Technology Fee Concept Paper Proposal – Bigham and Andenoro

Title: **Innovative Leaders Solving Global Challenges**

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Sponsoring Organization: College of Agricultural and Life Sciences and Department of Agricultural Education & Communication

Purpose and Objectives: Exploration of innovation in teaching and learning empowers students when linked to an authentic, real-life experiences. Video-recording technology supports the ability to capture records of these authentic learning experiences among students, community, and industry leaders. A recent initiative in the College of Agricultural and Life Sciences, the Challenge 2050 Project, provides an educational platform to document student learning and, ultimately, showcase our University of Florida leaders.

Our proposed request for video/audio recorders for the Challenge 2050 Project will meet the following objectives:

- Provide the opportunity for students to learn through recording their experiences of applying knowledge in real-world situations and to disseminate these experiences across a diverse range of audiences;
- Build collaborative partnerships using technology among students, faculty, community, and industry leaders to develop solutions to complex, global challenges;
- Assemble a database of video and audio documentation of authentic learning experiences; and
- Create opportunities to analyze data to quantitatively assess the impact of an authentic learning experience, which is important to enhance educational practices at the University of Florida and beyond.

Impact/Benefit: The College of Agricultural and Life Sciences (CALS) recently introduced the Challenge 2050 Project, an innovative approach to teaching and learning focused on preparation of 1) undergraduate students to be successful in the workforce and 2) excellence as global leaders. Challenge 2050 Project engages UF students to embrace and incorporate the transdisciplinary nature (e.g., economic, environmental, food, health, and social systems) to address complex, global challenges, such as how to sustain a human population of 9 billion by the year 2050 and beyond. Video/audio recorders increase the ability to interact with a diversity of individuals and groups. Such an outcome builds collaborative partnerships among students, faculty, community, and industry leaders who are working together to solve global challenges. There is great potential for these partnerships to be long lasting as students and society are driven to institute change via visual and audio outlets.

Upon completion of the inaugural Challenge 2050: Uncertain Future course this past fall semester, it is clear from both students and Florida's leaders that this authentic teaching and learning is in demand. Video/audio

recorders will help us meet this demand at the University of Florida and expand beyond. Students highlighted their need for video/audio recorders as a useful method to augment their expression of thinking along with development of leadership skills. Florida industry leaders highlighted the need for video/audio documentation to increase communication of teamwork and research projects. Video/audio recorders would benefit student activities in the Challenge 2050: Uncertain Future course. For example, recorders would support transdisciplinary team development of a proposal addressing real-world challenges, which is then delivered to community and industry leaders (e.g., UF/IFAS Wedgeworth Leadership Institute for Agriculture and Natural Resources). Video recorders would also support individual student community application quests, where students take the information from class and apply it in their lives/communities. Student's and Florida's leaders' reflection on the inaugural Challenge 2050 class indicated video/audio archives of these authentic experiences would have a powerful impact on current and future challenge-focused innovators.

Ability to capture video/audio documentation of the Challenge 2050 adventures does not stop with the first course. Video records would be used to support the learning objectives in three other courses in the Global Challenge Certificate (Table 1). Notably, the Global Challenge Certificate courses include eight UF faculty along with more than 25 collaboring speakers spanning disciplines across University of Florida colleges, think tank groups, small and large businesses, etc.

Table 1. Global Challenge Certificate

1) Global Uncertainty- Exploration of big-picture questions and transformative thinking.

2) Tools for Changing the World- Gaining competency as agents of change.

3) The Experience- Learning is maximized by immersion and first-hand experience.

4) The Solution- Complete project, a proposed solution to part of the challenge) with cross-disciplinary team and deliver to intended audience.

Videos/audio documentation enhances student learning in the four Global Challenge Certificate courses by 1) empowering students to consider how to document how they take action to address an unstructured, complex challenge; 2) providing students the opportunity to serve as stewards of their own knowledge; and 3) build a foundation for students to develop attitudes, dispositions, and skills critical for partnerships with stakeholders and engaging communities in this authentic, real-world challenge. Using technology to highlight the process of strategic planning, focused on solution development and implementation, is a non-traditional approach to the scholarship of teaching and learning. These are non-traditional educational approaches because students are being asked to integrate learned knowledge through all steps of strategic planning, while doing so in the context of uncertainty. Because students integrate this process in authentic situations, they realize there are no right or wrong answers to solve global challenges. Rather, technology helps students identify the complexity of the interconnectedness of disciplines through a trial and error solution-based process. This is an innovative approach in higher education with a desired outcome to prepare competent students to be competitive career leaders.

In addition to creating global leaders representative of the University of Florida, the collection of video/audio documentation will further promote the University of Florida through creation of a learning time capsule. Our goal is to create a publicly available, digital/audio library archive of student experiences, student interaction

with community and industry leaders, and students' innovative solutions to the 2050 Challenge. The learning time capsule and corresponding digital library would not only facilitate current and future students' and faculty members' learning at the University of Florida, but also extend to community members, stakeholders, or industry leaders as the time capsule may be useful in their future endeavors. Furthermore, these data obtained from visual/audio capture support synthesis of undergraduate education that will be disseminated through published papers and conference presentations. An additional impact of the consequent educational research is the potential for large-scale, higher education transformation mixing technology with non-traditional teaching and learning. If the data suggest student immersion in real-life experiences results in effective learning and retention of the experience, then this mixture has large-scale impacts through creation of lifelong learners. To demonstrate how we have begun to demonstrate large-scale impact, in the inaugural Challenge 2050 class, 40 undergraduate students, 20 faculty members, 3 administrators, 75 Florida industry leaders, and a Florida state senator were directly involved. We view the Challenge 2050 Project as only the beginning to reach individuals across diverse audiences and, ultimately, demonstrate the excellence of the University of Florida as a leader in higher education.

Sustainability: Expected cost of the requested funds is a one-time occurrence. Outcomes of the requested funding, however, are reoccurring and extend beyond the classroom. Our goal is to share the opportunities and challenges teaching with technology, from a pedagogical point of view, as a continued valuable contribution to the scholarship of teaching and learning in higher education. Visual capture equipment requested will be used in all Challenge 2050 courses included in the Global Challenge Certificate offered through the College of Agricultural and Life Sciences at the University of Florida. Visual capture equipment will also be made available to build additional immersion and internship opportunities for undergraduate students in the Global Challenge Certificate. The compilation of video/audio documentation will create a lasting repository useful for research, education, and extension outreach.

We have been allotted space from Ron Thomas and Santos Soler (UF/IFAS) to store video and audio clips on the IFAS server. Video and audio servers will be located at if-srv-video (WMV files) and if-srvv-media.ad.ufl.edu\websites$ (mp4, flv, swf, and others). Videos and audio files can be uploaded directly from computer to server and granted public access by entering the above URL on a browser. Students have given permission for their classwork to be used to advance educational endeavors via approval by signing a University of Florida Institutional Review Board approved consent form. Community members, industry leaders, and others appearing in videos/audio documentation available on the UFL server will provide written permission as well.