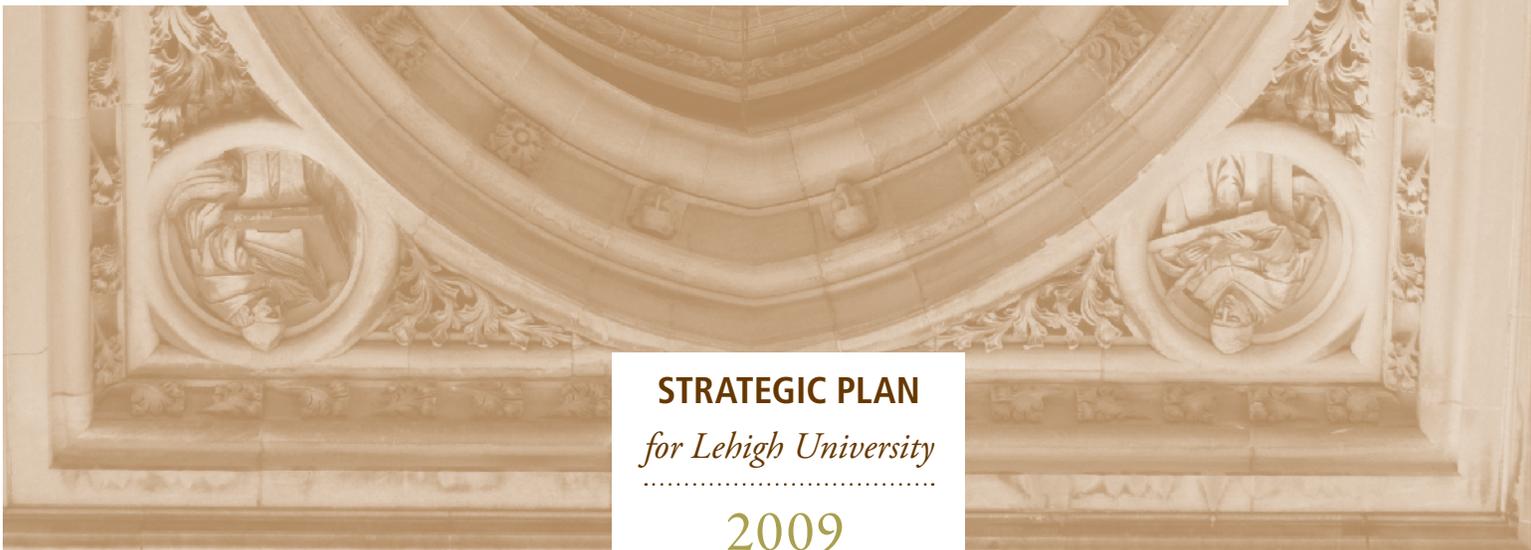
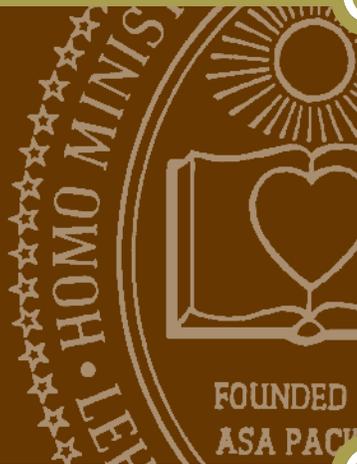




ADVANCING OUR
INTELLECTUAL
FOOTPRINT



STRATEGIC PLAN
for Lehigh University

2009

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ADVANCING OUR INTELLECTUAL FOOTPRINT LEHIGH UNIVERSITY STRATEGIC PLAN 2009

THE GOAL

Our goal in the coming decade is to be a premier residential research university, internationally recognized for research excellence and a distinctive student experience.

At the core of this goal is our ambition to transform Lehigh University by advancing our intellectual footprint. The students and future leaders we educate, the knowledge we create, and the contributions we make to addressing grand challenges define our intellectual footprint, and will ultimately determine our impact upon the world.

Achievement of this goal will be evident in enhanced academic stature and greater student success.

THE PLAN

Our strategic plan has four components:

- 1) Addressing Grand Challenges and National Needs in Strategic Areas of Focus
- 2) Investing in Faculty and Staff: A Strategic Expansion
- 3) Providing a Best-in-Class Experience: Promoting Student Success through Core Competencies and Student Engagement
- 4) Partnering in the Renaissance of the Local Community

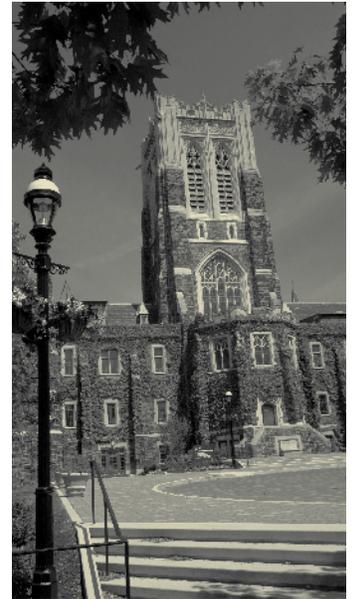
Lehigh University is among those few institutions that have an opportunity to provide a unique higher education by combining the research university with the student-centered residential college. We are distinctive in having both a campus setting and core strengths similar to a liberal arts college, as well as strong programs in business, engineering, sciences, and education.

We can enhance partnerships between faculty and staff to create exciting learning opportunities. We have talented undergraduate and graduate students, and their synergy is an important attribute of our university. Lehigh is further distinguished by the engagement and commitment of our alumni, who regularly speak of the importance of one or more professors or staff members in their lives, as well as the relationships built with peers. These distinguishing qualities are characteristic of what we are calling the “residential research university.”

We will build upon a foundation of tradition and identity.¹ Lehigh’s breadth in core disciplines encompassing the arts, business, education, engineering, humanities, science, and social science and our hallmark interdisciplinary approach to teaching and research across our colleges, coupled with an orientation to real-world problems, positions us well to address some of the world’s most pressing challenges.

We will guide Lehigh’s drive to be a premier residential research university through the following strategic areas of investment where what we do has a significant impact on the world and our students’ ability to compete in that world.

- Globalization
- Energy, environment, and infrastructure
- Health



¹Our foundation to build upon is outlined in Appendix 1.

