

## RESEARCH FACULTY RETREAT – 2006

### WORKING GROUP #7

#### ***IDENTIFY/DISCUSS/DEFINE PROGRAM THEMES (EXISTING AND FUTURE) IN THE CONTEXT OF CENTERS, DEPARTMENTS, AND TECHNOLOGIES (“CORES”)***

**Leaders:** Jeff Carr, Martha Alexander-Miller  
**Group members:** Don Dougherty, Steve Rapp, Edward Ip, Melicia Whitt-Glover, Ann Geiger, George Christ, Ski Chilton, Jianfeng Xu, Doug Easterling, Kathi Kemper, Jim Hoekstra, David Carroll  
**ExOfficio:** Susan Hutson  
**Staff Support:** Diane Joyner; Vicky Zickmund

#### **Overall Charge: Maintaining and Enhancing Successful Research at WFUSM**

##### **Introduction:**

It is clear that certain environments impede while others foster innovation and creativity. We believe that an essential goal for the institution is to create an environment that fosters creativity and innovation. Because modern science is complex and increasingly requires interdisciplinary, multidisciplinary, and/or transdisciplinary approaches, it is important to promote both individuals and teams. While development of individuals and teams may require different strategies, ideally, each individual or group benefits from the success of the other. The question then becomes “What mechanism(s) and organizational unit will most foster these approaches to promote successful research needed to advance human health in a rapidly changing environment?” More specifically, “What alteration of the incentives and organizational structure will allow us to achieve these goals in the near term and thus promote the creativity and innovation of our faculty?”

Hence the goal of this working group is to provoke and frame dialogue that allows WFUSM to:

- a) make more informed, strategic investments in the institution’s scientific enterprise, and
- b) recommend changes in the organizational structure that better promotes successful science.

The following questions seemed primary to the group:

1. How should the institutional infrastructure be redesigned to foster more initiative and creativity in the translation of basic science into clinical practice?
2. How should investment decisions be made to best secure the future of the school related to current and new areas of science, and the organizational structure to make it a reality?
3. How does the institution find the right balance between when it comes to investing resources for individual scientists versus teams of investigators?

The working group divided the task into two action items and has developed recommendations for each:

1. Current and Future Program Themes
2. Organizational Structure to Support Scientific Inquiry

## **1. Current and Future Program Themes**

As a starting point, the working group agreed that the institution's scientific priorities may change from year to year. The "areas of science" that any group might decide are important are likely rapidly evolving, and subject to change. In addition, the areas of strengths or weaknesses within the institution, as well as the areas of high yield, are largely dependent upon the perspective of the individual or group making the prediction or assessment. Given the scope of work and time constraints faced by the work group in preparation for the Research Retreat in October of 2006, the group decided to focus on organizational structures instead of program themes during our meetings. The previous work of the *ad hoc* committee on Institutional Research Goals which worked in 2003-2004 provides an established resource created by the WFUSM faculty for identifying major themes and areas of science. This information was supplemented by material provided by the Office of Research from their active strategic planning process and then reviewed by the working group. The list is presented in the Appendix.

## **2. Organizational Structure to Support Scientific Inquiry**

**A. Rationalizing the Organizational Chart Units for Researchers:** The working group decided that facilitating collaboration for scientists on all campuses and across disciplines is key to continued success of the research enterprise at WFUSM. Therefore, the organizational structure as related to research was reviewed by the group. Currently the organizational structure has two overlapping schemes. There are hierarchal structures related to the academic mission, specifically Divisions, Departments, and Sections, as well as an alternative organization approach based on Centers, Programs, and Research Interest Groups. The working group recognized that these structures have evolved over time; but believe the research enterprise would potentially benefit from clarifying (perhaps even simplifying) and defining the organizational units. Note that an explicit definition of the organizational units does not require an expansion of administrative and support structures and could better support transdisciplinary collaborations that promote scientific discovery. In addition, it establishes transparent procedures/guidelines for groups/individuals to follow when seeking approval for establishing centers and other organizational structures. Clarifying the decision making process will benefit faculty and administrators.

### **Recommendations:**

Limit the use of the designation of "Center" to the current definition of "Institutionally Recognized Center," by continuing the present course of limiting the use of the word "Center" to that of Institutionally-recognized Centers. The definition and requirements for an Institutionally recognized Center have been established previously in the document located in the Appendix. However, for various reasons, some related to the Clinical Enterprise and some related to the Funding Agency, there are entities within the Enterprise whose designations include the word "Center". These are the so called "little centers". In the Appendix, a list of the current descriptions of the organizational units is provided by the workgroup. The work group recommends that an alternative term for "Center" such as "Facility" be considered. There are also a number of programs and research interest groups. The establishment of these entities does not appear to have any specific guidelines.

### **B. Facilitating Inter-Disciplinary and Trans-Disciplinary Communication and Research**

The need for more inter-disciplinary and trans-disciplinary communication and planning was clear to the workgroup. WFUSM should facilitate collaboration for scientists on all campuses and across disciplines.

