

SUNY Excels 2015 Performance Report

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Section 1: Campus Alignment with SUNY Excels and SUNY's overall focus on completion

Binghamton University's Road Map (<http://www.binghamton.edu/president/road-map/>) is a plan that was initiated in April 2012 and extends through 2020. The process that established our Road Map was broadly inclusive, bringing together more than 400 faculty, staff, students, alumni and community members. The plan established an expansive vision for the campus's future—becoming the Premier Public University for the 21st Century. Functionally, the plan established five Strategic Priorities that roughly align with the priorities established by *The Power of SUNY 2020*. Equally important, the Road Map also established a practical and successful process for identifying specific projects and initiatives that will improve the experiences of students, faculty and staff over the next five years. Under this process, members of the campus community are encouraged to develop initiatives that strengthen the campus in accordance with our strategic priorities; these are widely vetted, and those deemed most important and likely to succeed are provided funding. The Road Map has been successful in engaging the entire campus in the pursuit of excellence, with a total of 424 proposals being developed by faculty, staff, and administrators. Throughout the entire process, there is an institutional commitment to growth—growth in *enrollment and educational access*, growth in *research and inquiry*, growth in *impact—economic, social, and cultural*—and growth in *success and opportunities* for our students.

Given the structure and purpose of the Road Map, Binghamton University's current strategic priorities correspond significantly with those of *The Power of SUNY 2020*. Below are the five Strategic Priorities of the Road Map, along with an abbreviated name that captures the priority's purpose.

Strategic Priorities (Abbreviated names)

- Engage in path-breaking graduate education, research, scholarship and creative activities that shape the world. **(Creative activities)**
- The premier public university of the 21st century will provide a transformative learning community that prepares students for advanced education, careers and purposeful living. **(Learning community)**
- Unite to foster a diverse and inclusive campus culture. **(Inclusive campus)**
- Enhance the University's economic, social and cultural impact through engagement from the local to the global level. **(Engagement)**
- Optimize the acquisition and allocation of human, technological, financial and physical resources. **(Strategic investments)**

Overall, our Strategic Priorities align well with SUNY Excels. In addition, several of the goals and measurements associated with our Strategic Priorities track very closely with those identified in SUNY

Excels. Of the 23 goals (see <http://www.binghamton.edu/president/road-map/the-goals.html> for a list of all goals) set in the Binghamton Road Map, seven are directly related to SUNY Excels goals (Table 1 illustrates this alignment), with the majority of the remaining goals correlating indirectly.

Table 1: Direct Alignment of SUNY Excels and Binghamton Road Map

SUNY Excels Priority Area	Binghamton Road Map Strategic Priority	Specific Goals related to SUNY Excels
Access	Inclusive campus	Enhance diversity of the student population at both undergraduate and graduate levels
Completion	Learning community	Increase four-year graduation rate
Success	Learning community	Prepare undergraduates seeking graduate degrees for the challenges of graduate school Prepare students to enter the workforce and successfully navigate their own career choices
	Strategic investments	Optimize staff and faculty resources
	Inclusive campus	Enhance diversity of the faculty, staff, and administration of the university
Inquiry	Creative activities	Increase Research, Scholarship, and Creative Activities Profile to that of a Premier Public University
Engagement	Engagement	Strengthen the University's economic impact on the local community

Section 2: Specific SUNY Excels Priority Areas and Metrics

As part of our planning process, senior campus administrators, with involvement from faculty, staff, students, and other stakeholders, identified targets that we hope to achieve by 2020 for each of the goals stated above, with one primary target for each priority area. Table 2 shows the alignment of these targets with the SUNY Excels Priority Areas.

Table 2: Binghamton Road Map Targets and Alignment with SUNY Excels

SUNY Excels Priority Area	Binghamton Road Map Strategic Priority	2020 Target (Primary target)
Access	Inclusive campus	20% of our students will be from underrepresented groups
Completion	Learning community	Increase 6-year graduation rate to 85%
Success	Learning community	100% of our students will be engaged in a high-impact learning experience
	Strategic investments	Student to tenure-track faculty ratio of 25:1
	Inclusive campus	10% of our faculty will be from underrepresented groups

Inquiry	Creative activities	Faculty ranking from Departments that have doctoral programs to improve according to Academic Analytics by 2020.
Engagement	Engagement	Increase the statewide economic impact to \$1.5 billion per year

We have made significant investments in order to achieve each of these targets. Table 3 lists some of these investments and their funding source. Funding for these projects primarily comes from two separate pools—funds set aside as part of the Road Map process (*RM-year*) that have been generated as a result of increases in enrollment as part of NYSUNY 2020, as well as resources associated with University-led projects included in Gov. Andrew Cuomo’s Regional Economic Development Council awards (*REDC-round*). The first round of Road Map funding was implemented at the end of the 2013 academic year and extended through 2015. The University is currently implementing the second round of Road Map projects (2015-16), has made financial commitments for 2016-17, and has called for proposals for projects to be implemented in 2017-18.