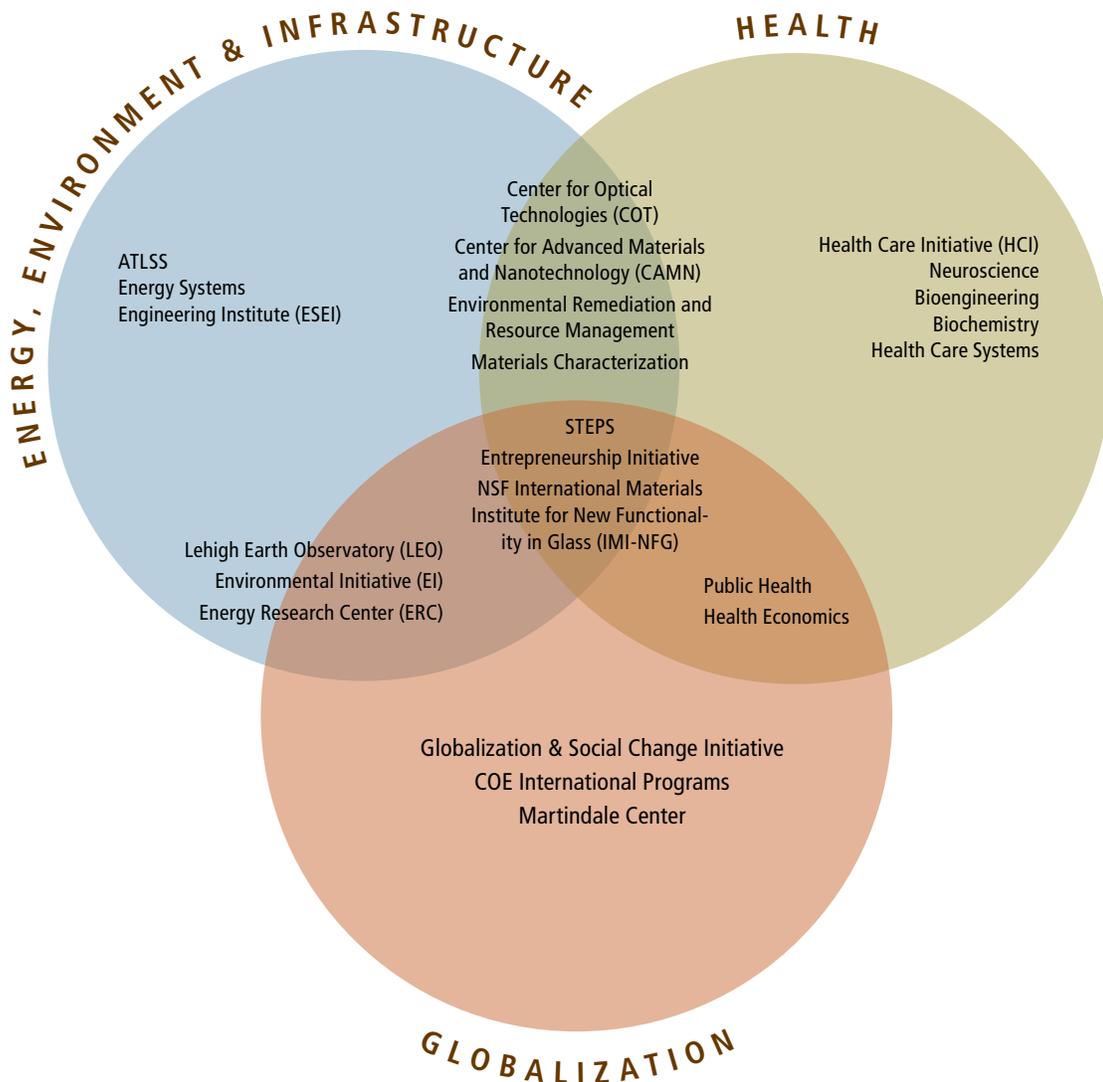
While this plan is organized into sections, the components are integrated into a vision for a better Lehigh University. We want Lehigh to be known as a leader in learning, a leader in innovation, and a leader in creativity. To accomplish this, our strategic plan provides opportunities for all faculty, staff, and students to capitalize on their strengths and maximize their skills. The plan is thus about people and culture, and enhancing our roles and work to amplify our mission of teaching, research, and service. We will transform our campus culture as we reshape our university's identity.

We envision engaging every undergraduate and graduate student through new pedagogies inside and outside the classroom. We find inspiration and excitement in tackling grand challenges in the research laboratory, classroom, seminar, and residence. We consider our neighborhood an integral part of our campus life and we strive to learn from it and collaborate with our community to bring it to new levels of vibrancy.

1. ADDRESSING GRAND CHALLENGES AND NATIONAL NEEDS IN STRATEGIC AREAS OF FOCUS

As we emerge from an era of great innovation and discovery that has produced tremendous advances in communications, medicine, and information technology, we look at new sets of needs and problems facing the world—grand challenges of the 21st century. The plan points the way for advancing Lehigh’s intellectual footprint with cross-disciplinary research activity spanning the colleges and bringing the necessary expertise to bear on three grand challenge areas: globalization; energy, environment, and infrastructure; and health.

These challenges are important to society, and they represent areas where Lehigh has core strengths and where concerted effort will allow Lehigh to have a significant impact. Both basic and applied research contribute to Lehigh’s capacity to address grand challenges. Lehigh’s structure, culture, and core strengths are ideally suited to this venture.



One of Lehigh's great attributes is its translation of fundamental understanding and discoveries into practical use for the benefit of society. Examples abound: the development of nanotechnology to pull arsenic from ground water translates into an inexpensive water purification system deployed where needed in poor parts of the world; the translation of a fundamental understanding of learning disabilities into an intervention without the use of drugs; an understanding of the elements of corporate competitiveness to provide business leaders with tools to sustain enterprises at the forefront of the global economy. In these and many other cases, Lehigh's faculty, staff, and students have worked to make the world a better place, and Lehigh is noted for bringing concepts from theory to practice.

By focusing Lehigh's research investment on grand challenges and national needs, we aim to:

- Develop and strengthen intellectual capital in areas of societal relevance
- Cultivate next-generation leaders through integrated research and education
- Promote international leadership in selected sub-areas of effort
- Enhance research infrastructure to maximize productivity and impact
- Leverage partnerships and collaboration to promote research

The hallmark of research universities is their marriage of forefront research with high-quality teaching. Professors who are leaders in their fields bring the latest knowledge and newest discoveries to their students in classrooms, laboratories, workshops, and the field. Lehigh's research strengths also build our external visibility and reputation through collaborative projects and the dissemination of research results.

Students learn fundamentals and solve problems in structured curricula and open-ended research projects that require creativity. The pursuit of new knowledge and the creative discovery process of research and scholarly inquiry establish an intellectual culture that pervades the university.

The areas of focus in this plan are intended to frame the trajectory of Lehigh's research expansion and they are synergistic and interconnected, as illustrated in the accompanying diagrams. As we implement the plan, we will augment areas of existing expertise and identify the institutional needs required for success, including hiring faculty and staff, facilities development, and growth of graduate programs. Here we provide an overview of the challenges and illustrations of how Lehigh can make a difference. The areas will evolve as we progress through the execution of the plan; our agility in navigating world changes will be important to our success.

GRAND CHALLENGE: GLOBALIZATION

Globalization has become a powerful force arising from high-speed communications and transportation networks that have lowered barriers to the exchange of people, goods, and ideas around the world. At the same time, the emergence of robust economic and ideological competition has made globalization more challenging than benign. Globalization may be the defining characteristic of the early 21st century, and it provides a new lens for our views of topics like commerce, resource distribution, arts and aesthetics, intercultural relations, academic and literary discourse, and relationships among nations.



Research to understand the nature of globalization and its effects is crucial to the success of business enterprises and the well-being of humans, societies, and cultures around the world. The world's commercial, technological, political, and cultural terrains are complex, and our understanding of those terrains and how to navigate them is terribly incomplete.

Lehigh has strengths that contribute to this area, among them UN-NGO status, the Global Citizenship Program, Globalization and Social Change initiative, Iacocca Institute, Martindale Center, and the many students who participate in study abroad programs or choose to major in fields with substantial international content, including a new interdisciplinary major in Global Studies. Lehigh is well-positioned to address a wide range of intellectual and practical challenges posed by globalization with faculty, research staff, and graduate students who are internationally connected.

The recent *Getting to Global Lehigh* report set forth an ambitious agenda resulting in the establishment of the Office of International Affairs, which will stimulate international interactions among students, faculty, and staff on campus and around the world and consolidate institutional support for those activities. By focusing our cross-disciplinary research effort in this area, we aspire not only to achieve a greater understanding of the nature of globalization, but to harness the force of globalization for the greater good.

Faculty and staff from across the campus can seize opportunities to participate in cross-disciplinary clusters addressing the effects of globalization. For example, topics include: fostering sustainable development in emerging economies; the reduction of conflict through educational practices that strengthen understanding of other cultures; commercializing new products in international markets; advancing scientific discovery and technological solutions to address global problems; and entrepreneurship that improves lives around the world. These all require contributions from an array of disciplines.

