

# The Surgery Innovation and Entrepreneurship Development Program (SIEDP): An Experiential Learning Program for Surgery Faculty to Ideate and Implement Innovations in Health care

Jonathan Servoss, MEd,\* Connie Chang, MBA,\* David Olson, PhD,<sup>†</sup> Kevin R. Ward, MD,\*<sup>‡</sup> Michael W. Mulholland, MD, PhD,<sup>§</sup> and Mark S. Cohen, MD, FACS<sup>§</sup>

\*Medical School Office of Research, University of Michigan, Ann Arbor, Michigan; <sup>†</sup>Office of Technology Transfer, University of Michigan, Ann Arbor, Michigan; <sup>‡</sup>Department of Emergency Medicine, University of Michigan, Ann Arbor, Michigan; and <sup>§</sup>Department of Surgery, University of Michigan, Ann Arbor, Michigan

**OBJECTIVE:** Surgeons are continually engaged in the incorporation of new technologies in their practice. In the operating room and beyond, they combine technical skill with creative problem solving to improve tools and techniques for patient care, making them natural innovators. However, despite their innovative tendencies, education on entrepreneurship and commercialization is severely lacking. Moreover, with increasing pressure to meet productivity metrics, their availability to learn the complexities of commercialization is limited. To address these challenges, we designed the Surgery Innovation and Entrepreneurship Development Program (SIEDP) with the objective to advance faculty innovations, develop new departmental innovation initiatives, and improve faculty education in the area of innovation, entrepreneurship, and commercialization.

**DESIGN:** The SIEDP is a first-of-its-kind experiential learning program specifically designed for busy clinical and research faculty in a major academic surgery department. Participants ideated and formed teams around health care innovations as they progressed through a 9-month curriculum of expert guest lectures and interactive

workshops. A postprogram evaluation and outcome tracking method was used to evaluate attainment of educational objectives and project development milestones.

**SETTING:** The Department of Surgery, University of Michigan Medical School, Ann Arbor, Michigan.

**PARTICIPANTS:** Eleven surgery faculty of varying academic rank and surgical subspecialties.

**RESULTS:** The program generated 2 faculty startup companies, 1 departmental commercial product, 3 patent disclosures, and 3 innovations that received additional funding. All participants in the program reported a significant increase in their understanding of innovation and entrepreneurship and that participation was a worthwhile faculty development activity.

**CONCLUSION:** Despite the various challenges and time constraints of surgical practices, programs like SIEDP can educate surgeons and other academicians on innovation, entrepreneurship, and commercialization and add value to the academic mission of providing excellent education, research, and clinical care. (J Surg Ed 1:111-111. © 2017 The Authors. Published by Association of Program Directors in Surgery All rights reserved.)

**KEY WORDS:** innovation, commercialization, entrepreneurship, faculty development

**COMPETENCIES:** Patient Care, Interpersonal and Communication Skills, Systems-Based Practice

*Correspondence:* Inquiries to Jonathan Servoss, MEd, Office of Research, Fast Forward Medical Innovation, University of Michigan Medical School, 2800 Plymouth Road, Building 520-3132, Ann Arbor, MI 48109; e-mail: [servossj@med.umich.edu](mailto:servossj@med.umich.edu)

*Correspondence:* Inquiries to Mark S. Cohen, MD, FACS, 2920 K Taubman Center, SPC 5331, 1500 E. Medical Center Dr, Ann Arbor, MI 48109; fax: (734) 936-5830; e-mail: [cohenmar@med.umich.edu](mailto:cohenmar@med.umich.edu)

## INTRODUCTION

Health care is currently experiencing great uncertainty at many levels. Academic medical centers, in particular, face increasing pressure in attempting to compete with non-academic health providers while fulfilling their tripartite missions of clinical care, research, and education. This uncertainty, combined with limitations of federal research funding, adds additional pressure to provide a continual source of innovative ideas for health care impact.

