

ABSTRACT: 2013 ELATE Institutional Action Project Poster Symposium

Project Title: Translational Research Program For Biomedical Engineering at Drexel

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Background, Challenge or Opportunity: Translational research represents that area of research that takes advances in basic science and develops them into devices/methods/practices that improve the human condition. From members of the business community, it is often included as entrepreneurship, which is not the same thing. From the scientific community, most of the effort remains at the border from basic science to clinical research with little work done to establish best practices that can increase the likelihood of moving advances to the marketplace. The challenge will be to ensure that resources are available for early stage translational research and not reserved for later stages entrepreneurship.

Purpose/Objectives: There are two objectives. The first is to educate Biomedical Engineering faculty on 1) translational research in general, 2) resources available in general to promote translation research, 3) specific resources within the Delaware Valley community for translational research and 4) how to take advantage of these resources. The second is to educate students in the opportunities available for translational research, provide them with some basic skills to be successful in translational research careers and what a career in translational research would mean.

Methods/Approach: To educate faculty, we will use a series of seminars and workshops. For students, we will work closely with the new Close School of Entrepreneurship to offer joint courses and a minor degree.

Outcomes and Evaluation: Outcomes for Biomedical Engineering faculty are two-fold. The first is an expected increase in number of translational research proposal submitted and funded from Drexel University. The second is an expected increase in the number of technologies from Drexel faculty sold or licensed. To improve the program, we would also develop an assessment/feedback mechanism. Outcomes for students are tied to our existing assessment set-up in AEFIS. These assessments include the traditional satisfaction with what they have learned and their ability to engage in lifelong learning. In addition, we are especially interested to know students who enter career paths in academic translational, go to work for existing start-up companies or start their own companies.



Enriching Translational Research in Biomedical Engineering

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DREXEL UNIVERSITY
Executive Leadership in
Academic Technology
and Engineering

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Background

Advances made in basic biomedical research are the results of the greatest investments our society can make for the future of the US economy. Direct return on this investment is booming as evidenced by our increased understanding of biological systems.

However, its impact, in terms of preventative medicine, new therapies and diagnostics, is growing far more modestly.

'Translational research' is seen as a solution to this disparity, ensuring that the bounty of discoveries is effectively 'translated' into benefits in the everyday world of medicine.

Translational research has a key role to play in improving our lives and also in completing the social contract between researchers and the taxpayers who help fund them in expectation of future cures

The central goal of this project is to enhance the mission of Drexel University by increasing translational research at the institution.