GRAND CHALLENGE: ENERGY, ENVIRONMENT, AND INFRASTRUCTURE

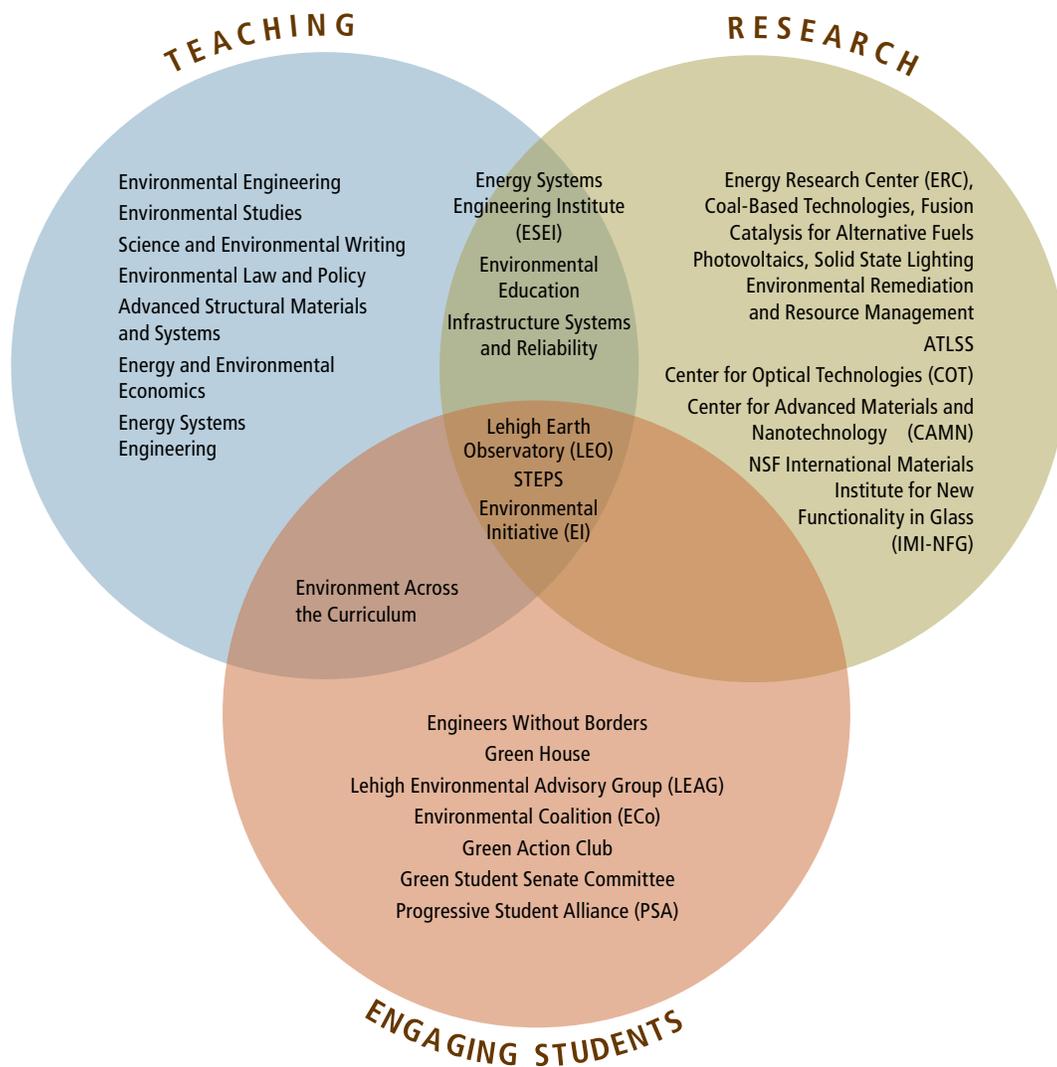
The worldwide demand for energy and our ability to alter the environment mean that, in effect, we must manage the planet's resources and viability. One of the most vexing sets of challenges facing modern society is how we will succeed in this management. Issues related to energy supply, delivery, economies, and consumption are more visible and crucial than ever. These issues also have serious national security implications.

All aspects of modern life depend on an infrastructure of transportation, water, power, networking, and communications systems that must be cohesive, integrated, efficient, and sustainable. Broad environmental challenges such as climate change, habitat conservation, pollution remediation, and sustainable development have

extraordinary social, economic, political, and even cultural implications. To meet the grand challenges associated with energy and the environment, we must better understand how to more efficiently utilize finite resources, develop new energy sources, and ensure the sustainability of the ecosystems that provide our food, air, and water.

Lehigh has strengths that position us well for developing further in this area. The Energy Research Center, Center for Advanced Technology for Large Structural Systems (ATLSS), the Environmental Initiative, the ambitious STEPS project, and Lehigh’s recent workshop on “Balancing Energy and the Environment: An

ENERGY, ENVIRONMENT, AND INFRASTRUCTURE



Exploration of Future Research Needs” are examples of cross-disciplinary commitments, along with substantial discipline-based efforts relating to energy, environment, and infrastructure systems.

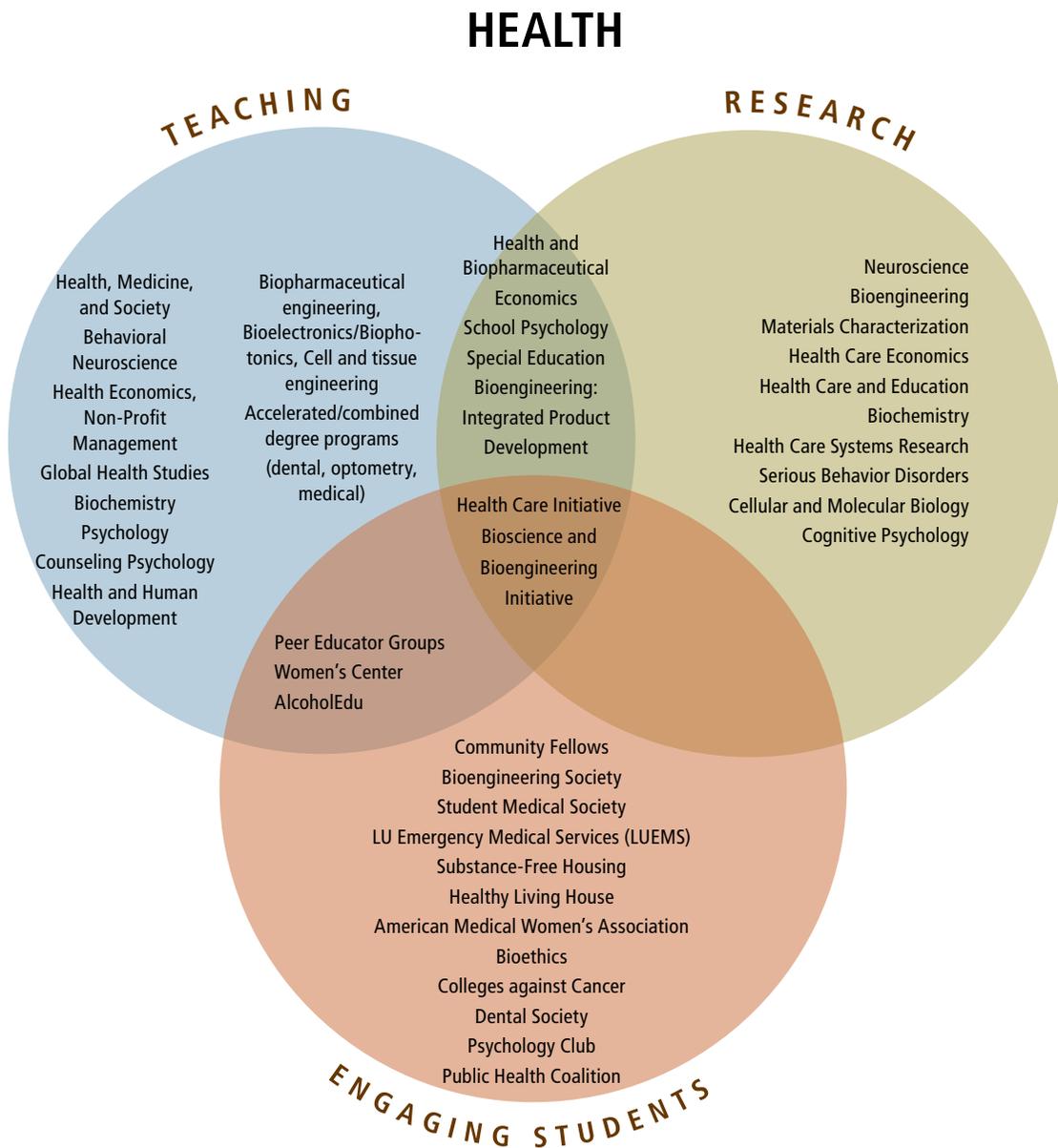
Lehigh is positioned to address the challenges in energy and environment in areas that are linked to fundamental needs in national infrastructure. We can leverage internationally recognized capabilities in areas such as structural engineering, surfaces sciences, materials characterization, environmental remediation, and clean coal technologies. Our ability to partner with government, industry, and start-up entrepreneurs in transforming these capabilities into economic development opportunities can be enhanced. This distinctive bridge between theory and practice is critical for long-term impact in this area.

