2011 Program Report Card: **University of Connecticut Nanotechnology Research**

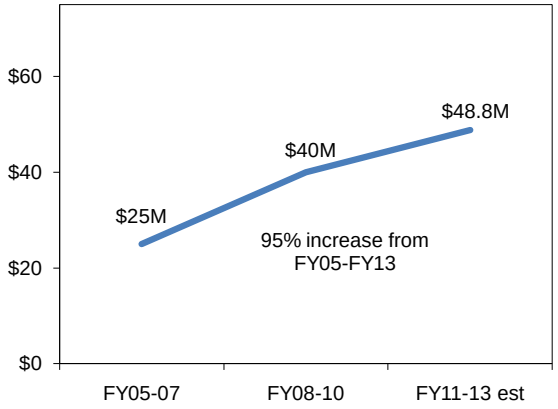
Quality of Life Result: Connecticut has a trained nanotechnology workforce through the education of scientists and engineers who conduct advanced research which infuses technical know-how in Connecticut industries and advances achievement of full economic development.

Contribution to Result: For each ~$100K of external funding in nanotechnology, a science or engineering PhD graduate student or Postdoctoral Fellow as well as undergraduate researchers are receiving an advanced technical education. These personnel represent a major source of an advanced technology work force available for the state. The interactions with Connecticut's industries ensures that the technical know-how generated by this nanotechnology research is made available to be implemented along with the trained personnel.

Total Program Funding for FY11: **$16.3M** State: $0 Federal: $16.3M Other: $0

Partners: A partial list of the partners that impact the nanotechnology efforts are CNI, Connecticut Industry including UTC divisions, Pfizer, CCAT, Members of IMS Industrial Associates Program and others, in particular small companies, that have access to UConn major nanotechnology research instrumentation capability, Yale University, and OWC as lead of the Nanotechnology Advisory Council. In addition many of the faculty that raised the nanotechnology research funding have relationships and partnerships in their research, both nationally and internationally.

Performance Measure 1:
Nanotechnology research funding.

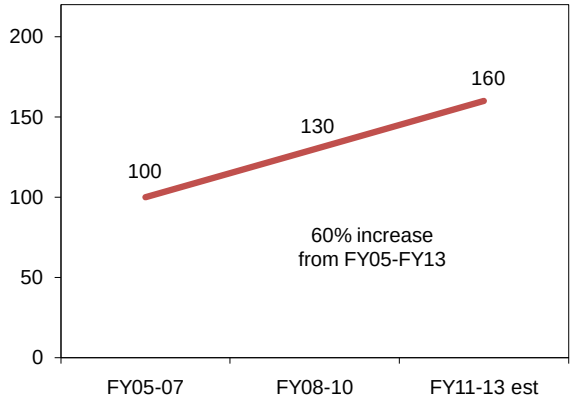


Story behind the baseline: Research funding in nanotechnology at UConn has gone up from $25M in 2005 to almost $49M in 2011 with about 55 faculty reporting their funding. Note that the funding typically spans 3 years. Due to the State's investment in UCONN 2000 and strategic reallocation of resources for faculty, the University has been able to secure more federal funding. Having the appropriate instrumentation and computational capability to do research is another area where progress has been made, but is ongoing. Outreach to private industry using the instrumental capability is highlighted by the IMS Industrial Associate Program as well as by a range of joint research efforts with Connecticut industries.

Proposed actions to turn the curve:
To move nanotechnology research forward at UConn and to serve Connecticut industry better, it is required to upgrade a wide range of instrumentation and laboratory capabilities.

Future UCONN 2000 funding is scheduled to address this need. Additionally, the University is pursuing federal funds to create the capacity for macro/nano engineering in medicine. Without these continued revenue streams, the University's ability to create new technologies and remain competitive would be limited.

Performance Measure 2: Graduate student and postdoctoral fellow support.



Story behind the baseline: Graduate student and postdoctoral fellow support went from approximately 100 in 2005 to about 160 in 2011. Position support is directly linked to the amount of funding awarded. It is also important to note

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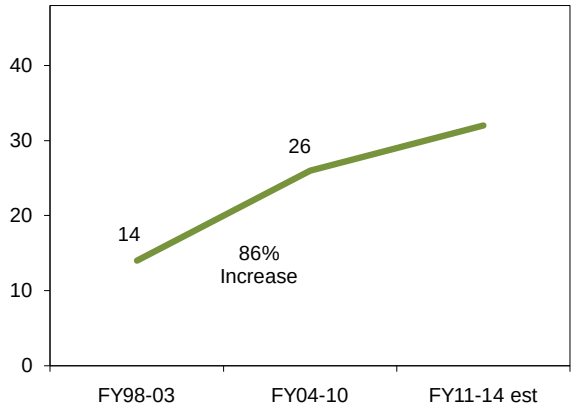
undergraduate involvement in nanotechnology via approximately 11 undergraduate courses and a nanomaterials concentration.

Proposed actions to turn the curve: If possible through the strategic reallocation of resources, additional hiring will further develop the Nanotechnology research efforts. The University will continue efforts to aggressively apply for and secure federal and private industry funding.

Performance Measure 3: Patents.



Story behind the baseline: Patent filings increased 86% since FY98. Many of the patents issued have been licensed to industry, both new startup and established companies in a wide range of technologies including energy related research, sensors, medical devices, protein folding and crystallography studies related to cancer research, conducting and advanced polymers, as well as advances in structural materials.

In 2000, the University established the necessary infrastructure to bring innovations to market by providing expertise in patenting and licensing, creating and supporting viable start-up entities, and assisting industry in their interactions with the University. New start-up companies based on University patents are on the rise. There are three active and several other that are being worked on.

Proposed actions to turn the curve: There will be increased efforts via the current infrastructure to take the intellectual property outputs of the nanotechnology research and convert the results into business opportunities for the state. Having more faculty, if possible through strategic reallocation of resources, conducting research will have a greater impact in this arena and vice versa.