

Update on the Partnership

Economic Impact of the Partnership

Last fall, the Partnership retained Tripp Umbach Healthcare Consulting to quantify the potential economic impact of the Minnesota Partnership for Biotechnology and Medical Genomics. The goals of the study were to evaluate other state and multi-institutional partnerships, quantify the benefits of investing in biotechnology to Minnesota and describe the health care benefits and cost savings for Minnesota related to investing in biotechnology and medical genomics. The study developed quantifiable economic impacts of the Partnership under two scenarios. A mid-range scenario predicts nearly \$290 million in annual economic impact and almost 4,000 new direct and indirect jobs for Minnesota in 2010. A high-range scenario predicts 10,000 new direct and indirect jobs and an annual net new economic impact of \$734.5 million in 2010. Projections also were delivered for 2015 and 2020.

Other key conclusions of the study include:

1. Minnesota is competitive in this field because of substantial investments already made by the University and Mayo, the scientific leadership of these two institutions and private sector development by Minnesota businesses. Achieving the maximum economic impact will require a sustained commitment from the State, the Partnership and the private sector.
2. Competition is intense among states to develop viable biotech sectors because the economic opportunity and potential in this field is enormous.
3. Minnesota must make investments today to yield the desired economic benefits. Without a viable State biotech initiative, it is unlikely Minnesota will emerge as a national leader in this field.

4. The Partnership will generate valuable economic benefits for Minnesota. Short-term, it will create significant economic activity and high-value new employment related to research spending. In the mid-term, the Partnership can transfer viable research and create growth in existing Minnesota businesses. In the long-term, the State can expect development of new start-up businesses and jobs created through intellectual property transfer and venture capital funding.

5. The future of biosciences development within the state is contingent on the University of Minnesota and Mayo Clinic successfully merging their respective strengths into a synergistic research partnership, on State support to help construct additional laboratory space and on the State's ability to appropriate a stable and sustained source of research funding to leverage existing research investments and attract new grants from other sources. □

The Rochester Building Addition for the Partnership

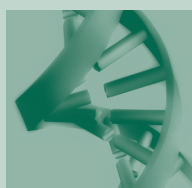
The Partnership is founded on the basis of collaborative research and the importance of multi-disciplinary science. Such collaboration of intellectual and scientific talents will advance research ideas and projects that neither the University nor Mayo could foster alone. Additional dedicated laboratory space in Rochester will enable these interactions and bring together investigators in state-of-the-art facilities. The Partnership has requested \$20 million in general obligation bonds to add three additional floors to the Stabile Building on the Mayo Clinic campus in Rochester. The Stabile building already

houses meeting and lecture facilities and a telecommunications link between the University and Mayo. The three floors will be owned by the University and operated by Mayo. This approach achieves the same innovative laboratory space at half the original capital-bonding estimate of \$40 million for a new, freestanding research building. The addition will be a modern open design that enables efficient laboratory working conditions for joint projects allowing the Partnership to conduct a higher level of research, supporting Minnesota's role as a major player in the rapidly growing field of genomics research. □

The Partnership Policy on Patient Confidentiality and Partnership Research

Medical genomic research depends on the availability of genetic samples and related information. Patient data generated by the clinical practices at Mayo Clinic and the University of Minnesota makes Minnesota a potential leader in this field. The Partnership takes deliberate precautions at all levels to ensure patient privacy and the security of the medical data and samples collected, in the following ways:

- The Partnership adheres to the rules and oversight of federally mandated Institutional Review Boards as well as the Food and Drug Administration and the federal Health Information Portability and Accountability Act (HIPAA).
- We seek informed consent for any involvement in research, including use of medical records, biological samples and participation in clinical research trials.
- The Partnership takes every precaution to limit the access and use of data and samples to only the investigators conducting the research.



The Minnesota Partnership for Biotechnology and Medical Genomics is a Minnesota initiative leveraging the scientific leadership of the University of Minnesota and Mayo Clinic. This is the second newsletter to keep you informed on the progress of the Partnership and news in the field of biotechnology and medical genomics. For more information, visit our Web site at www.MayoUMinnesotaPartnership.org; call the Academic Health Center at the University of Minnesota at 612.624.5100 or Mayo Clinic at 507.284.9258.

Continued on back ...

Four Research Grants Awarded by the Partnership

Minnesota Governor Pawlenty and officials from Mayo Clinic and the University of Minnesota recently announced the first research grants awarded by the Partnership. Four collaborative research projects will share \$3 million provided by the University of Minnesota, Mayo Clinic and the State of Minnesota. The selected projects will focus on cardiovascular disease, prostate cancer, Alzheimer's disease and obesity. The four recipients, chosen from nine finalists, were among 34 proposals submitted in September 2003. Proposals had to include investigators from both the University and Mayo, involve disease-based research that could not be done by either institution alone and apply novel applications of recent advances in biotechnology, genomics, proteomics and bioinformatics to significant issues in human health. Within two years, these research grants are expected to generate a major return to the state in terms of NIH research dollars.

