"Humanities at Virginia Tech and the Mellon Scholarly Communications Program:

The Making of a Comprehensive Research University"

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Introduction

As I travel throughout the country to discuss my work on the humanities and technology, I am often asked what it is like to work at a university with "tech" in its very name. I have become quite fond of this question, as it provides an opportunity to explain a rather remarkable development—how a university first established as a land-grant military institution with an emphasis on the "mechanical arts" among other things, has become the leading comprehensive research university in the Commonwealth of Virginia and is home to numerous thriving programs in humanities.

In this paper, I explain how institutional leaders at Virginia Tech have transformed the university into a thriving environment for humanities scholarship by leveraging the significant changes wrought by the Andrew Mellon Foundation's impact on scholarly communication through the nation's academic institutions. Mellon's distinct leadership in advancing humanities scholarship has produced immense benefits indirectly to Virginia Tech, which I examine in this talk. Those efforts have been central in abetting Virginia Tech's larger trajectory of shifting from a military institution exclusively focused on technical education in the early twentieth century to a comprehensive research university with a human-centered focus that sets a new standard for the twenty-first century.

Background

Unlike most of our nation's comprehensive research universities, Virginia Tech did not originate with an emphasis on liberal arts education. Rather, it began in 1872 as a land-grant military institution. Officially named the Virginia Agricultural and Mechanical College, it was established under the Morrill Act that was responsible for creating other land-grant schools. Its chief mission was to make education accessible to a mass level of White citizens of the Commonwealth of Virginia (it conformed to the nation's legal system of racial segregation) by preparing learners for military service and for employment in an industrial economy that required unprecedented curricula in the mechanical arts. In 1944, the name was officially changed to Virginia Polytechnic Institute as "technology" and "engineering" became a more familiar term in place of "mechanical arts." By the 1950s, it had begun admitting African American students, a trend that would slowly grow in the decades that followed. In 1964 the institution ceased to require all male students to participate in the Corp of Cadets. Along the way—in the 1960s—the institution became co-educational.[1]

It was not until 1970 that the Virginia legislature granted it university status and the current name was employed—Virginia Polytechnic Institute and State University. This is still the official name of the university, although since the 1990s "Virginia Tech" has also become an official name—the more widely branded one, in fact. This was the beginning of Virginia Tech's history as a comprehensive university. It meant Virginia Tech began investing in research and in the growth of the liberal arts, human sciences, and creative disciplines in the 1970s and 1980s. This included recruiting the renowned poet Nikki Giovanni in the 1980s. The relatively recent

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[1] Peter Wallenstein, *Virginia Tech, Land-Grant University 1872-1997: History of a School, a State, and a Nation* (Blacksburg: Pocahontas Press, 1997), 1-35.

provenance of these changes is important to keep in mind, because the scale of Virginia Tech'

reinvention and its stalwart support for humanities scholarship is profound.[2]

Mellon's Scholarly Communication Funding

By the 1990s and early 2000s, Virginia Tech began to respond to the shifting terrain of

scholarship that was resulting from the Mellon Foundation's efforts to enhance the possibilities

for scholarly communication. Not all the growth of scholarly communication at Virginia Tech

has been indirect. The Mellon Foundation provided a direct grant of $219,000 to Virginia Tech

in 2002 to support the university's development of a virtual collection of scholarly resources for

studying the history of Jamestown, Virginia. This produced an interactive, publicly available

digital resource that enables users to learn about the history of Indigenous nations and European

settler activities that have shaped the history of Jamestown and the greater Chesapeake region.

This is emblematic of the way the communication of humanities scholarship for a public

audience has become more efficacious at Virginia Tech. Of equal importance was this funding

project's ability to spark growth of collaboration for digital methods of scholarship both *among*

Virginia Tech and between VT scholars and those at other academic institutions.

Early Developments in Humanities at Virginia Tech

Far greater, however, has been the Mellon Foundation's impact on the larger ecosystem

of scholarly communication, which transformed scholarship from a narrow domain of producing

a small number of printed books and articles whose circulation was typically limited to academic

scholars to what is now a breadth of dynamic content that is widely available to both specialists

and non-specialists, typically at little or no cost to the audience. The Mellon Foundation's

profound investment in digitization technologies, particularly, created a ground shift in the

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[2] Wallenstein, *Virginia Tech*, 42-60.

methods of scholarly communication and the scope of its impact. As a result, the foundation inspired colleges and universities to reconceive fundamentally what constitutes scholarship in an era of digital technology.

