

**Annual Report of the Faculty Committee on Research [Draft version]
Towards a Strategic Plan for Growing the Research Enterprise at Carolina
Presented April 27, 2006**

Goal: a strategy to enhance the research enterprise at UNC to meet the Chancellor's goal of a funding level of \$1B/yr.

Needed: a clear assessment of investment areas that will enable Carolina faculty to maximize their potential in obtaining research funding. This suggests the development and vetting of a strategic plan.

Guiding principles: Carolina has many strengths; to grow the research enterprise we need to address weaknesses in the current system on campus that supports research and to augment through strategic investment the strengths that are believed to best enable the campus to more effectively compete for research funding.

Our faculty are key to meeting the Chancellor's goal. The following suggestions are offered as ways to promote faculty productivity and support creativity across campus.

Enhance faculty incentives to succeed - Faculty are the engines that drive our research enterprise. Making sure that they have the support they need to carry out their research, the time they need to think (and dream) about new ways to carry out their research, and recognition they deserve (and need) to attract bright colleagues and students and continued investment are critical to accomplishing our goal. It is suggested that:

1. [note \$\$ and that underpaid – work with Steve Allred to get figures] Faculty compensation packages be carefully evaluated.
Is Carolina competitive, not only in terms of salary, but in fringe benefits, sabbatical, start-up and ongoing support, etc? What characteristics are unique and worthy of promotion or enhancement? [include credit for IDR, entrepreneurial?]
2. Invest strategically in new hires.
Is there a need for senior faculty with established programs to fill critical gaps in our areas of expertise? The university should also look at the age pyramid for campus faculty and what it suggests we need.
3. Graduate student support be revisited.
Current policy discourages hiring/supporting graduate students because the cost of graduate students, considering tuition and stipends, is comparable to a postdoc. It is expected that this issue will be of increasing importance and a creative approach is needed that will require the help of the state legislature.
4. Faculty receive increased recognition.

The administration, both central and distributed, should find the best ways to promote nominations of deserving faculty to the National Academies and other honors to enhance national visibility. The Deans can play a critical role in this process.

5. Implement a campus-wide sabbatical program.

At present no campus-wide sabbatical program exists. A few funded leave programs are available (e.g. Kenan, Pope), yet decisions on sabbatical are largely in department hands and likely quite varied. At minimum the University should collate existing programs; better yet, it could greatly enhance existing programs. [but some discussion of drawback to blanket policy]

6. Evaluate administrative support at departmental level.

Increased funding will come with increased administrative burdens, not only at the Office of Sponsored Research but also in departments....

Expanding the funding base - Given the current funding environment, it is unlikely that the Chancellor's goal of a funding level of \$1B/yr can be met by traditional funding sources. Therefore alternative funding sources must be explored and strategies to reach these funding sources must be developed and implemented.

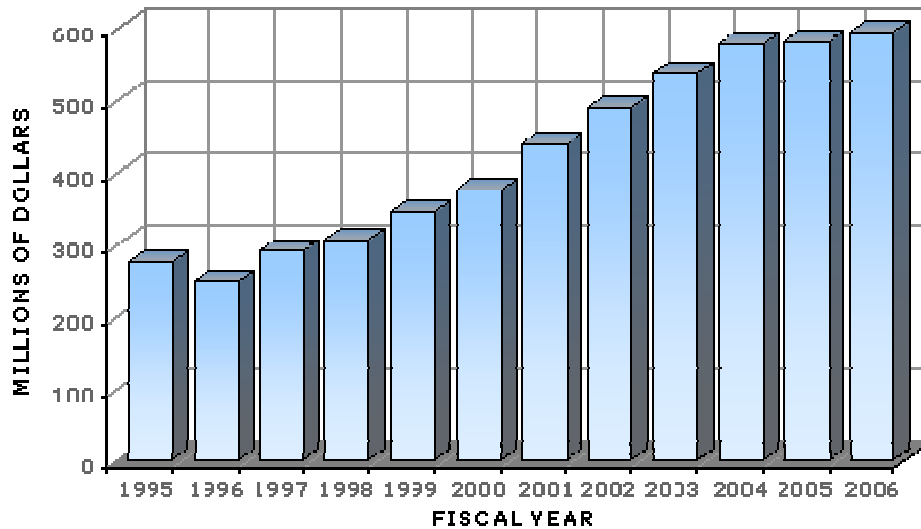
1. Identification of funding sources.

Traditional funding sources are NIH, NSF and other federal sources, and common nonprofit organizations.

Total sponsored research (2006): \$593,390,526.54
Percent from major sources:

Federal:	72%
Private nonprofit:	9%
Foundations:	7%
State	5%
Industry	4%
Other Govt.	3%

Growth of UNC research:



The plateau corresponds directly with decrease or at least flat federal support of academic research.

