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CAMBRIDGE MA.

OFFICE OF THE PRESIDENT

June 20, 1996



CAMBRIDGE, MASSACHUSETTS 02139

Dear Friends, Colleagues, and Neighbors:

On June 12, 1996, MIT hosted a celebration of the biotechnology industry in Cambridge, commemorating the Institute's fourth annual Cambridge First Day. MIT President Charles M. Vest joined Cambridge Mayor Sheila Doyle Russell; Professor Phillip A. Sharp, Nobel laureate and Head of the MIT Biology Department; Mr. James L. Vincent, Chairman and CEO of Biogen; and approximately 150 community members to recognize the City's biotechnology industry. Symbolizing the special accomplishments of the many persons of the biotechnology world, five individuals were honored; their significant achievements can be found on the following pages.

A recent study, *MIT, the Federal Government and the Biotechnology Industry: A Successful Partnership*, examines MIT's impact on biotechnology. MIT alumni and faculty have founded 30 Massachusetts biotechnology companies resulting in annual revenues to the companies of \$520 million in 1994, and accounting for 3200 jobs. Eighteen of these companies are located in Cambridge, including Biogen, Genzyme, Millennium Pharmaceuticals, Alkermes, and Matritech.

In FY96, MIT contributed approximately \$43,200,000 to the Cambridge economy. Direct purchases of goods and services in Cambridge amounted to \$33,200,000. The additional amount of approximately \$10,000,000 represents municipal revenue derived from MIT's payment of real estate taxes, municipal licensing fees, a voluntary payment in lieu of taxes on tax-exempt property, and MIT's public improvements on municipal streets and sidewalks.

There were also numerous educational and community initiatives fostered by Cambridge and MIT partners in FY96. The National High School Science Symposium, the Cambridge Elementary School Science Exposition, the LINKS Program, and the MIT Public Service Center fellowships are examples of these endeavors. MIT people also supported organizations such as Cambridge Hospice, and efforts like the recent Magazine Beach cleanup, cosponsored by the Friends of Magazine Beach and members of MIT's Sea Grant program.

Thank you for working with us. We wish you a pleasant summer and look forward to collaborating with you on these and similar projects in the coming year. If you have any ideas about the content of this newsletter, please call us at (617) 253-1988.

Sarah

Sarah E. Gallop

Paul

Paul Parravano

Ron

Ronald P. Suduiko

MIT Celebrates Biotechnology Industry in Cambridge

One hundred and fifty Cambridge residents, city officials, biotechnology representatives and members of the MIT community gathered on June 12 to honor the contributions of people who have helped place Cambridge at the forefront of the biotechnology industry. Cambridge Mayor Sheila Doyle Russell, Nobel laureate Phillip A. Sharp, and Biogen CEO James L. Vincent joined MIT president Dr. Charles M. Vest to honor five people whose accomplishments have benefited biotechnology in Cambridge laboratories and classrooms.

"This gathering is an opportunity for the Cambridge community to reflect on and celebrate our great successes in the field of biotechnology," Dr. Vest said. "The contributions that we are about to honor are symbolic of the efforts that all of you have made, and will continue to make, on behalf of the biotechnology industry and the community of Cambridge."

The award recipients included:

Dr. Melvin H. Chalfen, Commissioner of Health and Hospitals Emeritus, and a Cambridge resident, guided the City's effort to develop reliable guidelines for recombinant DNA research in Cambridge. His leadership resulted in a regulatory climate that provided fertile ground for the growth of the biotechnology industry, while protecting the health and safety of the Cambridge community.

Ms. Meg Golden-Fleet, a molecular biologist at Genetics Institute, Inc., brought her laboratory expertise to the classrooms of Cambridge schools when she developed the "Bacteria Around You" program for the Fitzgerald School's science curriculum. This initiative unites volunteers from Genetics Institute with fourth- and fifth-grade students to provide them with hands-on science experience.

Mr. Jack Heffernan is the Senior Vice President of Human Resources at Genzyme Corporation. He collaborates with Harvard University on the Biomedical Science Careers Project and participates in Project Success, a mentor program for local youth. Mr. Heffernan also advises local schools about biotechnology curriculum development.

