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Title of Issue: Engineering Outreach

Please describe in detail the issue you wish the Umstead Review Panel to consider.

Western Carolina University's Kimmel School of Construction Management and Technology offers B.S. degree programs in construction management, electrical and computer engineering technology, electrical engineering, engineering technology, the Master of Science in Technology, and the online Master of Construction Management.

Its mission includes a Service and Engagement function defined as follows:

- Supporting engagement through professional, industry-related, and community service activities for faculty and students.
- Utilizing the school's faculty and staff expertise for the benefit of students, industry, government, and society throughout Western North Carolina.[1]

The Center for Rapid Product Realization (Center) is an arm of the Kimmel School. Its mission is to match the Kimmel School's expertise and resources to Western North Carolina's needs by forming effective partnerships aimed at growing the region's economy.

The vision for the Center is to be known and respected throughout the region as an innovative, can-do partner and as the primary resource for technical assistance and technology transfer for government, business and industry officials interested in local economic growth and job creation.[2]

The Center desires to improve the access of the Western North Carolina community and the people of the State to the Kimmel School's facilities, equipment and expertise as contemplated by N.C.G.S. 66-58 (b)(8)o. To that end, the Center proposes to offer a suite of services 1) to stimulate economic transformation 2) facilitate the development of new product, processes and services for the Western North Carolina region and 3) to develop Western North Carolina as an attractive region to create and locate businesses, particularly advanced technology companies.

The services to be offered by Kimmel School faculty through the Center are:

- Engineering design and analysis
- Prototyping of products
- Rapid Prototyping of components and systems including low volume pre-production of new products prior to investment in molds and full scale production tooling
- Testing and Evaluation of Products, Systems and Manufacturing Processes

The primary service region will be Western North Carolina and the State of North Carolina. The secondary service region will be the area encompassed by a 200 mile radius around Cullowhee, NC, a multi-state area that has a clear and direct impact on the development of Western North Carolina. After serving the primary and secondary regions, the Center will provide service across the entire country as time and resources allow.

Service will be provided pursuant to contract. Administrative overhead (as appropriate), direct costs

and program support funds will be recovered for all services provided in the primary and secondary regions. It is anticipated that these charges shall be less than the market rate for equivalent services. Full market rate will be charged for services delivered outside the primary and secondary regions.

Services would be offered continuous throughout the year. Annual transactions could reach 50-100 per year.

[1] See Kimmel School Vision and Mission Statements attached hereto.

[2] For more information about the Center see the attached brochure.

Attachments:

1. Kimmel School Vision and Mission.pdf
 2. engtech rapid brochure.pdf
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RELATED LINKS

[Kimmel School Diversity Statement](#)

[University Mission Statement](#)

ENGAGEMENT

Kimmel School faculty have defined engagement based on the premise that faculty play a major role in economic transformation for Western North Carolina. From senior capstone projects to service projects to collaborative efforts with business and industry, we ask ourselves:

"What are you doing to sustain jobs in Western North Carolina OR create new economic opportunities for the people of Western North Carolina OR improve the quality of life for the people in the region?"

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Kimmel School Vision & Mission Statements

Mission Statement

Kimmel School offers B.S. degree programs in construction management, electrical and computer engineering technology, electrical engineering, engineering technology, the Master of Science in Technology, and the online Master of Construction Management.

The Kimmel School is committed to its statewide mission for education and its regional mission for engagement. The Kimmel School provides innovative programs for students in construction management, engineering and technology in an environment supporting economic development, professional development, and engagement of businesses and industries.

The Kimmel School fulfills the academic missions of teaching (learning), scholarship (*discovery*), and service (*engagement*) by:

TEACHING AND LEARNING

- Having the primary focus on teaching and learning that advances professional knowledge and creative skills through the application of construction management, engineering, technology, math, science, and business/management by providing on-campus, distance and life-long education.
- Educating minds, developing creators and problem-solvers, promoting management/leadership skills, critical thinking, life long learning, and promoting innovation to provide fundamentals with a high quality education.

