



MEMORANDUM

To: USC Faculty and Staff

From: Elizabeth Garrett, Provost and Senior Vice President for Academic Affairs 

Date: September 25, 2013

Subject: University Initiative in Informatics and Digital Knowledge

The 21st century is dominated by the quantity and influence of information and data. Our lives have been transformed by the connections forged by the internet and social media; much of our research is now shaped by the possibilities of deriving knowledge from highly complex or unstructured “big data”; and our teaching and scholarship are enhanced by new avenues of evocative multimedia communication.

The University of Southern California is already a world leader in digital media, informatics, and communication. From the Information Sciences Institute, which has shaped the internet and its use for more than 40 years, to the Institute for Multimedia Literacy, which promotes effective and expressive communication; from the USC Digital Repository, which pioneers next-generation information storage and expression, to the power of our High-Performance Computer, the fifth-fastest academic supercomputer; from the life-saving, personalized therapies driven by the work of the USC Epigenome Center, to evidence-based quantitative social science research; from our top-ranked game design program, to the promise of more effective training and treatment for our military and veterans through virtual reality and avatars — USC sets the pace on the frontiers of digital media and informatics.

While we are proud of our achievements in these areas, our leadership role demands that we do more. For this reason, I am pleased to announce a university-wide Initiative in Informatics and Digital Knowledge. This initiative, rooted in our Strategic Vision, *Matching Deeds to Ambitions*, aims to support rigorous and consequential research and to create new approaches to teaching and learning. Considering the combined support of the university, the schools, and our research centers and institutes, I anticipate that we will invest at least \$1 billion in this realm over the next decade.

This initiative, designed to organize our efforts, secure additional philanthropy and external funding, and ensure coordination and partnership, will focus on four areas that are expected to increase USC's competitiveness in informatics and digital knowledge.

First and foremost, the prevalence of data at massive scales and new forms of communication will profoundly affect scholars and creative artists across all disciplines. No one is surprised that engineers and scientists grapple with the promise and perils of vast amounts of data, but the reach of this work also includes the humanities, where USC has long been an international leader in digitally-enabled scholarship, and the quantitative social sciences. Many of the transformative faculty who have recently joined us rely on the tools of informatics, harness data to deepen our understanding of the world, or create scholarship or artistic expression in digital forms. We will continue to recruit faculty throughout the university whose work advances this initiative.

Second, we will focus on the influence of informatics, data and digital media on the curriculum. USC's hybrid and online graduate and continuing education programs are projected to reach more than 7,500 students in this academic year. We are also developing new curricular offerings related to this initiative, including a Master of Science in Computer Science (Data Science), a Master of Science in Global Supply Chain Management, a Masters in Learning Design, and a Masters of Cyber Security. Technologies such as the unique iPodia platform in the Viterbi School of Engineering bring new modes of learning and interacting with the world to our undergraduate students. Wallis Annenberg Hall will feature advanced multi-mode communication labs and broadcast systems that will allow students to connect with audiences across the globe. Our university-wide digital humanities project includes Ph.D. and post-doctoral programs to engage the next generation of scholars in emerging digital technologies, including digital publication of research and creative work.

Building on these technologies and programs, USC will provide an advanced test bed that will combine experimental pedagogical techniques with rigorous, innovative content to create state-of-the-art online and hybrid educational programs. We challenge our faculty whose research pushes the boundaries of online virtual environments, interactive technologies, and game design to develop technologies that inform contemporary scholarly practices and pedagogy, to create new majors, minors and General Education courses, and to develop graduate programs that will train future academic leaders in informatics and digital knowledge.

Third, we are making significant investments in the infrastructure necessary to support research, creative work and pedagogy in informatics and digital media. USC has developed world-class information research systems, including the archival architecture and massive 40 (soon 65) petabyte digital repository of the USC Shoah Foundation Institute, the experimental USC Lockheed Martin Quantum Computation Center at ISI, and the cutting-edge brain and body imaging centers on both campuses. Dr. Verna and Peter Dauterive Hall will host a diverse set of

quantitative social science institutes and serve as a physical and virtual hub for researchers examining a range of interconnected societal issues, such as health care economics, K-12 education policy, and the psychology of judgment and decision making. We will also work to deploy a clinical data research warehouse and new tools in the fields of genomics and internet analytics. Furthermore, the medical enterprise is improving patient-centered care through the implementation of a state-of-the-art electronic medical records system throughout our private hospitals and clinical practices.

Fourth, we are bringing informatics to our community through efforts like the USC Family of Businesses initiative, which helps local businesses obtain broadband internet connectivity and other technical services. The IWitness program, envisioned and overseen by the USC Shoah Foundation Institute, allows students across the world to access and interact with a vast collection of video and multi-media materials related to the Holocaust. The Southern California Clinical and Translational Science Institute provides resources that help investigators move discoveries through the research pipeline and into sustainable public health solutions for Los Angeles and the world.

Every school will be involved in this initiative, as will many institutes, departments, and faculty. It will span all our campuses, including the University Park Campus, the Health Science Campus, ISI and the Institute for Creative Technologies, and our researchers and clinicians in all the locations of Keck Medicine of USC, Children's Hospital Los Angeles and LAC+USC Medical Center. I have asked three members of my leadership team to join me in shaping this initiative: Michael Quick, Executive Vice Provost; Randy Hall, Vice President for Research; and Peter Siegel, Vice Provost and Chief Information Officer. We will collaborate with deans, faculty, and staff leaders to ensure that our anticipated investment is coordinated and has maximum effect. Building on last winter's successful Provost-Academic Senate retreat on technology and learning, and last year's "USC Symposium on Digital Media: Research, Education and Innovation," we will initiate forums for discussion and planning, particularly with respect to research efforts, investments in infrastructure, and interdisciplinary teaching.

I look forward to seeing the substantial results of our coordinated initiative in informatics and digital knowledge, which — pursued across the disciplines — will profoundly shape not only our own community, but also the world, for decades to come.

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