It is easy to envision information technology (IT) as a necessary but inherently inhuman set of processes that works behind the scenes to make our lives easier. That is why it gives me such pleasure to introduce this strategic plan: at its core, it is centered on nothing less than consistently providing exceptional care to our current and future patients. By insisting that our concern for patients drive our IT priorities, it became evident that IT is a critical component in delivering efficient, reliable, compassionate care.

Unique to the intermountain west, we train the next generation of doctors, nurses, pharmacists and countless other health professionals. This plan shows how we will use the electronic medical record to help these health care providers-in-training recognize, troubleshoot and follow real patient situations.

More than any other university in our region, we accomplish ground-breaking medical research, and we have one of the most advanced biomedical informatics programs in the country. This plan shows how we will align these assets to translate research findings from the bench to the bedside and even further into our community.

We provide comprehensive care to patients who come to us from areas throughout the state and the region: more than one million patient visits in 2009 alone! IT has an integral role in communicating with patients, tracking their medical histories, diagnosing their illnesses, and providing effective follow through. All of our future IT activities in the clinical realm are planned to improve how we treat and communicate with patients and their providers.

I would like to recognize the important contributions that major stakeholders throughout the University of Utah made to create an inclusive IT strategic plan. We’ve ensured that our plan is aligned with that of main campus IT. I’d like to thank, in particular, the physician leaders and Hospitals and Clinics leadership who contributed valuable ideas and important perspective to the development of the plan.

Today, nearly everything we touch, see or consider is built upon a foundation of complex information technology (IT). To weigh the endless possibilities for IT solutions and then produce a focused and realistic road map for a large academic medical center is no small feat. I am proud to see that the new strategic IT plan for University of Utah Health Care accomplishes that task.

Regards,

Lorris Betz, M.D., Ph.D.
Senior Vice President for Health Sciences
Executive Dean, School of Medicine
CEO, University of Utah Health Care
The primary focus of this plan is to enable the operations of the clinical environment at University of Utah Health Care. What makes us unique, however, is that our physicians, nurses, pharmacists and other care providers are also researchers and teachers. We have a nationally-renowned bioinformatics program and teachers who can pair their lessons with real-world clinical data.

The Health Sciences Mission:
To serve the people of Utah and beyond by continually improving individual and community health and quality of life. This is achieved through excellence in patient care, education, and research; each is vital to our mission and each makes the others stronger.

- We provide compassionate care without compromise.
- We educate scientists and health care professionals for the future.
- We engage in research to advance knowledge and well-being.

The 2010 IT Strategic Plan embraces our health sciences mission wholeheartedly and seeks to take full advantage of our assets in research and education in the coming years.
In 2001, we set out on a visionary strategic plan with aggressive goals. Tremendous progress has been made towards these goals, yet we know more needs to be done.

Clinical Strategic Goals
- EHR journey with Cerner and Epic
- Medical and document imaging
- Clinical ancillary system refreshes
- Terminology management services

Education Strategic Goals
- Enhance education offerings
- Medical library enhancements
- Coordinated investments (e.g., high definition video services, network)

Research Strategic Goals
- Electronic research administration
- Network substructures
- High computing capacity
- Enterprise data warehouse

Administrative Strategic Goals
- Enterprise-wide systems
- First era of analytical tools
- Practice management
- Web enablement
- Disaster recovery

We met with stakeholders across University of Utah Health Care to analyze our current state. We verified our investment in very strong systems, but took note that we have not yet fully realized the benefits of what we can accomplish.

How we accomplish the work ahead will rest not in the investment of new systems but in the optimization of the systems we currently have.
Internal Drivers
We are focused on providing an exceptional experience for our patients, being one of the safest and most quality-driven health care systems in the country, and operating efficiently with a healthy financial bottom line. IT provides the information and analytics to realize these goals.

External Drivers
Over the next eight years, health care delivery and reimbursements to providers will change considerably due to the Patient Protection and Affordable Care Act of 2010 (PPAC). At the same time, the National Institute of Health (NIH) is redefining the funding and life cycle of clinical and translational research.