Dr. Vicki L. Sato, a Cambridge resident, is Senior Vice President of Research and Development at Vertex Pharmaceuticals; she is also Chief Scientific Officer and Chair of the Scientific Advisory Board. Dr. Sato is a member of the Board of Trustees and the Board of Overseers at the Museum of Science. She has worked on many projects at the Museum, including the design and opening of the Biotechnology exhibit.

Ms. Mary M. Splaine, a Cambridge resident, has taught chemistry, biology, and physical science at Cambridge Rindge and Latin High School for 15 years. In addition to her teaching responsibilities, Ms. Splaine designed and implemented a biotechnology curriculum for CRLS students, and is the Cambridge community representative on the Biosafety Committee of Mitotix, a Cambridge biotech company.

In his keynote address, James L. Vincent congratulated Cambridge for its role in nurturing the biotechnology industry.

"I am pleased to share with you a City that combines so much of what is best about small-town values with big-city sophistication — the hometown of biotechnology — one of America's premier growth industries," Vincent said.

MIT congratulates the award recipients for their contributions to biotechnology and to Cambridge. Our City and our world are better because of their efforts to advance biotechnology's role in our society.

Study Traces Impact of Government-Funded MIT Research on Biotechnology

A recently completed study, *MIT, the Federal Government and the Biotechnology Industry: A Successful Partnership*, examines MIT's impact on biotechnology. It focuses on medical benefits, economic growth, US global competitiveness and other areas. Among the findings:

- Thirty of the 160 biotech companies founded in Massachusetts are MIT-related.* They have created more than 3,200 jobs and in 1994 generated annual revenues of \$520 million. Eighteen of the companies are based in Cambridge, including Biogen, Genzyme, Millennium Pharmaceuticals, Alkermes, and Matritech. Massachusetts and California have the largest concentrations of biotechnology firms in the country.
- Forty-five biotechnology companies in the United States are MIT-related. These companies employ nearly 10,000 people and produce aggregate annual revenues of \$3 billion, almost a quarter of the total annual revenues (\$12.7 billion) of all US biotechnology companies.
- By the year 2000, just 25 years after its inception, it is estimated that biotechnology will be a \$30-\$50 billion industry, employing 200,000 people in more than 1,000 US companies.
- Nine of the top ten best-selling biotech drugs in 1994 were developed by three companies founded or co-founded by MIT alumni or faculty: Amgen, Biogen, and Genentech. These drugs treat heart attacks; cancer; leukemia; viruses; infections from chemotherapy, infectious diseases, and AZT treatment of AIDS; anemia; diabetes; hepatitis; growth hormone deficiency; Kaposi's sarcoma; and other diseases.
- More than 100 license agreements have been negotiated between MIT and biotechnology companies since 1986. Such agreements allow companies to develop drugs and other therapeutic products from research done in MIT labs.
- MIT educates and trains future scientists, engineers, and managers in biotechnology; advances the scientific and technological base of the nation; and spawns biotechnology companies which have become industry leaders as well as leading-edge niche market specialists.
- The federal government is the largest source of funding for biotechnology-related research at MIT. It is the engine that drives scientific discovery and technology development in MIT labs and in the larger biotechnology industry. Funding agencies include the National Institutes of Health and the National Science Foundation.
- Of the approximately \$105 million in research conducted annually in biology at MIT, about \$87 million, or 83%, is federally sponsored. At least half of this research volume is directly applicable to biotechnology, and is conducted in the MIT Biology Department, the MIT Center for Cancer Research, the Whitehead Institute for Biomedical Research, and other centers.
- Five MIT professors have won the Nobel Prize in Medicine or Physiology since 1968 for discoveries of fundamental importance to biotechnology. They are H. Gobind Khorana (1968) the late Salvador Luria (1969), David Baltimore (1975), Susumu Tonegawa (1987), and Phillip Sharp (1993).

