# Annual Report of the Senate University Planning Committee
April 26, 2022

The Senate University Planning Committee (UPC) continued the theme of "University in Transition," and focused mainly on the status of R&D at different units and their plans to address the challenge to double research and scholarship at the University of Connecticut (UConn). The recent articulation of the overall research goal of $500 million by 2027, by the university administration and reiterated by OVPR in their recent presentation to the University Senate is a departure from R&D expenditure goal and sets a target that could be interpreted as lower than that announced by the previous university President. Redefining such goals in such short timeframes could question the research vision of the institution. Doubling of research over the course of 10 years and was in response to a State call for UConn to increase its innovation and entrepreneurial activities.

Enhancement of UConn's R&D footprint requires identification of ways to increase R&D expenditure (especially from full indirect generating external funding) and be nationally competitive and known for our excellence in targeted research areas. Development of strategies along with a reasonable timeline to address the Excellence in R&D challenge must adopt a "whole-of-university" approach with inputs from faculty, administration, industry, and students and in line with the national and global R&D needs and trend. OVPR and related units have the responsibility to provide administrative support for implementation and management of the approved R&D strategic plan by providing grant administration and making all process transparent and effective. Excellence in R&D, usually correlated to scholarship and ability to attract large external funding, is the goal of the university not of one particular unit and achieved by the tireless efforts of faculty and students - supported by staff, and facilitated by an administration with vision.

The Challenge: The 2021 Senate Growth and Development Annual report, clearly articulates UConn's limitation in advancing their research agenda in terms of increasing externally funded R&D. Based upon the annual Research Expenditure data presented by OVPR for Storrs and

https://ovpr.uconn.edu/about/research-metrics/#
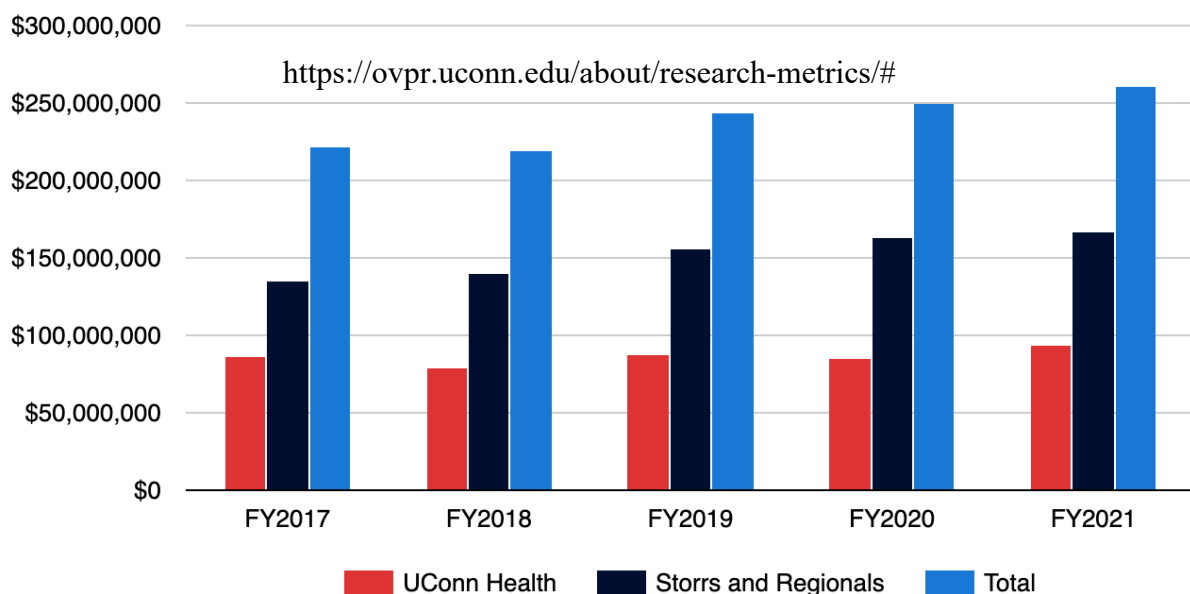
Regional campuses, FY 2019 saw an increase of 12% followed by a monotonous decrease to 2.4% in FY2021. UConn Health R&D expenditure increased slightly from $87 million in FY2017 to $94 million in FY21, an increase of $1.75 million/year [recently UConn Health has received two large grants that will modify future numbers]. Note, doubling of our research requires that R&D expenditure increase consistently at the rate of 8%. This estimates that by 2027 we have R&D expenditure of $414 million (see Table below). This necessitates overall research in the neighborhood of $700 million by 2027. Even at this rate we will not be competitive with Iowa State University that was ranked below UConn in R&D expenditure, in 2008.