The working group makes the following specific recommendations

1. Office of Research(OR) should step up to its role as a convener of “natural clusters” of researchers from different disciplines, especially when there emerges a grant opportunity for which WFUSM has the requisite strengths. This function requires OR to operate at a 30,000 foot level, recognizing linkages and synergies that may escape the notice of researchers. In addition, OR will need to have an active facilitation role to promote researchers from different disciplines coming together, pointing out how the researchers’ perspectives complement one another.
2. Train faculty in transdisciplinary thinking and problem-solving.
3. Encourage and create benefit to faculty for formation of ad hoc “science workgroups” to facilitate internal collaboration. This process might work as follows:
  - Faculty would propose a workgroup to the Office of Research using a simple 1-2 page submission form which would identify: who was in the workgroup, select key words to describe the area of science covered and provide a brief description of the project(s) or idea(s) being discussed. An explicit section on looking for talents/skills/collaborators should be included.
  - OR would review application and compare to the keywords of existing workgroups – if overlap, identified information would be relayed to workgroups so that the two could communicate in order to identify potential collaborations. At this point the two workgroups could combine if so desired.
  - OR would then add the “new workgroup” to the page of all workgroups active on the internal website and possibly list it on the external website.
  - OR should work with IS to potentially provide tools for communication and collaboration among workgroup members
  - OR and the WFUSM research enterprise would then have access to a searchable database of key areas of science being explored that should facilitate the drafting of larger program projects and funding initiatives. As part of this process, complete the faculty database project that was under development. The project is by various “science workgroups” This resource should be designed to put together a web-based comprehensive and searchable database of faculty research and expertise:
    - Allow basic scientists, clinical-scientists and clinicians to identify rapidly groups of individuals that may be working in areas with synergy with their research efforts,
    - Identify potential collaborators to translate discoveries from basic to clinical or vice versa,
    - provide links for scientists at different physical locations (Reynolda Campus, PTREC, Virginia Tech, etc...), and
    - facilitate the drafting of larger program projects and funding initiatives.

### **C. Funding Mechanisms to Support High Organizational Structure for Identification of High Impact Research Areas:**

The work group felt strongly that a more formal mechanism for identifying and capitalizing on the scientific strengths at the institution would lead to increased success in the research endeavor. The goal of this structure would be to:

- Provide a mechanism to provide rapid funding of high risk/high yield projects.
- Use a competitive system that challenges the faculty to think “outside the box”.
- Design a system that rewards innovation and collaboration.
- Have this program viewed by the faculty as a supplemental avenue for funding of pilot projects apart from traditional mechanisms.

To achieve these goals the work group proposes creating two distinct bodies that serve jointly to generate ideas (think tanks) and a linked funding initiative which are listed below:

1. External Board of Advisors

2. Internal Research Investment Committee
3. WFU Ventures Fund for innovative research and use the External Board to review proposals and award grants.

### 1. External Research Advisory Board – “Think Tank”

The committee recommends that a “Think Tank,” composed largely of individuals external to Wake Forest University Health Sciences, be formed and endowed with resources to accomplish the following primary missions:

1. To identify, develop and distribute a list of innovative areas of sciences likely to be of high value for WFUSM investment
2. Select and fund a portfolio of innovative projects through a competitive award mechanism.

Review on a biannual basis, the scientific capabilities of Wake Forest University Health Sciences and affiliates, and make recommendations to the administration and faculty about future directions.

It is recommended that the composition of the board be largely external to WFUHS. The ideal “Think Tank” member should be an established individual, capable of recognizing emerging trends and high value scientific endeavors. The functioning of this “Think Tank” is analogous to a “Board of Directors” for a biotechnology company. The workgroup strongly felt that previous experience and demonstrated innovation of recruited board members, whether it be within science or other areas, is critical to gaining an external perspective on current and emerging trends related to the key research missions of the enterprise. Representation from inside the Medical Center should largely be provided by ex-officio members from within the administration, the Office of Research and a select group of faculty.

#### Primary duties of the External Board of Advisors:

It is proposed that the **External Board of Advisors** meet twice per year. The **External Board of Advisors** would receive information via summary and /or detailed reports on various areas of scientific endeavors across the Medical Campus, the Institute of Regenerative Medicine, and the Reynolda Campus. The Committee recommends that the External Board work under a confidentiality agreement with WFUSM and that by providing inside information on innovative areas of science to this group it would enhance recruitment of board members and provide more valuable recommendations to WFUSM. The internally-provided information together with the external knowledge of the members would lead to the development of a biannual update of “scientific themes” which could then be widely circulated within the Enterprise.

A second charge to the committee would be to review and select for funding a subset of proposals. The “Think Tank” would be endowed with a prescribed amount of funds for which the faculty could compete for funding of innovative research ideas. It is recommended that the School set aside a significant sum of money to fund short (1-2 years) projects, proposed by researchers from within the institution. This money would be made available on a competitive basis to incentivize researchers to develop high risk but high yield projects. The initial review process to determine responsiveness to the objectives of the program and to provide an initial sub-setting of those of high quality vs. average quality would be done by the internal faculty panel. Depending on the response rate, those applications judged responsive and high quality would then be reviewed by the external advisory panel “Think Tank” which would then have ultimate control over the funding amount and distribution.