In order to meet quality improvement requirements and provide the basis for allocating payments to our providers, we must do a better job of collecting clinical data and integrating it with reimbursement data. These new national changes affect care providers across the continuum—from primary care through long-term home care—as well as researchers in the clinical environment.

Thanks to our strong academic programs, these changes also represent an opportunity for us to help shape the national dialog on the creation, aggregation, and use of the underlying data models.

1 Public Law 111-148, was signed into law on March 23, 2010.
Internal Challenges

While we have exceptional resources, we lack a shared governance infrastructure for IT across the clinical, research and academic domains. We must build an environment of collaboration throughout the health sciences.

We must enact changes beyond optimizing our workflow: the nature of our professional relationships, authority and budgets must change, and we must adopt more transparent models for monitoring, responsibility and accountability.

External Drivers

Health care reform and the changing economics of U.S. health care will fundamentally change the relationship between providers and health systems. We must forge new ways of working together, sharing risk, and managing clinical conditions of a population seamlessly across all settings.

Funding is a key challenge for any major initiative we undertake. Information technology requires not just one-time funding, but ongoing funding for operation and maintenance of the systems. We must carefully plan for multi-year investments when undertaking new initiatives.
Specific projects and even leaders may change, but what will not are our guiding principles. These represent our broad philosophy and enable us to make information technology initiative and investment decisions.

1. **Optimize investments.** In the past decade, we have invested more than $67 million in application, infrastructure, and professional assets. We will leverage and optimize those investments.

2. **Collaborate across the organization.** University Of Utah Health Sciences represents a unique and valuable pool of resources, expertise, and innovation that we will harness through collaboration.

3. **Align strategic portfolios.** Information technology activities and investments will be in balance with business portfolio strategies and priorities. This includes three areas of focus: patient, the clinician and operations.

4. **Build upon knowledge.** It is not just the generation and collection of knowledge that will make us strong, but also how we interpret it and apply it to clinical and operational decisions.

5. **Be value driven.** Information Technology services and solutions will be delivered at mutually agreed upon service levels and economic value.

6. **Be disciplined yet flexible.** We will seek to enable innovation while providing a stable, available, and secure information environment.
Our Goal
To enable caregivers to provide an exceptional experience every time patients use our system and at every point within it.

Challenges Today
• We don’t fully engage our wide, regional network of referring providers and provide them access to patient information.
• We have inconsistent points of entry for patients and referring providers, including fragmented systems for scheduling, registration, billing and reporting.

Changes We Will Make
1. Provide technology support for a referring provider communications strategy.
2. Import electronic clinical data via the Utah Health Information Network (UHIN) if a patient has been referred from another provider.
3. Centralize inquiries and our responses through an enterprise-wide call center.
4. Fully use the Epic for Business software (integrating scheduling, registration, billing, reporting) to make our staff interactions with patients more consistent.
5. Expand our online patient portal, MyChart, throughout the hospitals & clinics so that patients can review test results, schedule appointments, ask their provider a question, and even view and pay their bill online.
6. Utilize way-finding kiosks to help patients navigate the hospitals and clinics.
Our Goal
To provide one electronic health record (EHR) and associated knowledge management tools to all providers, available at all times.

Challenges Today
1. We must establish the funding commitment and timetable for bringing the Epic EHR to the acute care clinical environment and in so doing unite our acute and ambulatory EHRs.
2. We must make staff, governance and architecture changes to best incorporate the Knowledge Management and Mobilization plan (KMM) into our clinical information delivery process.

Changes We Will Make
1. Rollout the CareFX overlay to allow providers to easily navigate a patient’s information in both the Cerner EHR (acute environment) and the Epic EHR (ambulatory environment).
2. Ensure that all of our information systems are in place so that we can receive federal funds from the ARRA/HITECH Meaningful Use Incentives.
3. Use the Meaningful Use Incentive funding to complete the consolidation of our EHRs with Epic.
4. Incorporate evidence-based best practices and discovery from the KMM initiative into the EHR to optimize patient outcomes.