The glaring weakness of our research portfolio is industrial support. Whereas UNC ranks high in Federal support among peers (top 10), it ranks low (in the 90's) for industry sponsored research.

2. Identify alternative funding sources.

A concerted effort should be mounted to identify private and public companies, private donors, and private nonprofits that have not historically been substantial contributors to UNC.

Specific examples:

- Howard Hughes (HHMI)
- Burroughs Welcome Trust.
- Stanley Foundation (just gave 100,000,000 to Broad Institute)
- Other disease specific foundations (growth area)

- Defense industry
- Pharma/Biotech industries
- Alternative medicine industry
- Allied health industries

3. Develop strategies to seek alternative funding.

A. HHMI: Routinely nominate faculty for HHMI investigator status.

B. Private and public companies

- 1) Identify faculty that either have connections with industry or that conduct research with potential for translation.
- 2) Develop a program/system/office that can serve as a liaison between industry and UNC.
- 3) Develop ties to regional companies to enrich graduate program through increase support of fellowships
- 4) Encourage and facilitate translation of research into business adventures with UNC acting as a business partner. (Royalties funneled into research enterprise)

C. Private donors

D. Change culture on campus to be more inclusive of alternative funding sources.

Currently, faculty members seek NIH funding and other federal sources of funding almost exclusively at the expense of not seeking industrial funding. This is, in part, because of the culture that counts federal funding as more important during tenure review.

- 1) Promotion and tenure should count equally all sources of funding for research and not over value NIH/NSF funding.
- 2) Consulting activities should be encourage by allowing some time off for consulting as well as counting it as a scholarly activity in promotion documents.
- 3) IP development should be encouraged by counting it on promotion documents.
- 4) Students should be encouraged to engage in industrial internships.
- 5) Other initiatives to improve relationship to industry:
 - Seminar series, short courses, etc...

Intramural Funding - To reach the Chancellor's goal of garnering \$1 billion in extramural research funding per year, UNC Chapel Hill must provide the supportive environment needed to lay the foundation for research projects that can successfully compete for extramural funding. As federal (and even foundation) funding becomes more scarce and more competitive, stronger evidence from more comprehensive pilot studies and preliminary work is required. Sufficient intramural funding is essential to support this early foundational work. The University's existing programs of intramural

funding (e.g., University Research Council awards, Junior Faculty Development awards) are an excellent beginning, but expansion, transparency, and accessibility are needed if we are to meet the \$1 billion goal. Specifically:

1. Dramatically increase funding for the University Research Council (URC) grants program.

To lay the foundation for \$1 billion in extramural funding, we need to greatly increase the number and magnitude of URC awards. We lag significantly behind our peers in intramural funding. Three years ago, when UNC was allocating \$200,000 for URC grants, the University of California, Berkeley, was allocating \$1.8 million for its intramural grant program. Among our peers, the University of Virginia was allocating the least at \$600,000 – three times what UNC was allocating. While the Vice Chancellor has enriched the URC award program by \$50,000 in recent years, at least \$1 million per year is needed to fund this program adequately. It is estimated from evaluations of URC undertaken in recent years that \$1 of URC funding returns approximately \$28 in subsequent extramural funding – an excellent return on the investment. Currently, only about 25 percent of proposals outside the humanities and fine arts can be funded (the humanities and fine arts review panel funds a higher percentage of proposals by making partial awards, so they have been excluded from this analysis). At the same time, reviewers consistently recommend funding about 50 percent of proposals. Significantly enriching the program would increase the number of submissions, increase the success rate for worthy proposals, permit larger awards, and assist us with the recruitment of new faculty (who wisely recognize the importance of intramural funding to jump start their programs of scholarship.) To meet this \$1 million need, new sources of funding need to be explored such as endowments and state funding rather than redistributing indirects (F&A) that are now used to support faculty research in other ways.

2. Increase the number of University Research Council grant submission dates from two to four per year.

For University Research Council grants, increasing the number of submission dates from two a year to four a year will enable faculty to apply for funding when it is most appropriate and critical for their programs of research.

3. Make intramural funding details more transparent.

It is important to make information about what intramural funds exist and how they are disseminated, utilized and evaluated more transparent to the faculty community. For example, for University Research Council grants and Junior Faculty Development Awards, publish information about how much money is available for each award cycle, how many awards are given each cycle, what the success rate is, what the priorities are, who has received the awards in the past, and what the outcomes of those awards are

(e.g., are they leading to extramural funding?). It is also important to share information about who serves on the review panel, how they are selected, and what the process is for rotating membership among interested departments and schools.

