



THE UNITED STATES' EXPERIENCE

**TITLE:**  
**ENGINEERING SERVICES AND BUSINESS COUNSELING TO SUPPORT THE  
WESTERN NORTH CAROLINA REGION**

**GENERAL INFORMATION**

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**Country:** U.S.A.

**Coordinating Institution:** Western Carolina University, Cullowhee NC

**Duration of the experience:** June 2012 - Present

**Webpage:** <http://www.wcu.edu/academics/departments-schools-colleges/Kimmel/index.asp>



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**1) Objectives**

Through the Center for Rapid Product Realization (the Rapid Center), the Kimmel School at Western Carolina University (WCU) offers the services of a product development center for inventors, entrepreneurs, project sponsors and business partners throughout the Southeast and beyond. The Rapid Center offers a full suite of prototyping services, including 3-D printing using a large variety of materials, including plastics and metal. In partnership with the College of Business and the North Carolina Small Business and Technology Development Center (SBTDC), the Rapid Center has been designated a University Center (UC) and is partially funded by the Economic Development Administration (EDA), an agency of the U.S. Department of Commerce. The UC is focused on working with businesses to develop and launch new products, resulting in economic growth through job creation and retention.

## 2) Relevance

The WCU University Center provides a full suite of business and product development services to clients in the region. First the SBTDC representative in the Center meets with clients, at no cost, to evaluate their ideas and to discuss paths to commercialization. Next, the Rapid Center assists the clients in product design and development. This work is performed as a fee-for-service, but the client retains 100% of the intellectual property for their product. In parallel, the SBTDC and the WCU College of Business assists the clients with marketing planning and commercialization strategies. In concert, these services maximize the probability of translating good ideas into successful products. These services are available to any client, ranging from large businesses staying competitive in a global market to entrepreneurs launching a new business in the region.

## 3) Concrete activities and actions

The WCU University Center assists approximately 150 clients each year. A medical professional contacted the Center about a concept she had for a stethoscope modification to reduce patient-to-patient transfer of infectious pathogens. The SBTDC representative and the Rapid Center Director (Principal Investigator for the EDA grant) met with her to discuss her concept. The SBTDC representative worked with her to develop a market strategy, while the Rapid Center Director assembled a small team comprised of two students and one Center engineer to design and prototype the first stethoscope device. A team of nursing students evaluated the device in a clinical environment, while the College of Business analyzed the clinical feedback and translated the results into another design spin for the engineering team. Within four months the concept was accelerated to a functional prototype and a patent application for the client. In another example, the Center recently assisted a large international business on three separate projects in process improvement and lean manufacturing. The company has already implemented two of the three deliverables, reducing material waste (one project) and improving manufacturing and packaging quality (the other project).

## 4) Achievements and results

The scope of work for the University Center has a commercialization focus, resulting in the launch of new products, the creation of new jobs and increasing capital investment through these efforts within the region. The objective tasks are: (1) Providing strong and innovative product development and commercialization assistance to entrepreneurs and regional firms; (2) Connecting vetted opportunities with willing financial backers; (3) Documenting and demonstrating economic development results; and (4) Disseminating information and project results to the target region. Quantitative outcomes are measured and reported to the EDA annually by the number of (1) Inquiries received; (2) Clients counseled; (3) Projects completed; (4) New products launched; (5) Jobs created or retained; and (6) New capital investment. For the year covering July 2013 – June 2014, the Center reported 149 requests, 85 clients counseled,

55 projects completed, 16 new products launched, 223 jobs created or retained, and \$673K of new investment. These results exceeded the targets established for the region and represent a sustained contribution to economic growth in the Western North Carolina region.

## 5) Sustainability

The results reported in Section 4 represent a recurring theme of a value-added model for the region. Much of the support resulting in job creation/retention, as well as new investment stems from the Center's extensive engineering and prototyping capability including rapid 3-D printing. Center clients may quickly receive and evaluate functional prototypes of their concepts, which aids in their movement to manufacturing processes or seeking outside investors. As a not-for-profit university center, fees for service are set at the lowest possible rates, so that the services may be available to all business and individual inventors and entrepreneurs. All intellectual property is retained by the client in order to maximize their ownership in the technology transition. The model and the results reported here are accommodated by (1) A small North Carolina recurring budget, and (2) a modest recurring (2012-2017) EDA grant. The model and results are sustainable with a continuation of (1) and (2), and may be scaled up or down accordingly.

## 6) Lessons learned

The University Center is positioned to increase its leadership role in economic development for the region and beyond over the next five years. With the continuation of the EDA grant and the excellent new partnerships developing with other colleges across the campus (Business, Nursing, Biology, Chemistry, Computer Science), the Center has the ability to provide "full-spectrum" services to inventors, entrepreneurs and established businesses. This open, cross-collaboration has taken a number of years to develop, and is in fact, still developing. Additionally, the Center has partnered with other agencies and centers across the State and the region. Many of the processes employed by the University Center and the Rapid Center are proven and serve as a success story for the university and for regional economic developers. Given the opportunity to repeat this model, I would initiate joint partnerships and proactively overcome administrative hurdles in cross-college and multi-university operations. Additionally, I would establish more active partnerships with Research and Development Centers within private businesses in the very early stages. These are just developing now for our University Center and proving to be an excellent "force multiplier" for the region.

7) Capacity for the exchange of this experience

Cooperation modality	Cooperation modalities the institution can provide to others	The institution may be able to provide this cooperation to others by
Information Sharing	X	Now
Conference Calls	X	Now
Videoconferences	X	Now
Workshops	X	September 2014 – June 2017
Technical and Experts Visits	X	September 2014 – June 2017
Other(s) – please describe Network building and facilitation	Collaborative development	September 2014 – June 2017

8) Author of this story

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9) Key persons involved in the design, implementation, and evaluation of the experience

9 a.

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