FY	Reported R&D Expenditure ($ Million): Storrs & Regional	Reported R&D Expenditure ($ Million): UConn	Required R&D Expenditure ($ Million): UConn (Storrs & Regional) (8%)	% Increase UConn (Storrs and Regional)
2019	$157	$244		
2020	$164	$250		2.46% (5%)
2021	$168	$261		4.4% (2.4%)
2022			**$282 ($181)**	**8% (8%)**
2023			**$304 ($196)**	**8% (8%)**
2027			**$414 ($267)**	**8% (8%)**

To achieve such a feat, it is not only that we get proactive in creating our own opportunities, but we must also be successful in securing "Limited Opportunity Initiatives (LOI)" large grants. It is surprising to note that since LOI started UConn has never been able to secure funding under this category and "Pre-Award" never keeps track of proposals submitted under this category though it is possible to do so. Our lack of success could be attributed to the fashion screening is conducted, especially the delay in making a selection that complicates the identification of partners and development of a good proposal. However, OVPR plans to address these issues and make LOI a success. This discussion was led by the Sub-Committee on Limited Submission Opportunity, chaired by Mr. Daniel Stolzenberg, with Louis Hanzlik and Dr. Jessica McBride as members.

Path Forward: Policy and Procedures: In any successful institution known for their excellence in R&D and scholarship, we observe a great deal of coherence and transparency at all levels, in developing their vision, charting a path forward and implementation and management of the accepted policies and processes – in other words a "whole-of-university" approach. At UConn, there is a perception among faculty members, that such a process is totally absent, especially related to R&D planning and proposal submission. Policies are developed and implemented to assist faculty in their pursuit of knowledge by excelling in scholarly activities and securing external research funds. However, if adopted policies or implementation of such policies might hinder research active faculty to become less successful, then this results in a deviation of the goal of any academic institution.

To understand the practice adopted by OVPR to process proposal submissions, the "**Strengthening Pre-Award Infrastructure and Facilitation of Grant Application Submission,"** subcommittee was formed. The sub-committee was chaired by Senator Joanne Conover with Professor Tutita Casa, Senator Inge-Marie Eigsti, Ms. Bethany Javidi and Mr. Daniel Stolzenberg serving as members. The committee after meeting with OVPR personnel, departmental/school/college level staff members

assisting faculty with proposal preparation, and faculty, observed a lack of coordination and effective communication among involved parties who should be working towards the same goal, and some support is not yet in place (see Appendix for full report and all recommendations). Specifically:

- There is inadequate support for faculty during the proposal preparation and submission process (e.g., excessive paperwork, organizational confusion).
- Some faculty do not have pre-award administrative support, and those who do have varying degrees of support.
- Roles and responsibilities are unclear and may be redundant.

The main recommendation of the Sub-Committee is as follows:

- Establish an advisory committee with faculty and unit administrator representation to oversee pre-award administration.
- Provide a helpdesk to address questions and concerns from faculty and staff across the university.
- Facilitate closer faculty-administrator ties and interaction within units.

The Sub-Committee suggests the following recommendations to streamline proposal submission.

- Evaluate paperwork required (e.g., subawards with collaborating institutions) to increase pipeline efficiency and facilitate collaboration.
- Re-evaluate policies (e.g., CT statutes) and prioritize advocacy to raise awareness of and/or reduce institutional paperwork burden.
- Provide necessary and appropriate feedback to the PI and departmental/center grant manager within a reasonable time frame, not to exceed 3-business days, after receiving the initial submission to pre-award within the mandated 5-day guideline.
- Institute some flexibility on changes to supporting documents prior to submission within the 5-day timeline.
- Provide a list of documents that must be in final form at the 5-day deadline and identify those that can be revised. Provide clear guidance on any other internal deadlines that faculty must meet.