4. Expand bridge funding opportunities.

Expand bridge funding opportunities from including only those who are awaiting funding for a competing continuation to include faculty who are awaiting funding of a project related to a currently funded project (e.g., a faculty member might choose to respond to a request for applications (RFA) or a program announcement (PA) that builds on a current project and will employ the same project staff but is not technically a competing continuation).

5. Continue to enhance the collection, organization and distribution of information about intramural funding opportunities on the web.

Significant strides have been made in this area (e.g., GrantSource Library, Research Support Newsletter, access to information via search engines), yet faculty continue to struggle with access to this information.

Additional prompts and alerts will help orient busy faculty to these opportunities. Assuring that all faculty receive the Research Support Newsletter and including information about each opportunity's regular schedule of submission dates (in addition to the next submission date) in announcements will allow faculty maximal opportunity to plan their submissions.

Fostering Interdisciplinary Research (IDR) - as witnessed by success in competing for NIH Roadmap funds, UNC-Chapel Hill is in a strong position to develop interdisciplinary research teams by drawing on its many strong disciplinary programs. It is suggested that UNC-CH:

1. [*give minimum \$ amount*] Significantly increase the University Research Council funding.

As described above under Intramural funding, there is a need to enable more, larger seed and pilot programs with internal funds. This mechanism of development will better establish and position interdisciplinary research groups to go after large externally funded programs.

2. Enable existing Centers to pursue IDR through hires and training.

UNC-Chapel Hill's Centers and Institutes need to be at the heart of any plan to grow the research enterprise. Today, like no time in the past, major funding opportunities lie at the intersection of disciplines. "Big science" and more modest projects often involve researchers from more than one discipline. The Centers and Institutes are the best known representatives of interdisciplinary research. These organizations have the experience and the structure that enables them to bring together researchers from

numerous departments and schools. Furthermore, they have the flexibility to change composition as new topics emerge. The Institutes and Centers are a natural complement to the departments and schools in that the latter often provide the senior staff for the former, while the Institutes and Centers create an environment to develop projects that extend beyond the boundaries of any single department or school.

However, reliance solely on departments for researchers restricts the contributions that Institutes and Centers can make to increasing outside funding. The reason is that the number of faculty positions in departments will at best increase only modestly. Plus there are clear limits on how much additional time faculty can devote to seeking new funding resources given their major responsibilities in the classroom and their other duties. The limit on the number of faculty in departments and the limits on faculty time create obstacles to meeting our target funding goal. It is clear that UNC-Chapel Hill needs to increase the number of people seeking funding.

Because of this, UNC-Chapel Hill should consider allowing Institutes and Centers to hire new faculty and research professors as a way to expand the number of professionals who can serve as PIs on grants and awards. These positions will be based in the Institutes and Centers and these organizations would be responsible for establishing and maintaining their positions. In addition to tapping a bigger pool of talent to bring funding to UNC-Chapel Hill, these new positions could provide personnel who might find it desirable to do some part-time teaching, mentoring of students, or serving UNC-Chapel Hill in other ways without requiring the creation of new permanent positions. We recommend that UNC-Chapel Hill give more thought to the creation of these new positions at Institutes and Centers in a manner that would make them attractive to talented professionals.

1. Foster on-going learning.

IDR requires investigators to expand their interests beyond their traditional roles. Partnering with private interests to pursue areas of mutual interest that are promising, e.g. Odum Institute's work on survey methodology.

UNC-Chapel Hill core facilities - provide faculty with shared access to the most up-to-date instrumentation and technical services, and they do this at the highest levels of expertise. The core facilities directors are usually PhDs; they serve as engines of interdisciplinary research by providing training and services to investigators and by understanding the research of the faculty members they work with. Core facilities foster interdisciplinary and translational research, and are instrumental in the recruitment of new faculty.

But to grow and improve, even just to survive, the core facilities have needs:

1. The Cores need stable funding from the University that will support technical personnel, instrument acquisition, service contracts, software licenses, and service upgrades.
2. They also need access to 21st century administration systems, such as transparent billing procedures.
3. Some have particular need for back-up freezers, off-site storage, and the like.
4. There is also perceived need for new core services, such as systems biology expertise and biohazardous sample sorting.
5. One goal should be the elimination of redundancies through efficiencies like centralizing sources of lab animal coordinators and lab animal workers.
6. University support would also make it possible for core facilities to charge more competitive rates for their services, bringing back to UNC investigators who are sending their work to the heavily subsidized core facilities at Duke.

Maintaining and improving our outstanding cores should be part of the growth plan and should be considered a major attraction for the recruitment of new faculty members and for fostering interdisciplinary research on campus.