In what is certainly a key success of this transformation, university leaders at Virginia Tech were persuaded early-on that digital platforms could solve a classic challenge—how to ensure that doctoral research in the form of the dissertation was accessible to those scholars who might benefit from it. Many dissertations are never published as books, which means they never become publicly available to a large number of readers. Inter-library loans provided one means for readers to access a dissertation. But this requires the physical copy of the dissertation to be shipped round-trip for one user to benefit. The only alternative was creating a microform copy, which also had to be shipped physically. During the 1990s, the dean of the graduate school at Virginia Tech coordinated with the office of university libraries and the department of computer science to create digital copies of every doctoral dissertation produced by the university's graduates. The result was the Electronic-Thesis Dissertations program—ETD. The program went live in January of 1997 and made Virginia Tech the nation's first university to have such a requirement for doctoral theses. Every dissertation produced since that date is now digitally available online unless the author explicitly requests that the dissertation be embargoed. More recently, VT has begun digitizing pre-1997 doctoral theses so that every dissertation produced by a VT student will be digitally available.

Virginia Tech's library division of Special Collections became an important hub for realizing innovations in scholarly communications. As early as the 1980s, there was growing interest in producing born-digital electronic journals and digitizing paper journals. This became more realistically feasible by the 1990s as the Internet became widely adopted.

The creation of JSTOR and ArtSTOR also propelled evolution in the way VT researchers understood what constitutes scholarship and appropriate methods of communication. Virginia Tech was not a founding member of JSTOR, but it did become a subscriber in 1999. Since that time, the university has expended more than $2 million to enable VT faculty and students to have access to the digital content of JSTOR and ArtSTOR.

Virginia Tech's participation in JSTOR Forum is yet another display of Mellon's tremendously success change to the ecosystem of scholarly publishing. JSTOR Forum is a collection of images that has now been adapted to enable Virginia Tech and other academic institutions to upload local content that can be managed, cataloged, and distributed through minimal expense to achieve an optimal impact. Through this means, Virginia Tech is creating a sustainability collection that enables the university to curate items digitally and then to return the items to the owners. For scholars seeking visual content for use in their research, Virginia Tech's participation in JSTOR Forum has been especially beneficial. Because of ArtSTOR and JSTOR Forum, Virginia Tech is also digitizing its entire collection of Art and Architecture drawings so that these will be digitally available. In previous years, a researcher had to track down both images and copyright information in printed form with several searchability limits. The digital archive has changed that by created highly searchable content for academics to use for illustrating their scholarly publications. As an added benefit, copyright information is typically easily visible in this digital archive. This saves tremendous time in human labor so that scholars can devote more time to producing and articulating the interpretive significance of their findings. Virginia Tech's library staff has also expanded the awareness of Creative Commons for academic researchers to drive similar benefits.

As a pinnacle of these developments, Virginia Tech Libraries have created a special role for digital publishing strategies. The university has never had a press. So, current efforts are aimed at leveraging the absence of a legacy publishing infrastructure to advance a nimble, innovative digital publishing system that employs print-on-demand, scalable production, and highly versatile funding methods to create a means of supporting long-form scholarship for the long-term. It now appears that Virginia Tech's digital publishing strategy may offer a viable solution to ongoing concerns about the future of book publishing as academic presses come under increasing pressure to remain profitable in a market that is ever more difficult for profitability.

Digital Humanities

At the heart of innovation in scholarly communication lies the development of digital humanities at Virginia Tech. This area of scholarship has grown significantly as scholars at Virginia Tech have employed digital tools and methods of study in order to advance humanistic scholarship and creativity.