Each of the projects is explained in greater detail below. Between 2013 and 2015, Road Map expenditures totaled \$5.084 million in both base and one-time appropriations. It is important to note that the University also has many existing programs that support these missions (for example, we have a SUNY-best Educational Opportunity Program that supports student access and success). Funding for these programs are continuing and will increase as budgets and priorities allow; the programs that will be discussed in this document are, for the most part, new programs that are the result of the Road Map and opportunities stemming from State economic development programs. The campus also has established key metrics for determining progress on each of the Road Map’s strategic priorities. This table is provided as a quick reference; a narrative description of these projects follows. Projects specifically identified as part of the Road Map or REDC are **bolded** in the following descriptions.

Table 3: Strategies to Achieve Goals:

Binghamton Road Map Target	Investments (Funding Source)
20% of our students will be from underrepresented groups	Develop Organizational Structure to Support Diversity, Equity and Inclusiveness (RM 2013-15) Creation of Divisional/Dept. Staff with Diversity Responsibilities (RM 2013-15) Explore Increasing Scholarships to Aid Recruiting Diverse Students, Undergrad and Graduate (RM 2013-15) Office of Diversity, Equity and Inclusion (RM 2015-16)
Increase our 6-yr graduation rate to 83%	Enhanced Center for Learning and Teaching (RM 2013-15) Developing a Premier Student Experience through Academic Advising (RM 2013-15) EASSE into Premier: Expanding Academic Skills and Support in English The Role of Online Learning in a Premier University (RM 2013-15) Undergraduate advising (RM 2015-16) Retaining students in academic difficulty, increasing advising support (RM 2016-17)
100% of our students will be engaged in a high-impact learning experience	Fostering a Culture of Undergraduate Research (RM 2013-15)

	<p>Fleishman Center (RM 2013-15)</p> <p>The 4-1-1 program (RM 2015-16)</p> <p>Exponentially Increasing STEM Research for Economic Development (REDC Round 3)</p>
<i>Student to tenure-track faculty ratio of 25:1</i>	SUNY 2020 plan to add 150 tenure-track faculty
<i>10% of our faculty will be from underrepresented groups</i>	(see Access projects)
<i>Faculty ranking from Departments that have doctoral programs to improve according to Academic Analytics by 2020.</i>	<p>Establish a New College or School in the Life Sciences (RM 2013-15)</p> <p>Increased Institutional Support for Interdisciplinary Research (RM 2013-15)</p> <p>Library Support for New Programs and Departments (RM 2013-15)</p> <p>Increase the Funds Available for New Faculty Start-up Support (RM 2013-15)</p> <p>Recruit Top Quality PhD Students (RM 2013-15)</p> <p>Smart-Energy and Health Sciences (RM 2013-15)</p> <p>STARS: Strategic Targeted Academic Research Support; Adopt Strategies for Investment to Create Exponential (Non-Linear) Increases in Extramural Funding (RM 2013-15)</p> <p>Enhance Creative Activities and Research Infrastructure (RM 2013-15)</p> <p>Undergraduate and graduate recruitment (RM 2015-16)</p> <p>Graduate student support (RM 2015-16)</p> <p>Transdisciplinary Areas of Excellence (RM 2015-16)</p> <p>Start-up supplemental support (RM 2015-16)</p> <p>Stipend increase for new doctoral students (RM 2016-17)</p> <p>Matched funding for doctoral students (RM 2016-17)</p> <p>NSF Graduate Research Fellowship Supplements (RM 2016-17)</p> <p>Support for new faculty start-up (RM 2016-17)</p> <p>High performance and data intensive computing facility (RM 2016-17)</p> <p>Health sciences core facility instrumentation (RM 2016-17)</p>
<i>Increase the statewide economic impact to \$1.5 billion per year</i>	<p>Industry funded research (RM 2013-15)</p> <p>Entrepreneurship and innovation partners (RM 2015-16)</p> <p>Southern Tier High Technology Incubator (REDC Round 2)</p> <p>Plan and Execute the Next Successful Comprehensive Gifts Campaign (RM 2012-14)</p> <p>Additional needed frontline fundraiser: director of development (RM2015-16).</p> <p>Alumni Association Plan for Alumni Engagement</p> <p>Emphasize Broad-Based Engagement Activities (RM-2012-14)</p> <p>Provide Students with More and Enhanced Service and Giving Experiences through Coursework (RM-2012-14)</p>

Projects Related to Access

2.1.1.1. Full Enrollment (see Section 3)

2.1.2. NYS Residents Served by SUNY (See Section3)

2.1.3 Diversity It is a central part of our mission to support educational access for the residents of New York State. At the most fundamental level, this involves increasing enrollment, which is one of the central goals of Binghamton's NYSUNY 2020 plan approved by SUNY and the state legislature in 2012. As part of this increase, we have made a concerted effort to enroll more minority students. Since 2012, when NYSUNY 2020 went into effect, Binghamton has increased its enrollment by 2,321 students (a 26.5% increase). At the same time, the number of underrepresented minority students increased by approximately 740 (a 32% increase).

We also are working to ensure that the Binghamton University campus encourages success for all our students. One of the highest priorities of the initial Road Map process was the launch of the **Office (now Division) of Diversity, Equity and Inclusion (DDEI) (RM 2013-15)**, in Fall 2013, which established a framework for developing a campus climate that supports diversity, equity and inclusiveness. Valerie Hampton was named chief diversity officer. Some of the activities of the office to date include the creation of a Diversity Fellowship program to increase diversity in the professional ranks of each administrative division, and the development of a cultural competency training program for staff in the Divisions of Student Affairs and Operations.