SCHOLARSHIP AND DISCOVERY

- Developing scholarly and creative endeavors which are recognized as critical components in faculty development and in the maintenance of management and technological literacy and life-long learning.

- Engaging in scholarly activities appropriate to construction management, engineering and technology applications.

SERVICE AND ENGAGEMENT

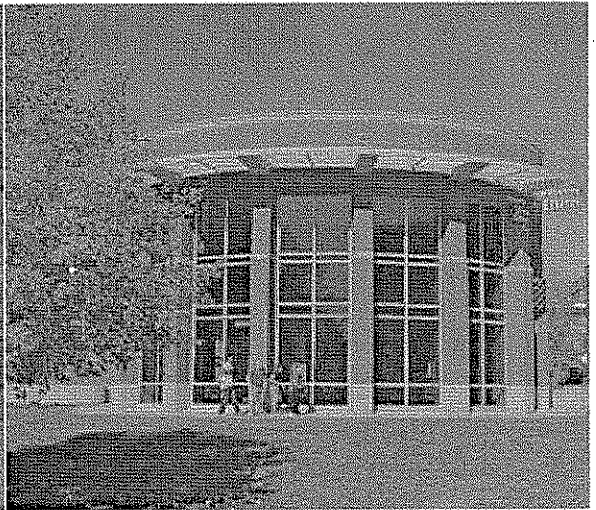
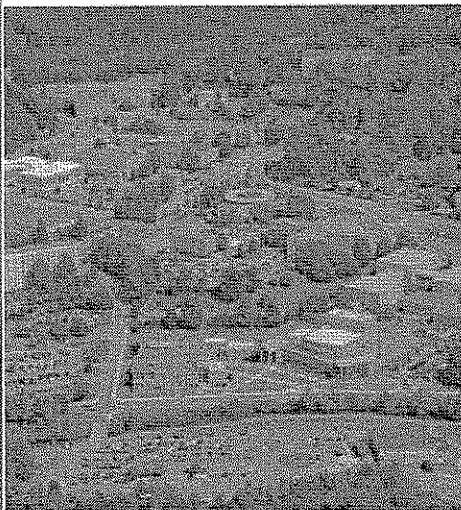
- Supporting engagement through professional, industry-related, and community service activities for faculty and students.
- Utilizing the school's faculty and staff expertise for the benefit of students, industry, government, and society throughout Western North Carolina.

Vision Statement

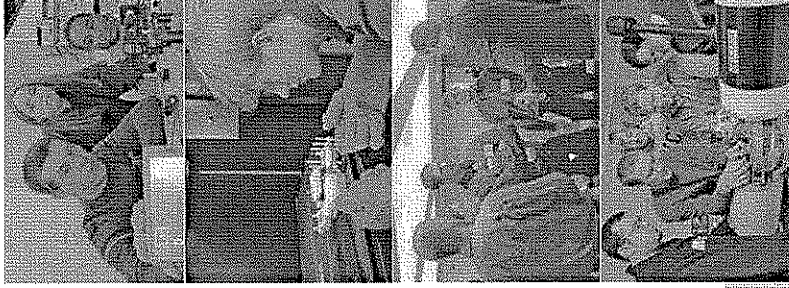
The vision for the Kimmel School of Construction Management and Technology is to provide the highest quality professional education in construction management, engineering and technology. The Kimmel School is dedicated to an educational program that carries construction management, engineering, physical sciences, technology and social sciences from the classroom and laboratory through the business board room into the work place. We saw greater than ten-fold growth in enrollment in our Construction Management program in its first five years. We have benefited from more than \$8 million dollars of investment in a new building and remodeled, high technology classroom facilities. We established the first B.S. in Electrical Engineering in Western North Carolina as a joint-degree program with UNC-Charlotte. Through student and faculty efforts, student organizations are revitalized and active in scholarship and service.

