Biographies

INSTITUTIONAL LEADERSHIP

PHOTOGRAPHY BY BRUCE WELLER

Thomas R. Cech, Ph.D.

Thomas R. Cech is president of the Howard Hughes Medical Institute. He is also a distinguished professor of chemistry and biochemistry at the University of Colorado, Boulder.

Cech's research on ribonucleic acid (RNA) has revolutionized the understanding of the biological role of this genetic material. Prior to his work on RNA, most scientists believed that proteins were the only catalysts in living cells. A series of experiments done independently by Cech and by Sidney Altman at Yale University revealed that RNA could also act as a biologic catalyst called a ribozyme. In 1989, Cech and Altman shared the Nobel Prize in Chemistry for discovering the catalytic properties of RNA. Cech is a member of the National Academy of Sciences and the Institute of Medicine, and among his other honors are the Lasker Basic Medical Research Award and the National Medal of Science.

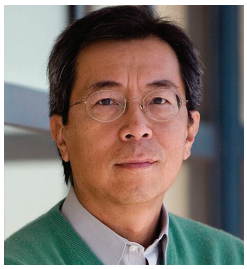
PHOTOGRAPHY BY PAUL FETTERS

Malegapuru William Makgoba, M.B.Ch.B., D.Phil.

Malegapuru William Makgoba is vice-chancellor and principal of the University of KwaZulu-Natal (UKZN) in Durban, South Africa.

A molecular immunologist, Makgoba's research has made seminal contributions to identifying and understanding the cell surface molecules and genes important in the human immune system's response. A global leader in HIV vaccine research, he has served in the leadership of the South African AIDS Vaccine Initiative, as founding chair of the UNAIDS/World Health Organization African Aids Vaccine Programme, and as a founding member of the Global HIV Vaccine Enterprise. Makgoba joined the former University of Natal as its first black vice-chancellor and principal in 2002, after serving as the first black president of the Medical Research Council of South Africa for four years. In addition to the Caring Physicians of the World award from the World Medical Association, he is the recipient of numerous honors, including fellowships at both the Imperial College Faculty of Medicine and the Royal College of Physicians of London. He is a founding member of the Academy of Science of South Africa and a foreign associate of the Institute of Medicine.

PHOTOGRAPHY BY BARBARA RIES



Robert Tjian, Ph.D.

Robert Tjian is president-elect of the Howard Hughes Medical Institute (HHMI). He is also a professor of biochemistry and molecular biology at the University of California, Berkeley, where he has been an HHMI investigator since 1987.

Tjian studies the biochemical steps involved in controlling how genes are turned on and off. He discovered proteins called transcription factors that bind to specific sections of DNA and play a critical role in controlling how genetic information is transcribed and translated. Tjian joined the Berkeley faculty in 1979 and served as director of the Berkeley Stem Cell Center and the Li Ka Shing Center for Biomedical and Health Sciences. At Berkeley, he spearheaded a major initiative to implement new paradigms for bioscience teaching and research. Tjian is a member of the National Academy of Sciences and has received many awards, including the Alfred P. Sloan Prize, the Louisa Gross Horwitz Prize, and California Scientist of the Year.

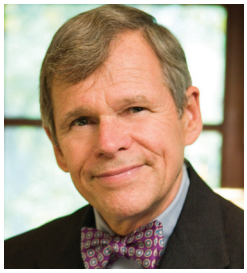
PROJECT LEADERSHIP

PHOTOGRAPHY BY CEDRIC NUNN

Salim S. Abdool Karim, M.B.Ch.B., Ph.D.

Salim S. Abdool Karim is pro vice-chancellor for research at the University of KwaZulu-Natal in Durban, South Africa. He is also director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA), a professor at Columbia University, and an adjunct professor at Cornell University.

A clinical infectious disease epidemiologist, Abdool Karim has done research on tuberculosis and HIV treatment that shaped the current therapeutic approach to treating co-infected patients. He is a co-inventor of part of South Africa's first HIV subtype C vaccine and subsequently led the first HIV vaccine trial in South Africa. Abdool Karim's recent research on microbicides showed that an antimicrobial gel may prevent HIV infection in women. He is chair of the World Health Organization (WHO) Scientific Advisory Group for Reproductive Health and is a member of the WHO Expert Advisory Panel on Sexually Transmitted Infections and HIV.



PHOTOGRAPHY BY PAUL FETTERS

Peter J. Bruns, Ph.D.