**companies founded or co-founded by MIT alumni or faculty, or companies that have licensed technology patented by MIT.*

Educational and Community Partnerships

Cambridge Kids Develop Writing Skills with Help of MIT Press

Eleven MIT Press employees, working with Cambridge School Volunteers, donated their time and expertise for the ninth consecutive year to help Kathy Clarke's students at the Kennedy Elementary School learn about writing. Throughout the school year, the MIT Press volunteers taught 13 fifth and sixth graders about word processing, writing, and publishing. They also accompanied the children on field trips to the MIT Press facility and to Harvard University's Fogg Art Museum.

At the end of the year the students showcased their new skills by "publishing" a booklet of their work, which was released at a special recognition ceremony. During the ceremony students read their work to parents, teachers, and Cambridge school officials and received a certificate of achievement from their friends at the MIT Press. Congratulations to these students — keep up the great work!

Cambridge and MIT Cosponsor National High School Science Symposium

The Cambridge Public Schools and MIT joined to sponsor the National High School Science Symposium on the MIT campus in April. Cambridge Schools' Science Coordinator Dr. Melanie Barron and MIT senior Jonathan Allen coordinated the Symposium, which brought together 13 school districts from across the nation to talk about innovations and improvements in high school science curricula.

Twenty-three teachers and 22 administrators gathered with others to discuss new national standards for teaching science released by the National Research Council and to promote greater interaction among science teachers. The participants began an e-mail discussion group after the symposium and plan to meet again next year.

Other sponsors included the Massachusetts Department of Education, the American Physical Society, the Massachusetts Biotechnology Council and Hewlett-Packard.

MIT Public Service Center: A Partnership in Science Education

Examples of the MIT-Cambridge educational partnership include :

- Collaboration on a successful application for a \$2 million four-year grant to the Cambridge schools from the National Science Foundation: the grant funds are used primarily for science teacher workshops and enhancing science teaching skills.
- The fourth annual Cambridge Elementary School Science Expo at MIT: Cambridge Mayor Sheila Doyle Russell, City Councillor Henrietta Davis, parents, and teachers joined 150 fifth-through eighth-graders who exhibited their science projects. One hundred and thirty MIT undergraduates worked as science advisors to expo participants, and hosted the school children during their day-long visit to MIT.

Educational and Community Partnerships

MIT Student Fellowships

For 24 MIT students, last semester presented a unique opportunity to work directly with the Cambridge Public Schools' departments of Science and Technology Education during MIT's student Independent Activity Period (IAP).

The MIT Public Service Center, directed by Emily Sandberg, awarded fellowships to the students based on a rigorous application and selection process. The Fellows' assignments covered all 14 Cambridge Elementary schools and Rindge and Latin High School.

Under the leadership of Dr. Melanie Barron, Cambridge Schools Science Coordinator, and Joanne Krapelka, Cambridge Schools Technology Education Coordinator, the MIT students worked full time for four weeks. They helped to implement a new curriculum, assisted science teachers, and supported efforts to establish new computer labs and networks. Throughout the program, representatives from MIT and the school met weekly to compare notes and review program progress.

Cambridge Citizens Gather at MIT to Support Hospice

Cambridge Mayor Sheila Doyle Russell and Vice Mayor Kathleen Born joined 300 Cambridge Hospice supporters for dinner. Afterwards, 800 people gathered in MIT's Kresge Auditorium to watch a vintage print of the Charlie Chaplin film *The Circus* and listen to a live orchestra playing the original movie score, led by renowned silent film conductor Gillian Anderson. Hospice officials obtained special permission to show *The Circus*, one of Chaplin's favorites, from the Chaplin family estate in Paris.

The fundraiser was dedicated to Anne Ritchie Shealey, a longtime Hospice volunteer and one of the original planners of the event. Mrs. Shealey passed away last September.

Cambridge Hospice, founded in 1979, helps terminally ill patients and their families. MIT commends Hospice staff and volunteers for their hard work and dedication to the terminally ill of Cambridge. For volunteer and donor information about Cambridge Hospice, call (617) 890-2931.

MIT and Friends of Magazine Beach Sponsor Riverside Cleanup

The MIT Sea Grant Program, in partnership with the Cambridge neighborhood group Friends of Magazine Beach, sponsored a cleanup on the banks of the Charles River on April 27. Participants included neighbors, MIT students and staff, and even passersby who stopped to help. Science teacher Karen Spaulding and her Morse Elementary School class also took part in the cleanup as part of their study of the environment.

