



Academic Entrepreneurship: The NSF I-Corps Program—Part II

Today, the I-Corps program is a nationally-renowned initiative with sites throughout the U.S. One full site was launched at the University of Central Florida (UCF) in January 2015 and was the first I-Corps program in the state of Florida.

This program is customer-focused learning and targets early stage startups. It promises that spinning off an invention into a business is a process that can be learned and systematically executed. This program serves as the platform to initiate a conversation between your team members on one side and the market and customer on the other side, test your idea, and provide a better sense of direction for your idea and its applications. It helps students gain the resources, knowledge, confidence, and skills to enter an industry mindset and to convert their creative ideas into something tangible and useful. The training also teaches learning more about the entrepreneur. It helps them ascertain the skills to create successful businesses and, in turn, stimulate the economy. The I-Corps program utilizes the scientific method to test and validate potential opportunities. The program is built on a framework of business model canvas and customer discovery and validation. It focuses on evidence and experience based lessons versus theoretical learning,

making it a unique accelerated entrepreneurship training experience. Unlike traditional lecture-based courses, the I-Corps program is a flipped, practical, hands-on learning lab that helps teams live and engage in the entrepreneurial experience through a systematic process of structured activities and mentorship by industry experts. Each participating team experiences a simulation of startup and the entrepreneurship process in the real-world environment that includes chaos, uncertainty, impossible deadlines, and conflicting input.

The key features of the program are as follows:

- The I-Corps program is a real time process that helps accelerate the innovation process and gives participating teams exciting opportunities in entrepreneurship education. The design methodology consists of tools, materials, templates, actions, assessments, and decision-making points. At every point a decision is made, a new set of steps are required to be followed to keep the teams engaged and moving forward in the program.
- I-Corps focuses on making better informed “go-no-go” decisions. Therefore, increasing the number of qualified “go” decisions is as important as increasing the number of “no go” decisions when the discovery process indicates that they are the better decision.
- Participants are expected to commit 10–15 hours every week to per-

form market research, customer discovery, and other commercialization-focused activities. Teams conduct interviews and report their findings on a weekly basis. Instructors provide materials in class and use online educational delivery methods.

- I-Corps offers proven curricula, tools, and methodologies such as the Business Model Canvas (BMC) and Lean Launchpad (LLP) to help entrepreneurs determine the feasibility of their potential venture. Through the Customer Discovery process, I-Corps requires team members to reach outside of the academic environment to speak with potential customers and identify the impact their innovation may have within the market or on a specific industry. Using the BMC, the assumptions of the initial business models are then updated based on the gathered information to help entrepreneurs make informed decisions based on actual data.
- Key component of the course is *customer discovery*. It is your chance to listen to the voices of your future customers. The customer discovery phase is crucial to collect badly needed input from your targeted markets.
- The program, through series of questions and calculated steps, helps you to define your *value proposition*, i.e. what your technology does to solve customer

problems when compared to the competition, and to know whether customers are ready to buy-in on what you are offering. It helps to boost your confidence and bring clarity to the proposed value proposition and gauge the size of your customer base.

- Each team must develop a *minimum viable product (MVP)* to test their product, its market viability and whether it meets its promised market value. This is a crucial step in the process.
- Then comes the key point when you must be honest with yourself to pivot or simply abandon the proposed idea with minimum loss. It might seem ironic but failing fast at this stage is a blessing, because minimum funds have been spent up to this point. It gives you the opportunity to pivot with confidence.

I-Corps Teams Analyzed

Recently, an analysis of 130 teams out of 150 teams who completed the program at the UCF site (between January 2015 to November 2018) showed that 58% of the

teams end up founding a startup and moving on, while 42% had to either completely cancel their plans or pivot to totally new adventures. The team connection with the host university was clear. Thirty-eight teams formed new ventures based on UCF research, and 18 patents were licensed from UCF. Teams are pursuing 51 Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) and other grant opportunities, and 29 grant proposals or applications have been submitted. It is also interesting to note that two of the teams that were previously declined a SBIR award received grants after taking the course. The program manager expressed that taking the I-Corps curriculum made a big difference in the quality and attractiveness of their proposals.

Summary

Given the technical and relevant nature of our R&D in power electron-

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ics, I believe there are many start-up opportunities that could lead to new technologies with reduced cost, more reliability and increased function-

alities. If you are the reluctant faculty who has the itch to become entrepreneur and who believes that you have developed a new technology: identify your business opportunity, define your success terms, take a deep breath, and when the opportunity knocks, take a dive. A dose of passion will help! I have been a faculty and entrepreneur simultaneously over the last 15 years. It has been rewarding to me and students, and has given me a sense of societal purpose. If you decided this is for you, I wish you the best. Enjoy the journey and the ride.

About the Author

Issa Batarseh (issa.batarseh@ucf.edu) received his B.S. degree in electrical and computer engineering and his M.S. and Ph.D. degrees in electrical

engineering from the University of Illinois, Chicago, in 1983, 1985, and 1990, respectively. He is currently a professor of electrical engineering in the Department of Electrical and Computer Engineering, University of Central Florida, Orlando, USA. He is the founder of two startups in power electronics, Petra Systems and ApECOR, and is a member of the National Academy of Inventors. Plus, he has been inducted into the Florida Inventors Hall of Fame. He is a Fellow of the IEEE.



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