Students, faculty, and staff participate in the Lehigh Environmental Advisory Group (LEAG). Undergraduate and graduate students enroll in courses or pursue degree programs that reflect their interest in energy, environment, and infrastructure across all four colleges, including recently established programs in Environmental Studies, Environmental Law and Policy, and Energy Systems Engineering (proposed for fall 2009). Additional cross-disciplinary activity would put Lehigh in a leadership position in this area and garner more external support for research.

Energy, environment, and infrastructure are matters of global scale and concern, and they affect health, too. Substantial external support is available for cross-disciplinary ventures in natural science and engineering in this area, including catalysis, materials, energy generation, environmental remediation, and climate change, as well as other domains of environmental science, environmental engineering, environmental education, and systems engineering where Lehigh already has focal points. New cross-disciplinary linkages as we execute the plan and strengthen the breadth of Lehigh’s academic platform will include, for example, the behavioral sciences, economics, history, finance, and management.

GRAND CHALLENGE: HEALTH

Among the challenges facing society are the health problems in growing and diverging populations experiencing chronic disease and threatened by emerging infectious diseases with global reach. Some of these infectious threats have gained considerable attention in recent years, exemplified by the rapid emergence of severe acute respiratory syndrome (SARS) and concerns about the global spread of the Avian Flu and West Nile virus.



Chronic illness poses a different but equally important challenge as an aging population deals with cancer, heart disease, metabolic and autoimmune diseases, and obesity. Other disabling conditions—including mental illness, cognitive impairments, and psychological and learning disabilities—influence the overall health of a population and add to the challenges facing society. Multidisciplinary research related to health is a highly resourced national need.

The societal and economic impacts of such health problems are enormous, and the local and personal tolls are also severe. The prevention of disease through public health measures, education, and medical interventions presents economic, behavioral, social, cultural, and policy challenges. Treatment of disease in modern societies extends far beyond medical science to include complex systems for the delivery and financing of care through a highly regulated confederacy of government entities, nonprofit agencies, and for-profit enterprises. Inequities in the social distribution of access to and utilization of health care point to inadequacies in those systems. The manufacture of medical devices and drugs is a large and highly regulated sector of the economy with tremendous apparatuses for research, development, and marketing.

Lehigh has research programs that contribute to the understanding of health and disease, disabling conditions, public health, the healthcare industry, and healthcare delivery; artistic, literary, and historical studies of the human condition; diagnosis, prevention, and treatment of disease and disabling conditions; and health and disability education. Some of Lehigh's strength in this area comes through faculty interest in applying their disciplinary expertise to the diverse needs of this area. The Bioscience and Bioengineering Initiative and the Health Care Initiative have stimulated activity in this area. For instance, we leverage expertise in materials science, photonics, electronics, cell and molecular science, biological science, and bioengineering toward the development of affordable devices and systems that help to diagnose, treat, and prevent diseases.

Students at all levels are pursuing interests relating to health in numerous disciplines across the colleges, including recently established programs in Bioengineering, Health and Biopharmaceutical Economics, and Health, Medicine, and Society. Lehigh's excellence in evidence-based practice is a critical prerequisite to success in meeting health challenges. Partnerships with colleagues and programs in medical institutions will broaden the opportunities for Lehigh in this area.

Lehigh can leverage increased external funding and make a significant impact with cross-disciplinary clusters that draw students and faculty from broad disciplines, including the arts and humanities, basic sciences and engineering, economics, business, education, and the social and behavioral sciences. For example, studies of disease processes, management of research and development enterprises, systems for delivering and financing care, and ethical management of risk integrate contributions from several disciplines for better outcomes.

2. INVESTING IN FACULTY AND STAFF: A STRATEGIC EXPANSION

In order to enhance our research and graduate programs while retaining our distinctive undergraduate experience, we plan a strategic expansion of the Lehigh University faculty over the next decade.

In addition, our plan also calls for a bold investment in the university's infrastructure and related staff over the next decade, which will result in tangible benefits in increasing the quality of our research and education enterprise. These additions will allow all faculty to be more productive in their engagement with students and in their pursuit of forefront research. External research support, entrepreneurial activity, reputation, and the intellectual climate will all improve with judicious augmentation of faculty.

In many ways, Lehigh competes above its weight class. We provide exceptional student experiences and educational opportunities in a broad set of areas with a relatively small faculty. Like other premier institutions, we require excellence in teaching, research, and service from our faculty. These demands are exceptionally heavy on those who have both large teaching loads and highly competitive research programs. Lehigh needs a large enough faculty to preserve the commitment to teaching and personal attention to students, while increasing research productivity and graduate programs.

We have a professional staff that is fully engaged with faculty and students and plays a central role in our mission of research, teaching, and service. Lehigh staff members are committed to making the living environment a learning environment for undergraduate and graduate students. They enrich the learning experience and make our research and teaching productive. They are educators in the broad sense and they add a dimension to Lehigh that creates the feeling of family, not an institution.

To attract and retain diverse and talented faculty and staff to Lehigh requires that we be responsive to the needs of today's workforce. Work/life balance, child care, elder care, and the vibrancy of the community are issues that impact productivity and career decisions for both men and women. In order to attract more underrepresented minorities to faculty and staff positions, we must also proactively identify and address the needs of these individuals within the context of Lehigh's culture and the surrounding community.

By investing in our faculty and staff, we will foster a campus culture that actively attracts and supports a diverse, inclusive, and intellectually vibrant community that promotes individual success while advancing the university's mission.

FOCUS ON EXCELLENCE

The primary means to meet our goals is through hiring and supporting excellent faculty. Excellence attracts excellence, and great faculty candidates measure their fit with their faculty colleagues by their reputation and by the excitement of working



with top graduate and undergraduate students. There must be a culture of innovation, discovery, creativity, collaboration, and hard work, and we must champion those individuals who exemplify the best of those traits.

We strive for the most vigorous intellectual climate we can achieve through support of the professoriate and dynamism in the culture. An underresourced and over-committed faculty and staff will not attract high achievers to join them. In order to advance, we need the critical mass necessary to provide educational support, student attention, and research leadership. The total is greater than the sum of the parts. It is imperative that we adhere to the highest standards of excellence in all faculty and staff activities.



It is critical that we position Lehigh as an institution that will attract talented faculty in a highly competitive environment. We know that a significant percentage of faculty at Lehigh and at other institutions will retire over the next 10 years. Thus, in addition to the proposed expansion of faculty, we will be replacing faculty who retire.

We will use measures and comparisons of research productivity, student success, scholarly work, graduate outcomes, and benchmarks to guide our hiring decisions.² We will communicate these standards clearly through effective mentoring and performance feedback, and apply these standards uniformly for hiring, retention, and promotion.

²Measures of success are listed in Appendix 3.

Strategic Investments Amplifying Teaching Success and Providing Research Strength

The faculty expansion will not be uniformly distributed, but rather will involve strategic enhancement of faculty in key areas of importance to Lehigh University in the future. The grand challenges are areas where our research and teaching at the undergraduate and graduate levels can be enhanced to produce the next generation of leaders.

We can amplify our successes in current areas of teaching strength. Our highly regarded and outstanding undergraduate programs—such as those in accounting, finance, psychology, biological sciences, mechanical engineering, journalism, international relations and professional graduate programs in education, business, and engineering—will continue to be draws.

Much is said about interdisciplinary work these days. Lehigh is good at spanning broad areas in both teaching and research programs in a collaborative and integrative way. It is important to emphasize Lehigh's distinctive ability to lead in interdisciplinary pedagogy and curriculum. Our exceptional programs bridging engineering and business (IBE), engineering and the arts (IDEAS), or science and policy (environmental initiative) are testament to the special facility we have in creating integrative learning opportunities. Our research is equally multidisciplinary,

with new programs in bioengineering, environmental science and policy, and the economic impacts of health problems.

Excellence in research and teaching are strongly coupled. A leading scholar is able to bring new ideas and engaging perspectives into the classroom. Students are able to work on open-ended problems outside of the classroom guided by the leading researchers in their fields. The distance between the classroom concept and the latest discovery or the newest finding shrinks, and students benefit from that dynamism.