We believe that attracting qualified minority candidates for faculty and staff positions is highly pertinent to attracting and retaining underrepresented students. In order to support this activity we've appointed divisional diversity officers (**Creation of Divisional/Dept. Staff with Diversity Responsibilities (RM 2013-15)**) with a primary focus on identifying, attracting and retaining highly qualified minority faculty, staff and students to Binghamton University. NYSUNY 2020 has presented a unique opportunity for the University to increase the number of minority faculty members as part of the hiring initiative that is now underway. Working together, DDEI, the provost, and the deans are encouraging departments to broaden their candidate pool to include more minority candidates; this is a challenging project given the small number of available candidates and the competitive salaries they can garner from other campuses. Nonetheless, we have been able to increase the number of underrepresented minority faculty from 37 in 2011 to 54 in 2015—a 45% increase. A similar increase in underrepresented minority staff has also occurred.

In addition to the creation of DDEI and the divisional diversity officers, Road Map funding was used to **Explore Increasing Scholarship to Aid Recruiting Diverse Students, Undergrad and Graduate (RM 2013-15)**. This project is designed to increase student diversity by reducing unmet financial needs for low-income students, increasing support for Clark Fellowships, seeking external support for minority scholarships and grants, and strengthening recruitment in school districts with large numbers of minority students, particularly in New York City.

2.1.4. Capacity (see page 7)

Projects Related to Completion (2.2.5 – 2.2.8)

Binghamton University has a tradition of student success, with significantly higher retention and graduation rates and shorter time-to-completion than both national averages and peer group comparisons. As part of the Road Map, we have developed a number of programs designed to intervene with and improve the experiences of students who are academically at risk to ensure that they continue

through to graduation. In order to increase the percentage of students who are graduating in four years, we have employed four strategies: **Enhanc[ing] the Center for Learning and Teaching (RM 2013-15)**, investing in undergraduate advising, expanding academic skills and support in English, and exploring the role of online learning in a premier university. Each of these strategies is explained below.

The primary objective of enhancing the Center for Learning and Teaching (CLT) is to foster innovative teaching approaches by offering instructional design services, consistent with our identity as a highly selective, residential campus. The CLT offers a state-of-the-art learning studio, nicknamed “The Sandbox,” that serves as a teaching laboratory incorporating innovative educational technology, flexible layout and multi-use design. It is arranged to encourage collaboration and active learning, and features four large, wirelessly programmable screens and electronic walls and interactive white boards to promote engaged learning. In addition, the University has established a system of “mini-grants” to support instructional innovations by faculty, expanded the University Tutoring Services, produced "road shows" to highlight effective teaching, and worked with the University’s Educational Opportunity Program and athletics programs to support at-risk students.

Good advising and academic support is critical to student completion. Recognizing this we have invested in advising in all three years of our Road Map planning. Funding for **Developing a Premier Student Experience through Academic Advising (RM 2013-15)** enabled the campus to pioneer a new degree-auditing program, Degree Works, designed to give students and advisors a more accurate and timely record of student’s coursework and progress to degree; this year Degree Works has been adopted throughout the SUNY system. This initiative also paved the way for **Undergraduate Advising (RM 2015-16)** staff increases, under which four advisors were added to assist in both general academic advising and as key personnel in a proactive and responsive retention effort. A focus on **Retaining Students in Academic Difficulty and Increasing Advising Support (RM 2016-17)** targets both the freshman population that is already in academic difficulty during the first semester and continuing students, particularly transfer students, for whom more advising contact should lead to improved retention and graduation prospects.

In order to support our undergraduate transfer students Binghamton introduced to Road Map proposals to improve our selectivity, yield and retention of this important group of students. **Undergraduate Admissions Support (RM-2015-16)** and **Undergraduate Advising (RM 2015-16)** provided for the hiring of a total of eight staff members to support graduate and undergraduate recruiting and advising, including assistance to transfer students as part of SUNY’s seamless transfer process. In addition to direct support for recruiting and advising for transfer students, Binghamton University also introduced the Binghamton Advantage program in 2011. Under this program, students from SUNY Broome are granted admission to the University, contingent upon achieving a 3.2 GPA after one year of studies at the community college level. This program continues to grow, with approximately 220 students entering through the program in 2014, compared to an initial class of only 40 students.

In addition to the CLT and enhancements in advising, we have invested in two additional projects to promote student completion. The first, **EASSE into Premier: Expanding Academic Skills and Support in English (2013-15)**, increases support for courses, programming and services to support high retention of international students, particularly with regard to strengthening their language skills throughout their degree programs. Located in our new Global Center (supported by REDC funding), our English Language

Institute is increasing staff and working closely with the University Tutoring Services to better serve students and develop best practices to ensure international students' academic success.