Surgeons are frequently engaged in the incorporation of new technologies in their practice. In the operating room and beyond, they combine technical skill with creative problem solving to improve tools and techniques for patient care, making them natural innovators. Surgeons are also keenly aware of how health care delivery and patient workflow can affect outcomes and overall costs. While surgical training and faculty development have evolved, one area that remains a challenge is the education on how to navigate innovation, commercialization, and entrepreneurship more effectively. Even surgeons who have had a lifetime of clinical training and experience may lack the necessary tools, skills, and network to successfully take an innovation from an idea to an actual product or service that can impact patient care. Moreover, with increasing pressure to meet productivity metrics, their ability and bandwidth to learn the complexities of commercialization is severely limited.

To address these challenges, we describe the development and implementation of a first-of-its-kind program in innovation and entrepreneurship, specifically designed for clinical and research faculty in an academic surgery department. The Surgery Innovation and Entrepreneurship Development Program (SIEDP), a collaborative program between the University of Michigan Medical School's (UMMS) Fast Forward Medical Innovation (FFMI) program and the Department of Surgery, is an educational program combined with mentorship for faculty in the area of innovation and entrepreneurship, designed to develop and advance surgical innovations toward commercialization.

## METHODS

### Program Strategy

Program planning for SIEDP was led by an Administrative Director from FFMI and the Associate Chair for Innovation and Entrepreneurship within the UM Department of Surgery. Approximately 3 months of planning were required to receive approval for implementation, hire a Lead Instructor, develop the curriculum, and select the faculty participants. Participants were selected based on their interest in innovation or previous experience with commercialization as demonstrated by activities within the department or through interactions with FFMI. The targeted approach to selecting faculty ensured the correct participant

to instructor ratio so projects could receive adequate coaching and mentorship. Several of the participants were already working on individual projects that had some preliminary commercial viability; however, dedicating the time and seeking expert advice was challenging. Those without personal innovation projects with commercial viability had an interest in developing innovative strategies to enhance the department's mission to excel in its tripartite mission. The incentive for faculty to participate was the opportunity to accelerate any personal innovation with dedicated time to work on the project under the direct mentorship and guidance of an experienced Lead Instructor and the FFMI commercialization team, as well as the ability to create and develop new departmental innovation strategies as an educational experience within the program. The incentive for the department to structure the program was to offer the educational experience as an investment in faculty and provide a mechanism for innovative ideas to be implemented within the department or commercialized as products. The overall goal was to provide dual opportunities for participants to advance their personal idea, as well as learn specific innovation concepts by forming teams around a department project.

To generate department innovation projects, participants brainstormed during an ideation session at the onset of the program to develop ideas and innovations in the areas of clinical care, education, and research. After forming teams around the projects, the curriculum facilitated individual working sessions for teams to apply concepts to their department innovation project, as well as any personal innovation with commercial potential. Furthermore, under the guidance of a Lead Instructor with expertise in innovation, biomedical technology development, and entrepreneurship, the curriculum successfully balanced the portfolio of department innovation projects and personal innovations with commercial potential by offering the coaching and oversight to develop a comprehensive business case for both. In addition, the guest lectures from various University of Michigan (UM) schools, colleges and units, including UMMS, Engineering, Law, Information, Office of Tech Transfer, Food and Drug Administration (FDA) regulatory leadership, private industry contacts, and venture capital partners, created perspectives and exposure to strategies that faculty participants can use throughout their careers to creatively address patient needs via a rigorous and methodical innovation and commercialization process.

### Program Objectives and Structure

The 9-month program consisted of monthly sessions scheduled on Fridays from 9 AM to 2 PM during regularly scheduled and protected faculty development time within the Department of Surgery. For each session, participants convened to hear expert presenters, workshop department innovation and commercialization concepts in teams, and present findings to the group for

Download English Version:

<https://daneshyari.com/en/article/8834648>

Download Persian Version:

<https://daneshyari.com/article/8834648>

[Daneshyari.com](https://daneshyari.com)