Path Forward: **R&D Challenges** - The standard practice that has allowed securing externally funded research in the past could be effective for faculty members in their initial stage of development, such a securing Career awards, however, the concept of securing externally funded research has morphed into multi-PI, multi-university large grants as that helps granting agencies in managing such awards. Moreover, the "asks" by the funding agencies have shifted for some disciplines from "basic research" to "applied research" and encourages participation of industries [see Table 1]. Higher education institutions traditionally carry out most of the "basic research" but industry engagement in this area has increased from 18% in 2012 to 30% in 2019. Although federal funding for research performed by institutions of higher education has increased in dollar amount the proportion funded by federal government has declined from 60% in 2010 to 50% in 2019. The share of basic research supported by industry has increased from 23% in 2010 to 31% in 2019. Moreover, 65% of experimental development and 19% of applied research are dominated by business sectors, while providing 86% and 55% of their own funds.
[*https://ncses.nsf.gov/pubs/nsb20221/u-s-and-global-research-and-development*]

Table 1. U.S. R&D Funding by Sector and Character, 2019

Current dollars, in billions

Sector	Basic Research		Applied Research		Development		Total	
	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
Federal Government	43.9	40.7	41.8	33.5	53.2	12.6	138.9	21.2
Nonfederal Government	2.6	2.4	1.7	1.4	0.6	0.2	5.0	0.8
Business	33.0	30.6	68.7	55.0	362.1	85.5	463.7	70.7
Higher Education	13.6	12.6	5.9	4.7	2.3	0.5	21.8	3.3
Other Nonprofit	14.7	13.6	6.8	5.5	5.1	1.2	26.7	4.1
Total	107.8	100.0	124.9	100.0	423.4	100.0	656.0	100.0

The evolving research priorities and re-orientation of funding pipelines suggest establishing strong partnerships with industry to address both federal and industry funded basic and applied research. UConn must make an effort to establish and excel in system development and engage in "applied and developmental research" in participation with industry to design and demonstrate of concepts and assist in manufacturing of products that are useful to the nation and industry, while excelling in basic research. Moving forward, we must rethink our R&D strategy and address the following:

- o Step 1
  - Identify our research expertise (measured in terms of publications (in nature, science etc), large multi-PI funding).
  - Identify our research infrastructures. A personal state-of-the-art research lab is fine but does not have the permanency. We need to have shared facility [IMS provides such a facility as well as serving as a service-for-a-fee facility.]
- o Step 2
  - Identify the national/global R&D and technology needs.
  - Identify the needs of local industry.
  - Identify needs of large industries.
- o Step 3
  - Identify R&D and technology development in areas with maximum return. [Measured in terms of existing expertise, research infrastructure, and long-term industry/federal govt. needs]
  - Target hiring in Engineering and Sciences (Health Center, Economics and Business) targeting upcoming areas of technology boom [Energy, AI, Security, Health, Sustainability/Climate, Agriculture, etc]. If possible, establish complementary research expertise to support local large industries.
  - Establish (Invest in) research infrastructures supporting multi-PI modality.

This investment will be counted towards part of startup packages of incoming scholars. Moreover, such investments articulate the commitment of UConn in promoting R&D. Implementation of Step-3 will be a challenge and must be carried out once a R&D vision along with an implementation plan is drafted.

- Planning must identify and prioritized list of R&D focus areas with estimated investments and size of research cohorts (expanding over multiple disciplines).

- In target R&D areas organize workshops and invite national/international research leaders. [Note, the target is not only to have scientific discussions but identifying upcoming R&D challenges faced by industry, nation and the global community.]
- Generate White Papers identifying the upcoming challenge and put teams together to address the challenges.
- Approach DARPA, DoD, DoE, ONR, ARO, AFOSR, NSF, NIH as needed to start multi-agency discussion with UConn being the lead. At this stage assistance of congressional delegates will be important.
- Work with interested agency/agencies to create Request for Information – at this point UConn should be assisting the agencies to organize the discussions. Bring relevant industry that will benefit from this initiative.
- Work with agency and generate RFP – form your team.

Path Forward: Re-allocating IDC/Center Graduation – OVPR reports $8.6 million in support for Centers and Institutes. It is expected that centers have a sustained income generating process and becomes self-supporting or "graduate" after a certain period of time – say 5 years. This will allow the university to refocus and support research, scholarship and education in areas of national need.

Financial support could be in the form of external funding from federal and state funding agencies, foundations, gifts and endowments, and other State approved sources. As an example, with $12 million in external funding, $2 million could be used to fund the center from the $4 million generated as IDC. This funding serves as the operating cost of the center and funds all staff, research associates, equipment maintenance, etc. It is important that all centers engage in strategic planning highlighting their plans for attracting external funds. Such plans are to be evaluated annually and tuned to assure success.

Path Forward: Re-allocating IDC/Library Support: Excellence in research requires excellence in scholarship and that in turn mandates the existence of a world class library that has subscription to all journals and proceedings. Having a goal to double R&D expenditure without such a resource is a contradiction. Allocating a portion of the IDC, could be from the $8.6 million for center support, for journal subscription will ensure our success in attracting quality faculty and R&D funding.

