Institution Submitting Request: University of Utah
Proposed Title: Center for Engineering Innovation
Currently Approved Title:
School or Division or Location: College of Engineering
Department(s) or Area(s) Location: College of Engineering
Recommended Classification of Instructional Programs (CIP) Code (for new programs): 15
Current Classification of Instructional Programs (CIP) Code (for existing programs):
Proposed Beginning Date (for new programs): 07/01/2013
Institutional Board of Trustees' Approval Date:

Proposal Type (check all that apply):

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*Requires “Section V: Program Curriculum” of Abbreviated Template

Chief Academic Officer (or Designee) Signature:
I certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

____________________________________
Signature
Date:

Printed Name:

1 CIP codes must be recommended by the submitting institution. For CIP code classifications, please see http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55.
Section I: Request

Establish a professionally staffed and organically growing center for engineering innovation that focuses on translational development work, bridging the gap between basic science and engineering innovation and commercial product development. This center will be instrumental in (1) facilitating sustainability and success of existing and future startups, (2) maturing and de-risking technologies and thus increasing IP value, and (3) developing a source of larger scale contract funding for sponsored research and development. The proposed director of the new center, Professor Florian Solzbacher, Ph.D., met with every Department Chair in the College of Engineering to poll their support and expectations of the new center. Some Department Chairs requested presentations in their faculty meetings and encouraged their faculty members to meet with the proposed director one on one. The proposed center director also met with the Associate Vice President of TVC, the director of the Pierre Lassonde Entrepreneur Center, and the director of the Center for Medical Innovation to request their feedback and buy-in.

Section II: Need

On a national level, government funding for education will likely continue to decline over the coming decades and conventional federally sponsored research funding will at best stay constant, but with increasing competition for those dollars, the University should strive to develop new revenue streams.

The University, with the help of the USTAR program, has developed a national reputation for spinning out startup companies. Success, however, requires survival and sustained growth of those businesses.

We have the unique opportunity to make Utah the leading institution for translation and engineering impact while delivering on USTAR promises and diversifying the income base. Currently, there is no facility in the state or intermountain region offering what the Center for Engineering Innovation is proposing.

CEI had the opportunity to showcase their services at the recent USTAR Confluence Meeting titled “Where Research Meets Commercialization.” Attending was David Marriott, a business owner of a 40-employee company in the state of Utah. Following the meeting he sent an email to Ivy Estabrooke with the following comment, “As a result of the conference, I and some of our engineers met with Florian Solzbacher and some of his staff about possible collaborations at the UofU's Nanofab. I was blown away by the resources available to me as a small business. My impression is that the SME Community is not tapped into these world-class facilities nor the individuals driving the tech forward. I can't help but wonder how many small business have no idea what is available to help them move their technology forward.” This quote strongly demonstrates a need in the community that CEI can provide.

Section III: Institutional Impact

The College of Engineering, with the Utah Nanofabrication Laboratory as a University core facility and recharge center, is proposing the establishment of a Center for Engineering Innovation, which would be a partner with the School of Medicine Center for Medical Innovation.

Activities:
- Help mature technologies still in the research stage and increase their IP value through prototyping services
- Support TVC with technical knowhow
- Advise faculty and student inventors on commercialization issues
- Provide service for local industry through contract research and development
- Support early stage (SBIR-type) engineering / translational development
- Support small businesses and UofU startups with access to professional/senior support personnel
- Connect entrepreneurial researchers across college boundaries

Success Metrics:
- Increase in industrial and government development contract/service income to UofU (including SBIRs)
- Increase in licensing fees per license
- Increase in UofU spinoff survivability/sustainability
- Increase in sustainable job base in UofU startups and Utah tax income
- USTAR metrics (jobs, payroll, etc.)

Business Model/ROI:
- Mirrored after other non-profit translational/engineering centers: e.g. Draper Laboratories, Fraunhofer, Johns Hopkins Applied Physics Laboratory
- Leverage existing Nanofab recharge center, staffing and infrastructure for center start
- Leverage existing Microsystems research team and Dept. of Electrical & Computer Engineering support staff for center start
- Report to the College of Engineering Dean’s Office for oversight

Section IV: Finances

Part A: Grants and Contracts
Secured Grants in place and in process totaled $7,400,677 of which $2,468,159 benefited the Department of Electrical Engineering. Of these secured and pending Grants within the Department of Electrical Engineering, projected funding expenditures are estimated as follows: $874k in FY2015, $1,012 k in FY2016 and $600k in FY2017

Part B: Gifts/ New Revenue
As of December 2014, the Center for Engineering Innovation has invoiced $178k. CEI has secured $281k in purchase orders, and issued an additional $59k in quotes. There is currently $473k in contracts under negotiation. New revenue is expected to come from new and repeat customers.

Part C: Salary Program
All senior experienced personnel are assumed to eventually derive at most 25% of their pay from CEI related to development work. This effort pool available to CEI is then utilized to develop new business and as a billable resource for billed contract work through the Nanofab. Net payroll remaining in CEI will depend on Nanofab time and sales related to CEI leads. Annual increases of 3% are assumed for following years.

Part D: Cash Reserves
Current fund balance with projected existing personnel cost through the end of FY2015 is projected at a deficit of $103k.

Part E: Support
Pledged support for FY2014 totaled $351,200 with contributions from the Office of the President of the University, the Office of the Vice President for Research, the College of Engineering and the Utah Nanofabrication Laboratory. Pledged support for FY2015 totaled $268,340 with contributions from the Office of the President of the University, Senior Vice-President of Academic Affairs and the College of Engineering. Dr. Florian Solzbacher also contributed $24,000 personally in support of key personnel.

Upon approval of the Center for Engineering Innovation, a new ORG ID will be requested. An overhead agreement will be negotiated to redirect some of the overhead back to PI’s working within the center on translational work, with some overhead returning to departments.
CEI is affiliated with the Utah Nanofab Core Facility and has approved billing rates through this facility. Rates have been established for on-campus users, off campus users with federal funding, and off-campus users with non-federal funding. Rates for off-campus users with non-federal funding will be 2x campus rates to help off-set administrative costs within the center.

CEI personnel are identifying new interdisciplinary collaborations in which proposals are being submitted to obtain grant funding. In addition, CEI is working with industry to collaborate on SBIR proposals. Funded awards will off-set personnel costs and contribute to the sustainable funding.

Facilities: The Center for Engineering Innovation is currently located in the Sorenson Molecular Biotechnology building. The Director and Research Faculty require use of office space. The administrative assistant occupies a cubicle space. CEI personnel utilize equipment resources located in the Utah Nanofab Core Facility, Surface Science and Analysis Laboratory, and other affiliated labs. Space will be used dynamically and requests for additional space will follow need. Space in the Sorenson Molecular Biotechnology building is overseen by the Sr. VP for Research.

Section V: Program Curriculum

***THIS SECTION OF THE TEMPLATE REQUIRED FOR EMPHASES, MINORS, AND CERTIFICATES ONLY***

All Program Courses (with New Courses in Bold)

N/A

Program Schedule

N/A