
EXECUTIVE SUMMARY

OVERVIEW

Rutgers Biomedical and Health Sciences (RBHS) serves as the umbrella organization for eight schools, four centers and institutes, and a behavioral health network. RBHS was created in July 2013, in accordance with the 2012 New Jersey Medical and Health Sciences Education Restructuring Act. The creation of RBHS within Rutgers, The State University of New Jersey, established Rutgers as one of the largest academic institutions in the United States providing health care education, research, and clinical service and care.

As an academic health center, RBHS recognizes the changing health care environment and is positioning itself accordingly. With the enactment of the Patient Protection and Affordable Care Act, accountability for patient care is shifting to providers, health care will be more value-driven, and health care teams must embrace interprofessional collaboration and innovation. The focus of health care will be population-based, rather than individual-based, and the provision of health care will move from large regional centers toward community centers. Further, rapid changes in technology will provide new opportunities for patient care and research.

RBHS is poised to take advantage of, and excel in, this new environment, with its schools of allied health professions, biomedical sciences, dental medicine, medicine, nursing, public health, and pharmacy; its centers and institutes focusing on cancer, advanced biotechnology and medicine, environmental and occupational health, and health care, health care policy, and aging research; and its behavioral health care unit.

Preparing for the challenges of a changing health care environment and addressing the charge to develop a strategic plan, the RBHS community embarked on a comprehensive and inclusive discovery and planning process beginning in December 2013. The vision for the resulting five-year RBHS strategic plan is to strengthen programs across all RBHS schools and units, foster integration and collaboration across RBHS and between RBHS and the university's non-RBHS programs, build academic strength in health throughout Rutgers, and serve the state by improving health and access to health care.

The plan was developed with input from more than 5,000 faculty, staff, and students who responded to surveys; the 24 members of the RBHS Strategic Planning Steering Committee, representing all RBHS constituencies, other Rutgers faculty, and the New Brunswick and Newark communities; more than 500 faculty who served as members of working groups; Camden, New Brunswick, and Newark community focus groups, which included 40 community representatives; and the RBHS leadership, including the chancellor and school deans and unit directors.

In developing the strategic plan, consideration was given to the changing health care environment, as well as the overarching Rutgers strategic plan and its integrating themes, strategic priorities, and foundational elements. Rutgers aspires *to be broadly recognized as among the nation's leading public universities: preeminent in research, excellent in teaching, and committed to community*. Relevant integrating themes of the universitywide strategic plan that are particularly applicable for RBHS include: cultures, diversity, and inequality—local and global; improving the health and wellness of individuals and populations; and creating a sustainable world through innovation, engineering, and technology.

RBHS ASPIRATION AND IDENTITY STATEMENT

ASPIRATION

RBHS aspires “to be recognized as one of the best academic health centers in the United States, known for its education, research, clinical care, and commitment to improving access to health care and reducing health care disparities. This will be achieved through dedication to elevated standards of excellence and innovation, interprofessional collaboration and integration, and deep engagement with the community.”

IDENTITY

“RBHS leads Rutgers’ efforts to be a state, national, and international leader in the biomedical and health sciences and their related professions. The approach incorporates insights from laboratory sciences and the clinical, behavioral, public health, and social sciences, as well as from non-health care disciplines, including business, economics, engineering, law, the arts and the humanities. RBHS will advance population-based, value-driven health care by building on its recognized clinical and research excellence, engaging with local and global communities, taking advantage of and strengthening its uniquely diverse workforce, and realizing interprofessional synergies among its schools and institutes. Further, RBHS will strengthen its many professional ties with state and federal governments and foster new public-private partnerships with industries critical and vital to New Jersey’s economy.”

SIGNATURE PROGRAMS

Signature programs for the RBHS strategic plan have been chosen from current programs of strength. The objective is to build these signature programs across all RBHS units and for the programs to become among the best in the nation over the next five years through strategic investment.

The **Cancer** program will take advantage of the overarching structure of the Rutgers Cancer Institute of New Jersey. The program will enhance team science through a series of targeted initiatives:

- changing the culture, 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 its breadth and depth and provide guidance for pursuing vitally important team science grants such as National Institutes of Health-funded program project grants and specialized programs of research excellence;
- expanding its programs to Newark and statewide; and
- building and supporting key infrastructure, including shared resources and staffing, to ensure success of the plan.

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.