3. PROVIDING A BEST-IN-CLASS EXPERIENCE: PROMOTING STUDENT SUCCESS THROUGH CORE COMPETENCIES AND STUDENT ENGAGEMENT

High-quality teaching is an established strength at Lehigh, and it will remain so. The value proposition of a Lehigh education arises from the balanced educational experience both inside and outside the classroom, the ability to take courses in any of the colleges, and the distinctive academic, living, performing arts, athletic, and social atmosphere. Lehigh produces well-rounded students that enter the world able to succeed as exceptional members in both business and society. During their years at Lehigh, students learn how to successfully tackle practical and real problems. We excel in leadership development and intend to build upon that platform of success over the next decade.

Residential education means that students have opportunities to learn from their faculty, staff, and peers in structured classroom settings, their living environment, and other venues throughout campus. It is our goal today to further enhance this distinguishing quality of a Lehigh education while preparing for changes in the student body and the world in which they will live and work.

We aspire to an environment where the academic and living experiences merge into an integrated learning experience. Students succeed in such an environment when they exhibit mastery of a body of knowledge and acquisition of essential cognitive, developmental, and interpersonal competencies.

Collaboration and partnerships among faculty, staff, and both undergraduate and graduate students are essential to success. The ultimate objective of those partnerships is to ensure that students leave Lehigh as academically accomplished, self-confident, creative, and productive leaders, citizens, and persons of sound character.

The students will become more diverse and international and that diversity will enable us to better prepare the next generation of leaders. As our student demographics change, we must adopt pedagogical approaches and experiences that will

benefit a broad set of students and connect them as part of an inclusive and equitable community. It is our opportunity today to further enhance this distinguishing quality of a Lehigh education while preparing for changes in the student body and the world in which they will live and work. Programs and curricula must evolve at pace with student needs and societal changes and we must continually monitor our campus climate for its qualities of equity and community.

The plan emphasizes a university-level student identity that connects undergraduates and graduates to Lehigh's full range of learning opportunities, while recognizing the differing needs of our undergraduate and graduate populations.



ADVANCING UNDERGRADUATE STUDENT SUCCESS

One of the defining characteristics of Lehigh is the first-rate undergraduate experience our students receive both in and out of the classroom. With this strategic plan, we intend to build upon this strength to create a best-in-class undergraduate experience. Advancing Lehigh's intellectual footprint requires advancing undergraduate student success through an intentional, integrated approach to learning that engages every student in achieving a set of core competencies. This distinctive learning environment will emerge as a characteristic that differentiates Lehigh from its peer institutions.

The core competencies embrace both academic and co-curricular experiences, lay the critical foundation for a distinctive student life and learning experience, and are a central element of our plan:

1. Intellectual Development. Students develop intellectual interests; gain foundational knowledge; acquire cognitive skills; adopt strategies of inquiry, disciplinary integration, and advanced discourse; understand others who differ from them in life experiences, outlook, or opinion; and adopt intellectual values that promote an ongoing commitment to learning.

2. Individual Identity Development. Students explore and come to understand their personal values, beliefs, and sense of self.

3. Interpersonal Development, Equity, Community, and Global Engagement. Students learn how to identify, understand, and implement the skills they need to build relationships in life; to interact and collaborate with others who are different from them; to learn leadership; and to engage with society at the campus, community, and global levels.

Achievement of the core competencies is a community effort requiring everyone's participation. The core competencies provide a framework for our hallmark programs in leadership, residential education, and community service, and they inform activities in our undergraduate research, arts, and athletic programs. Successful execution of the

plan must engage every community member in order to engage every student.

We recognize the importance of adequate facilities to support a superior living and learning environment. Opportunities for personal interaction and access to campus resources are critical. We must expand the residence system for undergraduate and graduate students so that we are able to extend the benefits of the university living environment to more students. Enhancing and modernizing our campus center would create a catalyst for the community by providing a setting for learning via leadership, community service, student organizations, social interaction, and self-directed activities.

ADVANCING GRADUATE STUDENT SUCCESS

Increasing our research activity will result in increases in doctoral students. Our graduate students are a richly diverse resource for our community, and we must do more to guarantee that the best and brightest graduate students are attracted to Lehigh. Successful graduate students become ambassadors of Lehigh's achievements in research and teaching to the broader academic community around the nation and beyond.

In order to promote graduate student success, the plan focuses on community building and the personal responsibilities that affect most of our graduate students.

Community building will encourage graduate students to become more involved in the life of the university and to identify themselves as Lehigh graduate students, rather than only as members of the home department. A robust community of graduate students will add to the overall campus intellectual climate, encourage the cross-pollination of ideas, promote high-level intellectual and social discourse, and do more to integrate domestic and international students.

In recognition of responsibilities faced by graduate students, we must address their support and infrastructure needs. Since research activities are pursued year-round, graduate students generally work all year and Lehigh must become an active, vibrant university operating on a twelve-month calendar, providing critical support to faculty and graduate student research.

Graduate students are often key teachers and mentors for our undergraduate students in formal and informal settings. Greater interaction between the undergraduate and graduate populations through, for example, professional development programs, multicultural events, and productive mentoring relationships would advance the development of core competencies for both groups.

4. PARTNERING IN THE RENAISSANCE OF THE LOCAL COMMUNITY

Lehigh's location in a mid-sized urban community offers a unique opportunity for the university to partner with local government officials, businesses and community organizations to create a vibrant environment that benefits students, faculty, staff and members of the community. Enhanced engagement with the community will enrich the intellectual lives of students, faculty, and staff while benefiting our neighbors.

The community surrounding Lehigh is rich in history, with a heritage of religious settlers and industrial pioneers. Vast resources, an influx of hard-working immigrants, and nationally vital industries combined to make this area a national treasure. The influence of Bethlehem Steel, on both the city and Lehigh University, cannot be overstated. Lehigh owes its heritage to coal, steel, and the foresight of great industrialists such as its founder, Asa Packer.

With the steel industry no longer the anchor of the economy, Bethlehem is undergoing great change, and there are opportunities to access the state's urban redevelopment funds and leverage existing initiatives such as the Lehigh Valley Industrial Park Development on the former Bethlehem Steel plant, the Ben Franklin Technology Center, and the Keystone Innovation Zone.

As we consider Lehigh's relationship to the community, it is important to recognize that much has been accomplished. The city and the community have made great progress by promoting new commercial development, offering events such as First Friday and creating the Greenway. The university's South Side Initiative has engaged in a range of academic-community collaborations, and has been a vehicle for sharing the university's intellectual resources (faculty and students) as well as fostering informed dialogue about transforming our neighborhoods. Service, including service to the community, is one of our core values.

Lehigh has contributed to the city's evolution through the creation of Campus Square, through neighborhood student housing, through its support of high technology start-ups, and its economic support for local business. We have been recognized nationally for our successful partnerships on economic and entrepreneurial initiatives in the local community, and the timing is ripe for increasing these efforts. In addition, there is opportunity to engage our students through entrepreneurial learning initiatives in our immediate neighborhood.

There are already a great number of positive community interactions involving faculty, staff, and students. Examples include STAR, an intervention program for at-risk children; STEM, a program where Lehigh students teach elementary through high school students science, technology, engineering, and math; the Community Service Office, which provides student volunteer opportunities in over 100 local agencies; C.O.A.C.H., a service program where Lehigh student-athletes connect with middle and high school students; and CHOICES, a program designed to interest middle school girls in science and math. There are also academic opportunities through the Community Fellows Program, the College of Education Center for Developing Urban Educational Leaders, and the Health, Medicine and Society minor.

FUTURE SUCCESS TIED TO THE CITY

Lehigh's future success is inextricably tied to that of the local community and the region. Universities serve as anchor institutions for cities, and the strategic role Lehigh can play in bringing about positive change is significant.

We cannot be passive and hope for positive development of the neighborhood. We must be an effective leader and collaborator in developing a long-term plan to effect such change, and make investments to support it. There is a great deal more that should be done, particularly in light of the ongoing transformation of the local community. Among those active in the development of the area are Majestic Realty Company; Lehigh Valley Industrial Park (LVIP); Las Vegas Sands, developer of the Sands Casino Resort Bethlehem; and St. Luke's Hospital.