The Kimmel School recognizes the necessity to recruit the highest quality students, faculty, and working professionals to develop, assess, and continuously improve high quality learning experiences to ensure further growth in the profession regionally. For the Kimmel School to maintain this vision, we recognize the importance of adequately funding new faculty and staff positions as well as the need for additional space for classrooms and laboratories to meet the needs of increased enrollment. Faculty will develop and measure retention initiatives and increase the quality of student enrolling in our programs. The Kimmel School must also grow program enrollment in a strategic manner, continue to recruit and retain the highest quality and dedicated faculty, and continue to increase interaction and involvement of professional societies and student club organizations.

THE CENTER FOR
rapid
PRODUCT REALIZATION
WESTERN CAROLINA UNIVERSITY



matching university resources
with industry needs
for today and tomorrow



UNIVERSITY OF
rapid
PRODUCT REALIZATION

CAPABILITIES...

WORK WITH EXPERTS

Faculty with Industry Experience
Dedicated Engineering Staff
Student Teams

GET EXCELLENT RESULTS

Rapid prototypes in ABS, UV Resins, PE, white blue or clear colors;
features as small as 16 microns
Laser Precision Machining with submicron accuracy
CNC and Manual Machining
Part Verification
Reverse Engineering
Patents and Technology Transfer

PAVE AN EFFICIENT DEVELOPMENT PATH

Match RP Method to Requirements ... *Maximize Value*
Evaluate Form, Fit, Function ... *Fast, Low-cost Visualization*
Get Early Feedback ... *Avoid Risky, Up-front Tooling Costs*
Field-test Functional Prototypes ... *Prevent Costly Mistakes*
Verify Specifications ... *Contact or Noncontact Metrology*
Debug Handling/Production Lines ... *Be Prepared for Product Arrival*
Optimize Manufacturing ... *Expert Consultation*
Secure Intellectual Property ... *Patents and Technology Transfer*

PROGRAMS...

OPTOELECTRONIC SYSTEMS

Prototyping
Analyzing polarization
Measuring the spectral characteristics
Testing the bit error ratio
Collaboration with Carolina MicroOptics Triangle

CONCEPT TO MANUFACTURING

3D design, prototyping and testing
Creating functional prototypes in hours
Verifying product specifications
Reverse engineering
Scaling to automated production

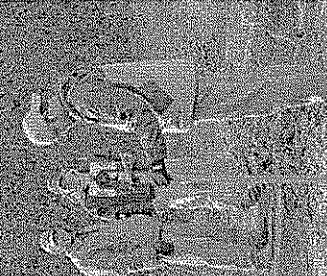
ADAPTIVE TECHNOLOGIES

Solving challenges of "aging in place"
Improving productivity for persons with disabilities
Enhancing the learning environment for children with disabilities
Recipient award for contribution in creating 30 jobs for persons with disabilities

INTELLIGENT SENSOR SYSTEMS

Monitoring air quality
Underwater exploration via the internet
Autonomous pods to measure temperature and humidity in streams
Sensor systems with ultra wideband connectivity for tracking & guiding

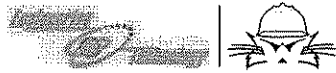
We foster innovation and collaboration.
We welcome hearing from you even if you
application doesn't fit a current program area.
Our goals is to create economic transformation
and engaged learning.



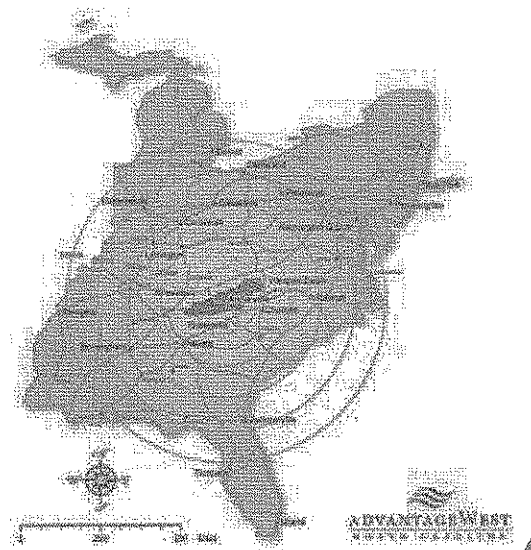
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A University of North Carolina campus



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