The **Environmental and Occupational Health** program will take advantage of the considerable strength in the existing Environmental and Occupational Health Sciences Institute (EOHSI). EOHSI’s faculty members have built research programs utilizing an interdisciplinary model that integrates environmental and occupational health with policy, planning, engineering, and other disciplines across the university. An important initial step is to hire a visionary director for EOHSI.

Major efforts in the upcoming five years also will include recruiting junior faculty in some or all of the following key areas of existing strength, who are needed to fill gaps and replace senior faculty: exposure science, environmental epidemiology, environmental toxicology, epigenetics, environmental engineering, and risk analysis. Recruitment and investment also are needed in two emerging areas within environmental health: individual susceptibility to environmental disease and nanomaterial impact on environmental health. Further, a universitywide committee will be established to coordinate and facilitate productive interdisciplinary programs in environmental health. Membership should include central Rutgers administration, RBHS representation, and talented senior faculty. The committee will have a broad mandate, including brainstorming, hiring, and joint fundraising for interdisciplinary research.

Infection and Inflammation will take advantage of the considerable strength in the newly established Institute for Infectious and Inflammatory Disease (I3D). This program has particular strengths in host-microbe interactions, immunopathology, and global health. Specific initiatives include:

- recruitment of junior and mid-level faculty with expertise in the targeted areas of host-microbe interactions, immunopathology, and global health and recruitment of mid-level or senior faculty to lead research programs in these areas;
- encouraging and rewarding collaboration by moving faculty with common interests to common locations in Newark and New Brunswick/Piscataway, holding yearly retreats, working closely with the Office of Technology Commercialization to generate intellectual property portfolios, establishing partnerships with pharmaceutical and biotechnology companies, and initiating a pilot grant program to enable the development of multi-investigator grant proposals;
- developing state-of-the-art resources, including new core facilities for metabolomics, bioinformatics, and clinical research/trials units;
- upgrading/maintaining equipment in existing core facilities;
- upgrading animal facilities; and
- raising funds from private donors in New Jersey and nationally.

The **Neuroscience** program will be based in the new Brain Health Institute. The institute's goal is to develop neuroscience at Rutgers to become a nationally preeminent and highly translational research enterprise. New tools are transforming neuroscience and these afford an unprecedented opportunity to create new treatments for central nervous system disorders. Initial focus will be on four areas and associated disorders: neurodevelopmental (autism spectrum disorder and schizophrenia), neurodegeneration and injury (multiple sclerosis, Parkinson's and Alzheimer's diseases, spinal cord and traumatic brain injury), cognitive and sensory neuroscience, and motivational neuroscience (addiction, obesity). The program will have three major goals:

- to create research programs focused on the biological underpinnings of healthy central nervous system function, as well as dysfunctions associated with the above disorders;
- to develop new treatments for these disorders using neuroscience tools; and
- to establish a rich neuroscience resource in New Jersey that educates the public, clinicians, faculty, and students, as well as state, national, and international health officials.

The ultimate goal is to identify the biological bases of nervous system function and dysfunction, and apply new neuroscience techniques to develop powerful, effective strategies for prevention and treatment of brain and spinal disorders.

Community Health and Health Systems has been selected as an emerging signature program. The program's goal is to promote evidence-based population health improvement by engaging diverse communities and advancing delivery system innovation.

Although Rutgers is well-positioned to advance its role and standing in the fields of community health and health systems improvement, with a substantial number of faculty having interests in relevant areas, it does not currently have the depth of funded faculty to develop a program likely to compete with the top programs nationally within the next five years. However, work in this area will address a vital RBHS goal of providing community health care and is of great consequence to the state. This will be accomplished by developing and sustaining capacity to generate high-impact, rigorous research; attracting significant extramural support; effectively translating research to policy and practice; and, ultimately, making major contributions to improving population health, eliminating health disparities, and promoting health equity. Initial activities will focus on building capacity within Rutgers.

COMPLEMENTARY PROGRAMS

Complementary programs will be developed RBHS-wide to focus on areas that, while relatively strong, are not currently of sufficient strength to have the potential to be among the best in the nation within the next five years, but are essential for the growth and development of RBHS, for the success of RBHS signature programs, and are critical to Rutgers' mission. In two of the complementary programs (Clinical Research and Public Health), RBHS will take the lead. In the other two (Informatics and Drug Discovery and Development), RBHS will participate in programs being led by the university's central administration.

The **Clinical Research** complementary program will undertake two important initiatives in support of the RBHS signature programs, the emerging signature program, and other research programs.

