



Robert Wood Johnson Foundation

{Pioneer}

The Pioneer Portfolio supports innovative ideas and projects that may lead to breakthrough improvements in the future of health and health care.

We look broadly across health and health care—and often to fields outside the health sector—for ideas that push beyond present-day constraints to spark the major improvements of tomorrow. And our efforts are not limited solely to health and health care innovations but extend to new ways of having impact within the field of philanthropy.

Underlying many Pioneer projects is a combination of a bold vision and the persistent ingenuity of the person or team at its heart. We believe these projects, when paired with strategic support and resources, may trigger change that can dramatically improve our health and health care landscape five, 10 or 20 years down the road. In 2007 the Portfolio announced its largest grant to date, a \$15.6-million award to Archimedes, Inc. Dr. David Eddy and his team built Archimedes, a powerful mathematical model that provides a virtual world of people—with different physiologies, diseases, signs, symptoms, doctors, tests, treatments and outcomes—for health care and policy leaders to use as a testing ground to answer questions that cannot be feasibly, safely or quickly studied in the real world.

We are supporting the development of the Archimedes Health Care Simulator (ARChES), an online interface and delivery platform that will allow more organizations to use Archimedes to answer exponentially more questions. By lowering the skill and cost threshold required to use the model, more decision-makers in health care and policy organizations will be able to use the power of Archimedes to generate evidence-based knowledge that we hope will ripple throughout the health care system to benefit individual providers and patients.



Scott Johnson is another visionary who grew so frustrated with the sluggish pace and disjointed nature of disease research efforts that he sought an altogether different path to treatment breakthroughs. A business executive diagnosed with multiple sclerosis 30 years ago, Johnson established the Myelin Repair Foundation (MRF) to shake up—and speed up—the quest for a cure. Pioneer’s grant helped MRF establish the Accelerated Research Collaborative (ARC), a new research model that hastens the time to drug discovery. Drawing on a cooperative research infrastructure, top scientists across multiple labs continuously share findings to pursue a joint plan to identify therapeutic targets. This cooperation—together with a framework for intellectual property protection, technology transfer agreements and relationships with pharmaceutical and biotech firms—has allowed the ARC team to file for nine patents in less than three years. The team has received widespread scientific and media attention for these gains, and more than 50 disease research organizations have contacted MRF to determine whether the ARC model might work for them.

Eddy, Johnson and other Pioneer grantees are testing novel ideas that may create better routes to improved health and higher-quality care in the future. Closer to home, we explored innovative philanthropic practice models to seek bold ideas and thinkers that may not reach RWJF through conventional grant channels. One example is the online idea competitions we held with Changemakers, part of a leading social enterprise group, Ashoka.

Our series of Changemakers competitions allowed RWJF to enter the realm of open source, in which entrants are required to post ideas online, where everyone can view, comment and vote on them. We didn’t pick the winners; thousands within Changemakers’ online community did. Our three competitions focused on diverse challenges—identifying disruptive innovations that benefit health care consumers; applying video game-based solutions to health challenges; ending intimate partner violence—but they netted some common results.

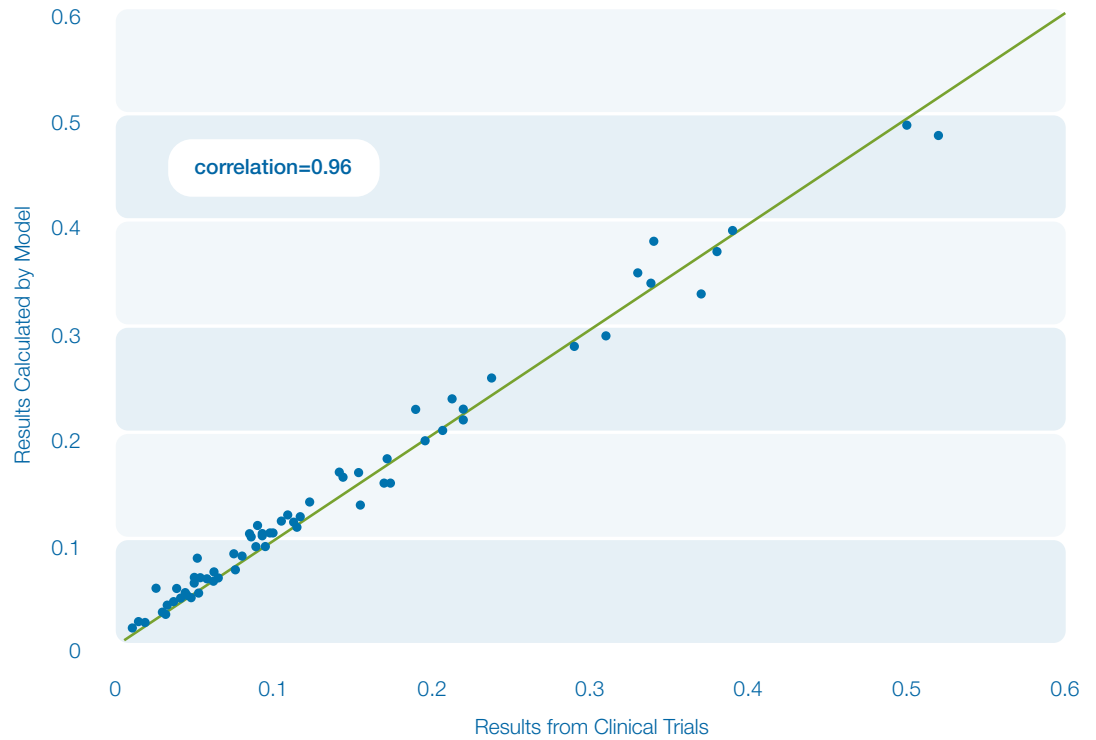
The competitions all drew a dynamic set of ideas from thinkers and doers across the globe, stretching our understanding of problems and surfacing unexpected paths to solutions here in the United States. And, our competition to find disruptive innovations in health and health care generated ideas that we may help to spread on a greater scale through subsequent RWJF support.

Other program areas at the Foundation have begun to use open-source competitions to explore new strategies and support ideas that might not reach RWJF through traditional grantee-seeking processes. As they infuse and shape our work, these and other philanthropic innovations can enhance our transparency and accountability, making us more responsive and, we believe, more effective.

For additional information about our initiatives and objectives, visit www.rwjf.org/pioneer.



Comparison of Archimedes Model Results and Clinical Trial Results from 74 Validations



David Eddy, M.D., Ph.D., and Leonard Schlessinger, Ph.D., simulated 18 independently selected randomized clinical trials by repeating in the Archimedes model the steps taken for the real trials and comparing the results calculated by the model with the trial results. A total of 74 validation exercises were conducted involving different treatments and outcomes in the 18 trials; for 71 of the 74 exercises, there were no statistically significant differences between the results calculated by the model and the results observed in the trial.

Source: *Diabetes Care*, Vol. 26, No. 11, November 2003.