Starting in the early 2000s, Virginia Tech's administration continued to make significant changes in the support for scholarly communication by redesigning library space and investing in technology infrastructure to enable scholarship to thrive. The efficacy of these strategic developments has been especially optimal for digital humanities. Visionary senior administrators such as Thanassis Rikakis deepened the university's commitment to leveraging technology innovation to benefit scholarly communication. With this support, Virginia Tech's Dean of libraries Tyler Walters undertook a radical redesign of the library to make space for digital humanities innovation. This has included creating multiple sound booths and a recording lab so that faculty and students can create podcasts, produce instructional audiovisual content, and

digitally record creative works. As a result, podcasts are rapidly becoming an effective medium for academic researchers to impact the public through expanding the acquisition of knowledge to new audiences beyond a narrow circle of academic readers. This form of public humanities is a key success of the investment in digital humanities. Virginia Tech has also advanced digital humanities through creating the Technology-Enhanced Learning and Online Strategies division (TLOS). This division promotes faculty digital fluency in order to equip university researchers with an ever-expanding array of digital tools. This has been an important successful strategy for development digital humanities. TLOS has enabled successful digital learning experiences, and the creation of technology-enhanced learning environments. Such tools are transforming the university's capacity to communicate and distribute scholarly content in ways previous generations of academics could scarcely have imagined.

Digital studios are another area of strategic development for advancing digital humanities. The Virginia Tech libraries created digital studios that offer various types of laboratory space to create scholarly content. One of these, for instance, focuses on data visualization. Another is a 3-D printing lab. Yet another enables sonification methods to be applied to unstructured and structured data. The virtual environments studio is enabling cutting edge work to be done in immersive environments as well as enabling research on human-computer interaction and experimentally derived theories of digitally mediated presence.

The Cube is another of the important outcomes of investment in digital technologies to promote scholarship. The Cube is a state-of-the-art room in the form of a cube that began as a black-box theater. It was transformed into a room-size array of digital audio and video technology that enables the conduct of research and the production of creative scholarly content. Jointly administered by the Institute for Creativity, Arts, and Technology (ICAT) and Virginia

Tech's Moss Arts Center, the Cube is best known for its ability to immerse users within a virtual environment of visuals and sound. This immersive reality constitutes the next frontier in digital humanities output.

> One of the Cube's biggest selling points is its sound system, which creates deafening 360-degree audio with 124 standard speakers, four subwoofers, and nine additional speakers that project hyper-targeted sound, like the aural equivalent of a spotlight. It's possible to create things that could never be replicated with an ordinary sound system, like an experimental composition by ICAT media engineer Tanner Upthegrove that sends metal and chainsaws whirling around the room and wouldn't feel out of place in Hellraiser. Close your eyes in another demo — a recording from inside a tornado — and you can almost feel the tremors as wind rips away nails and wood. (https://icat.vt.edu/the-cube/)

Among the most recent developments in digital humanities at Virginia Tech is the Athenaeum. Launched in the fall of 2017, this state-of-the-art facility was developed through a partnership between the College of Liberal Arts and Human Sciences (CLAHS) and the Virginia Tech Libraries. The Athenaeum's mission is to promote the acquisition and implementation of digital research skills by undergraduate students, graduate students, postdoctoral fellows, and faculty in the liberal arts and human sciences through collaborative, hands-on experience pursuing digital research projects. It is a suite of spaces and services in Virginia Tech's Newman Library comprising a 54-person-capacity modular classroom, a smaller Collaboration Room (12-person capacity), and the Media Den recording studio. The classroom contains eight digital monitors, a swiveling HD camera for teleconferencing, and a fully microphoned ceiling; this enables collaborators physically separated by thousands of miles to interact and communicate for

digital collaboration. The Media Den is designed to provide optimal acoustic conditions for creating digital audio content such as podcasts and creative performances. Working in tandem with the library's media studios, it provides users a collaborative space for public-impact programs, consultations, design-collaborations, and even teaching.

The digital methods and collaborative space for scholarly communication in the humanities at Virginia Tech have also spawned numerous programming initiatives, including a digital humanities postdoctoral fellowship; the recipient of this fellowship is co-located in the Athenaeum with other humanists who are bringing innovative leadership to Virginia Tech's use of digital tools and methods of scholarship.