(2.1.4 Capacity) Binghamton also is committed to enhancing student completion and success through the development of on-line coursework. Binghamton currently has more than 600 courses taught on line, many of which are utilized by students during Winter and Summer breaks, which contributes to Binghamton's extremely efficient time-to-degree rankings. One of our Road Map projects, **The Role of Online Learning in a Premier University (2013-15)**, established a campus task force to review of the University's current practices and objectives in online learning in order to develop an overall strategy for online learning and an infrastructure to support the different pedagogy required in online or blended courses. The Center for Learning and Teaching is training both experienced faculty and graduate students in the different pedagogies required for effective on-line teaching. The University has provided funding to support a series of workshops and seminars for 75 teachers each year that will focus on effective strategies and technologies for on-line student learning.

Projects Related to Success (2.3.9)

Of the three measures of success—the percentage of students in high-impact learning experiences, the student to tenure-track faculty ratio, and the percentage of faculty from underrepresented groups—the first two are discussed below. The third was covered in our discussion of access.

High-Impact Learning Experiences (also applies to 2.4.12 Student hands-on research, entrepreneurship, etc.)

We have made several investments aimed at ensuring that every student benefits from at least one “high-impact” learning experience — defined as internships, study abroad, service learning, or undergraduate research. Evidence suggests that student participation in these types of learning experiences encourages academic engagement and therefore, student success. There are several components of this initiative. For example, one project thus funded is **Fostering a Culture of Undergraduate Research (RM 2013-15)**, with an emphasis on the social sciences and the humanities. The Office of Undergraduate Research has hired three staff members and additional resources were made available to support undergraduate research in Summer 2014. This office has established a database of campus research opportunities and funding sources, and works to promote the results of student research in campus publications as well as at disciplinary conferences and meetings. Similarly, the University is also working to encourage undergraduate research in STEM fields through a grant awarded through the REDC process — **Exponentially Increasing STEM Research for Economic Development (REDC Round 3)**— which has provided funding for the University to design, construct and outfit new laboratories with innovative infrastructure so that we may increase the number of undergraduates participating in research in the associated disciplines as part of a new Freshman Research Immersion program. Additional funding for this program was obtained from the Howard Hughes Medical Institute.

Through generous support from alumni Steve and Judy Fleishman, the **Fleishman Center for Career and Professional Development (RM 2013-15)** was substantially enhanced in 2014 with a state-of-the-art facility in the heart of campus. Through walk-ins and appointments, students are assisted with career and major decision-making, resume and cover letter development, graduate school decision-making and applications, practice interviews, job and internship searching, and on-campus interviews. In addition,

significant educational and networking programming is provided throughout the entire year, and last year the Center earned two regional awards recognizing its programming innovation. Alumni are strongly encouraged to engage with students in recruiting and hiring graduates and interns. Student use of Fleishman Center services significantly exceeds that of our Carnegie Classification peers in many areas—for example, 8,470 students attended Center programs last year, compared to peer averages of only 3,244.

Professional masters degrees play an increasing role in the success of today's university students, with the result that these programs are in high demand. Twenty-two such programs, across a variety of disciplines, have recently been added or are in the process of receiving SUNY approval. For example, Binghamton Plus (formerly The **4-1-1 program (RM 2015-16)**), an inclusive Masters in Liberal Studies (MALS) will develop internship placements and provide curricular connections for master's level students in the liberal arts. Binghamton Plus is designed to make graduating seniors in the liberal arts more desirable as employees—while providing access for new, career-oriented students. The program has been developed by faculty and evaluated by external reviewers. It is in the advanced "review and discussion" phase and will be presented to campus governance processes this fall.

Reducing the Student to Tenure-Track Faculty ratio

The additional tuition revenue resulting from NYSUNY 2020 will allow Binghamton University to hire 150 net new faculty over a five year period and increase enrollment by 2,000 students during that same period. These additional funds have enabled us to extend access to what is widely regarded as the best undergraduate education in the SUNY system, with a broad-based hiring strategy that encompasses all schools. With the added teaching capacity we have been able to better accommodate demand. The increase in faculty has allowed us to offer a broader range of cutting-edge courses, add 400 new student research opportunities, and substantially decrease our student:tenure-track faculty ratio, one of the prime indicators of student success, from 28.06:1 to 25:1 by 2020. By improving this ratio, the university enhances the quality of student experiences, increases faculty-student interactions to promote success, and fast-tracks students' path to graduation.

2.3.10 Financial Literacy n/a

Projects Related to Inquiry (2.4.11 Total Sponsored Activity)

As a research university, one of Binghamton's core missions is the discovery and dissemination of new knowledge. The Road Map process and the allocation of new resources have therefore focused especially on strategies related to Inquiry. Some of our investments in inquiry are also related to issues of access—for example, with regard to the addition of a new school and the expansion of our graduate programs. The University's commitment to research and scholarship also contributes to Student Success—such as through High-Impact learning experiences such as our Freshman Research Immersion Program. At the same time, strengthening research and scholarship will pay dividends in the economic well-being of the community, and thus also are relevant to issues of Engagement. This section will describe four major strategies and related projects aimed at increasing research and creative activities: the development of a College of Pharmacy and Pharmaceutical Sciences, the establishment of five Transdisciplinary Areas of Excellence (TAEs), start-up support for new faculty, and investments in graduate students.