Peter J. Bruns is vice president for grants and special programs at the Howard Hughes Medical Institute, where he oversees the Institute's programs to strengthen science education at all levels, advance public understanding and appreciation of science, and broaden access to science. He was integral in the creation of HHMI's South Africa initiative and continues to help direct the program.

Before joining HHMI, Bruns was a faculty member in genetics at Cornell University for more than 30 years. His research focused on the genetics and molecular biology of the single-celled organism *Tetrahymena thermophila*, and he pioneered methods to manipulate the unusual nuclear composition of these organisms. In addition, Bruns earned a national reputation for his efforts to improve science education for students at all levels. He established the Cornell Institute for Biology Teachers, which is designed to strengthen high school science instruction. He also expanded opportunities for Cornell students to conduct original laboratory research in biology and related disciplines. He came to HHMI in 2001.

PHOTOGRAPHY BY PAUL FETTERS

Jack E. Dixon, Ph.D.

Jack E. Dixon is vice president and chief scientific officer of the Howard Hughes Medical Institute (HHMI), where he directs its flagship investigator program, which provides leading U.S. scientists the resources, time, and freedom to pursue challenging questions.

Dixon came to HHMI in 2007 from the University of California, San Diego School of Medicine, where he served as dean of scientific affairs. His research has focused on a group of proteins that govern a key biochemical reaction called phosphorylation, which serves as a signaling mechanism between living cells. In 1973, he began his first faculty position in Purdue University's biochemistry department. He moved to the University of Michigan in 1991 and later became co-director of Michigan's Life Sciences Institute. Dixon is a member of both the Institute of Medicine and the National Academy of Sciences and formerly served on HHMI's Medical Advisory Board.

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PHOTOGRAPHY BY SEAN KERNAN

William R. Jacobs, Jr., Ph.D.

William R. Jacobs, Jr., is a professor of microbiology and immunology and a professor of molecular genetics at the Albert Einstein College of Medicine, and a Howard Hughes Medical Institute (HHMI) investigator.

Jacobs is an expert in tuberculosis and other diseases in the mycobacteria family. His research uses bacterial viruses—called phage—to introduce foreign DNA into the bacteria that cause TB, *Mycobacterium tuberculosis.* That work has revolutionized scientists' understanding of TB bacteria. Prior to Jacobs' development of gene transfer mechanisms, little was known about the genetics behind *M. tuberculosis*, including which genes were related to virulence and drug resistance. Jacobs and former Einstein colleague and HHMI investigator Barry Bloom collaborated on a series of experiments that led to the first genetic manipulation of *M. tuberculosis*. Jacobs, who did his doctoral dissertation studying leprosy, is currently developing a multipurpose vaccine that could attack malaria, HIV, and tuberculosis.

PHOTOGRAPHY BY PAUL FETTERS

Adriaan Willem Sturm, M.D., Ph.D.

Adriaan Willem Sturm is dean of the Nelson R. Mandela School of Medicine at the University of KwaZulu-Natal in Durban, South Africa. He is also interim director of the new KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH).

During his career as a medical microbiologist, Sturm has studied tuberculosis, HIV, and sexually transmitted diseases. He was a leading scientist investigating the first outbreak of extremely drug resistant tuberculosis (XDR-TB) in KwaZulu-Natal province and a principal investigator on the project that sequenced the genetic code of that pathogen. Sturm began his research career in the Netherlands and became chair of the microbiology department at Aga Khan University in Pakistan in 1990. He came to the University of KwaZulu-Natal in 1993 and has served as a professor, head of the medical microbiology department, and dean. Sturm is also director of the Medical Research Council's genital ulcer disease research unit at the university.

PHOTOGRAPHY BY STEVE GILBERT

Bruce D. Walker, M.D.

Bruce D. Walker is a professor of medicine at Harvard Medical School and a physician at Massachusetts General Hospital (MGH). He is also a Howard Hughes Medical Institute investigator and director of the newly formed Ragon Institute of MGH, the Massachusetts Institute of Technology, and Harvard.

Walker's research focuses on how the immune system controls chronic viral infections, with an emphasis on HIV. He leads an international effort to understand how rare people can fight off HIV infection without treatment. Walker routinely works in South Africa, where he is an adjunct professor at the Nelson Mandela School of Medicine at the University of KwaZulu-Natal in Durban. There, he collaborates with the Doris Duke Medical Research Institute and serves as a principal investigator in the HIV Pathogenesis Program, which studies the evolution of HIV and of the immune responses that are effective in controlling the virus. He also contributes to training the next generation of African scientists.

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