2021-2022 Senate University Planning Committee Meetings (Zoom online meeting)
1. October 5, 2021
2. November 2, 2021
3. December 7, 2021
4. February 18, 2022
5. March 25, 2022
6. April 22, 2022

2021/2022 University Planning Committee Members

*Mehdi Anwar, Chair, Engineering
*Bonnie Burr, CAHNR, Extension
*Joanne Conover, CLAS, Physiology and Neurobiology
*Inge-Marie Eigsti, CLAS, Psychological Sciences
*Louis Hanzlik, SFA, Music
*Suman Majumdar, CLAS, Stamford Campus
Tracie Borden, Waterbury Campus
Tutita Casa, Neag School of Education
Kathy Hendrickson, Business (Career Development Office)
Bethany Javidi, OVPR's Office
Ruth Kustoff, CETL, Office of Continuing and Professional Education
Jessica McBride, CAHNR, Communications Office
Gaston Neville, Undergraduate Student Government Representative
Carl Rivers, Office of the Registrar
Jeffrey Shoulson, Senior Vice Provost for Academic Affairs (Ex-Officio Member)
Daniel Stolzenberg, Neag School of Education
Audrey Silva, Communication Access/Interpreting Services
Rachel Tambling, CLAS, Human Development and Family Sciences
Luke Villani, Undergraduate Student Government Representative

*Senate Member 2021/2022

Committee Charge: *This committee shall review the University planning processes and consider their potential outcomes. The committee may provide on behalf of the Senate an evaluation and review of specific issues and activities related to institutional advancement.*

Appendix
University Planning Committee

Subcommittee on: Strengthening
Pre-Award Infrastructure and Facilitation of Grant Application Submission

Context:
The heavy administrative burden placed on faculty and departments and a lack of transparency surrounding the submission process deter faculty from submitting grant applications and minimize the ability to submit their most competitive versions. Below are our findings and our recommendations.

Goal:
Reform and strengthen existing infrastructure and increase effectiveness and transparency of associated processes. Doing so will free faculty to focus on the scholarly and creative aspects of proposal development and encourage the increased submission of winning proposals, thereby enhancing UConn's reputation as a world-class research institution .

First Steps:
Reduce confusion, enhance communications, and improve efficiency in proposal preparation and submission, thereby enabling faculty to focus on the scholarly and creative aspects of proposal development.
Increase the support staff has on the preparation of highly competitive grant proposals.

Findings:
Overall, there is a lack of coordination and effective communication among involved parties who should be working towards the same goal, and some support is not yet in place. Specifically:
- There is inadequate support for faculty during the proposal preparation and submission process (e.g., excessive paperwork, organizational confusion).
- Some faculty do not have pre-award administrative support, and those who do have varying degrees of support.
- Roles and responsibilities are unclear and may be redundant.

Main Recommendations:
We recommend the following:
- Establish an advisory committee with faculty and unit administrator representation to oversee pre-award administration.
- Provide a helpdesk to address questions and concerns from faculty and staff across the university.

- Facilitate closer faculty-administrator ties and interaction within units (e.g., as per CLAS model, and sub-units within Neag).

Recommendations to Increase Collaboration:
- Provide all UConn faculty with access to pre-award administration support.
  - During the 'on-boarding' process, connect new faculty with their support staff and brief them on the proposal submission process.
  - Provide an overview for current faculty describing their pre-award 'team' and the current infrastructure at the unit and university levels.
  - When faculty indicate they plan to submit a proposal, initiate an orientation that details the support they can receive, introduce available staff and their roles, and provide them with initial paperwork specific to the granting agency.
- Identify a point person to resolve issues within units, including departments, centers, and schools/colleges.
- Support a framework that allows faculty to provide suggestions about the type of support they need and why it would be helpful.
- Provide feedback on new procedures within the pre-award pipeline, including those that are working well and those that are not.
- Ensure that unit-level staff have expertise with the main funding agencies that support their faculty's work.
- Streamline the pipeline so that unit-level administrators can submit applications. Such a practice would help avoid a two-tiered system.

Recommendations to Streamline Proposal Submission
- Evaluate paperwork required (e.g., subawards with collaborating institutions) to increase pipeline efficiency and facilitate collaboration.
- Re-evaluate policies (e.g., CT statutes) and prioritize advocacy to raise awareness of and/or reduce institutional paperwork burden.
- Provide necessary and appropriate feedback to the PI and departmental/center grant manager within a reasonable time frame, not to exceed 3-business days, after receiving the initial submission to pre-award within the mandated 5-day guideline.
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