THE CASE FOR
ARTS & SCIENCES
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ARTS & SCIENCES: THE HEART OF THE UNIVERSITY

Together we learn, we discover, we create, we heal, we innovate, we lead. These are the goals of Leading Together – the Campaign for Washington University. These goals represent the essence of what a comprehensive research university must be in the 21st century. And it is precisely these aspirations – learning, discovering, healing, innovating, and leading – that define the role of Arts & Sciences as the core of a great university.

These goals not only exemplify the mission of a research university, they also challenge us. As we seek new ways to teach, to learn, and to advance knowledge, the complex national and global issues of today demand that we assemble all of our specific fields of knowledge and practice. The most profound production of knowledge is not created in isolation, but along a vibrant, interactive continuum of the natural sciences, social sciences, and humanities.

The real-world challenges of health, climate change, energy, economic growth, and international development cannot be effectively addressed within a single academic discipline. Rather, effective solutions need to incorporate knowledge from the natural sciences to the humanities, solutions that rely on the breadth and depth of Arts & Sciences. Within Arts & Sciences, nearly 400 tenured and tenure-track faculty contribute to their chosen fields of scholarship. It is their research, spanning the academic landscape, and their commitment to teaching that will provide the broad intellectual basis for addressing these challenges.

This is why our success is key to the university’s success.

Arts & Sciences fundraising priorities include:
• Invigorating undergraduate education
• Enriching scholarship support
• Advancing our distinction in graduate education
• Building intellectual centers of faculty excellence
• Improving the depth of the natural sciences

“The most profound production of knowledge is not created in isolation, but along a vibrant, interactive continuum of the natural sciences, social sciences and humanities.”
LEADING WITH IDEAS: TWO TRANSFORMATIVE PRIORITIES FOR ARTS & SCIENCES

PROVIDING A DISTINCTIVE UNDERGRADUATE EDUCATION

We must provide an outstanding education for undergraduates that develops leaders in all walks of life who are both broadly and deeply educated.

To accomplish this we must attract the very best faculty and students to Washington University. Here they find a vibrant and collaborative academic community that builds upon a core in the liberal arts and the interactive connections that only a research university can provide. We envision a faculty whose scholarship and research animates the classroom and lecture hall. We envision graduate students whose pursuit of advanced degrees contributes to both the university’s research profile and to the learning of undergraduates. We envision interactions of our faculty and students with the professional disciplines of medicine, social work, law, business, art, and architecture. Undergraduates of all academic majors and career interests will leave Washington University enriched by having been part of a larger, interconnected academic community.

With over 30,000 applications for 1,600 seats in the freshman class each year, we are able to assemble a freshman class of high ability and potential. The opportunity to select a major in one of over 30 academic departments and programs in Arts & Sciences or to seek a professional degree in one of our four professional schools gives students access to a wide range of excellent teachers, research opportunities, and out-of-class experiences. We are the leaders of today, and we educate, train, and develop future leaders. Our distinctive education leads not only to subject knowledge, but also to:

- An ability to think and act creatively
- Intellectual curiosity
- Practical skills, acquired by experience through independent study, internship, and research
- Knowledge of and informed perspectives on humanity, human behavior, and society
A distinctive Washington University education leads to both subject knowledge and to the intellectual skills and experiences required for leadership.

LEADING IN SCIENCE RESEARCH AND EDUCATION

Science has long been a focus at Washington University, both at the Medical School and on the Danforth Campus. But, as a mid-size research university, we are limited in size and scope. The challenge is to develop world-class programs that stand with the best from any university. In order to compete with our peers and fulfill our responsibility to train future scientists capable of exploring increasingly complex challenges in new ways, we must be innovative and use resources strategically. Departments must be vibrant, and interdisciplinary programs need to be built on strengths and opportunities.

These aspirations lie behind a major Arts & Sciences’ plan, the Integrated Science Initiative, with the goal to transform our physical spaces for new science research and education. The initiative addresses immediate needs in core disciplines such as chemistry and physics while planning for stronger alliances between the natural sciences, medicine, and engineering and technology. This vision will create important opportunities to transform the Danforth Campus for Arts & Sciences and for the university.
Initiatives for Arts and Sciences Leading Together Campaign

For Arts & Sciences to flourish, we need outstanding students, faculty, facilities, and programs. Arts & Sciences’ goals for Leading Together include increasing annual support as well as support for scholarships, graduate education, outstanding facilities, and academic programs.