As part of the plan that will be developed, we will assess our institutional needs in the context of the needs of the community. Finding appropriate space for selected academic programs and administrative offices also represents an opportunity to benefit the university and the community. Encouraging faculty, staff, and graduate students to live in the local community, and providing appropriate housing incentives can lend vibrancy and stability to the neighborhood.

Flourishing communities often include the following characteristics and features: A vibrant street life with an eclectic mix of shops, restaurants, and galleries; a mix of housing (including safe, affordable housing and options for residents of different income levels); a lively arts scene; an environment where students and faculty live and mix easily and comfortably with other residents; a rich intellectual and cultural climate; a well-maintained downtown area that encourages interaction; and readily available public transportation. This rejuvenated area should include visible collaborations between the university and the community and showcase a city inspired by ideas, innovations, and new businesses. It should also be a place that draws and nurtures entrepreneurs.

Lehigh's success in serving as a collaborator in the continuing renaissance of the local community will depend on the relationships it develops with a broad range of partners with a legitimate interest in this endeavor.

The community around Lehigh can enrich the experience of Lehigh students, faculty, and staff through service learning, research, innovation, and entrepreneurship. The partnerships between the university, its alumni and the community can enhance the learning and development of students, provide research opportunities, and provide support and expertise that remains a part of the community. Building such partnerships is essential to create sustainable change.



FINANCIAL MODEL FOR THE PLAN

The goals of the strategic plan cannot be measured simply in dollars. Raising Lehigh's academic stature and reputation and making Lehigh's undergraduate experience the best in the country are primary goals that have indirect financial implications. While we expect these attendant benefits, we need to ensure that we can finance the initiatives that will determine the university's future.

In this plan, the expansion of the faculty will come from endowed chairs. These critical investments provide the faculty leadership and create the critical mass to drive the enhanced research activity and distinctive student experience.

Donor financial support, particularly endowed gifts, will be the key to providing the much-needed investment in our faculty and in strengthening our research, graduate, and undergraduate programs. The contributions to grand challenge areas of national need provide essential motivation for donor support. Support from increased outside grants and contracts support faculty-led graduate and undergraduate research, and indirect cost recovery supports the infrastructure costs of this work.³ Successful implementation of the Strategic Plan will create revenue diversification through increased endowment earnings and research grant and contract support.

The institution's enhanced academic reputation will attract the best faculty and student talent, affording Lehigh additional research opportunities. Finally, there are much-needed enhancements to key physical facilities, in order to ensure that the necessary space and technology exist to support these crucial priorities.

Given the challenging current economic environment, and Lehigh's responsibility to those providing support for this plan, the university has established metrics to assure that these investments achieve the identified goals. Financial metrics include:

Increase in Research Revenues – With the addition of faculty and the enhancement of research productivity, the university can measure its success in the increase in total funded research grants and contract revenues and in the increase in research per faculty member. A successful plan will result in doubling research revenues.

Increase in Endowment and Endowed Chairs – Endowing current and incremental faculty positions will strengthen Lehigh's endowment fund, a critical asset to support its mission for this generation and for generations to come. Lehigh currently lags behind its aspirant peers in this crucial financial asset. With donor support, prudent spending, and successful investment management, Lehigh can begin to close the gaps that limit our flexibility in providing funding sources for educational and research opportunities for its students and faculty.

Revenue Diversification vs. Aspirant Peer Group – Lehigh is currently more tuition-dependent than our aspirational peers. Tuition dependence will lessen with the success of Lehigh's strategic plan as a result of increased research revenues and endowment income.



³The financial aspects of sponsored research, including indirect cost recovery, are described in Appendix 4.

Increase in Current Use and Capital Gifts – Enhanced research productivity will most certainly result in increases in funding from organizations and individuals looking to provide seed funds to spark new research initiatives. At the same time, the expansion in faculty and programs will most certainly lead to an expansion of our physical plant, which will be financed largely through philanthropic support.

SUMMARY

As we strive to achieve our goal to make Lehigh University a premier residential research university of international distinction that engages every student, we must keep our sights on the long-range impacts of all that we do.

Lehigh has an opportunity to excel at balancing a number of the most compelling aspects of the U.S. system of higher education. We provide students a rich academic experience that fosters intellectual and personal growth in a true community environment.

In this plan, we set out how we will:

- Conduct research that accesses the talent of our faculty and students to address pressing societal challenges
- Educate future leaders whose creativity and innovation will benefit our nation and the world
 - Provide a balanced education and balanced experiences to a diverse group of thinkers
 - Bring theory to practice, impart fundamentals and practical wisdom, and bridge work and life
 - Raise our academic reputation
 - Make Lehigh's student experience the best in the country
 - Teach new generations of leaders to change the world

If we accomplish this, Lehigh University will be, more than ever, a vibrant institution and a leading university.

ADVANCING OUR INTELLECTUAL FOOTPRINT

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Appendix 1

A FOUNDATION TO BUILD UPON

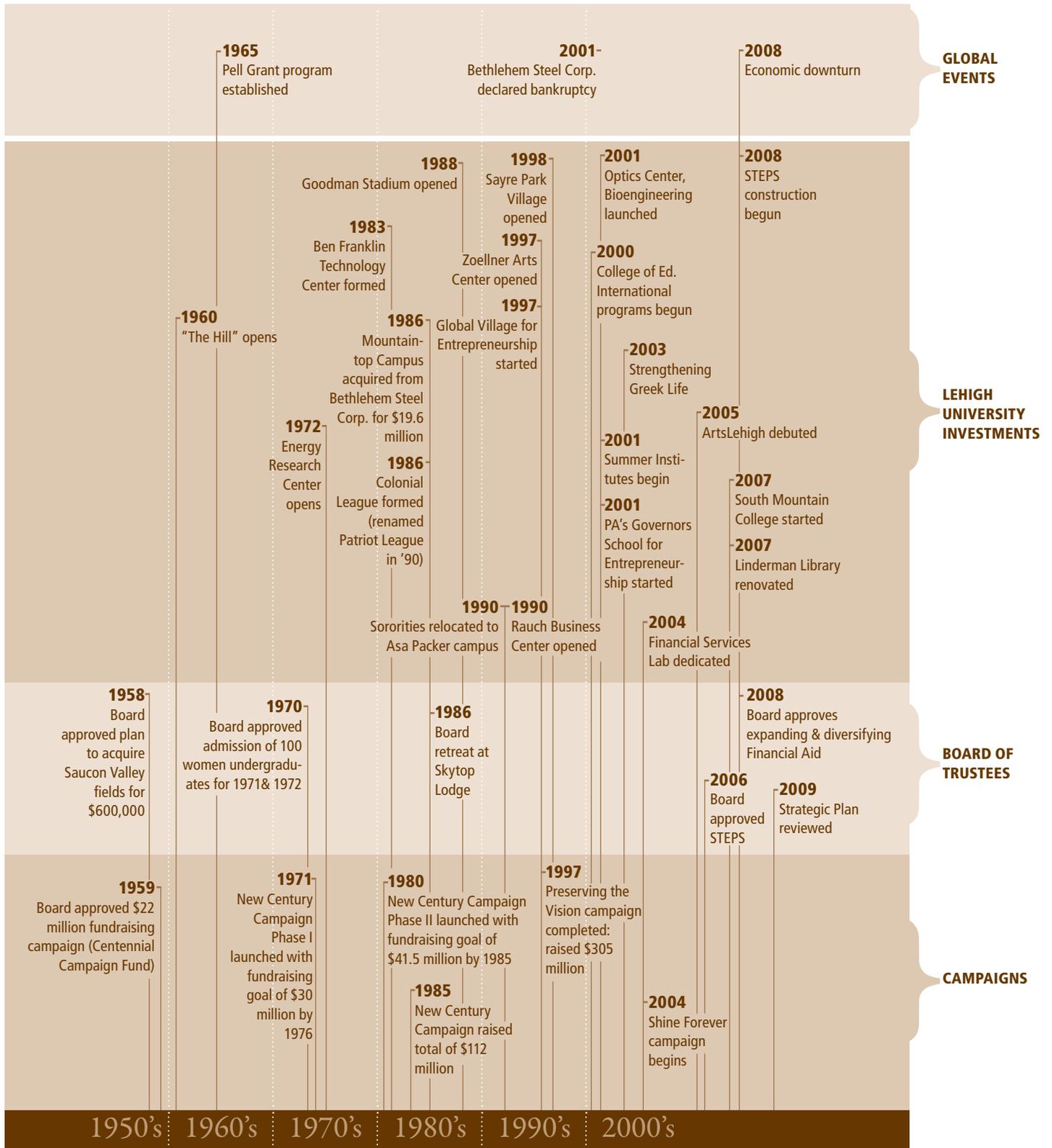
Lehigh is founded on the belief that the nation needed an educated workforce to rebuild itself. Our founders understood that this required combining a scientific and classical education, with an orientation toward making a contribution to society.

