

Preparing Oregon for the Era of Personalized Medicine

Translational genomics has the power to unlock the healing secrets of our DNA. OHSU researchers are the keepers of the keys.

Welcome to the era of [personalized medicine](#).

In the very near future health care professionals will be able to factor a patient's personal genomic profile into an individualized disease-prevention or treatment plan. Within the next three to five years, the sophisticated laboratory instruments used to generate this genomic data will increase in speed and accuracy a thousand-fold, creating near-limitless potential to end suffering due to cancer, neurodegenerative disorders and other life-threatening or debilitating conditions that arise from genetic defects.

As a result, new computational strategies, new tools and new types of scientists are emerging to deal with these unprecedented volumes of complex information. Specifically, the field of [bioinformatics](#) – a family of advanced methods for analyzing, storing and interpreting raw genomic data – is of critical importance to bring the value of this information directly to the patient with new cures and better care. The science of bioinformatics is in its infancy, and the relatively few specialists in this area are in very high demand.

With immediate and substantial new investment, OHSU can establish a comprehensive center of excellence and expertise in the field of Translational Genomics. Through investment in Translational Genomics, expanded expertise and a strengthened core infrastructure in bioinformatics would provide a framework within which our internationally recognized strengths in basic science and translational research could, together, bring the power and promise of personalized medicine to our region.

OHSU has the demonstrated potential to lead in this revolution because of its pioneering role in the field of targeted therapies such as Gleevec. Oregon and the surrounding region look to OHSU because it is the state's only academic health and research institution. With existing strengths in biomedical science and applied clinical research, OHSU now has the potential to contribute previously undreamed-of new treatments and individualized cures for cancer and a rogue's gallery of other acute and chronic diseases.



It took an international consortium of leading scientists 10 years and \$3 billion to sequence the human genome. Soon your doctor will be able to do the same thing while you wait, and for a tiny fraction of the cost.

But before this exciting era of customized care can take shape, we need the people and equipment it takes to find useful clinical information among the vast volumes of data in our genes.

With the help of its partners, OHSU has the opportunity to lead in this exciting new era of health and science.

What OHSU supporters can do

A philanthropic investment of \$5 million — part of a total investment of \$10 million from public and private sources — would enable OHSU to establish and sustain a comprehensive center of excellence in Translational Genomics.

Funds would support the recruitment of new bioinformatics faculty, the procurement of powerful new computing resources essential for complex data analysis, and the enhancement of informatics training programs for students and practicing professionals to ensure adequate expertise will be available to OHSU and others for years to come.

The development of this critical mass of computational scientists and equipment will ultimately advance each of OHSU's core missions of healing, teaching, discovery and outreach across multiple departments at the university.

Expanding OHSU's capabilities for genomics and bioinformatics is a core goal of a three-year development effort to raise \$100 million to provide OHSU's exceptional faculty with the resources they need to work and collaborate at their best.

Shrinking costs, growing opportunities

\$2,000,000

Cost to sequence the genome of DNA co-discoverer James Watson in 2001.

\$100,000

Approximate cost to sequence a full human genome in 2008.

\$1,000

Projected cost to sequence a human genome by 2014.

“OHSU now has the chance to be a leader in genomics research. If we seize it, Oregonians will be among the first in line to benefit from personalized medicine.”

– Gleevec developer Brian Druker, M.D., director, OHSU Knight Cancer Institute

Giving opportunities

The OHSU Translational Genomics initiative has these specific philanthropic goals:

Faculty retention and recruitment

A **\$3 million** investment is required to recruit one senior faculty member to direct this enterprise and two junior faculty with expertise in bioinformatics. Included are salary and three years of standard start-up costs related to individual faculty research programs, encompassing support for post-doctoral and doctoral students, equipment and associated renovation.

Equipment

Approximately **\$1 million** is required to provide the high-performance computational equipment and services needed for advanced bioinformatics research. Included are costs for hardware, maintenance agreements and server-hosting services.

Scientific, educational and administrative support

At least **\$1 million** in additional support is needed to recruit non-faculty scientists trained at the graduate level in programming, data analysis, hardware maintenance, database construction and other tasks to support the center's faculty and computing infrastructure. These funds would support graduate educational programs in translational genomics while providing administrative support for the initiative.

Make a Gift

OHSU Foundation staff members are available to help coordinate the details of a gift. For further information, contact:

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