

## RESEARCH FACULTY RETREAT - 2006

### WORKING GROUP #4

#### ***DISCUSS THE RELATIONSHIP BETWEEN AND INTEGRATION OF CLINICAL, BASIC, TRANSLATIONAL, COMMUNITY, AND POPULATION RESEARCH AT WFUSM. THE ROLE OF THE CLINICIAN SCIENTIST IS A CRITICAL PART OF THIS DISCUSSION***

- Leaders:** David Goff, Linda McPhail
- Group members:** Tom Arcury, David Herrington, Mark Wolfson, John Stewart, Aimee Wilkin, Barbara Nicklas, Ed Swords, Leslie Poole, Alison Snow-Jones, Mark Cline, Liqing Yu, Cynthia King, Jack Rejeski
- ExOfficio:** Charles McCall
- Staff Support:** Rachel Williams; Vicky Zickmund

The working group was asked to focus on the relationship between and integration of clinical, basic, translational, community, and population research at WFUSM while paying close attention to the critical role of clinician scientists during this discussion.

The group addressed the following areas:

- Present state of institutional efforts to integrate research at WFUSM
- Current impediments to successful integration
- Specific suggestions for improving integration

During this process, the group was motivated by the following question:

*What can be done to increase efficiency in translating new discoveries to improve overall human health?*

#### **Present state of institutional efforts to integrate research at WFUSM**

The spectrum of research can be divided, in a somewhat arbitrary manner and with imprecise borders, into basic, phase 1 translational, clinical, phase 2 translational, and population research domains. In this scheme, basic research refers to research related to understanding fundamental aspects of natural phenomena, often in laboratory settings. Phase 1 translational research refers to research that relates to the transition from basic and animal research into research involving humans. Clinical research comprises studies and trials in human subjects. Phase 2 translational research refers to the transition from clinical research into population research or implementation. Population research refers to research related to the influences on the health of human populations. Although this classification scheme may appear to imply a linear, unidirectional approach to science with inexorable progression from one domain of research to the next along a translational arrow, the reality is that feedback occurs at multiple points along this complex cycle. For example, findings based on population or clinical research may stimulate new basic research hypotheses. Consequently, at a minimum, effective communication across domains is required to facilitate translation of new knowledge at multiple levels into improvements in human health. It has been proposed that actual integration of research efforts across these domains might enhance the translation of knowledge into improved human health. By "integration," the group envisions an environment in which researchers collaborate actively across research disciplines (transdisciplinary research).

The current state of integration of research across domains was judged to be suboptimal in general and variable at WFUSM. Multiple areas of research were discussed; several examples are mentioned briefly here. The consensus held that the best example of effective integration of research at WFUSM exists in the area of cancer research, and this success was attributed to the accomplishments of the Comprehensive Cancer Center (CCC). Yet, even in this area of relative success, opportunities for improving strength were identified, especially in phase 1 translational and clinical research. (This area of relative weakness was also noted in the recent critique of the successful CCC renewal application.) An emerging and well integrated program within CCC is the Brain Tumor Center of Excellence. The Aging Center was identified as another area of relatively successful integration, though, in this instance, relative weakness was perceived in basic research related to aging. The Institute for Regenerative Medicine was identified as an example of effective integration of basic and clinical research (including phase 1 translational research); however, the current applicability of phase 2 translational and population research approaches was judged to be relatively low. As a final example, cardiovascular science was judged to be an area with substantial research activity in multiple domains, but with less emphasis on the development of an effective integrative structure.