The rationale behind this mechanism is to provide a means of accelerating the development of research projects and programs within the enterprise and to make these funds available to the most innovative ideas across all campuses and organizational units. Existing funding

mechanisms can hamper the development of novel ideas in that resources are often not available in a timely manner. This would serve as a competitive mechanism to foster creativity and innovation across all disciplines.

## **2. Intramural Faculty Research Advisory Board:**

The work group believes that it is a valuable exercise for an internal representative to also evaluate the areas of scientific strengths and weakness within the Institution. Furthermore, it would be advantageous to identify areas of potential high yield for additional investments of resources (personnel, space, money, etc...),. To achieve this, the working group recommends that a standing body composed of faculty members be created to generate an annual report addressing these issues. It is recommended that half of the members be appointed by the administration and the other half elected. The focus of this group would be to identify areas of scientific strength within the institution, including the Reynolda Campus, the Institute of Regenerative Medicine, the Medical School, and affiliated organizations, such as the Piedmont Triad Research and Engineering Center, local business, the Salisbury Veterans Administration, and others. The primary product of this group would be an annual report of areas of scientific strength, scientific weakness, and areas of opportunity. This report would be sent to the Administration, Faculty at large, but especially timed along with presentations to the “**External Research Advisory Board.**” The **Intramural Faculty Research Advisory Board** would have an advisory role to the **External Research Advisory Board**. Through this mechanism individual researchers and faculty would have a major voice via direct communication with the external advisory board. By design, these lines of communication will by-pass all existing administrative organizational structures. The traditional hierarchical administrative structure would have a voice with the external “Think Tank” via the ex-officio members.

## **Appendix Follow**

**WFUHS STRATEGIC PLANNING:  
Research Programmatic Plan**

**Part A**

**Continue supporting those areas where investments and commitments already have been made. These include:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>→ Downtown Campus</li> <li>→ Transgenic Injection Facility</li> <li>→ Friedberg Campus Development<br/>(animal housing, use of NCCR applications, etc.)</li> <li>→ Academic Imaging: MRI, PET, CT</li> <li>→ Brain Tumor Research Center</li> <li>→ Tissue Engineering</li> </ul> | <ul style="list-style-type: none"> <li>→ Nutrition Center Build Out</li> <li>→ Structural Biology</li> <li>→ Public Health Sciences Space</li> <li>→ Infrastructure and Enabling Technologies           <ul style="list-style-type: none"> <li>▪ Equipment: High Speed Sorter, Mass Spec.</li> <li>▪ Research Excellence Award Program</li> <li>▪ Centers</li> </ul> </li> </ul> |
|--|--|

**Part B**

**The following proposes programmatic and other areas that WFUHS should focus its available (discretionary) investment resources over the next 5 years. Resources include faculty recruitment, space, equipment, etc. A two-pronged approach is recommended for operationalizing this programmatic plan. First, groups of faculty may propose exciting research ventures that are consistent with the areas indicated below. Second, administration may identify specific areas for the institution to pursue.**

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<u>Enabling Technologies</u> - Proteomics - Genomics - Bioinformatics - Biostatistics - Imaging - Biomedical Engineering - Nanotechnologies - Others	20- 25%	20- 25%	20- 25%	15- 20%	15- 20%
<u>Areas of Science/Disease</u> (Each of these areas should include an emphasis on Minority Health and Women (or Gender differences). - Aging - Cancer: Clinical Research - Obesity/Diabetes and complications - Airway and Allergic Disease - Vascular Disease - Substance Abuse/Addictions - Vaccine Development/Emerging Infectious Disease - Future/Emerging targets of opportunity <ul style="list-style-type: none"> <li>• One Example: Clinical Neurosciences (including Dementia, Stroke, Pain, Movement Disorders)</li> <li>• Second Example: Bone/Joint</li> <li>• Others</li> </ul>	60-65%	60-65%	60-65%	65-70%	65-70%
<u>Infrastructure</u> Examples include, but not limited to: renovations (i.e. wet bench and space development-excluding Downtown Campus, grants management, IRB, Information systems specifically for Research mission....).	5-10%	5-10%	5-10%	5-10%	5-10%

## Glossary

1. **Institutionally-Recognized Centers** are formally recognized organizational units within the School of Medicine. Center directors who lead these centers report directly to the Dean of the Wake Forest University School of Medicine. Every **institutionally-recognized center** must have defined goals and plans that are multi-disciplinary in nature and that support the strategic plan for Wake Forest University Health Sciences (WFUHS) and the Wake Forest University School of Medicine (WFUSM).
2. **Other Centers** are organized groups that have been established to support a single specific focus, such as centers named based on:
  - departmentally based activities
  - receiving an NIH center grant
  - advertising needs – to draw patients
  - clinical centers – to draw students & patients
3. **Programs** have multi-investigators and are cross disciplinary.
4. **Cores** are institutionally supported technologies that cannot be provided to the faculty by a single or several investigators. It consists of a facility that has been formed to provide resources and support around a focused technology or function. Recognized cores are cost centers, require institutional investment, and periodic review.