School of Pharmacy and Pharmaceutical Sciences (SOPPS)

This project to establish a school of pharmacy proceeded along an aggressive timetable, beginning as the as part of our NYSUNY 2020 proposal and identified as the Round I Road Map proposal **Establish a New College or School in the Life Sciences (RM 2013-15)**. Beginning in 2013, a Letter of Intent was submitted for this new program which was approved by the SUNY Board of Trustees in March 2015. The state has appropriated money for a new building and land has been purchased in nearby Johnson City. Construction is expected to begin in Fall 2015. Dean Gloria Meredith joined the campus earlier this year. There is an advisory board in place and the Dean has begun hiring faculty and administrators who will develop the curriculum and prepare materials for accreditation. We are on target to receive the first class in Fall 2017; after four years, it will enroll approximately 360 PharmD and 50 Pharmaceutical Sciences PhD students, and employ 15 clinical and 15 research faculty. The School's researchers, in conjunction with faculty involved in our Transdisciplinary Areas of Excellence (see below), will focus on personalized medicine, drug development and delivery, infectious disease control, and healthcare management and outcomes. Research work in the School is expected to generate in excess of \$1.65 million in eternal funds annually. In addition, the University sees the School linking with external research partners in the pharmaceutical industry to develop new smart drugs and drug delivery systems.

Start-Up Support for New Faculty

In addition to strengthening student success by reducing student-to-tenure track faculty ratio, the faculty hiring initiative undertaken through the Road Map will significantly increase the amount of university research. One of the central tenets of our hiring process has been to focus on both highly-respected, experienced faculty along with extremely promising young faculty; both groups can require substantial investment incentives. Toward that goal Road Map funding and support from our Research and Academic Affairs Divisions was authorized in 2014-15 through 2016-17 to **Increase the Funds Available for New Faculty Start-up (RM 2013-15)**, to provide **Start-up supplemental support (RM 2015-16)**, and **Support for new faculty start-up (RM 2016-17)**. From 2012-13 to 2015-16, the university has hired a total of 200 tenure-track faculty. Of these, approximately 70, mostly in the STEM fields, received start-up support, ranging from a minimum of \$20,000 to a maximum of \$600,000.

Transdisciplinary Areas of Excellence (TAE)

As the University's NYSUNY 2020 plan and the concurrent Road Map were developed, the campus selected **Smart-Energy and Health Sciences (RM 2013-15)** as two research areas where the University had significant historical strengths and the potential to assume national leadership. These were areas of discovery that attracted research talent from a variety of disciplines, in part because the questions raised in these fields are complex and address critical social, cultural, scientific, technological, economic and policy concerns. This new approach to research—holistic, interdisciplinary, and focused on pressing national and global challenges—was embraced by other disciplines on campus, leading to the identification by faculty and administrators of three additional Transdisciplinary Areas of Excellence (TAE): Citizenship, Rights and Belonging; Material and Visual Worlds; and Sustainable Communities. In short, NYSUNY 2020 and the Road Map process resulted in a complete rethinking of the University's approach to academic inquiry.

Much of the Initial Road Map funding focused on providing seed grant support for the TAEs. Three separate programs: **Smart Energy and Health Sciences; STARS: Strategic Targeted Academic Research**

Support; Adopt Strategies for Investment to Create Exponential (Non-Linear) Increases in Extramural Funding (RM 2013-15) and Increased Institutional Support for Interdisciplinary Research (RM 2013-15) each offered funding to support collaborative research; the first in Smart Energy and Health Sciences, the second two providing support for all five TAEs. Significantly, the **STARS** initiative also introduced the concept of cluster hires in the TAEs as a means of rapidly increasing the University's stature as a research University. To date, of the approximately 200 faculty hired since the start of the Road Map, about 35% have been associated with the TAEs.

The Road Map also has provided funding to strengthen the campus research support staff and infrastructure. **Transdisciplinary Areas of Excellence (RM 2015-16)** provided funding for a grant writer, administrative assistant, and a laboratory technician, necessary to meet the administrative and support needs of a growing faculty. Two additional Road Map initiatives, **Library Support for New Programs and Departments (RM 2013-15)** and **Enhance Creative Activities and Research Infrastructure (RM 2013-15)** provide additional administrative and library support for the TAEs and other campus research activities; the former, by providing resources to purchase materials that most directly support faculty and research groups aligned with the TAEs and the latter by supporting two new full-time research staff positions to assist in grants administration, compliance requirements and principal investigator informational needs.

The University also has moved to enhance the research facilities employed by TAE and other faculty in their research work. Early on, as a part of the Health Sciences initiative, the Health Sciences TAE identified a strong need for Binghamton University to establish a **Health Sciences Core Facility**. Road Map funding beginning in Round II helped establish a centralized core in the Center of Excellence Building to house and maintain large ticket equipment, some of which the campus has already purchased. In addition, two separate Road Map initiatives, **Increased Institutional Support for Interdisciplinary Research (RM 2013-15)** and **Health Sciences Core Facility Instrumentation (RM 2016-17)** provide for instrumentation support for this facility. A second phase of the core facility initiative will establish a satellite core facility that will include a more standard array of equipment for tissue processing, RNA/DNA/protein preparations and other procedures central to studies in the Health Sciences, particularly in such areas as cell biology, microbiology, biomedical engineering, pharmaceutical sciences and neuroscience. Faculty associated with the core will also seek additional external funding from federal, state, and private agencies.

