

# Novel initiative seeks genetic causes of diabetes risk

**Public–private model pursues precompetitive R&D**

*Mark Ratner*

The Novartis Institutes for Biomedical Research (NIBR), and the Broad Institute of Massachusetts Institute of Technology and Harvard, have announced a unique joint project to unravel the genetic causes of type 2 diabetes. The partnership, called the Broad–Novartis Diabetes Initiative, is novel because it will make all of its findings immediately and freely available to scientists on the Internet.

"People seem most intrigued by the fact that an academic genetics group and a company are committing up front to putting all of the data out as soon as they themselves have it," says David Altshuler, principal investigator at the Broad Institute. "We believe that the fundamental information about the genome and which pathways are altered in disease is precompetitive."

The Initiative will perform genomic analyses using high-density single-nucleotide polymorphism (SNP) mapping and whole-genome-scanning techniques on samples from a long-term, ongoing study of diabetes and its genetic causes by a group at Sweden's Lund University, led by professor of endocrinology Leif Groop.

The Broad brings its capabilities in genetics and large amounts of genomic information to the table, as well as bioinformatics to pull the data together. For its part, Novartis will help elaborate the pathways and how they'll be prioritized, and it also anticipates doing wet lab work to follow up findings. "Functionalization of the results is part of what we bring to the collaboration," explains Tom Hughes, Global Head of Diabetes and Metabolism Research at NIBR.

"I wouldn't underestimate the knowledge of the disease that a company like Novartis has," says Altshuler. "There is a strong intellectual component of the knowledge one gets in a pharmaceutical company that is largely synergistic and non-overlapping with what an academic scientist thinks about." Novartis also brings funding to the Initiative, to the tune of US $4.5 million over three years.

One of the Initiative's primary goals is to show productivity as soon as possible, and it is striving to release an initial set of data in 6 months. "We want to convince people who are working with the data on the outside that it's a legitimate data set," says Hughes. "So we may need to do something that is reminiscent or confirmatory of what's already known. We also want to add value, so we'll do some early looks at genes of interest in the external community, not just for reassurance, but to also give them something that's hot."

"What we will come up with is information linking specific genes to the susceptibility of developing type 2 diabetes, as well as some information that may relate to the efficacy of certain drugs or the prognosis with regard to different courses of therapy," says Hughes.

One likely example for early study is the role of mitochondrial genes — an area of interest to both the Broad and Novartis. "Only a handful of the hundreds of genes involved in mitochondria have been studied for their role in the genetic risk of the disease," says Altshuler.

**David Altshuler believes genomic information is precompetitive.**
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But the Initiative does not foresee patenting the data, and there will be no lag between the development of the data and its public revelation. "It's a secondary consideration, but obviously we have it in our minds to have both intellectual property and publications as work streams," suggests Hughes.

The Initiative helps Novartis to build the bridge between academic and clinical expertise that it sought in moving to the Boston area in 2002. (Hughes and Altshuler have offices right across the street from each other.) It is also a springboard from which to build a long-term relationship. "Once you learn how to work together, future efforts become that much more effective," says Altshuler.