Innovative Strategies for STEM Instruction Workgroup Report
STEM Institute April 6th, 2013

Successes in Implementation

1. The group identified many successful active learning strategies already being used on the UGA campus and that we have a wealth of invested and motivated faculty with great expertise, including but not limited to: peer-led team learning (Armstrong – Biology), SCALE-UP classrooms (Weigert – Physics), case-based /problem-based learning activities (Dolan – BCMB, Dustman – MIBO, many others), podcast lectures/flipped classrooms (Dustman – MIBO), clickers & response systems (many), use of ipads for lecture/roving lecturers (Green – Warnell/Forestry), real-time question/message/tweet submission during class (Green – Warnell/Forestry, Dustman – MIBO).
2. The current wireless network has played an essential role in allowing faculty to utilize new technologies for instruction in our classrooms.
3. The CTL's and STEM's Faculty Learning Communities provide great opportunities for faculty to share and discuss innovative teaching ideas and strategies.
4. College of Education's Innovation 20/20 series showcases teaching innovation talks/discussions, and provides a video archive resource of the talks.

Barriers in Implementation

1. Communication between teaching units, faculty, STEM, CTL, Teaching Academy, etc. needs to be clearer.
    a. Many of us in the workgroup had no idea that programs like Innovation 20/20 existed.
    b. There seems to be a number of different education-related email listservs: PRISM, CTL, Teaching Academy, Department Seminars (e.g., brown bag series talks)
    c. While UGA has lots of innovative teachers, most of us are aware of 'experts' only by word of mouth.
2. Need to keep the wireless network improving –
    a. Need adequate signal strength in all classrooms
    b. Number of connections could quickly become limited as more users come
    c. More technology equipment would be useful to faculty – air servers, for example
3. Majority of learning spaces on campus are not physically conducive to many active learning techniques
4. Large class size can be an impediment to active instructional techniques – high student to faculty ratios

Resources Available

1. Innovation 20/20 archives
2. FLC's
3. Departmental, CTL & Teaching Academy sponsored seminars which focus on teaching & education are regularly offered
4. SCALE-UP rooms – we have one, nearly two, in Physics
5. Wireless/cloud is much better than it used to be

Next Steps

1. Investigate and refine communication across campus: Can all these listservs be integrate into one UGA-wide communication resource? – low $
2. "Pools of Intelligence" – We felt that if there was a go-to resource/repository that identified faculty at UGA who were leaders in innovative teaching (via a searchable index, perhaps) that it would aid others in finding collaborators out of our academic specialties and schools/departments and encourage others to try new techniques. – low $
3. Invest in some additional technology for classrooms - Air servers and 2Screens software for instruction, for example, to allow faculty to step away from the lectern and engage with students, while using an ipad for presentation. – low $
4. Expand FLC's, departmental seminars and CTL/Teaching Academy seminars on education topics. – low $
5. Encourage/reward participation in FLC's, brown bag seminars, Innovation 20/20, and the like to get more faculty (plus post-docs and grad students) involved. (Better communication of the seminars, for example, would aid this.) – med to high $
6. Renovation of learning spaces to include more SCALE-UP, mobile learning environment spaces across campus. – high to very high $