A second core facility is being developed to address the "Big Data" needs of faculty in a variety of fields that employ computationally intensive modeling, simulation, and analysis. Historically, campus researchers have met this need either through collaboration with researchers at other Universities or by employing "work-arounds" that utilized excess computer capacities. Neither approach was perfect, as it placed the research needs of our campus second to the needs other institutions or institutional priorities. We are addressing this challenge by providing one-time support for the acquisition of a **High Performance and Data-Intensive Computing Facility (RM 2016-17)** that will foster significantly greater productivity and efficiency by reducing costs and paperwork, while adding flexibility and opportunities ask more speculative and potentially more rewarding questions.

Graduate Student Support

We are rapidly growing our tenure-track faculty, our research profile, our undergraduate student population and our graduate student population. During this period of growth, it is critical that we

attract, admit and matriculate the highest-quality graduate students to our master's and doctoral programs in order to support and facilitate our faculty growth.

Our current plan calls for improving graduate selectivity by generating increased applications to all graduate programs. The Road Map proposal **Recruit Top-Quality PhD Students (RM 2013-15)** provided support for increased marketing and the expansion of assistantship opportunities on campus.

Undergraduate and Graduate Recruitment (RM 2015-16) provides for an increase in graduate admissions staff, allowing the University to participate in more graduate fairs in a wider geographic range, as well as to improve on-line information and marketing. Our goal is to increase our enrollment of PhD students at a rate close to our faculty growth rate, as this will help us maintain our research profile. An increase in **Graduate Student Support (RM 2015-16)** will provide stipend assistance for graduates assigned to faculty hired as part of our recent expansion.

By every measure, Binghamton's support for graduate students is inadequate: according to the best national data available, they range from \$2,000 to \$8,000 below national averages, with the worst disparities in STEM fields. Three projects in Road Map Round three targeted the challenge of graduate student funding. A **Stipend Increase for New Doctoral Students (RM 2015-16)** will allocate additional funding to support tuition scholarships for TA and GA graduate students, with the goal of raising stipend levels to the 75th percentile for the discipline.

At the same time, we are developing a plan to encourage faculty to seek external funding to support their graduate students. **Matched Funding for Doctoral Students RM 2016-17)** explicitly recognizes the advantages that some disciplines (especially STEM fields) have in terms of securing external funding, as well as the differences in costs among the fields. Under this proposal, Binghamton University will match doctoral student funding generated by the academic units through grants and contracts. Our goal in pursuing this approach is to recognize and reward departments and schools for doing what they can do on their own. This approach creates a direct partnership between the central administration and the departments/schools to generate external funds in a responsible way, while helping recruit and retain a stronger and more diverse pool of doctoral students.

In addition to increasing stipends in general for graduate students, we also are seeking to attract and retain the nation's most promising young researchers by establishing a program of **NSF Graduate Research Fellowship Supplements (RM 2016-17)**. National Science Foundation Graduate Research Fellowships are generally awarded to graduate students with great potential to achieve high levels of success in their future STEM careers, and thus are an important measure of the quality of an institution's research programs. Historically, neither Binghamton University nor any of our SUNY peers have received many of these awards; in 2014 SUNY received just 6 of the 750 awards made to AAU Public Universities, and Binghamton received two of these. Under this plan, the Division of Research, the Graduate School and the Office of Undergraduate Scholarships and Awards will work to encourage a greater number of qualified students to apply for the NSF GRFP and will supplement the NSF GRFP award with an additional \$10,000 stipend for every Fellowship winner, beginning with up to five per year, with the intent that these stipends will serve as a recruiting tool to retain Binghamton recipients, while helping recruit new NSF awardees to Binghamton for their graduate careers.

2.4.12 Student hands-on research, entrepreneurship, etc. (see page 7)

2.4.13 Scholarship, discovery and innovation

For over ten years Binghamton University has been very active in collecting data on publications, scholarship, sponsored funds, and creative activities undertaken by our faculty. Data from our Annual Faculty Reports is collected via a web-based tool which populates a database used to create reports. Additional information is assembled via student records and instructional activity databases to create what we call the “Contributions to Mission Report” for each academic unit on campus. The Contributions to Mission Report for each department is supplemented by information from the Delaware Study and Academic Analytics™ and together they inform regular meetings with departmental representatives on instructional and scholarly progress.

This type of information being considered here is very specific to individual disciplines and even sub-disciplines and must be analyzed in its full context, so caution with system-wide collection is advised. It has taken us over a decade to reach a place where most of our disciplines are comfortable with how the data is represented. Binghamton University would be very interested in participating in the design of a system-wide tool for these purposes.

Projects Related to Engagement (2.5.14 & 2.5.17)

Binghamton University has long been committed to strengthening the communities that support us. The partnerships we have formed with community organizations have resulted in an annual statewide economic impact of more than \$1.3 billion and accounts for more than 12% of the Southern Tier’s economic activity. Please see our Economic Impact website for more information and to access our annual Economic Impact Report (<https://www.binghamton.edu/community/economic-impact.html>). Because of these efforts, in 2015 Binghamton University was one of only 18 universities nationwide, and the only campus in New York state to be named as an “Innovation and Economic Prosperity University” by the Association of Public and Land-Grant Universities (APLU).

