



Oregon Center for Translational Genomics

Federal Dollars Requested for FY 2009: \$1.85 million

Federal Bill & Account: Department of Health and Human Services: HRSA

Previous Federal Dollars: None

Total Federal Dollars Requested for the Project:: \$3,925,000

Total Amount of Project: \$8 million – remaining funds will be contributed by OHSU through private fundraising and other non-federal funds.

OHSU proposes to create a new center, the Oregon Center for Translational Genomics. This scientific center will develop new, individualized avenues for diagnosing disease, finding new treatments, and analyzing responses to treatments. We know a great deal about the basic biology of genetics. But translating this basic science knowledge into treatments for individuals remains a challenge. For medicine to advance, we must be able to understand how individual genetic differences lead to the development of disease and to different responses to treatments for diseases. If we can rapidly and accurately identify these complex groups of genes, we can determine an individual's risk for disease and employ adequate prevention. We can also find treatments that respond best to an individual's specific genes.

OHSU is the ideal setting for such a center. We are asking to fund equipment and operations for a Solexa High-Speed Sequencing Station, the state-of-the-art instrument for individualized genomic medicine, and a team of scientists with expertise in bioinformatics, biostatistics, and molecular genetics. As Oregon's only academic health center, OHSU is the ideal setting for this center, but this center would also interact with and facilitate efforts of other groups in Oregon, including those devoted to designing drugs for genetically defined targets. We are seeking initial funding for a period of three years.

The Oregon Center for Translational Genomics will focus on finding specific genetic markers that predict disease risk and treatment response. OHSU already has significant expertise in bioinformatics and biostatistical support for the analysis of the very large and complex genetic data sets, but to manage the additional data generated by this improved instrumentation, we will also need more scientists. Projects most directly relevant to individual diagnosis or individualized therapy will be given the highest priority.

This center would certainly benefit Oregonians, since OHSU is the only academic health

center in Oregon. But it would also benefit all U.S. citizens: OHSU is already an international leader in “individualized” medicine—OHSU cancer center director Dr. Brian Druker was the first scientist in the world to make a basic genetic discovery the foundation for targeted treatment of cancer cells, treatments that attack only the cancer cells and leave healthy cells alone. This was a major breakthrough and confirmed that this kind individualized medicine is an effective and valid way of treating our most grave diseases. He revolutionized the understanding of cancer and its treatment.

Dr. Druker is joined by a cadre of scientific leaders who could make individualized medicine a reality. OHSU researchers are uniquely poised to take advantage of new technologies for genetic analysis: they are world leaders in individualized cancer diagnosis and treatment, in studying the complex diseases of drug (especially methamphetamine) and alcohol abuse, in obesity and diabetes, and in a variety of neurological disorders (especially multiple sclerosis). In order for OHSU to maintain its leadership role in biomedical research, a center for high-speed genetic analysis—both equipment and scientists to analyze new data— is essential.

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