MIT Sea Grant and Friends of Magazine Beach began working together last winter to plan and organize the event. The two groups intend to continue the program every spring and fall. If you would like more information about future Magazine Beach cleanups, contact Andrea Cohen of MIT Sea Grant at (617) 253-3461, or Mark Sullivan of Friends of Magazine Beach at (617) 497-0983.



City of Cambridge

46.

IN CITY COUNCIL

June 24, 1996

MAYOR RUSSELL
VICE MAYOR BORN
COUNCILLOR DAVIS
COUNCILLOR DUEHAY
COUNCILLOR GALLUCCIO
COUNCILLOR REEVES
COUNCILLOR SULLIVAN
COUNCILLOR TOOMEY
COUNCILLOR TRIANTAFILLOU

WHEREAS: The President of the Massachusetts Institute of Technology, Charles M. Vest, proclaimed Wednesday, June 12, 1996 as **Cambridge First Day at MIT**, an annual occasion established to honor the Cambridge business community and to celebrate the vital economic partnerships in our City; and

WHEREAS: To mark this fourth Cambridge First Day, President Vest hosted a **community celebration of the biotechnology industry in Cambridge**. The speakers at the event reflected on the past, present, and future of biotechnology in Cambridge, and included Dr. Vest, Mayor Russell, Head of MIT's Biology Department and Nobel Laureate, Phillip A. Sharp, and Biogen Chairman and Chief Executive Officer, James L. Vincent; and

WHEREAS: A highlight of the event was President Vest's presentation of **recognition awards to praise special people** who have worked to advance the field of biotechnology. The awards given to these individuals were symbolic of the efforts of all who are supporting and furthering biotechnology in Cambridge; and

WHEREAS: The awards were presented in two categories: The first was "Cambridge People Helping to Support Biotechnology", and included the following individuals:

Dr. Melvin H. Chalfen, a life-long Cambridge resident, served as Commissioner of Health and Hospitals from 1981-1995. In that capacity, Dr. Chalfen guided Cambridge efforts to develop reliable guidelines for recombinant DNA research, thus insuring fertile ground for the growth of the biotechnology industry.

Dr. Vicki L. Sato, a Cambridge resident, is Senior Vice President of Research and Development at Vertex Pharmaceutical. Before joining Vertex, she served as Vice President of Research at Biogen and taught biology at Harvard University. Dr. Sato co-authored a book on cellular immunology.

Ms. Mary M. Splaine, a life-long Cambridge resident, has taught science at the Cambridge Rindge and Latin High School for 15 years, and in 1990 created the curriculum for a new biotechnology program. Ms. Splaine serves as the Cambridge community representative on the Biosafety Committee for Mitotix; and

WHEREAS: The second category was "Biotechnology People Helping to Support Cambridge", and included the following individuals:

Ms. Meg Golden-Fleet is a molecular biologist at Genetics Institute and has volunteered her expertise to develop the Cambridge elementary school program "Bacteria Around You".

Mr. Jack Heffernan is the Senior Vice President of Human Resources at Genzyme Corporation and is involved in a variety of community programs providing educational opportunities for local youth interested in biotechnology; now therefore be it

RESOLVED: That the Cambridge City Council hereby join the Massachusetts Institute of Technology in honoring the above individuals for their contributions to biotechnology and to the Cambridge Community, and in celebrating the advancement of the biotechnology industry in Cambridge.

In City Council June 24, 1996

Adopted by the affirmative vote of nine members.

Attest:- D. Margaret Drury, City Clerk.

A true copy; 

ATTEST:-

D. Margaret Drury
City Clerk



City of Cambridge

46.

IN CITY COUNCIL

June 24, 1996

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Born, Davis, Dwyer, Galluccio
Consent Order #46 *Reyes, Sullivan*

Mayor Russell re: Proclaim Wednesday,
June 12, 1996 as Cambridge First Day
at MIT, an annual occasion established
to honor the Cambridge business
community and to celebrate the vital
economic partnerships in our City. *R-715*

Toomey + Triantafyllou

In City Council June 24, 1996

Order Adopted