Entrepreneurship and innovation partners (RM 2015-16)

Entrepreneurial activities of faculty and students have the potential become sources of regional economic growth, innovation and employment opportunities. Burgeoning geographic regions such as Boston, Silicon Valley, and the Research Triangle in North Carolina have each demonstrated how University-led research generates and supports entrepreneurial activity. In an effort to jump-start new business in the Southern Tier, Binghamton University will be committing Road Map funds to establish staff and seed support for student based start-up company ideas.

Southern Tier High Technology Incubator (REDC Round 2)

Binghamton University, SUNY Broome and the regional economic development community are building an incubator at 120 Hawley Street in downtown Binghamton to help grow an entrepreneurial ecosystem that nurtures emerging companies. The incubator and building site are included in Binghamton University’s START-UP NY tax-free program giving tenants up to ten years of state tax relief. In addition, the incubator is participating in the Southern Tier Hotspot tax-free initiative. The Binghamton University Foundation formed The Southern Tier High Technology Incubator Inc. as a not-for-profit to build and own the incubator on a site leased from the Broome County Industrial Development Agency.

The incubator will provide the infrastructure needed for companies focusing on energy, electronics and health, with specialized laboratories for testing, evaluation and prototyping. In addition, the incubator will have co-located business resources and provide access to research and educational programming,

core user facilities, student internships and co-ops, and technology transfer and commercialization offices at Binghamton University and SUNY Broome.

Industry-Funded Research (RM 2013-15)

Collaboration with industry plays an important role in Binghamton University's research strategy. Currently, industry support represents about 10% of the University's research expenditures; this compares favorably to a national average of about 6%. This project's goal was to leverage this success by establishing a task force to develop recommendations to enable Binghamton University to significantly grow industry-funded research. The task force identified three key objectives to be met in order to increase university collaborations with industry: 1) establish a single point of contact for industry collaboration; 2) identify key areas of interest to the University that are relevant to industry and invest in faculty and core facilities in these areas; 3) provide incentives to faculty to promote collaboration with industry with the goal of conducting transformational research that benefits society and improves people's lives. The University's Assistant Vice President for Innovation and Economic Development is serving as a point person with regard to these recommendations.

Southern Tier Health Sciences and Technology Innovation Park

Perhaps the most significant project in the University's efforts to increase industry partnerships and foster community economic development is now under development. Binghamton University's new School of Pharmacy and Pharmaceutical Sciences (SOPPS) will welcome its first class of students in fall 2017. Apart from the economic impact resulting from 400 new students and 30 faculty—estimated at more than \$100 million annually--this facility forms the centerpiece of the Southern Tier's economic development plans for Round IV of the Regional Economic Development Council (REDC) funding, as well as its proposal for New York state's Upstate Revitalization Initiative (URI). The Southern Tier REDC is currently finalizing its proposals for 2015, with the focus being the development of a new Southern Tier Health Sciences and Technology Innovation Park that will establish a healthcare ecosystem in the region surrounding Wilson Hospital and the SOPPS.

Our plan is to grow the regional medical infrastructure — the cohort of doctors, nurses, biomedical researchers and life scientists that work in one of the fastest-growing sectors of the economy. Toward this end, we envision building a new healthcare campus that will bring together the Decker School of Nursing, the Clinical Campus of Upstate Medical University, and the School of Pharmacy and Pharmaceutical Sciences. Apart from providing space for teaching and learning near one of the region's largest hospitals, we also see these facilities housing research and clinical facilities to support advances in such related areas as rehabilitation and regeneration technologies. In addition, we see the development of a biopharmaceutical hub as well as space for research and production for medical 3D printing. This is research that is at the forefront of medical science, and positions Binghamton University and the region for decades of future growth — both in terms of jobs and national reputation.

2.5.15 Alumni/Philanthropic Support

Binghamton University is committed to expanding private support and alumni engagement, with the objective being to **Plan and Execute the Next Successful Comprehensive Gifts Campaign (RM 2012-14)**. Binghamton University is not currently in a state of campaign readiness, based on a variety of factors and challenges in previous years, including the completion of its most recent successful campaign that

concluded in 2012 that raised in excess of \$101 million. The Binghamton University Foundation Board of Directors has received a plan that calls for an aggressive hiring and investment plan in Binghamton's development operation that would result in a state of campaign readiness by 2018-2019. We anticipate beginning the nucleus phase of a campaign at that point. To date, Binghamton has hired both a new Vice President for Advancement and a new Associate Vice President, and is in the process of **hiring Additional needed frontline fundraiser: director of development (RM 2015-16)**. Major Gifts officers and fundraising staff have been added to four of our schools. And attention has been paid to corporate fundraising, placing Binghamton in good position to plan and pursue its next comprehensive gifts campaign. While not technically advancing a comprehensive gifts campaign, Binghamton University continues on an upward trajectory with regard to alumni and other private philanthropic support. Individual commitments of support have increased from \$5.4 million in 2011 to over \$9.1 million in 2015, a 69 percent increase. Alumni engagement is also on the increase, due in no small measure to the development of a [Plan for Alumni Engagement](#) by the University's Alumni Association. Recognizing that alumni engagement is a necessary precursor to philanthropic support, the plan establishes five central goals for the Association: 1) Affirm the Alumni Association as the University's centralized organization for alumni relations; 2) Develop high-quality programs and benefits that offer value to alumni; 3) Create opportunities for alumni to connect with each other and with students; 4) Create spirit and pride in Binghamton University; and 5) Support a dynamic alumni volunteer program that provides opportunities, training, stewardship and recognition.

