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At Weill Hall dedication, faculty panel ponders life science feats and promises

By Krishna Ramanujan

In a conversation that lifted the lid on current research and issues in the life sciences, a panel of accomplished Cornell faculty engaged in a lively discussion during the kickoff event of the dedication of Joan and Sanford I. Weill Hall and the Weill Institute for Cell and Molecular Biology, Oct. 16.



Robert Barker/University Photo

Faculty panelists discussed the life sciences during the dedication of Weill Hall. From left: Scott Emr, Anne Moscona, David Skorton, Claudia Fischbach-Teschl and Carlos Bustamante.

The researchers covered such topics as recent breakthroughs in the life sciences and how basic research can lead to discoveries that change people's lives. Cornell President David Skorton moderated the event in Kennedy Hall's Call Auditorium.

In his introduction, Cornell Vice Provost for the Life Sciences Stephen Kresovich said the opening of the \$162 million, 265,000-square-foot life sciences building "reflects a new phase in the grand experiment of life sciences at Cornell University."

To begin this new phase, Skorton asked panelists to look back on the biggest breakthroughs in the past decade in their fields.

"The completion of the human genome and the advances in sequencing and genotyping have completely transformed the biomedical sciences," said Carlos Bustamante, professor of biological statistics and computational biology. He added that such advancements have vast implications for human health, our "understanding of the genetic basis for many complex diseases," and agriculture and veterinary science.

Claudia Fischbach-Teschl, assistant professor of biomedical engineering, pointed to "discoveries that characterize cancer as a disease," including the "concept of cancer stem cells," which are cells found in tumors that behave very similarly to stem cells "but they have the ability to form tumors and are responsible, we think ... for therapy relapse and metastasis."

Skorton also asked panelists to share their thoughts on the connection between basic and applied research and clinical care, Anne Moscona, an infectious-disease expert at NewYork-Presbyterian Hospital/Weill Cornell Medical Center, said that for the last 20 to 25 years she has done fundamental research on a particular virus that causes such respiratory illnesses as croup, bronchitis and pneumonia and the "details of how that virus binds itself to the lung and gets itself into the cell in order to infect." Such research has allowed scientists to "attack each one of those steps and develop strategies" for developing anti-viral drugs. Also, discoveries about this virus apply to "a whole group of viruses that enter cells in similar ways,"

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she said, and this knowledge aids diagnosis and treatment.

Scott Emr, director of the Weill Institute for Cell and Molecular Biology, pointed out that new fundamental understandings of genes and proteins and their functions have uncovered a single protein that leads to Alzheimer's disease. This protein "traffics among the membranes within cells" and generates a defective, abnormal product that collects "within the brain, killing the brain cells and ultimately resulting in the disease." The basic biology underlying the disease will eventually lead to treatments, he added.

When asked why each of the panelists chose to work at Cornell, Emr said that what he loves most about academia is being "surrounded by young people ... with great dreams of what they can be ... I have this opportunity as director of the [Weill] institute to recruit lots of young faculty ... If I can make them a success and make the road a little easier to empower them to do what they can do so well, to use their intellect, use their creativity, this to me would be just a wonderful legacy for the institute."

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