Approach

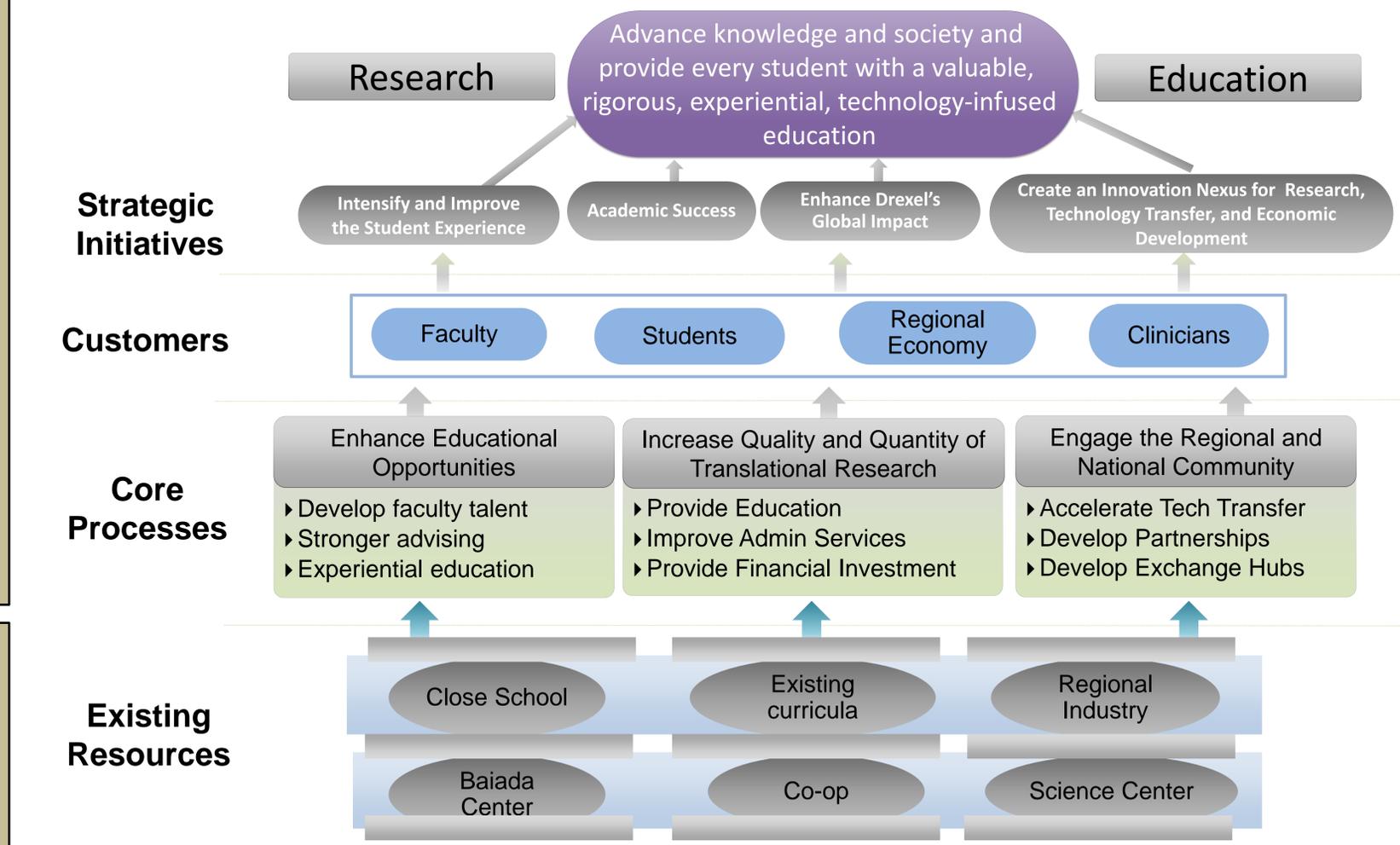
The relationship between academia and industry is the key to successful translation. Closer collaboration, including opportunities for each to better understand the needs and assets of the other, is required. Critical differences between entrepreneurship and translational research must be understood.

If faculty are to successfully engage in translational research they must understand the needs of industry during the process of bringing new therapies and diagnostics to market as well as avenues for testing and disseminating preventive medicine strategies. This requires new educational practices for faculty and students.

At the same time it is likely that industry will also need to change. For examples, industry may increase direct payments to universities to solve problem that it defines. In some cases, industry may need to free research and development from concerns related to marketing and sales infrastructure. In addition, some industries, such as the pharmaceutical industry, may need to be restructured. This is beyond the scope of this project.

Finally, University technology-transfer offices are critical to move this relationship forward and streamline the partnership. It is important that these offices support the process and not become a hindrance. This requires updating the administrative resources in partnership with faculty.

Alignment to Drexel's Mission Statement



Identified Strategic Partners

- ❖ **Project Mentor:** Banu Onaral, PhD
Director School of Biomedical Engineering
- ❖ **University Institutions:**
Donna DeCarolus, PhD
Director Close School for Entrepreneurship
- Robert B. McGrath, Ph.D. –
Senior Associate Vice Provost for
Entrepreneurship and
Technology Commercialization
- Janet Fleetwood, Ph.D –
Vice Provost for Strategic Development
- Keith A. Orris –
Senior Vice President For Corporate
Relations & Economic Development

Goals

- ❖ Buy-in from strategic partners
- ❖ Minimize overlap/redundancy
- ❖ Maximize synergy
- ❖ Strong return on investment

Focus on Translational Research Education

Faculty

- Workshops
 - Utilize Coulter Foundation Method/Science Center (Quorum)
 - Focus on NIH T1 issues
- Roundtables
 - Identify Needs of Researchers & Industry
 - Engage Region Resources (Ben Franklin Tech., BioAdvance, etc)
 - Engage Drexel Research Administration
- Advisory services
 - Mentorship
 - T-Researcher –in-residence

Students

- Undergraduates
 - Minors program with Close School
 - Entrepreneurship vs. translational research
- Master's Program
 - Internships
 - Thesis opportunities
- PhD Program
 - Interdisciplinary
 - Partnership with faculty/industry

Assessment

- ❖ Faculty satisfaction with workshops and roundtables: questionnaire at the end of the event
- ❖ Faculty satisfaction with advisory services: repeat visits, referrals, follow-up surveys
- ❖ Student reviews through current AEFIS system
- ❖ Increased translational grant submissions and funding
- ❖ Increased licensing agreements
- ❖ Increased industry funding for research