1. UNITE OUR TWO EHR SYSTEMS
2. INCORPORATE KNOWLEDGE MANAGEMENT DATA GATHERING/SHARING INTO THE EHR

CLINICAL EXCELLENCE
Our Goal
To enable leaders in our organization to make smart operational decisions by providing them with easy access to and analysis of key data, including: talent, revenue, finances, clinical data, materials, and processes.

Challenges Today
- We have invested in but not yet optimized key systems: Lawson, Oracle/PeopleSoft, Epic for Business, the Data Warehouse and IBM/Cognos.
- Several systems span multiple administrative units like IT, Human Resources and Financial Services, and optimizing these systems requires coordination and collaboration.

Changes We Will Make
1. Utilize untapped Lawson supply chain capabilities such as asset management, contract management, process workflow, and supply chain analytics.
2. Optimize the Epic for Business data collection and reporting.
3. Rollout and optimize the Cognos business intelligence tool.
4. Fund and resource the Data Warehouse environment consistent to the multiple missions (quality, research, administrative) that it supports.
5. Organize the mutual roles of Decision Support, Quality, and Data Warehouse teams so that the scope of analytical services are optimized.
Our Goal
To unite a nationally renowned Biomedical Informatics program with the clinical enterprise, enabling evidence-based research findings to reach our community faster.

Challenges Today
- There is no administrative or funding coordination between Biomedical Informatics and IT.
- Clinical researchers use diverse tools to record and analyze research data.

Changes We Will Make
1. Establish a sustainable funding allocation for a clinical informatics infrastructure.
2. Explore how clinical researchers can best use the EHR as they conduct research.
3. Create one, system-wide data registry for researchers.
4. Make information available so that:
   a. Researchers can apply the clinical record to determine the effectiveness of care pathways and to identify candidates for research.
   b. Researchers and their staff have immediate access to compliance information, protocols, consent forms and more to smooth the time-consuming administrative aspects of their work.
   c. Researchers can more easily measure the performance of their studies.
   d. Clinical research study results, as appropriate, can feed into the KMM environment to enable knowledge sharing.
5. Train EHR staff in the advanced data management practices used by the Biomedical Informatics faculty.

1. Unite the Biomedical Informatics program with the clinical enterprise
2. Enable researchers to conduct studies more efficiently
3. Enable providers to access research findings more readily
Our Goal
To provide the best hands-on clinical education for providers-in-training.

Challenges Today
- Students training to become physicians, pharmacists, nurses and other care providers have difficulty accessing the fragmented EHR environment.
- There are unclear service expectations between IT and the School of Medicine and the Colleges of Pharmacy, Nursing and Health.

Changes We Will Make
1. Expand the use of the EHR and clinical data sets in the curriculum.
2. Establish governance over student access to data and IT service to the schools.
3. Provide students and residents clinical data to support grand round preparation, departmental studies, and health services research.
4. Expand the use of clinical data sets in curricula in compliance with security and privacy guidelines.
5. Develop intra-school governance over privacy permissions for students as well as levels of IT service for clinical education.
In order to accomplish the vision of a highly integrated health sciences information environment, we have mapped out specific goals for our internal IT groups.

1. Bolster information governance across the health sciences.
   a. Broaden participation to include research and academic representation.
   b. Create a data governance committee.

2. Build a stronger information architecture.
   a. Proactively plan and envision data management with clinical, research and academic stakeholders to define priorities and future solutions.
   b. Leverage the conversion of clinical data to the ICD-10 system in order to establish common vocabularies and consolidation of data management systems.
   c. Expand informatics resources to capture data from the EHRs.

3. Focus applications on existing vendors and solutions that integrate with the current environment.
   a. Formally adopt an enterprise-wide application portfolio policy and process.

4. Broaden infrastructure to encompass all health sciences entities, be a factor in all future facility and capital undertakings, and plan for disaster recovery situations.

5. Strengthen service management for the benefit of internal clients as well as IT personnel.

Strategic plans often fail simply because there is no clear path to implement them. We have created an action plan to enable us to immediately execute this plan. We are confident that we can harness the potential of our information systems in service of our patients, our physicians, our researchers and our students, and in so doing, make University of Utah Health Sciences stronger.