

From Beyond Boundaries

Beyond Boundaries: Campus of the future

The Beyond Boundaries initiative seeks to advance “our status as an internationally recognized global land-grant institution, and strategically addressing challenges and opportunities of the changing landscape of higher education,” as established by President Timothy Sands in May, 2015.

Four thematic groups of the Beyond Boundaries initiative have been working since September to help draw a picture of Virginia Tech a generation into the future. Later this semester, a comprehensive report will present concepts to the university community. This status report covers highlights of how this particular faculty-led group envisions campus and curricular design and requisite intersections with key stakeholders.

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We are pleased to lift up a few concepts from many emerging through the Beyond Boundaries discussions. Certain things will not change. Our land-grant legacy serves us well, but must be adapted for a 21st century world. Hands-on Minds-on experiential learning coupled with the research university mandate to apply knowledge in solving problems will continue in our DNA.

We all fundamentally believe there is something special about the residential campus experience, particularly in Blacksburg. However, we also suggest that the campus of tomorrow will not necessarily be place bound. It cannot be if we wish to become globally engaged. And whether it’s in Blacksburg, Roanoke, NCR, or elsewhere around the globe, it ought to integrate the various functions now segregated here and elsewhere.

First, we would like to Reimagine the Campus around Innovation Hubs (some have dubbed them Creativity and Innovation Districts). Campus is currently segregated into various zones for academics, living, recreating, innovating, and even business and industry, if we think of the Corporate Research Center as part of campus. Yet, we realize that physical proximity and serendipitous “productive collisions” abound on residential campuses. We believe that campus infrastructure and design ought to integrate currently segregated functions. Such hubs would incorporate living-learning communities, innovation spaces, research labs, co-located companies and start-ups, and a commons. To some extent, they would mirror “innovation districts” emerging in major urban areas around the world.

All this being said, the VT-shaped students of the future must continue to develop deep disciplinary expertise, so the envisioned innovation hubs must seamlessly intersect with the academic structures that provide core discipline fundamentals.

Most importantly, these Innovation Hubs would be linked to thematic areas of global/societal importance, something like themes envisioned in the upcoming Destination Areas. These thematic areas will evolve over time, and therefore these hubs must be flexible/adaptable and evolve at the same time. It almost goes without saying that technology would undergird Innovation Hubs. After all, not all of our students, colleagues, professors, or partners will be on campus.

Second, we envision more Human-Centered Smart Environments - digitally-enabled safe environments to experiment, prove ideas, and even fail. Simulation, virtual reality, and technology underlie these hands-on minds-on environments. Think of simulated stock or commodity trading floors for students studying financial markets. Or a fully immersive virtual environment like the Cube where physical space can be experienced and tested before building the real thing, such as Joe Wheeler recently did with the FutureHaus Bathroom of Tomorrow. Or a completely simulated city all the way down to individual simulated humans and their interactions. Such learning environments should be pervasive across the curriculum and research enterprise, and would be seeded by “Big Data” flowing from the real world.

Third, Global Engagement Hubs will be distributed around the world supporting engagements of weeks or months or years, depending on the time scale of the problem to be studied or solved. Where physical presence is necessary it would be temporary until need for long-term engagement is proven. They will be integrated with local communities and, in some cases, dependent upon local support. Local investment might come in many forms – from businesses, governments, or even Virginia Tech alumni.

Our partnership with Shandong University in China exemplifies what started as a limited partnership, in this case it was a research relationship. We are now on the verge of a comprehensive joint venture for a new university campus in China. The architecture school’s Chicago Studio leverages alumni connections for professional office space, classrooms, housing, and even to teach. This rich experience integrates many aspects of the learning environments we often try to replicate on campus. Certain principles undergird our thinking. Physical spaces must be flexible over time. They must be technology rich. Think smart classrooms (to the degree that we still have classrooms), high connectivity, telepresence, or “holodeck” like virtual engagement.