The University is also investing in infrastructural support for private philanthropy, and has incorporated several initiatives as part of its Road Map. For example, **Emphasize Broad-Based Engagement Activities (RM-2012-14)** enabled our Alumni Relations staff to focus on creating "development partners to strengthen the relationship between potential donors and the University. The campus is also working to build relations with current students to encourage student philanthropy as part of **Provid[ing] Students with More and Enhanced Service and Giving Experiences through Coursework (RM 2012-14)**

2.5.16 Civic Engagement

Binghamton promotes civic engagement through a dedicated Center for Civic Engagement (CCE) (See: <https://www.binghamton.edu/cce/>) and through specific curricular initiatives ranging from practica in various degree programs to community-based internships sponsored through career center course rubrics. Data on civic engagement is collected through multiple channels. Binghamton assigns two special course designations to identify courses with a service learning component; accordingly we can identify all students who have enrolled in courses with such a designation. Binghamton also collects information on reports filed by individual faculty. Beginning with the next cycle, there is a more specific inquiry related to civic engagement/service learning activities included on the faculty report template. The Division of Student Affairs works in partnership with the SGA to track service hours of students in those organizations that promote significant service commitments by members. The same approach is taken with specific student cohorts who have community service expectations of students (e.g., Scholars Program, athletes). Student involvement software is used to track and warehouse these service activities. In the case of student organizations, an officer of the organization must approve/verify reported activity. Finally, Binghamton tracks/predicts service activity based upon student response to NSSE. We have found it useful to separate mechanisms that measure volunteer activity from those that measure curricular-based initiative. We are working on an approach to include non-credit but intense/sustained volunteer service in either its own category or as service learning. For example, we would

include recurring mentoring/tutoring commitments to a K12 school in this category. Our “effort” threshold for such activity is that it should require at least as much time as a one-credit course (estimated at 45 hours).

Section 3: Conclusion and Expected Impact on your Campus

A public university has several unique missions: it has to serve the needs of the public with regard to educating the next generation of professionals and citizens, it needs to produce new knowledge leading to innovative technologies and thoughtful consideration of society and culture, and it needs to leverage its resources to promote economic, social, and cultural development in our communities and beyond. For these reasons, the focus of Binghamton’s Road Map has been to increase the size and scope of our enrollment and faculty, and thereby serve as a catalyst for research, education and outreach. We want to increase our regional and global impact and making Binghamton the go-to University for people seeking solutions to difficult problems. At Binghamton, growth is the key to future success.

At the campus level, growth increases access for New York state students and promotes success by allowing us to deliver more classes in more fields, giving more students new educational and career opportunities in fields that are in high demand by New York state industries. Growth has allowed the University to hire more faculty, lower the student-to-faculty ratio, and focus on student-centered learning. Growth has made us more accountable to New York state’s students, families, and communities. Growth fosters new inquiry by shifting the current balance between teaching and research, encouraging faculty to target their research and scholarship on addressing the world’s challenges. It enables us to develop new areas of research and scholarship focusing on such crucial areas of inquiry as healthcare and biomedical technologies, alternative energy, cultural belonging, the impact of the material world on culture and society, and the creation and maintenance of sustainable communities. Growth will allow Binghamton University to establish a critical mass of excellence across the entire campus that will attract better students and faculty. And growth will increase visibility and recognition, generating increased pride among alumni, partners and our community. Growth is making Binghamton the crown jewel among New York state’s public colleges and universities.

As a result of NYSUNY 2020, Binghamton has successfully increased its undergraduate enrollment. Our focus now is on bringing new and higher quality graduate students to campus, which we believe is necessary if Binghamton is to achieve its proper balance as a public research institution. The University already has a number of initiatives underway to help increase the graduate population: a new PharmD and Pharmaceutical Sciences PhD program currently under review and due to begin by 2017; a Graduate Growth Initiative, which targets the development of new career-oriented master’s programs; commitments to enhance funding for graduate students to bring the best and brightest to campus; an increasing cohort of teaching assistants to support increases in undergraduate enrollment; and a growing base of research assistants on grants and contracts due to the growth in research funding.

At Binghamton, we have invested in access, supported success, and fostered scientific and scholarly inquiry. We are working to improve our already outstanding record of student retention and completion, and our commitment to community engagement has received national acclaim. Taken together, the broad vision outlined in the Road Map, combined with the specific initiatives Binghamton University has undertaken as part of the Road Map and state-wide economic development programs, has placed the campus on the path to premier.