hat’s on my mind this month is the new Shared Vision 2020 plan for University of Maryland Medicine, which is aimed to accelerate the pace of discovery, collaboration, innovation and quality of patient-centered care across the Medical School and Medical System. Our new vision is meant to position us for maximum and extraordinary success in the face of the challenging times upon us. Together with our UMMS partners, we have decided to apply strategic, bold and different approaches to all our key mission areas—education, clinical care, finance and philanthropy, and research.

Last month, we distributed a summary of our “Shared Vision 2020 for UM Medicine,” which I hope many of you have had a chance to review and share with your colleagues, students, staff and trainees. This special edition of SOMnews will focus on aspects of Vision 2020 that are specific to the School of Medicine, and some of the initiatives already under way.

Despite the current economic climate and uncertainties regarding the future of academic medicine in general, and research funding in particular, difficult times call for innovative thinkers who not only face challenges head-on, but welcome the opportunity to think strategically and think opportunistically. Although limited resources could be used as an excuse to make conservative decisions, true leaders need to make bold choices to avoid the pitfalls of inertia, which can easily lead to decline over time. This is why the key component of our Vision 2020 plan is to implement selective, strategic disruptive innovations across all our mission areas, starting in fiscal year 2014. The impetus behind this initiative is to take the idea of “disruptive innovation,” coined by Clayton M. Christensen, MPH, MBA, the Kim B. Clark Professor of Business Administration at Harvard Business School, and translate this idea, which was originally applied to the business world, into a driving principle for our University of Maryland Medicine, which is aimed to accelerate the pace of discovery, collaboration, innovation and quality of patient-centered care across the Medical School and Medical System. Our new vision is meant to position us for maximum and extraordinary success in the face of the challenging times upon us. Together with our UMMS partners, we have decided to apply strategic, bold and different approaches to all our key mission areas—education, clinical care, finance and philanthropy, and research.

Christensen defines disruptive innovation as a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up the market, eventually displacing established competitors. By analogy, we will use this technique to displace the obstacles we face as we plan our future.

Over the course of the next seven years, we will apply selective, strategic disruptive innovations as we strive to accomplish the following:

- In education, we will transform our teaching philosophy and educational “products” by promoting student-driven innovation and discovery.
- In clinical care, we will aim to become unquestionably the premier healthcare system for the State and region, distinguished by our clinical destination centers of excellence in many key areas.
- In finance and philanthropy, we will work to attain a philanthropic goal well in excess of $500,000 million through partnership, exploration of new revenue streams and strategic re-investment of reserve funding.
- In research, we will make discoveries that significantly change the direction of scientific research and health care by tackling “Big Science” questions through team science initiatives and research consortium units, accompanied by huge federal funding support.

In the past seven years we have seen extraordinary growth in virtually all mission areas, including an approximately 15 percent growth in total revenue, through increases in the number of grants and contracts, percentage of gifts, growth of the medical service plan, and other key areas. We have achieved top-tier status and have become a national leader in clinical and academic medicine, as well as biomedical research, by adopting a fierce, goal-oriented, aggressive, strategic and opportunistic approach to maximize our academic yield. While our historical performance will inform our efforts and help to shape us and influence our way forward, we cannot merely “rest on our laurels,” but need to adapt, modify and allow room for strategic disruptive innovations to continue our trajectory of success. Vision 2020 is a culmination of ideas that came together through many discussions with senior staff, colleagues, ad-hoc advisory committees, and the input of the Research Affairs Advisory Committee. It is a culmination of ideas that came together through many discussions with senior staff, colleagues, ad-hoc advisory committees, and the input of the Research Affairs Advisory Committee. I am grateful for their invaluable assistance during the initial planning stages. However, now we need to put our philosophical position into practice and move Vision 2020 forward. The leadership cannot do this without the willingness of the entire UMMS community to join us in this endeavor. The programs and initiatives you will read about in this special issue are just the beginning of how Vision 2020 can and will be implemented across the School.

As the summer comes to a close, and we turn our thoughts to the coming academic year, I hope these stories will serve to inspire and stimulate your own bold and strategic ideas for your academic unit.

In the relentless pursuit of excellence, I am Sincerely yours,

E. Albert Reece, MD, PhD, MBA
Vice President for Medical Affairs, University of Maryland John 2. and Akiko K. Bowry Distinguished Professor and Dean, University of Maryland School of Medicine
The University of Maryland School of Medicine has implemented a new course to stimulate critical thinking and enhance intellectual acuity and inquisitiveness in medical students, in order to prepare them for the challenges of clinical practice or research. The course—called Foundations of Research and Critical Thinking—strengthens the curriculum’s focus on research and critical thinking by requiring each medical student to create and execute a scholarly scientific research project. Each student will select a mentor for his/her project, prepare a proposal, and complete either a clinical, translational, or basic science research project or a grant application. The course represents an innovative approach to medical education that is in place in few medical schools nationwide.

The Foundations of Research and Critical Thinking course has two components. First, in their first year of medical school, students will take part in a series of lectures and small-group sessions. Lectures will focus on topics such as “The Physician as an Academic Investigator,” “How to Critically Evaluate and Write a Scientific Paper,” and “Ethical and Responsible Conduct of Research.” The second component of the course is a scholarly project that for most students will take place during the summer between the first and second years of medical school.

For their scholarly project, students will develop a proposal for a basic, translational, or clinical biomedical research project. With the assistance of their mentor, they will complete the research project and submit a final report summarizing their work. As an alternative, they can complete an extensive grant application describing a research hypothesis and project. Students may also satisfy the requirements of the course by completing one of the school’s dual-degree programs, combining the medical degree with a PhD or a Master’s degree—the combined MD/MPH (Master of Public Health) program, for example.

