to the threat of bioterrorism.

Henderson has been recognized for his work by many institutions and governments. In 1986 he received the National Medal of Science; he is the recipient of the National Academy of Sciences' highest award, the Public Welfare Medal, and with two colleagues he shared the Japan Prize. Recently he received from the Royal Society of Medicine the Edward Jenner Medal. In all, 13 universities have conferred honorary degrees and 15 countries have honored him with awards and decorations. In June 2002, President Bush presented him with the Presidential Medal of Freedom, the nation's highest civilian honor to recognize distinguished service to the country.

All who are interested are welcome to attend the lecture and to meet with Henderson at an informal reception that will follow the talk.

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NIH RECORD

'Out of the Box'

Project Sparks Interest of 4th Graders in Health, Science

By Jennifer Haley

Question: What do 4th grade classes in Eagle Butte, S. Dak., Southeast Washington, D.C., Chevy Chase and Honolulu have in common?

Answer: Each school has been selected to participate in an outreach effort to create awareness of the importance of science and health. "Project: Out of the Box" is a direct appeal to youngsters to take responsibility for their own health. The project addresses the NIH goal to eliminate the gaps in health among minorities throughout the nation, and has the additional benefit of getting children interested in science, health professions and the work of NIH.

Out of the Box is centered around sending to participants surprise packages that highlight national health awareness themes. Piloted by the Office of the Director's Equal Employment Opportunity Office, the project began after an NIH-Hawaii Research Partnership site visit, when then-acting NIH deputy director Dr. Yvonne Maddox began sending surprise packages to a Honolulu elementary school she had visited. The packages were so popular that the initiative was expanded in 2002 to include classes in four different schools — Eagle Butte Upper Elementary School in South Dakota, Ketcham Elementary in D.C., Rock Creek Forest Elementary in Maryland and Kalihi Waena Elementary in Hawaii.

Recently, NIH deputy director Dr. Ruth Kirschstein introduced the project to an excited 4th grade class at Ketcham. She distributed a package highlighting October and November health themes to the students. The youngsters' enthusiasm was evident as each one received a bright red backpack provided by NIAID and the NIH Office of the Director.

October was Family Health Month. NIDDK provided the booklets *Energize Yourself and Your Family* and *Tips for Parents on Health Eating & Activity Across Your Lifespan*. For National Diabetes Month in November, NIDDK sent pedo-meters to emphasize the need for exercise. African American, Native American and Hispanic populations have a higher incidence of diabetes than Caucasians. Exercises such as walking can significantly reduce a person's chances of getting Type 2 diabetes. The students also learned about the National Library of Medicine's Medlineplus web site and its kids page located at http://www.nlm.nih.gov/medlineplus/childrenspage.html. Students enjoyed the "Big" bookmark, provided by NLM, with the picture of a Piscataway Indian boy on it. Maryland and D.C. students were completing studies about Native Americans. Pictures of Indian chiefs were in the classroom as they celebrated Native American Heritage Month. Students were excited to learn that Native Americans live in the metropolitan area. Using a map of NIH, students were asked to find various ICs on the map. "Oh what fun," remarked Kirschstein, as she joined a student diligently looking for and finding NLM on the map.

A student at Rock Creek Forest Elementary School in Chevy Chase locates NIH institutes and centers.

Kirschstein also helped students set their pedometers, explaining the importance of exercise to their health. She was impressed with a student who made up math problems using the pedometer. Kirschstein told students how to reduce the chance of getting colds and the flu.

"Reports say 22 million school days are missed each year for colds and flu alone," she told them. One student proudly responded that he knew how to keep from getting a cold and proceeded to share several good health habits. "My, that's excellent," Kirschstein enthused. "Think about becoming a doctor."

When it was time to leave, one especially tiny fourth grader asked, haltingly, "Dr. Kirschstein, do you like your job of talking with children?"

"Yes I do," replied Kirschstein. "It is the best!" Students from snowy South Dakota to tropical Hawaii seem to share the sentiment that Project: Out of the Box is the best.

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46th Year of Developing Leaders

Management Intern Program Recruits

Outstanding men and women interested in pursuing a career in public service are encouraged to apply for the 2003 NIH Management Intern (MI) Program. Entering its 46th year, the program — a highly competitive 2-year rotational training opportunity — has been successful in identifying and training future NIH leaders to manage in the public sector. It offers an opportunity to explore different administrative career fields, gain invaluable insight and train for leadership roles. Recruitment will open on Feb. 10 and close on Mar. 10. Up to five MIs will be selected. Positions are offered at the GS-5/9 levels; the program has a career ladder with potential to the GS-12 level, depending on the candidate's grade at time of selection.

