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## The Changing Face of Bioscience Real Estate

By Nancy J. Kelley

**May 18, 2010** | Ten years ago, the mapping of the human genome ushered in a new era of research and medicine. Since then, much has been accomplished in unraveling the causes and complex human disease. Today, we stand on the cusp of a new era of personalized medicine, where these discoveries can be applied with unprecedented precision to improve health care for the general population.

For this to occur, existing methods of scientific research, discovery, and clinical care delivery must be transformed to allow targeted rational drug development, and predictive, preventive and consumer-driven medical delivery. This transformation will require the design and construction of new types of facilities that foster multidisciplinary team work amongst scientists and clinicians in medicine, biology, chemistry, physics, mathematics, engineering, computer science and IT.

In spite of the challenging economic environment lately, there is reason for optimism that this transformation will unfold over the next several years in new physical environments that foster the promised "revolution" in health care. Indeed, the economic "winners" in the future will be those regions, institutions and companies that rebuild

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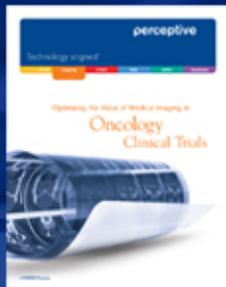
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their physical environments so as to remain competitive and create new scientific and clinical products and jobs.

### Past, Present and Future

In 2007, the United States and global markets experienced an historic financial meltdown, triggering a worldwide economic crisis. As credit and equity financing dried up and funding from the NIH declined (in constant dollar terms), the life science industry suffered a double-digit decrease in venture capital investments and initial public offerings came to a standstill.

The health care industry fared somewhat better, but as unemployment rose many Americans lost health insurance coverage, leading them to postpone treatments and abandon unpaid medical debts.

These developments had a crippling effect on the life sciences and health care real estate markets. Slowing tenant demand in life sciences real estate depressed rental rates in many life science clusters. Development projects were put on hold pending financing and/or tenant commitments. Hospitals and health care institutions delayed capital decisions as endowments and philanthropic donations declined.

The worst may now be over, however. In 2009, the American Recovery and Reinvestment Act included a \$10.4 billion increase in NIH funding, grants channeled to researchers, academic medical centers, universities, pharmaceutical and biotechnology companies. The recently enacted health care reform legislation will allow millions of newly insured people into the market, expanding demand for medical services. In the midst of this change, the Genomics and Personalized Medicine Act of 2007 will encourage early, personalized diagnosis and treatment of diseases that will support improved patient outcomes and reduce healthcare costs. And profound technological advances in next-generation sequencing technology will open up possibilities for new models of scientific discovery and clinical care.

With the improving economic environment comes signs of some positive trends. Rising life expectancies — the number of people aged 65 years and older will double between the years 2000 and 2030 -- will increase demand for health care that will keep people active and healthy as they grow older. New health care models will transform the current system of care, incorporating elements such as alternative care sites (retail clinics); disease management, wellness and retail medicine; IT and electronic medical records; and genomics, personalized medicine and diagnostics. Finally, the Genetic Information Nondiscrimination Act (GINA), which protects Americans against insurance and employment discrimination based on genetic information, should encourage expanded clinical trials and broader use of personalized medicine.

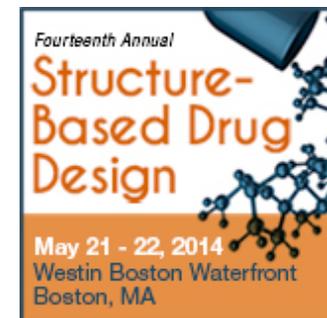
The improving economy and long-term trends should encourage personalized medicine initiatives that offer competitive advantages for research institutions and hospitals, while spurring economic growth. Recent experience nationally and internationally indicates that these initiatives attract medical education programs, clinical expansion, the creation of new bioscience and IT companies and new facility construction. Deferred investment in quality, combined lab and clinical space to support these activities will drive demand for the new types of facilities required.

### Real Estate Facility Needs

The type of facility required will depend on the nature of scientific and patient needs. For example, research institutes or academic medical centers will require truly integrated facilities that combine clinical, research and educational space, supported by animal facilities where treatments can be tested early on mouse models, and

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core facility services.

Community hospitals will require physical environments that promote “patient centered care,” such as those institutions who have embraced the “Plane tree” philosophy, which incorporates elements of healing design such as access to nature, clear way finding and commitment to privacy.

Cancer and other ambulatory care centers will require accessible, patient friendly spaces, while accommodating complicated new technologies such as proton beam technology and linear accelerators, and encouraging the operation of clinical trials. All of these systems will be supported by state-of-the-art medical office complexes, where patients and physicians can actively participate in making decisions about genetic testing, disease prevention, diagnosis and care, supported by the latest in electronic medical records.

These scientific and clinical institutions will, in turn, be supported by satellite genome sequencing service centers, which will quickly and inexpensively sequence thousands of individual genomes, or application support centers that provide mass spectrometry and other support services for life science researchers.

All of this activity will be bolstered by the launch of new companies working to commercialize the new treatments and products discovered.

The bioscience real estate of the future is already being developed today. With the coming economic recovery and recent legislative and regulatory changes, these environments will help the world to realize the medical revolution promised by the historic mapping of the human genome.

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