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Good morning, Chairman Kingston, Ranking Member DeLauro, and distinguished Members of the Subcommittee. Thank you for allowing me to testify.

The Unique Role of Academic Medical Centers in Health Care Transformation

University of Utah Health Sciences, like all of our nation's academic medical centers, recognizes that this Subcommittee, through the effective and sage stewardship of HHS funding, holds the future of American health in its hands. University hospitals and medical schools like us are your committed partners. Together, we stand at a critical juncture in the history of health care. Our health care system is broken. We need a transformation—to provide patients safer and better care at lower costs, to focus more on health and prevention, and to fully leverage our scientific discoveries and technologies for better patient and population health. For the future of America, we must get it right this time. The successful transformation of U.S. health care depends on the vitality of our academic medical centers now more critically than ever. Why? Because (1) we have the thought leaders who will innovate our way to new solutions, (2) we make the scientific discoveries that provide new cures and new hope, and (3) we train the future workforce—their adoption of new ways of practicing medicine will sustain the transformation of health care and ensure its continued improvement. Models of funding of academic medicine and recent trends put our vitality in serious jeopardy. You have the power to restore that vitality.

University of Utah: A Case Study in the Critical Role of Academic Medical Centers

In many ways, we at the University of Utah are a typical academic medical center. Like

most university health care systems, we offer a continuum of care that is unavailable anywhere else in the community: from population health and wellness to high-end unique specialty care serving those who are too sick to be provided for in the community. Less typical, we are the only academic medical center in Utah and in a region that spans over 10% of the continental U.S., including also Idaho, Wyoming, Montana, much of Nevada and western Colorado. Our Salt Lake City facilities, satellite clinics, telehealth services, AirMed helicopters and fixed-wing aircraft give patients across the entire region access to a Level 1 trauma center, the region's only burn center, the region's only designated Comprehensive Stroke Center, and our world-renowned Huntsman Cancer and Moran Eye Centers, just to name a few. We also serve as the safety net for many low-income and uninsured people, providing over \$100 million in charity care this year.

NIH Funding & Research that Saves Lives

As academic medical centers, research and education are what distinguish us from other health care systems. University of Utah Health Sciences is home to vibrant Schools and Colleges of Medicine, Nursing, Pharmacy, Dentistry, and Health, and while there are many stories I could share with you about the impact of our work in all of these fields, I would like to bring to your attention one particular opportunity which has the potential to be revolutionary—and that is genomic and personalized medicine through the Utah Genome Project.

I'll start with the story of a Utahn – we'll call him Michael. Michael's mother died at 47. She followed Michael's grandmother, who died at 42. Colon cancer, the second deadliest cancer in the U.S., killed them both. Michael, now in his fifties, will die one day, but there is a good chance it won't be from colon cancer, because in 1987, with the help of NIH funding, University of Utah researchers identified mutations in the APC gene as the underlying cause of an inherited disease called familial adenomatous polyposis, or FAP. The lifetime risk of colon cancer for

people with this mutation is 100%. And this is not just limited to FAP patients. Scientists have determined that this mutation is also found in 80% of other colon cancers. With this genetic discovery, new drugs that target the specific cancer-causing proteins of these mutations are now in clinical trials.

This University of Utah discovery, and our discovery of more than 30 genes, including the breast cancer genes (BRCA1, BRCA2), sudden cardiac death (long QT), and dozens of other diseases, have been made possible through a unique state resource that houses massive family genealogies connected to public health and medical records, called the Utah Population Database. Thanks to the forward thinking leadership of people like you and scientific visionaries like Francis Collins, this is just the tip of the iceberg for genomic or personalized medicine. Because today, we can decode an entire human genome—over 3 billion base pairs of a person's DNA—for just about \$1000. That amount of data can be overwhelming. Searching for the genetic cause of disease in the human genome is like looking for one misspelled word in all the books in the Library of Congress. By using the Utah Population Database, however, we can compare the genetic sequences of affected family members with those not affected by disease. This is like having a magnifying glass to find that one misspelled word, the disease-causing gene. Our database currently maps the family genealogies and medical records of almost 7 million people, and it is truly a national treasure. By way of reference, the next largest database is DECODE in Iceland, now privately owned with about 500,000 records.

Thanks to work made possible by NIH funding, state and philanthropic support, and to a tradition of large families in Utah, this genetic goldmine can be a precious resource for all of humankind, helping us prevent or cure diseases from autism to Alzheimer's, from cancers to heart disease. We are calling this the Utah Genome Project. Through investments like this, your

Subcommittee can support the NIH to ensure that all of us and our children and their children, like Michael, can outlive our family history.

Sustaining the Health Care Workforce

As we move into an era of personalized medicine, we also need to ensure that we have the workforce to care for us as we age, and to secure a healthy future for the next generations. The AAMC estimates that by 2025, we will face an overall physician shortage of over 130,000 and a primary care physician shortage of over 65,000. At the same time, over 30 million previously uninsured Americans will gain insurance coverage, and the number of people over age 65 – who use twice as much health care as younger adults – will double.

Medical schools, like ours, are doing our part to address this shortage. In the past decade, we've increased enrollment by an average of 30%. But this is only half of the solution. We must also train these new graduates before they can begin seeing patients – a difficult task, as the number of federally funded residencies has been capped since 1997. With limited GME funding, academic medical centers are increasingly reliant on other federal funding streams, including Title VII, to help support new training positions and to relieve this bottleneck.

In Utah, Title VII and Title VIII funding is especially important. Of Utah's 29 counties, 27 are designated as primary care Health Professional Shortage Areas. Moreover, Utah ranks last among the 50 states in the number of active primary care physicians per capita. Title VII and Title VIII programs allow us to address these gaps by funding the education and training of nurses, family medicine physicians, geriatricians, physician assistants, and other health professionals. As the only federally funded programs dedicated for this purpose, these are crucial to ensuring that our communities – both rural and urban – receive the care they need.

Academic Medical Centers: The Future of Health Care

At the University of Utah, we are committed to leading the transformation of health care. We hold ourselves accountable for providing outstanding care, at justifiable costs, and with active patient engagement. By leveraging our thought leaders in areas like quality improvement, Lean management, system redesign, and others, academic medical centers like ours will provide relevant and sustainable model solutions to our health care crisis. We can be successful, but our funding model puts our future, and the future of health care, in serious jeopardy.

Our future is secured through our investment in research and education, and funding in both is historically insufficient. Due to the high costs of biomedical research, academic medical centers spend an additional 25-40 cents for every \$1 of external research funding received. In education in Utah, we cover the cost of 65% of a medical student's education, with only 5% funded by the state and 30% by tuition. Once these students graduate and enter residency, federal funding covers only 75% of the cost of our trainees. As a result of this systematic underfunding of research and education, we have had no choice but to divert clinical revenues to subsidize these shortfalls. However, clinical reimbursement rates continue to fall, uncompensated care costs continue to rise, and health care reform, in general, challenges us to do more with less.

It is clear that this model of subsidizing research and education from clinical revenues is not sustainable, and it's not right. We want to secure a bright future for health care, and the opportunities are truly remarkable. The time has come to address the critical issues of sufficient direct funding for research and education through NIH, Title VII, Title VIII, and other critical health and human services funding. Together, we can help HHS achieve its mission of "providing the building blocks that Americans need to live healthy, successful lives."

Thank you once again for the opportunity to appear before you. I appreciate your time and welcome any questions you may have.