Humanities Leadership for a Comprehensive University

The important changes that emerged from the 1980s to the early 2000s set the stage for Timothy D. Sands, Virginia Tech's sixteenth president, to chart a bold direction for the university. In June 2014, Sands assumed leadership of an institution that had successfully attained national prominence for its leadership in technology innovation while developing its strengths as a comprehensive research university. But it was at a crossroads, as other universities throughout the nation were cutting support for the humanities and instead focusing on investment in technology and scientific disciplines. In sharp departure from this trend, Sands directed university leaders to develop a vision for redoubling the commitment to comprehensive education. At a university already dominated by STEM disciplines, this meant emphasizing the role of humanities. The result is the "Beyond Boundaries vision." This vision focuses on 2047—the institution's 175th anniversary year, to consider the key aspects of strategic planning that must be developed and realized in order for the university to thrive as a comprehensive, human-centered institution that promotes technological literacy, cultural competency, and empathy. By

focusing roughly three decades into the future, this vision is propelling Virginia Tech into a new era of human-centered scholarship by making humanities more central to the entire university.

This was evidenced by the university's emphasis on "VT-shaped learning." This paradigm combines disciplinary depth with transdisciplinary competency to ensure that scholarship connects across what would otherwise exist as intellectual silos. Beyond Boundaries also calls for growing the emphasis on the centrality of the human condition. In 2016, the College of Liberal Arts and Human Sciences successfully lobbied for devoting university resources to a humanities center that would support the further advancement of scholarship on the human condition and that would help showcase the important work emerging from the College at a time that society has witnessed increasing support for science, engineering, math, and technology disciplines. The result is the Virginia Tech Center for Humanities, a transdisciplinary entity formally established in 2018 within the College of Liberal Arts and Human Sciences. Thanassis Rikakis, then Provost of the university, also took an unprecedented step by creating a role devoted to the humanities within the Office of the Provost. The university had already created a provost-level role for the Arts. In both respects, Virginia Tech remains the nation's only university with such an arrangement, and it reflects the institution's embrace of humanities and liberal arts as elements central to the entire university. This is quite an advance, considering the university's origins.

Most recently, Virginia Tech has begun creating an Innovation Campus in the nation's capital region. Even this path-breaking endeavor, which will include leading programs in computer science, software engineering, machine learning and artificial intelligence, is being informed by the importance of humanities at a time that technology innovation is creating important societal challenges that require comprehensive approaches.

Conclusion: The Future Challenge for Humanities

  My academic career began at a public university—Florida A&M University, a land-grant institution. I am currently at another public land-grant university—Virginia Tech. It is remarkable that Virginia Tech began as a technically focused, military school and has become a comprehensive institution where the humanities is not only thriving but also leading university-wide initiatives for human-centered outcomes. Digital humanities innovation has borne rich fruits at this public institution. Digitization initiatives created the ground-shift that made possible the development of digital humanities as Virginia Tech. Scholarly communication is now advancing astride new digital methods that involve virtual and augmented reality and creative approaches to human-computer interaction.

  These positive outcomes, however, should not elide the fact that the larger pattern of inequality that has shaped modern society has also impacted our nation's colleges and universities. It is no secret that a book proposal or a grant application from a faculty member at a wealthy private university is far more likely to receive acceptance than a comparable application from a public university. Public universities today often receive less than 20% of their funding from the state. The rest has to be made up largely through tuition and external funding. By contrast, private elite universities have far greater capacity to fund their own initiatives given the wealth they have accumulated through private endowments. To take but one example, our nation's wealthiest university has an endowment nearly 40 times greater than the invested assets of Virginia Tech and more than 800 times greater that of the public, historically Black Virginia State University, another land-grant.

  This does not mean that private wealthy universities should not receive external grants. It is important that they do. This does mean, however, that **the future of external funding must**

be more equitable. This is especially urgent in the area of humanities, where the available external funding is more limited. In fact, as the wealth-gap widens between wealthy private institutions and public ones, foundations such as the Mellon foundation will need to consider how to counter this inequality through new approaches to equitable distributions of funding. This will require an explicit commitment to increasing funding for public institutions, including land-grant institutions as well as regional and community colleges tasked with positively impacting a broad cross-section of society.

In the coming years, it will be even more critical for our nation's public universities to receive funding from humanities foundation such as Mellon. Although the humanities are thriving at Virginia Tech, the typical story of the humanities at public universities is austerity or dissolution—closing or shrinking programs, ending faculty lines, etc. In this difficult future, humanities scholarship will rely even further on the equitable distribution of external support. The result can mean longevity and success for the humanities scholarship that is essential to comprehensive education and social thriving.