Several inferences may be supported by this assessment. First, the examples of the most effective integrative efforts have arisen in the presence of integrative units, e.g., Centers that promote collaboration across department and domain boundaries. Second, a common feature of the most successful assemblies for clinical and translational research is the availability of financial resources that must be applied toward forming transdisciplinary research teams. Examples depending mostly on extramural resources include the CCC and Aging (Pepper) Center. Examples initiated by institutional internal resources include the Institute for Regenerative Medicine and the Brain Tumor Center of Excellence. Notably, the broad base of cardiovascular sciences does not have a central base of funding. Third, a leadership structure exists for the most successful integrative programs. Fourth, even when integrative structures exist, relative weakness in faculty expertise in a domain can impair the success of the integrative effort. Finally, successful models of transdisciplinary research can emerge without substantial centralized resources (e.g, the Program in Lipids). These efforts often exist within a departmental structure, but the center or institute structure optimizes the relationship between and integration of clinical, basic, translational, community, and population research at WFUSM.

### **Current impediments to successful integration**

Other impediments to successful integration were noted:

1. Lack of administrative focus on financial planning for the future research enterprise as well as promoting cohesion and partnerships between departments, especially between basic and clinical science departments. For example, department chairs from basic and clinical science departments rarely discuss mechanisms by which their faculty could interact and collaborate.
2. Lack of incentives for internal collaboration, especially across departments and campuses.
3. Limited availability of physician scientists
4. Lack of a searchable faculty database

## **Specific recommendations for improving integration**

### **1. *Enhance the administrative focus on financial planning for the future of the research enterprise and promoting cohesion and partnerships between departments, especially between basic and clinical science departments.***

The group supports the institutional efforts to establish a Clinical and Translational Science Award (CTSA) funded program as the CTSA represents an important mechanism to improve integration of the research enterprise and a necessary program for the success of clinical/translational research.

The institution should examine the research portfolio from a perspective of research areas and domains to identify key opportunities for selective recruitment to enhance the likelihood of successful research integration (e.g., basic science aspects of aging and translational/clinical aspects of cancer research).

Translational pilot grants should be established to promote collaboration across domains and disciplines. The Cross Campus Collaborative program could serve as a model.

Existing research centers and institutes (and their leadership) should be evaluated as to their success in promoting integration and collaboration.

Research centers should be established to promote integration in promising areas.

Seminar series should be restructured and/or established to promote and showcase translational and integrative research.

### **2. *Establish incentives to foster more internal collaboration, particularly across departments and campuses.***

Change the culture so researchers perceive equivalent or greater "credit" for internal collaborations (especially across departments and domains) than for external collaborations (subcontracts).

Implement a more transparent indirect cost recovery mechanism that incorporates sharing of indirect funds across departments and domains.

Modify the Research Excellence Awards to reward and promote collaborative translational research, especially across departments and domains.

Modify the promotions process to enhance recognition of the value of efforts to integrate clinical, basic, translational, community, and population research at WFUSM.

Expand shuttle services between campuses and provide parking privileges to those conducting collaborative research.

Establish mechanisms in grant budgets to allow for cross-campus (Reynolda campus, medical school, hospital) collaboration (i.e. sharing personnel costs across institutional boundaries for fellows or technicians performing collaborative research).

### **3. Limited availability of physician scientists**

Develop an institutional program that enhances the transition from fellow to faculty researcher for potential clinical scientists, similar to a program recommended last year by the Research Advisory Committee (RAC).

Provide administrative infrastructure to assist faculty with submissions of institutional and individual research career development awards to support translational and clinical researchers.

Due to the clinical demand on their time, clinician scientists often devote a smaller proportion of their effort to research than do other faculty researchers. Consequently, the funding level of clinician scientists may be less stable. When funding gaps or dips occur, clinicians are often required to increase their clinical effort, thereby further impairing their subsequent likelihood of success in research. The institution should develop mechanisms to support clinician scientists through brief funding gaps to promote long-term success.

Provide incentives for recruitment and retention of established physician scientists.

### **4. Lack of a searchable faculty database**

The development of collaborative/interdisciplinary research projects and funding is best achieved as investigator-driven efforts by those with the ideas and talents for developing them. Development of a Wake Forest University-wide (Reynolda campus and medical school) searchable database that includes information about faculty research/clinical interests and expertise would allow investigators to identify other faculty members with complementary interests and expertise.