Thought Experiments (e.g. Examples of Process, Overlay and Affinity) Suggested by the UTK Faculty Senate Leadership regarding Academic Organization Review Discussions – December 2021

In order to provide some specific context for the process for academic structure changes, we present three "thought experiments" of actions that align with three of the alternatives (Process, Overlay and Affinity) posited by the Working Group. This is not at all to indicate that the Senate Leadership supports these three but rather they are included to provide some more concrete examples of the "benefits and challenges" that might be expressed for any action, as well as to indicate how such actions would connect to the timeline.

Process: Enhanced Undergraduate Flexibility
The objective is to enhance the undergraduate experience for a significant fraction of students without requiring any structural change. In this example, the goal is to provide significant additional flexibility for high-performing (e.g. those in the various Honors programs) undergraduates that particularly enhances opportunities for interdisciplinary exploration and reduces constraints imposed by standard curricular requirements. Rather than creating a host of interdisciplinary programs, this program would offer chosen undergraduates the opportunity to develop a course of student that is personalized to their interests, while still adheres to the broad principles of the Vol Vision to encourage broad disciplinary exposure. It is a modified version of the current options for independent studies programs (e.g. A&S College Scholars) that would allow some, but not complete choices of alternatives in the curriculum.

Benefits:
- Enhances the benefits of the Honors Program by allowing some flexibility compared to those not in Honors
- Empowers students to be involved in developing their own curriculum more than current
- Does not require any major new structural changes of academic programs
- Would enhance direct connections between participating students and their faculty advisor early in their academic program
- Does not create the need for any changes to BAM

Challenges:
- Requires review of proposed curriculum for each student rather than the current cookie-cutter approach
- Likely involves faculty effort rather than professional advisors earlier in the academic career
- Many students may not be sufficiently aware of career goals to benefit from the flexibility
- Would require careful consideration so that it is not focused only on certain advantaged groups of students
- Requires approval of Undergraduate Council

Overlay: Graduate Fields not Departmental Graduate Degrees
The objective is to enhance the potential for collaboration between faculty across current departmental boundaries through graduate students and allow for much more flexible graduate programs to be fostered. The process is to have graduate programs based in "fields" rather than administrative "departments" and allow faculty across the campus to be associated with these fields. Such a scheme is in place at a variety of leading institutions (e.g. UC Davis, Cornell). Rather than departments "owning" a graduate program, it is controlled by the faculty associated with a field. This

offers to enhance the connections between faculty that occur due to collaborations in mentoring a graduate student, fosters interfaces between disciplines that are constrained by the academic departments here, and does not require the creation of a "interdisciplinary college" that would only benefit explicitly interdisciplinary areas.

Benefits:
- Fosters more connection between faculty in very different academic units including across colleges
- Provides flexibility in some fields which may be constrained by the expectations of all faculty in a particular department
- More open to interdisciplinary fields
- Has been successfully implemented at several leading universities
- Provides more flexibility within a graduate program than might be available through departmentally-based degrees
- Does not require, at least initially, creation of new degrees that would require State-level approval

Challenges:
- Requires more effort of faculty involved in graduate education to devote to graduate curricular matters
- May be confusing to students who may have support in an academic department but has a degree program in a field
- Requires care in dealing with assistantships if these are based in departments rather than in the fields
- Credit for graduating students in BAM would have to be specified (perhaps to the College of the advisor)
- Requires Graduate Council approval

Affinity: College of Quantitative Sciences
The objective is to bring together many of the faculty from across campus whose expertise is in quantitative areas. This would foster collaborations in both curricular and research initiatives. It would reduce the need for every College to have its own courses in core quantitative areas (e.g. reduce the need for every unit to have its own statistics and data science courses) and foster a more uniform curricular approach to quantitative fields. The core units would be Mathematics (from A&S), Statistics (from Haslam), Computer Science (from Tickle), Data Science (from Bredesen) and Informatics (from CCI). This would also foster a more uniform approach to areas such as data science in which UTK has lagged in developing curricula relative to most major universities. As quantitative areas rapidly change with technology, it creates a unit which would be more nimble at dealing with such changes. Joint appointments with quantitatively-focused faculty based in other units would allow for collaborations.

Benefits:
- Allows for more appropriate course design at the undergrad and the graduate level based on core concepts and skills
- Allows for effective sequencing of courses that have a dependency structure across quantitative fields
- Fosters collaborations that have been essential elements of advances in quantitative sciences but are currently separated by academic units in different Colleges

- Would be a natural home for data science initiatives
- Would not initially require a host of curricular changes for degrees – could keep current degrees

Challenges:
- Need for more administration and staff support for a new College
- Would possibly upset the major donors associated with current Colleges
- Would require a new BAM implementation
- Identifying sufficient space for the associated combined units