MIs complete assignments that introduce them to potential administrative career tracks in grants and contracts management, information technology, human resources management, central service management, science policy, program and management analysis, public liaison, legislative analysis, budget and finance, communications and public information and education.

To be eligible to apply, candidates must be U.S. citizens willing to work full time and currently employed by the Department of Health and Human Services at the GS-5 level or above, or wage grade equivalent on a career or career-conditional appointment that offers noncompetitive conversion during the application period.

The application process and the schedule of information sessions can be found online at http://internships.info.nih.gov. Applications cannot be submitted until Feb. 10. For more information contact Carol Storm, 402-3383.

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NIH RECORD

Word of Mouth Influences Joint Replacement

When people think about having a hip or knee replaced, knowing someone who's had the surgery may influence their decision.

Past studies have shown that in certain minority populations, joint replacement is underutilized for treating pain and improving function. Now, a recent study funded by the National Institute of Arthritis and Musculoskeletal and Skin Diseases and the Robert Wood Johnson Foundation has shown that one reason African Americans may be less likely than Caucasians to seek joint replacement surgery is because they know fewer people who have had the procedure.

Dr. Mary Charlson and her research team at Cornell University conducted a 30-minute telephone survey of hip and knee pain and joint replacement surgery in 515 African Americans and 455 Caucasians. According to the results, 42 percent of African Americans and 31 percent of Caucasians reported pain. However, 42 percent of African Americans — compared with 65 percent in the Caucasian group — knew someone who had surgery for the pain. This racial difference in personal contacts with joint surgery recipients may contribute to underutilization of the procedure in African Americans.

For many people, joint surgery helps relieve the pain and disability of severe osteoarthritis. This is the most common type of arthritis that affects millions of people in the United States. In osteoarthritis, the surface layer that cushions cartilage in a joint breaks down and wears away, allowing bones under the cartilage to rub together, resulting in pain, swelling and loss of joint motion.

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NEWS BRIEFS

Chamber Music Concert, Jan. 26

The Rock Creek Chamber Players will give a free public concert at 3 p.m. on Sunday, Jan. 26 in the Clinical Center's 14th floor assembly hall. The concert, sponsored by the recreation therapy section, will include works for brass ensemble by Gabrieli; Chopin's nocturne in E flat major, op. 9, no. 2, and two of his mazurkas for solo piano; Gordon Jacobs' suite for bassoon and strings; and Mozart's divertimento for string trio. For more information, call (202) 337-8710.

FEW Holds Dinner, Jan. 27

The Bethesda chapter of Federally Employed Women (FEW) invites all to its quarterly membership dinner on Monday, Jan. 27 at the Bethesda Four Points Sheraton at 5:30 p.m. The event features author and motivational speaker Blanche Williams-Corey, who has been named America's "achievement architect" due to her entrepreneurial successes. She established the African-American Lively Arts Association, Inc.; Destination Florida, Inc.; and was small business incubator director for the Center for Technology, Enterprise and Development. Her topic will be "Design Your Year for Greatness."

RSVP and remit payment of $25 by Jan. 24 to Michelle Shorter, Bldg. 31, Rm. 9A34G, 594-8842. Sign language interpretation will be provided. For other reasonable accommodation, contact Allyson Browne, abrowne@mail.nih.gov or call 451-0002.

Tae Kwon Do Beginner's Class

The NIH Tae Kwon Do School is offering a beginner's class for adults and mature teens starting Jan. 27. The curriculum combines traditional striking arts, forms and sparring with emphasis on self-defense. No experience is necessary. Class will meet in the Malone Center (Bldg. 31C, B4 level, next to the NIH Fitness Center) from 6 to 8 p.m. on Mondays and Wednesdays, and will continue for about 2 months until participants can be integrated into the regular school training. Dues are $40 per quarter and a uniform costs $30. Interested persons are welcome to watch regular training sessions. For information call Andrew Schwartz, 402-5197 or visit http://www.recgov.org/r&w/nihtaekwondo.html.

Wednesday Afternoon Lectures

The Wednesday Afternoon Lecture series — held on its namesake day at 3 p.m. in Masur Auditorium, Bldg. 10 — features Dr. Janet Daling on Jan. 29, speaking on "The Epidemiology of Breast Cancer Among Older Women Between 65-79 Years: An Understudied Age Group." She is professor of epidemiology, University of Washington School of Public Health and member, Fred Hutchinson Cancer Research Center.