A writer in the *Syracuse Post* in 1895 captured the Lehigh culture when he said, “From the first, Lehigh’s characteristic has been her earnestness. It is the boast of her graduates, the inspiration of her students. Men go there to learn to take a useful part in the economy of life.”

It is from this foundation that we now focus our attention on national and world needs of the 21st century. We take Lehigh University’s culture of rolling up our sleeves and tackling hard problems into our goals for the coming decade.

We benefit from the investments of those who have worked and contributed to Lehigh in the past, including our extraordinarily dedicated and loyal alumni. Recognizing the remarkable asset our alumni represent, we seek ways to make their connection to the university flourish. We also recognize that key decisions by previous leaders and pivotal contributions of donors have shaped the Lehigh we strive to advance. It is informative and helpful to look at these recent events that have brought us to the strong foundation we have to build from.

LEHIGH UNIVERSITY INVESTMENTS *a Timeline*



Appendix 2

LEHIGH TODAY

We take as givens that today at Lehigh we share a common set of core values: *integrity and honesty, equitable community, academic freedom, intellectual curiosity, collaboration, commitment to excellence, and leadership*. These core values drive our decisions about our priorities.

In January 2008, Lehigh University undertook a strategic thinking process in order to engage the community in an inclusive and far-reaching dialogue about the university's future. Organized around three themes, working groups of dedicated faculty and staff members spent the spring of 2008 leading the campus in a discussion of Lehigh's goals for *Transforming Lehigh: Advancing Our Intellectual Footprint*. These three themes are:

1. Enhancing our distinctive student life and learning experience
2. Increasing research and graduate programs to respond to vital challenges
3. Investing in faculty and staff to be at the forefront of distinguished universities

There was excellent participation in the strategic thinking process: 220 individuals were involved in the campus-wide events, and college faculty meetings engaged 190 faculty members from the four colleges. Well over 50 small group meetings were held, and faculty, staff, and students posted more than 80 comments to our blogs.

An important goal was accomplished in getting the campus community to describe their best ideas for the future. A powerful message of institutional identity emerged, the essence of which was summarized in a paragraph from the first page of the *Strategic Thinking Process: Working Group Reports*, which President Gast presented to the Board at their July 2008 retreat:

"We want Lehigh to be viewed as a leader in learning, a leader in innovation, and a leader in creativity. This may mean moving beyond the historically acceptable level of risk for the institution—the time is right for Lehigh to make this kind of bold move."

Building on the recommendations from the July 2008 Board retreat, President Gast and her senior team began the process of drafting a strategic planning document to guide the university over the next ten years. The senior team formed working groups to draft an initial version of the plan presented to the college deans, faculty leaders and committees, and pretenure and recently tentured faculty for their reactions and feedback in November 2008. Before the 2008 winter break, a draft of the plan was posted on the strategic planning website to elicit comments from faculty and staff.

Our high aspirations and ambitious objectives were abundantly evident in this past year of thinking and planning. Several integrating themes emerged from discussions about *what we do and who we are* and they reflect the fabric of Lehigh University and the strong foundation we can build upon today:

- Our vital intellectual climate
- Addressing global challenges
- Strength in transforming theory into practice for societal good
- Cross-disciplinary programs
- A dynamic, creative, innovative, and entrepreneurial culture
- Leadership skills acquired by students
- Integrated learning experiences among undergraduates, graduates, faculty, and staff
- First-rate athletics program with an emphasis on the scholar-athlete
- Opportunities for engagement in the arts and an enriched cultural environment

Appendix 3

MEASURES OF SUCCESS

It will be important to measure our progress toward our goals continually throughout the coming years. We will measure our progress with a combination of external metrics and internal measures of success. Some of these are quantifiable and benchmarked with other institutions, while other measures will be more Lehigh-specific and will provide our own guidance and understanding of how we are doing. The following list shows those attributes that we intend to watch. Those with an asterisk represent metrics that are currently benchmarked, while those with a “D” indicate those already included on one of the dashboards presented at each Board meeting. A plus sign (+) denotes items included in the faculty activity report.

1. Addressing Grand Challenges and National Needs: Developing Teaching and Research Strengths in Key Areas

- Scholarly outputs (publications in refereed journals) +
- Books published+
- Faculty awards+
- Research expenditures per faculty by source^{+D+}
- Number of submitted research grant proposals+
- Success rate on grant proposals+
- Number of graduate school applications
- Quality of graduate student applications
- Admit/yield rate on graduate student candidates
- Number of doctoral students, degrees granted^{+D+}
- Number of Masters/MBA students, degrees granted^{+D+}
- Average time to complete doctoral degrees
- Positions/placements earned by graduate students post-degree
- Number of undergraduate research projects
- Citations for high-impact work
- Joint programs with distinguished institutions, US and international+
- Key alliances with international institutions+
- International visiting scholars coming to Lehigh+

2. Investing in Faculty and Staff

- Full-time faculty data (total, tenure track, by rank, diversity)^{*D}
- Full-time staff data (total, diversity)⁺
- Success rate in hiring top-ranked candidates in searches
- Retention rate of pretenure faculty
- Mentoring pretenure faculty
- Scholarly outputs (publications in refereed journals)⁺
- Books published⁺
- Presentations at national and international conferences⁺
- Media citations and placements⁺
- Patents⁺
- International collaborations⁺
- Faculty/staff awards of distinction⁺
- Faculty/staff performance review process and outcomes
- Faculty/staff professional development activities⁺
- Faculty participation on advisory and governing boards⁺
- Faculty sabbatical destinations, national and international⁺

3. Advancing Student Success: Promoting Core Competencies and Student Engagement

- Evidence of new pedagogy
- Evidence of new curricula
- Admission success: student quality and diversity
- Retention/persistence rates (year by year of enrollment)^{*D}
- Graduation rates (and average time to earn degree)^{*D}
- Number of students with an international learning experience
- Senior thesis topics and numbers
- Number of undergraduate students who pursue graduate degrees
- Total student service hours
- Prestige scholarships earned by Lehigh undergraduates
- Undergraduates completing “developmental transcripts” including summary of measurable elements
- Internship experiences

- Externship experiences
- International experiences
- Entrepreneurial experiences
- Leadership experiences
- Co-curricular learning experiences
- Measurable evidence of faculty-student engagement
- Undergraduate research projects supervised
- Faculty-student service initiatives
- Experiential learning opportunities supervised
- Faculty-student committee or project experiences
- NSSE survey results
- ACUHO survey results (residential satisfaction)
- Exit interview assessments
- Young alumni engagement in university activity
- Career placement statistics for Lehigh graduates
- Number of graduates who pursue careers in academia
- University fellowship acceptance rate
- Graduate student publications, conference presentations
- Graduate alumni giving rate
- Placement of graduates

4. Partnering in the Renaissance of the Local Community

- Economic development metrics
- Students living on campus/off campus
- GoldPLUS card use statistics
- Lehigh programs involving partnerships with community or area businesses
- Crime statistics (including calls to local police about Lehigh students)

Institutional Metrics

- Enrollment data^D
- Undergraduate student selectivity measures (applicants, admit rates, yield rates)^D
- Diversity profiles (relative to enrollment/employment, selectivity, and quality)^D

- Rankings relative to specifically determined institutions (comparable factors, overlap in recruitment of students and/or faculty/staff)
- Number of Lehigh academic departments earning national rankings
- Reputation rankings (*U.S. News & World Report*)^{*}
- National rankings^{*}
- International rankings

Institutional Financial Metrics

- Endowment market value^{*D}
- New gifts to endowment^D
- Total cash gift receipts^D
- Alumni giving participation rate^{*D}
- Campaign status/progress report^D
- Revenue diversification
- Research expenditures (total)^{*D}
- Indirect cost recovery^D
- Number and percentage of graduate students and postdoctoral fellows supported on external funding
- Number and percentage of undergraduate students supported by financial aid/type of aid^D
- Average institutional financial aid package^D

Appendix 4

FINANCIAL ASPECTS OF SPONSORED RESEARCH AT LEHIGH UNIVERSITY

INTRODUCTION

Lehigh is a comprehensive research university. The scholarly research our faculty conduct addresses societal needs and advances our educational mission. Faculty who are leaders in their respective fields bring the latest ideas into the classroom and our students benefit from projects and interactions with top researchers. Our research portfolio enables us to recruit high-quality faculty and students, and it enhances the institutional infrastructure available for research and teaching purposes.