The first is the development of the infrastructure needed to support a National Institutes of Health (NIH) application for a Clinical and Translational Science Award (CTSA). The CTSA, when funded, would provide expanded core resources in key areas, including biostatistics, bioinformatics, data management, clinical trials and epidemiology, research nursing, and pharmacy and pharmacology.

The second initiative is a collaboration with Rutgers University Cell and DNA Repository (RUCDR) Infinite Biologics. The collaboration will enable RUCDR to support RBHS researchers focusing on the genetic causes of common, complex human diseases and enable genomic discoveries that will lead to diagnoses, treatments, and cures for these diseases. Through this collaboration with RUCDR, resources will be available to assist investigators and provide access to high quality biomaterials, technical consultation, and logistical support.

RBHS will play a major role in a complementary program and university-led initiative in **Drug Discovery and Development**. A Rutgers-wide Drug Design Center will be formed to enhance collaborative design and discovery of lead compounds to advance medicine and the understanding of disease. Six objectives have been identified for the RBHS complementary program component:

- formally designating drug discovery and development core competencies in platform technologies;
- promoting joint recruitment of world-class faculty across academic units;
- enabling multi-principal investigator collaborative grant opportunities and establishing training and educational initiatives that align with core competencies in platform technologies and translational research in signature programs;
- providing essential service capabilities where collaborative teams are not available;
- instituting interdisciplinary seminar series and working groups focused on drug discovery and development; and
- maximizing the value of collaborative innovation by creating new tools and lead compounds relevant to drug discovery and development through collaborative research.

It is critical for Rutgers to develop and implement a bold, strategic vision for an advanced cyberinfrastructure (ACI) ecosystem that addresses **Informatics** needs universitywide. The RBHS plans for a complementary program in informatics will be aligned accordingly. Plans include: participating in the Rutgers-wide office for research cyberinfrastructure, deploying a balanced ACI at Rutgers, recruiting faculty with systems and computational expertise, recruiting faculty with biomedical informatics expertise, and establishing multidisciplinary research and educational structures.

The RBHS complementary program in **Public Health, including global health**, will address key priorities for Rutgers, New Jersey, and our partners around the world. An important initiative will be recruiting a dean for the School of Public Health who also will lead this complementary program.

The program will provide methodological expertise through a Biostatistics and Epidemiology Consultation Center to be created. Additional initiatives include recruitment of junior and senior methodologists, organization of conferences to attract stakeholders in each of the signature program areas, and creation of pilot grant programs to support research in each of the signature areas. Goals include the development of multi-investigator grant proposals in each of the signature areas and a faculty mentorship program to support rising junior faculty in each of the signature program areas. Global health activities, overseen by the RBHS chancellor, will include the recruitment of a Henry Rutgers Term Chair for Global Health, pilot funds to support the development of global health research programs, development of a global health master's degree program, recruitment of faculty with interests in global health, and creation of a web-based global health resource center, providing information for faculty and students with these interests.

EDUCATIONAL INITIATIVES

Seven educational initiatives have been selected because of the potential for each to improve and/or enrich educational and training programs across RHBS.

A **Novel Approaches to Teaching** initiative within RBHS will create learning environments that promote quality and patient safety and advance educational excellence. Six objectives are envisioned: expanding the usage of existing simulation facilities by extending access to all learners on the same campuses where appropriate; developing an administrative structure to oversee the utilization, planning, designing, and maintenance of current and future simulation resources; adopting a single, unified learning management platform; mapping, developing, and sharing RBHS foundational curricular resources; enhancing and expanding the utilization of distance learning for undergraduate, graduate, and continuing education; and determining the feasibility of shortening the training path for all RBHS students. This initiative will be led by the RBHS vice chancellor for interprofessional programs, with guidance provided by an RBHS Novel Approaches to Teaching Steering Committee.

An **Interprofessional Education (IPE)** program at RBHS will train health professions students to work as members of highly competent interprofessional collaborative teams during their professional careers. Four objectives are planned: creating an RBHS-wide administrative infrastructure to oversee and support the development of IPE initiatives at RBHS; facilitating the development of a wide range of IPE learning opportunities for RBHS students; augmenting the physical infrastructure available to RBHS students for IPE experiences; and enhancing the national reputation of RBHS as a leader in interprofessional education. An Interprofessional Faculty Advisory Council will advise the RBHS vice chancellor for interprofessional programs, who will lead this program.

