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Framing Collaborations for Breakthroughs in the Biomedical Sciences

Expanding Interdisciplinary Expertise

The field of biomedical science is undergoing rapid transformation with a new focus on interdisciplinary collaborations across many scientific and technical disciplines, including biology, chemistry, physics, nanobiotechnology, clinical medicine, applied mathematics, and computer science. Innovative interdisciplinary partnerships hold dramatic potential to address some of the most challenging biomedical issues: less-invasive and

more-targeted medical therapies, devices, diagnostics, and imaging techniques. Cornell University with its strength in the biomedical sciences in New York City and in the life sciences in Ithaca is in a position to embrace this opportunity.

The opportunities extend to collaborations between social scientists and clinicians, which also have direct benefits to patients, as well as collaborations in other areas that

benefit public health. We talk about these types of intercampus collaborations in this issue of *Connecting with Cornell*, including the Cornell Institute for Translational Research on Aging; research within the departments of Operations Research and Information Engineering (ORIE) and Public Health; and the new program in Global Health.

With its culture of collaboration, Cornell University is committed to supporting these types of intercampus, interdisciplinary interactions and to providing the necessary infrastructure to ensure their success. Appointed by David P. Hajjar, senior executive vice dean and executive vice provost of Weill Cornell Medical College (WCMC), I work to support medical college faculty interested in intercampus collaborations, while Steven Kresovich, vice provost for the life sciences, acts in this capacity for Ithaca campus faculty [see *Research in Focus*, page 104].

The Strategy

In the fall of 2005 provosts Carolyn A. (Biddy) Martin and Antonio M. Gotto appointed four intercampus faculty committees in Cornell's areas of scientific and clinical strength where intercampus collaborations would most likely lead to breakthrough results and discoveries. They charged the committees with developing recommendations for future intercampus research collaboration and educational programs.

these retreats, pilot grants were awarded to faculty collaborating across the campuses. During the summer of 2007, more targeted joint retreats were held in Ithaca [see Conference Review, page 64]: one for the biomedical engineers and surgeons; another for the biomedical engineers and neurosurgeons; and a third for faculty from diverse disciplines with an interest in new approaches to the diagnosis and treatment of lung cancer [see "Tackling the Lung Cancer Problem," page 11].

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Four scientific and clinical areas emerged:

- Biomedical engineering, nanomedicine, and systems biology
- Chemical biology and experimental therapeutics
- Global health and infectious diseases
- Multidisciplinary approaches to cancer biology

The faculty committees identified three key opportunities that would be provided by more closely linking the medical school and the Ithaca campuses. The two campuses are now working to identify specific ways to exploit the opportunities identified:

- Catalyze pioneering research programs that depend on interdisciplinary collaborations available only through intercampus interactions
- Develop universitywide educational and training programs, which bring together diverse disciplines, to train scientists and clinician-scientists in some of the most challenging disease-related problems of today
- Support the development of very costly core resources, which can be shared across both campuses, to allow faculty to engage in the most advanced research techniques and applications

More Strategies

The two campuses are concentrating on even more ways to help faculty develop new collaborations. For example, scientific retreats were held on both campuses in 2005 and 2006 and faculty from both campuses attended. To promote collaborations that resulted from

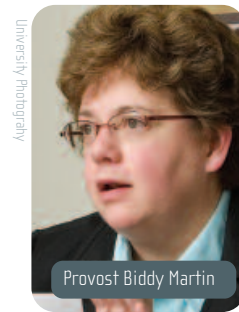
We are continuing to address the logistical issues that arise with long-distance collaborating. For example, there is a campus-to-campus bus service with wireless internet access. Financial support is now available to graduate students who travel on the bus for their intercampus collaborative research projects. An intercampus website has been launched to provide information on a range of topics: housing and transportation needs, how to access the internet, library resources, core facilities on each campus, and procedures for intercampus collaborating. There is even a matchmaking service!

The Promise of Collaboration

In the setting of Cornell's collaborative culture, there are unlimited opportunities for inter-campus research, education, and training. These programs will enable promising opportunities for groundbreaking interdisciplinary research activities, graduate training spanning both campuses, and undergraduate education interfacing with clinicians and biomedical researchers. We are proud of the ongoing collaborations, very excited about the potential of future ones, and committed to providing the necessary support to make them happen.

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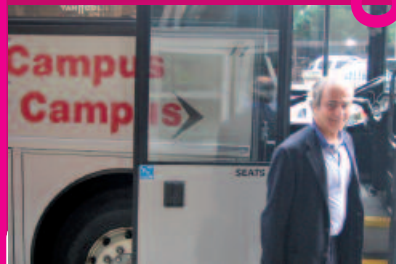
Provost Biddy Martin



Dean Antonio Gotto

Addressing Logistics

INFO



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