

## ACS 2024 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

O-09

### Promoting Technology and Collaboration

#### Fostering Innovative Mindsets Among Medical Students through Multidisciplinary Collaboration

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**Background:** Successful surgeons and physicians usually are very risk averse, and we avoid trying new things without having strong scientific evidence that would support a safe implementation of any innovation. Inherently, these behaviors prevent innovation. For the last seven years, we have implemented an innovation curriculum in our first-year medical students to create innovation mindsets during their early career formation. The faculty involved in this course includes Surgeons, Computer Scientists, Designers, Electrical and Biomedical Engineers, Nurses, Patients, etc.

**Technology Overview:** From 2016 until 2023, at the Mohammed Bin Rashid University of Medicine and Healthcare Sciences, in Dubai, UAE, we have implemented a 15-week course, part of the compulsory formal curriculum for all medical students. This course includes lectures and hands-on tutorials on innovation, digital health, artificial intelligence, wearables, 3-D printing, virtual and augmented reality, among other technologies. A defining component of the course includes Design Thinking, and students through a rigorous eight weeks identify voids in the market and common health care problems. By the end of the course, they design innovative solutions that transcend conventional boundaries, be it a mobile phone medical app, a new patient experience, or even a novel patient gown.

**Potential Application in Surgical Simulation and Education:** Until now, nearly 400 medical students have graduated this transformative course successfully, and nearly 60 different innovation projects have been designed and proposed by our students. While such proposals of innovation end up in simple prototypes, they are shaping innovative mindset and some of our students later in their medical school pursue more formal innovation projects.

**Potential Opportunities to Collaborate:** We proposed integration of innovation courses in the core curriculum of medical schools, along with active engagement of non-medical faculty members including diverse array of stakeholders involved in medical innovation.