RBHS will work under the direction of other Rutgers entities to support three additional educational initiatives. Programs in **Undergraduate Health Related Education** are a high priority for many Rutgers

undergraduate schools. RBHS will encourage the development of new programs and the growth of existing programs, particularly those with articulation ladder opportunities for undergraduate students with interests in health professions education. Leadership for these programs will be provided by the individual undergraduate schools and programs, with support and assistance provided by RBHS as appropriate.

Underrepresented Minority Group Pipeline Programs are a high priority for Rutgers. RBHS schools and institutes currently manage multiple successful pipeline programs. Efforts will be undertaken to coordinate and bridge RBHS programs with other university programs. Aims include: increasing the visibility of unique high caliber underrepresented minority group programs available throughout Rutgers; increasing diversity and inclusion in the allied health, research, and policy professions through recruitment, holistic admissions processes, education, retention, and progression to the workforce; providing educational experiences that are humanistic, and culturally and linguistically sensitive; continuing to develop and enhance mentoring, role modeling, and leadership opportunities at all levels from elementary to career and workforce; and promoting collaboration across all campuses in education and research training.

Likewise, **Leadership Training** is a high priority for Rutgers. RBHS will work with the Rutgers executive vice president for Academic Affairs, who oversees leadership training programs for faculty Rutgers-wide, and with University Human Resources for leadership training for staff.

Individual RBHS schools will direct two additional educational initiatives. A **Joint Degree Program** initiative will enhance training opportunities for health professional students, and will enable RBHS to recruit the top students, particularly as health care moves toward new models of team health care and health delivery systems. The respective schools will provide management of these programs.

Professional and Continuing Education programs are needed to strengthen professional competencies among professionals at RBHS and throughout New Jersey. To avoid duplication of effort and address the idiosyncratic nature of programmatic requirements and other issues, RBHS will no longer provide central administrative support and individual RBHS schools will be directed to manage these programs. However, since central administration provided a level of support in the past, a hybrid management model will be developed by RBHS, in consultation with leadership at each school, until schools are able to transition into this new school-based management model.

CLINICAL INITIATIVES

The RBHS strategic plan includes several important initiatives designed to enhance our clinical enterprise. RBHS, in concert with Rutgers central administration, will review its health care marketing, communications, and branding strategy to create and implement a consistent and appropriate **brand** to be associated with the delivery of clinical services statewide, nationally, and globally. RBHS will also work to build and expand **clinical partnerships** with its two principal teaching hospitals, University Hospital in Newark and Robert Wood Johnson University Hospital in New Brunswick, and with multiple hospital systems throughout New Jersey to ensure ongoing clinical and educational opportunities for providers, faculty, staff, and students. Other initiatives include a new **accountable care organization** (ACO), the pursuit of additional ACO opportunities, and assessments of **faculty practice** plans.

OTHER SERVICE ACTIVITIES

Service activities are either planned or will emerge as components of many RBHS strategic plan signature programs, complementary programs, educational initiatives, and clinical initiatives.

Commitment to clinical and community service has been and will continue to be integral to the missions of all RBHS schools, centers, institutes, and behavioral health center.

INTEGRATION AMONG RBHS SCHOOLS AND ACROSS RUTGERS

We are pursuing the reorganization and integration of several programs in order to create academic strength and greater efficiency within RBHS and across Rutgers. On July 1, 2014, the Rutgers College of Nursing (Newark and New Brunswick) and the Rutgers School of Nursing (legacy University of Medicine and Dentistry of New Jersey (UMDNJ)) merged to form the Rutgers School of Nursing. New Jersey Medical School in Newark and Robert Wood Johnson Medical School in New Brunswick are considering joint chair appointments and related initiatives, including sharing basic science courses between the medical schools and with the undergraduate schools.

RBHS plans to utilize its statewide geographic reach, diverse patient population, and breadth of quality, multi-professional educational programs to develop a new faculty practice model optimally suited for the 21st century.

RBHS will work with the university to develop and coordinate universitywide center and institute policies and multiple RBHS faculty members will serve on the Rutgers-wide Committee on Academic Unit Organization, recommended as part of the Rutgers strategic plan, to consider reorganization options with Rutgers University–New Brunswick and Rutgers University–Newark and within RBHS, specifically in regard to basic science departments. Biomedical graduate training programs, currently existing as distinct entities at Rutgers–New Brunswick and within RBHS, will integrate under an umbrella organization to form a proposed new division of graduate studies, which will include biomedical sciences.