This is the latest step in our ongoing effort to make our medical education comprehensive, teaching our future doctors every aspect of medicine, from science to patient care,” says George Fantry, MD, Assistant Dean for Student Research and Education and Associate Professor, Department of Medicine. “We are enhancing the skills of our students to include intellectual acuity and critical thinking, enabling them to become sharper physicians and biomedical scientists.”

“We hope that they will use these skills to provide better patient care and revolutionize medicine with biomedical innovation,” says Donald R. Matteson, PhD, Associate Professor, Department of Physiology, and Director of Student Research Education and the dual degree programs. “They’ll use these skills in problem-solving as they diagnose and treat patients, or as scientists, as they create and study research hypotheses to advance medicine. This course is keeping the University of Maryland School of Medicine in the top tier of medical schools, providing students with the best education possible.”

A new Critical Care Resuscitation Unit (CCRU) opened at the R Adams Cowley Shock Trauma Center on July 18, 2013. The CCRU is designed to improve the flow of critical-care patients to appropriate patient care areas at the University of Maryland Medical Center (UMMC). “The CCRU will focus on critically ill patients with advanced surgical specialty needs who are transferred from outside hospitals,” explained Lewis Rubinson, MD, PhD, who is medical director of the new unit. “Examples of patients include those with acute care surgical or soft tissue problems, cardiothoracic and vascular emergencies, as well as neurological and neurosurgical emergencies.”

Over the course of only a few hours, CCRU patients are evaluated by a nurse practitioner and attending physician, stabilized, and then sent to a bed in an appropriate critical-care unit. These patients come from outside hospitals that are not able to offer the same level of care that is available at UMMC. The CCRU streamlines the process for the referring physician, so with one phone call a patient can be on his/her way to definitive care at UMMC, and “everyone is on the same page about how we’re going to handle this patient,” said James O’Connor, MD, Associate Professor, Department of Surgery and Chief of Critical Care at Shock Trauma. “That’s really important. You want to streamline the process for the referring physician, and you want to make sure that the care the CCRU is providing is exactly the care that referring physician wanted for that patient. It will be a collaborative effort here.”

Collaboration in health care will become more and more necessary as the Affordable Care Act and other big changes in medicine start to make an impact. “Regionalization of surgical critical care services is an important aspect of the changing healthcare environment, and the CCRU will assist UMMC in being a regional and national leader in a high quality, systematic approach to regionalization,” said Dr. Rubinson. “We are enhancing the skills of our students to include intellectual acuity and critical thinking, enabling them to become sharper physicians and biomedical scientists.”

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Five years ago, it took weeks to sequence a person’s genome, and now it takes just a little over a day,” reflects Dr. Devine. “In five years from now, the entire industry will change, and the role of our team and others doing this type of work is to create a space to understand, study, safeguard, and responsibly use all the data we will collect about a person’s genetic makeup to help improve human health.”
On November 22, 2013 the School of Medicine will launch a major initiative, **Accelerating Innovation and Discovery in Medicine**, aimed at significantly and measurably increasing the pace and scope of clinical and basic sciences research that ultimately impacts human health. A cornerstone of this initiative will be the formation of an external Scientific Advisory Council, which will visit us annually and provide critical advice on our research portfolio, programs and plans, as well as offer guidance and support for junior faculty presenters.

This effort will be kicked off with a full-day symposium, the “Festival of Science,” to celebrate the groundbreaking research being conducted on campus. To celebrate this auspicious event, Francis Collins, MD, PhD, Director of the National Institutes of Health, will give the inaugural keynote address.

The first Scientific Advisory Council consists of five internationally acclaimed biomedical researchers and physician-scientists:

- **Rita Colwell, PhD**
  - Professor and Chair, US Life Sciences at UMCP • Former Director, National Science Foundation • 2006 National Medal of Science recipient
- **Carol Greider, PhD**
  - Professor & Chair, Molecular Biology at JHU • Awarded 2009 Nobel Prize for Physiology or Medicine • Member, Institute of Medicine of the National Academies
- **Philip Needleman, PhD**
  - President/CEO, St. Louis Science Center • Member, Institute of Medicine of the National Academies
- **Elias Zerhouni, MD**
  - President of Global R&D, Sanofi Pharmaceuticals • Former Director, National Institutes of Health • Member, Institute of Medicine of the National Academies
- **Ralph Snyderman, MD**
  - Chancellor Emeritus, Duke University • James B. Duke Professor of Medicine • Former President & CEO, Duke University Health System • Former Chair, Association of American Medical Colleges • Member, Institute of Medicine of the National Academies

“I am thrilled that, arguably, the world’s most preeminent scientists have agreed to be a part of this important initiative,” said Dean E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean, University of Maryland School of Medicine. “When I invited these distinguished scientists to join us for this important project, not only were they eager to help, several of them mentioned how impressed they were with the dynamic progress the School of Medicine has made over the past several years,” added the Dean.

Three academic units will be featured each year at the Festival of Science to showcase the breadth and depth of the work ongoing at the School of Medicine. The symposium will give presenters an opportunity to receive feedback and advice from the Scientific Advisory Council and their colleagues during the open sessions. Presenters and School of Medicine leaders also will have the chance to speak with Council members during small-group meetings. This year, projects from the Department of Pharmacology, the Department of Surgery, and the Institute for Genome Sciences will be highlighted, which will reflect a sampling of our robust basic, translational and clinical research portfolio.

November 22 Mark your calendars for the first annual Festival of Science!