Overview of the Four Funded Research Projects

Understanding how blood vessels and cells interact in early heart disease: Endothelial Genomics and Phenotype in Early Atherosclerosis

Hardening of the arteries (atherosclerosis) occurs when the cell lining of the arteries stops functioning properly, leading to heart attacks, strokes and death. There may be genomic characteristics that make the cells lining the arteries more susceptible to dysfunction and plaque, placing an individual at greater risk for developing atherosclerosis. Investigators hope to develop ways to

measure heart disease risk earlier and more accurately, and to develop new drugs to fight coronary heart disease. This will result in a new, broad-ranging preventive therapy for cardiovascular disease and an opportunity for drug development in Minnesota, with biotech and pharmaceutical involvement.

Research into the brain's resistance to weight gain: Non-Volitional Activity in Obesity Resistance: Role of the Brain

Recent studies indicate that more than half of Minnesotans are overweight and one in five are clinically obese, costing Minnesota an estimated \$1.4 million in obesity-related health costs. Investigators intend to explore how chemicals in the brain may make an individual naturally resistant to obesity. Eating habits, metabolism, and exercise do not account for individual differences. One possibility is the energy burned in daily activities termed by Mayo researchers as NEAT, or non-exercise physical activity thermogenesis. The investigators will attempt to understand how the brain regulates NEAT, and develop novel approaches to prevent and treat obesity in Minnesota. Such an advance has the potential to improve the health of every Minnesotan and cut medical costs dramatically.

Developing a way to diagnose Alzheimer's before autopsy—test, treatment and therapy: Proteomic Design of Peptide-Based Probes for the Molecular Imaging of Amyloid Plaques to Diagnose Alzheimer's Disease Using Contrast-Enhanced Magnetic Resonance at High Field Strength (9.4T)

Alzheimer's disease affects 4.5 million Americans. By 2010 the cost to Minnesota is estimated to reach \$1.5 billion. Most of that

burden is borne by individual families because Medicare and most private insurers do not cover long-term care for Alzheimer's. This project proposes development of a molecular probe that would find and connect with amyloid plaques, one type of abnormal brain cell associated with Alzheimer's. Researchers hope this will lead the way to an early-stage diagnostic tool for Alzheimer's disease, enabling better treatment and effective therapies. The project involves neuroscientists, radiologists and specialists in proteomics and diagnostic imaging from both institutions.

Finding a blood or tissue test for prostate cancer to identify aggressive cancers: Coordinated Multi Program Utilization of Microarray Data to Generate and Validate Biomarkers for Improved Care of Patients with Prostate Cancer

Current tests for prostate cancer can identify cancer, but cannot indicate if an aggressive type of tumor is present. In this project researchers will identify a new biomarker that will lead to specialized prostate cancer tests to be performed on blood samples or biopsy tissues. The medical goal is an improved and more specific chemical or genetic test for prostate cancer that will identify the more aggressive forms of the cancer. Minnesota will benefit from medical cost savings because physicians will be able to target aggressive care at patients most likely to have problems, thus treating the disease earlier before more complex and expensive procedures are needed. The State will also benefit from a marketable diagnostic test that will bring income to Minnesota.

To read more about the funded projects visit www.MayoUMinnesotaPartnership.org.

The competition

Washington University in St. Louis

"BioMed 21" at Washington University in St. Louis is a strategic initiative in biomedical research and medicine. Diabetes, obesity, Alzheimer's, Parkinson's, neuropsychiatric, cardiovascular and autoimmune diseases, plus a wide range of cancers and infectious diseases, will be areas of study. Research efforts will involve faculty in every department of the medical school and University. Initially, there will be three interdisciplinary programs: A new Genome Sciences and Human Genetics Program, a Division of Clinical Sciences for patient-focused research and a University-wide Center for Biological Imaging.

BioMed 21 is a \$300 million initiative that will be supported through gifts, federal research grants and internal resources. In addition, the medical school's Genome Sequencing Center will receive new funding totaling more than \$130 million over three years from the federal government's National Human Genome Research Institute (NHGRI). A \$150 million, 250,000 square-foot research facility is anticipated and an \$18 million, 40,000-square-foot research facility is also planned.

Several other State and institutional initiatives are described on our Web site at www.MayoUMinnesotaPartnership.org □

Patient Confidentiality and Research continued ...

- Patient confidentiality is further ensured by employee training, written policies and standard operating procedures.
- Information about privacy policies and procedures is available.
- Research is conducted in a way that earns patient confidence and trust, as our institutions have done for over a century.

To read the complete Partnership's Policy on Patient Confidentiality, visit www.MayoUMinnesotaPartnership.org/confidentiality.html □

Did you know?

Minnesota is widely recognized as a hub of the medical device industry, and is home to numerous companies and research institutions at the leading edge of biotechnology and biomedical developments. These companies and institutions are making significant advances in biotechnology, medical devices and drug delivery, and will be major beneficiaries of the Partnership's advancements in this field. Medical Alley, a trade association founded in 1984, has helped promote interest and investment in Minnesota as a major center of health care achievement, research and innovation. Minnesota is the home of many leading biotech and biomedical companies, including Medtronic, 3M Health Care and Guidant Corporation.

Your Support Matters

If you are intrigued by what you've read about the Minnesota Partnership for Biotechnology and Medical Genomics and would like to learn more or show your support, visit our Web site. If you or someone you know has benefited from medical advancements in biotechnology or medical genomics, please share your story with us.