Additional integration will occur with the planned expansion of the Cancer Institute of New Jersey to Newark and the new Brain Health Institute, which will bring faculty together across the university. Other integrated programs will be explored in collaboration with Rutgers University–Camden, Rutgers University–New Brunswick, and Rutgers University–Newark.

OTHER ENABLING STRUCTURES

Three enabling structures (infrastructure) have been selected for support and investment. RBHS will work to **Advance Institutional Stature** by educating faculty, senior administrators, and Rutgers alumni regarding the criteria by which RBHS schools and programs are evaluated by national ranking publications; educating faculty on the importance of media coverage of notable research, clinical, educational, and service activities; developing a marketing and communications strategy; developing a unifying brand for RBHS health care delivery; promoting excellence in high quality scholarship, services, and discoveries; developing signature programs; developing new standards and criteria for faculty appointments and promotion; increasing faculty size through creation of additional faculty tracks; increasing school selectivity by soliciting applications from out-of-state students in those schools not doing so currently; and selecting one or more peer and one or more aspirant schools for in-depth study of the methods and metrics utilized and achieved by each to improve or maintain their ranking.

RBHS will provide **Faculty Development** programs, policies, and practices that ensure faculty are supported from initial appointment through retirement. A faculty retention committee developed recommendations that have been incorporated into the strategic plan. They include:

- to improve faculty morale and invest in resources that support research, clinical, and teaching activities of current faculty;

- to address compensation, benefits, and other collective bargaining issues expeditiously;
- to recruit and support diverse faculty and leadership to reflect the demographic composition of local communities and New Jersey more broadly, in terms of race/ethnicity, gender, and nativity status;
- to recruit and retain faculty with interests in health disparities and cultural competencies;
- to revise and standardize faculty appointment and promotion criteria that provide guidance to faculty in choosing a pathway that will enable them to achieve their professional aspirations, maintain high standards of excellence for RBHS, and facilitate the recruitment, appointment, promotion, and retention of outstanding faculty;
- to strengthen and expand the roles of faculty affairs offices, including the tracking of and reasons for departures;
- to establish formal mentoring and faculty development programs;
- to strategically retain high performing faculty members through the budgeting of retention packages as strategic initiatives, analogous to recruitment packages; and
- to systematically collect and compile faculty retention and separation data in each school to track trends and the success/failure of retention efforts to enhance periodic review and modification of faculty retention strategies on an ongoing basis.

There are substantial **Facilities** challenges to address. Maintenance has been deferred for too long. Some space is badly in need of repair or replacement, while other well-maintained space is underutilized. Space utilization across RBHS will be evaluated. When possible, funded investigators will be moved from poorly maintained to well-maintained space; well-maintained space also will be assigned to newly recruited investigators. Over time, as additional funding becomes available through more intensive use of well-maintained space and improvement in the function of the clinical enterprise, resources will be mobilized for space renovation.

FINANCIAL AND DEVELOPMENT STRATEGIES

Many operational, programmatic, and financial challenges and opportunities remain following the integration of Rutgers and the former UMDNJ. A series of strategies have been and will continue to be implemented across RBHS. In addition to those being introduced through clinical initiatives and enabling structures, strategies will include: review of staffing levels and implementation of position approval controls; review of research support infrastructure to ensure efficiency; leveraging state funding for fringe benefits more effectively; holding department chairs and division directors accountable for improving financial performance; recruiting leaders as permanent deans to replace interim deans; and analyzing revenue-cycle and collection rates for strategic opportunities.

Strategies also have been and will continue to be developed to fund the strategic plan. Some initiatives will be supported in the first year by funds contributed by each RBHS entity (representing 2 percent of each entity's revenue) to a chancellor's account and additional funds provided directly by each RBHS entity through reserves set aside within its budget to support school-specific and RBHS-wide programs as each entity chooses (representing 5 percent of each entity's revenue). In future years, the former will be replaced by a strategic fund to be made available through responsibility center management. RBHS also will take advantage of the alignment of RBHS and Rutgers strategic initiatives to fund some of its priorities, such as Henry Rutgers University Professors and Henry Rutgers Term Chairs. Finally, the New Jersey Health Foundation will provide pilot funds to support RBHS signature programs and a major reorganization of development across Rutgers and the Rutgers Foundation will occur to enhance fundraising for RBHS.