

Signature Programs

Cancer

Rutgers is extraordinarily well placed to develop an outstanding program in translational research in cancer, including research in tobacco, which is among the best in the U.S. The unified Rutgers Cancer Program, under the auspices of Rutgers Cancer Institute of New Jersey (CINJ), has a statewide catchment area. CINJ is New Jersey's only National Cancer Institute (NCI)-designated comprehensive cancer center. Since inception, CINJ's membership and expertise have broadened across the Rutgers continuum and it has forged collaborative relationships with Princeton University and the Institute for Advanced Study in Princeton. CINJ membership now spans 14 Rutgers schools and institutes. CINJ is comprehensive with scientific strength in basic, population, and clinical research in cancer and its current research programs have translational targets through intra-programmatic and/or inter-programmatic interactions. In 2014, the program generated approximately \$70 million in grant support and the scientific productivity of the members was illustrated with over 700 publications. CINJ's translational research program includes critical niches that enable it to achieve national prominence, including efforts in precision oncology, which is conducting clinical trials that provide genomic assessment leading to personally guided therapies for patients based on their cancer's characteristics. CINJ's precision oncology work is conducted in collaboration with Rutgers University Cell and DNA Repository (RUCDR) Infinite Biologics. It is anticipated that future collaborative activity in this regard will also include the planned Institute for Quantitative Biomedicine at Rutgers (RU-New Brunswick). The anchoring CINJ Early Phase Clinical Trial Program is top-ranked, having received highly competitive funding from the NCI and the Department of Defense. CINJ has received long-term funding from the NCI Cancer Therapeutics Evaluation Program and now leads one of the nation's early therapeutic clinical trials network (ET-CTN) sites. Clearly, Rutgers Cancer Institute is benefiting the state through acquisition of federal funding and the population by providing state-of-the-art opportunities, and is now positioned to further enhance the state and university.

The RBHS signature cancer program, to be led by the CINJ director, will take advantage of the programmatic structure of CINJ, tobacco control research at the School of Public Health, and the complementary programs in clinical research, drug development, informatics, and public health. The program will enhance team science through a series of targeted initiatives:

- changing the culture and at the same time eliminating silos;
- developing funding mechanisms to enhance collaboration and "prime" multi-investigator projects and funding vehicles;
- identifying and recruiting key faculty who will both increase the "breadth and depth" and provide guidance to vitally important team science grants such as P01s and SPOREs; and
- building and supporting key infrastructure, including shared resources and staffing, to assure success of the plan.

The cancer program will also expand to enhance research and patient care state-wide, including to the Newark RBHS campus. The integration of the Newark clinical programs into the CINJ network will allow for the CINJ clinical research programs and trials to be offered to a more diverse population. Incremental investment will be needed to provide pilot funding to generate preliminary data, provide protected time for enhanced research productivity, recruit new faculty, and support critical infrastructure development and use.

Implementation of these targeted initiatives will be driven by a collaborative deliberation and assessment process by key stakeholders. Assessment of infrastructure will assure that appropriate resources are available. First, a top to bottom review of existing shared resources will be conducted.

Second, necessary new and shared resources will be identified. An initial review has identified, for example, some specific needs: tissue banking, informatics, and analytic and synthetic chemistry.

An aggressive timeline is planned. In year 1:

- a Strategic Plan Implementation Committee will be established to oversee the program;
- the first series of affinity groups across the Rutgers continuum will be identified;
- initial mini-retreats will be held; and
- an analysis of shared resource use and a user survey will be completed.

In year 2:

- the first series of group retreats will be assessed to identify competitive goals and needs;
- potential areas of research will continue to be identified;
- a Request for Application will be released to announce the availability of funding for high quality team pilot projects;
- critical faculty recruitments needed to enhance current and future programs will be identified;
- the recruitment process for identified faculty positions will begin;
- critical requirements for new shared resources will be identified; and
- a funding plan will be developed to allow for the use of these shared resources in obtaining data needed in support of team/translational applications for funding.

In years 3 through 5:

- ongoing team programs will be monitored;
- potential new areas will be considered, evaluated, and, when appropriate, supported;
- non-productive and non-competitive teams will be eliminated; and
- use of overall shared resources and infrastructure will be evaluated.

The goals and metrics for the translational research in the cancer program will include:

- support for the development of a world-class funded team of translational researchers in cancer;
- breaking down silos and building teams assessed by increased collaboration, multi-PI high impact papers, and externally funded multi-PI grants;
- developing a translational pipeline from Rutgers basic science to clinical trials assessed by increased investigator-initiated early phase trials; and
- translating public health and tobacco studies from population studies to change in policy.

An aggressive timeline will be pursued. Discussions are ongoing across Rutgers and Princeton to identify collaborative areas, faculty assets, and requirements that will lead to the submission of institutional training grants (NIH T32 and R25 level mechanisms, in addition to grants from other agencies) as well as a number of multi-PI collaborative applications. As outlined in the strategic plan, significant incremental resources will be required for recruiting new faculty and providing support for infrastructure and critical seed funds to “prime” collaborative grant applications. With these in place, targeted applications such as R25 proposals are anticipated for submission: one would be submitted in the first 18 months and a total of three more would be submitted within the next three and a half years. Currently, four T32 training grants active with cancer center PIs focus on cancer-related areas. One cancer-focused T32 grant proposal will be submitted in the first two years of the program with an additional two more by year 5. Currently, no active multi-investigator P01 or SPORE grants exist within the cancer program. A skin SPORE application will be submitted by the end of year 2 and a second (prostate cancer) by the end of year 5. With added funding, a P01 grant proposal will be submitted by the end of year 2 and two additional P01s will be submitted by the end of year 5. To facilitate SPORE,

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P01, and multi-PI R01-level grants, one SPORE and two collaborative program retreats have been scheduled in the next three months. These retreats will focus on identifying current collaborators, faculty recruitment needs, and funding requirements for preliminary data.

CINJ currently leads 79 open therapeutic trials; six are peer review-funded and an additional 19 are investigator-initiated. It is expected that overall investigator initiated and externally peer-reviewed grants will be increased by 25% within two years and by 50% by year 5.