In some fields, active research does not require significant financial investment and is rarely if ever funded from external sources; however, at Lehigh, as at other premier research universities, much of the research program is funded by external sponsors. The amount of external research funding is an important measure of our activity and it contributes to graduate education and our research infrastructure. This brief is intended to provide a short overview of the university's funded research program, using data from the past three years to describe the current state of affairs. Further discussions about the "future state" of funded research will be incorporated into the discussion of the strategic plan for the university.

SPONSORED RESEARCH

Federally funded research

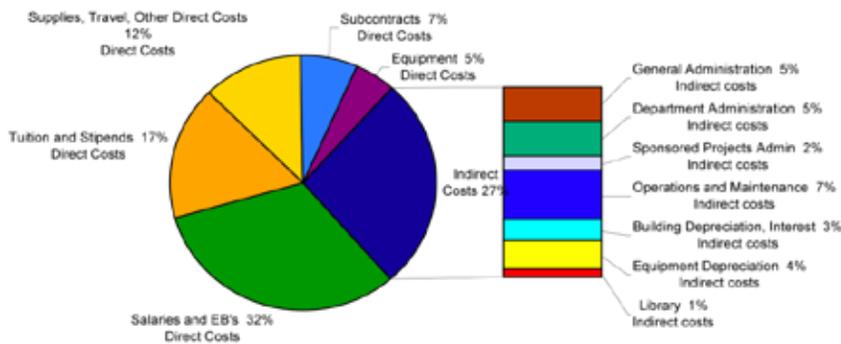
Since WWII, the United States federal government has made significant and important investments in research in our nation's universities. These investments have contributed greatly to the national economy and have fueled great scientific and technological revolutions. Early in the development of the practices for federal sponsored research, the government recognized the need to support not only the *direct* costs of performing research but also the *indirect* administrative and infrastructure costs associated with this mission.

The total cost of a sponsored program is thus the sum of direct costs and indirect costs. Direct costs are those identified with a particular project (such as graduate student salary) and indirect costs are those costs incurred in support of research administration and infrastructure. In federally funded research, all direct costs of research projects should be borne by the external funds, and the indirect costs are

covered through an indirect cost rate negotiated with the cognizant federal agency. Every three years, Lehigh University negotiates its indirect cost rate with the Office of Naval Research. The current Lehigh indirect cost rate is 58.73%, made up of 26% “administrative” and 32.73% “facilities” costs. Thus, each federal research dollar provides \$0.63 in direct costs and \$0.37 in indirect costs at full recovery. Since the indirect cost rate is assessed on MTDC (modified total direct costs)¹ of an award, and since we do not recover full indirect costs on some federal grants, indirect cost funds to the university are smaller than this amount. The figure below identifies both the direct and indirect cost components of research expenses and illustrates that for FY 2008, each federal research dollar to Lehigh provided \$0.73 in direct costs and \$0.27 in indirect costs.

¹Modified total direct costs exclude equipment, capital expenditures, tuition remission, and the portion of each subaward (to another partner institution) in excess of \$25,000.

The Federal Research Dollar on the Lehigh Campus



In general, the expectation for federally funded research is that a university should neither incur additional costs (beyond mandatory cost-sharing, discussed below) nor receive funding beyond the costs of the research program. An exception to this general rule is that the administrative portion of the indirect cost rate is capped at a rate of 26%, no matter what the actual costs are. At Lehigh we recover 2-3% less than our actual administrative costs when that cap is applied to our total rate calculation.

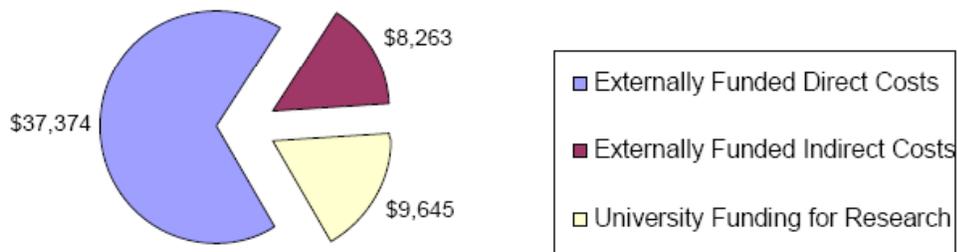
Non-federally funded research

At Lehigh, a significant portion of the total funded research activity is paid for from other, non-federal sources: primarily state government funds and foundation and private industry support. For non-federally funded research, the direct costs of the projects should be fully covered, but the indirect cost picture is much more idiosyncratic. For most state awards, the indirect cost rate is capped at 10 percent, and in some cases it is even less, regardless of the actual costs. For many industry awards, the full indirect costs (even beyond the rate negotiated with the federal government) could be recovered, although this has not been strictly practiced at Lehigh. In FY 2008, Lehigh received \$6.6 million from state sources, with indirect cost recovery of \$530,000 for an effective rate of only 8.1%. Lehigh received \$6.4 million from other non-federal sources, with indirect cost recovery of just over \$1 million, for an effective rate of 16.3%.

Costs of research that are borne by the university

As noted above, the university must pay for “cost-sharing” when required in federal awards. These amounts differ from agency to agency, and award to award. For example, in spring 2007, the National Science Foundation (NSF) reinstated a mandatory cost-sharing requirement of 30% on major research instrumentation (MRI) proposals. The Keck Foundation expects a university to contribute 1:1 matching funds. At Lehigh, the total cost borne by the university for cost sharing has been \$800-900,000 per year in the past three years. In addition, Lehigh has various internally funded research programs (e.g., Faculty Innovation Grants, undergraduate research support, graduate student grants), totaling approximately \$900,000 per year. Lehigh also provides 50 percent tuition support for every graduate student supported on a research grant—the total dollar value of this “tuition remission” is approximately \$1 million

Sponsored Research at Lehigh
(fiscal year 2008 dollars in thousands)



annually. And as noted, the university does not always receive the full reimbursement due for the indirect costs of the research endeavor. This under-recovered amount has been between \$5 and \$6 million per year in the past three years.

Finally, the university has a current policy of distributing 16% of the indirect cost reimbursement to the college deans (9%), individual researchers (4%), and their departments, centers, or institutes (3%), for support of research-related activities, on each award. In addition, through the “revenue stream” program, the colleges receive 80% of the indirect cost recovery, above a pre-set target amount. These two revenue streams have totaled \$2.5-\$3.3 million in each of the past three years.

The funds provide support for college programs and initiatives, investment in plant and equipment, and important support for the “start-up” funds provided to newly hired faculty, in order to ensure that their research gets off to a productive start. In the sciences and engineering, these expenses include significant investments in plant and equipment, and may include renovations, summer salary for the faculty member, and/or initial support for graduate students.

The start-up packages vary, based on market forces and the type of research, but typically range from \$30,000 to \$1 million per faculty member, with the largest amounts required for senior hires in the sciences and engineering. The amounts spent on start-up costs may be spread over several years; in the past three years, the total expense for the university ranged from \$1.5 million to \$2.2 million. These expenditures (\$9.6 million) are reflected in the pie chart shown as 17.4% of the \$55.3 million in “total research expenditures” at the university in FY 2008.

LEHIGH UNIVERSITY.