On Feb. 5, Dr. Jeanne Brooks-Gunn, professor of child development, department of pediatrics, and Virginia and Leonard Marx professor in child development and education, Columbia University, will discuss, "Growing Up Poor in the United States: Research Policy and Practice."

For more information or for reasonable accommodation, call Hilda Madine, 594-5595.

Handling Extramural Workplace Stress

The STEP (staff training in extramural programs) committee will hold a session titled, "Extra(mural) Stress: Strategies for Success," on Thursday, Jan. 30 from 1 to 4:30 p.m. in Lister Hill Auditorium, Bldg. 38A (registration begins at 12:30 p.m.).

It is no secret that changing times are stressful. Aside from the everyday stresses of the job, other more global workplace stresses over which we have little or no control can potentially affect the ability of NIH extramural staff to perform their jobs. What strategies can be used to cope with stresses emanating from the threat of homeland terrorism or the impending "soft landing" for the NIH budget? What is the science behind stress and stress-reducing methods like meditation, exercise and special breathing techniques? This session will address practical coping mechanisms not only for our daily workplace stresses, but also for those global stresses that affect our ability to remain effective in our jobs in an ever-changing world.

Restaurant Earmarks Funds for FOCC

Dine out at Willie & Reed's restaurant on the evening of Thursday, Jan. 30 and 10 percent of your bar tab will be donated to the Friends of the Clinical Center (FOCC). The restaurant is located at 4901 Fairmont Ave. in Bethesda. FOCC depends on donations that are used to help support Clinical Center patients during their visits to NIH.

Inn Accepts Donation from Fire Fighters

Tyrrell Flawn (third from r), executive director of the Children's Inn at NIH, accepts a $1,915 donation from members of the local F-271 chapter of the International Association of Fire Fighters (IAFF), which raised the funds during two events — the first annual IAFF-Children's Inn Golf Tournament and a charity softball tournament sponsored by local businessman Harold Routzahn. Flanking Flawn for the recent check presentation are (from l) Timothy Knepp, Chris Andreno, Chuck Weaver, Mike Laven, Paul Donaldson and Thomas Hipkins. Not shown are Matt Stevens, John Borden and Chris Pyles.

NIH Chamber Singers Recruit

The NIH Chamber Singers is recruiting sopranos, tenors and basses to round out its merry band of troubadours. Preparations begin soon for the spring

2003 concert series for NIH employees and patients. If you are interested, contact Susan Hauser, hauser@nlm.nih.gov or 435-3209.

Saliva Used for Diagnosis

NIDCR recently hosted the first meeting of its grantees who are part of a new program to develop novel technologies using saliva as a diagnostic tool. In opening remarks, NIDCR director Dr. Lawrence Tabak emphasized the rich opportunities that saliva provides for non-invasive assessment of a variety of oral and systemic diseases. Technologies developed through this program may one day catalyze a shift in our current health system of disease detection to real-time health surveillance.

The meeting provided an opportunity for the grantees to give presentations about their research projects and to meet with Tabak, deputy director Dr. Dushanka Kleinman and NIDCR program directors, including Dr. Eleni Kousvelari who coordinates the effort on behalf of NIDCR. The seven grantees are Drs. Eric Anslyn, University of Texas; Dan Malamud, University of Pennsylvania; Anup Singh, Sandia National Laboratories; David Stahl, University of Washington; David Walt, Tufts University; David Wong, UCLA; and Paul Yager, University of Washington. The co-principal investigators and representatives from NHGRI, NCI and NIAMS also attended the meeting.

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NEW APPOINTMENTS

Zlotnik Appointed MBRS Chief at NIGMS

Dr. Hinda Zlotnik, a microbiologist with extensive experience in grant and program administration, has been appointed chief of the Minority Biomedical Research Support Branch of the NIGMS Division of Minority Opportunities in Research (MORE). She has been working as a program director in the MORE division since 1999. She came to NIGMS from the University of Puerto Rico School of Medicine in San Juan, where she was director of the Office of Sponsored Research and a professor in the department of microbiology and medical zoology. During her academic tenure, Zlotnik's research focused on pathogenic actinomycetes (bacteria related to those that cause strep infections). In addition, she was active in training underrepresented minority students for careers in science, a major aim of the MORE division. In 1995, she spent 6 months as an NIH extramural associate, performing assignments with the NIGMS Minority Access to Research Careers Branch and with NIDCD.

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