Leading Together Priorities

1] Attract a talented and diverse student body

2] Attract and retain outstanding faculty

3] Advance the scholarship, research, and creative potential of students and faculty

4] Further strengthen an exceptional teaching, research, and living environment

5] Enhance excellence by increasing unrestricted annual support

Key Needs

- Unified undergraduate experience
- Undergraduate and graduate scholarships
- Endowed professorships
- Integrated Science Initiative
- Intellectual centers of faculty excellence
- Interdisciplinary focus on global health and the environment
- Modern research labs, classrooms, and collaborative spaces
- Study abroad
- Undergraduate research
- Flexibility to adapt to new challenges
- Seed funding for new initiatives
1] ATTRACT A TALENTED AND DIVERSE STUDENT BODY

Scholarships and Fellowships

Support for talented students to attend Washington University regardless of financial circumstance.

We must continue to attract, enroll, retain, and inspire the most talented students from diverse backgrounds and cultures from St. Louis, the nation, and the world. We must provide an education that helps promising young people realize their goals and their potential.

The most talented, committed, passionate students come from every conceivable background and circumstance. We will ensure tuition is not a barrier for any qualified student. Not only do scholarships benefit the recipient, but all our students benefit from exposure to diverse ideas, cultures, and people. Scholarship and fellowship support helps ensure that our campus represents the diversity of the nation and the world.

Graduate Education

The importance of the PhD: what makes us a research university.

Admission to the nearly 40 PhD degree programs in Arts & Sciences is highly selective. PhD students face intense, challenging years of study but succeed because of close interactions with leading faculty. The culmination of this study, the dissertation, pushes the boundaries of knowledge forward and creates new ways of understanding the discipline. As PhD graduates become the nation’s new educators, they bring their expertise to educate a new generation of students, fulfilling an academic renewal that is fundamental to the advancement of knowledge.

Madeleine Daeppl, LA 2013, came to Washington University on a highly selective Lien Scholarship. Majoring in economics and mathematics, she has earned an astounding 13 A-plus grades. She is co-president of Burning Kumquat, a student-run garden, and received a competitive grant to aid in the implementation of an environmental education and gardening project for inner-city youth in St. Louis. Most recently, she was selected as a Truman Scholar for her academic performance, leadership, and dedication to public service.
PhD programs are essential to a world-class research university; they fuel learning and discovery across the academic enterprise. In turn, the research produced by faculty and their graduate students forms the basis for developments in science and technology. These developments serve as an economic engine driving the region’s and the nation’s ability to form new businesses, to compete, and to innovate.

Funding for graduate students is critical. The best and brightest students will choose their graduate school on the quality of the academic program, the facilities available, faculty, and financial assistance. Attracting the best graduate students requires competitive fellowships. And, graduate student research often requires financial resources for travel, to conduct fieldwork, or to buy a specialized piece of equipment. Our goal is to increase the support for graduate student fellowships, to pair new graduate fellowships with current and future endowed professorships, and to provide an internal grant program to support dissertation research.

As a graduate student in physics, fellowship support enabled Shanti Deemyad, GR 2004, to conduct groundbreaking research on the superconductivity of lithium. Her study was the cover story in the preeminent physics journal in the world, Physical Review Letters. The research could have important repercussions for those working to understand the core elements of the universe and would not have been possible without financial support. Graduate students of this caliber and potential require substantial investment in order to succeed in their research endeavors.

- Tuition must not be a barrier for any qualified student.
- Increased support for graduate student fellowships, endowed professorships, and dissertation research is vital to the success of Arts & Sciences.
2] ATTRACT AND RETAIN OUTSTANDING FACULTY

The Integrated Science Initiative

Science at Washington University engages in topics as large as our solar system and as small as a nanoparticle. While scientists continue to be rooted in traditional disciplines, today’s research requires interdisciplinary teams from multiple departments to solve complex problems in new ways. Physical proximity among disciplines is essential for collaboration and for nimble adaptation to a fast-changing research environment. Flexible, modern, and interconnected laboratories with advanced equipment are required. But first and foremost, great universities need top scientists, teachers, and students.

Many of our scientists are the best in the world. We lead in important fields such as evolutionary biology, cognitive neuroscience, planetary science, and chemical biology. Our benchmarking study, Arts & Sciences: Strategy for Excellence in the Sciences, identified additional opportunities for strategic growth, including materials science, plant biology, environmental studies, and space sciences.

Young professors such as biologist Joseph Jez explore the ways in which the environment affects health. Current research in the Jez lab employs a combination of x-ray crystallography, enzymology, molecular biology, proteomics, and cell biology to understand the molecular foundations of heavy metal detoxification in plants and to explore new metabolic pathways in nematodes that are of possible pharmaceutical interest. This research addresses a worldwide problem: nearly a quarter of all disease and premature mortality deaths are attributable to environmental factors, especially in the least developed regions of the world.
These interdisciplinary thrusts require strong departments and faculty grounded in traditional disciplines who are eager to cross intellectual boundaries. Materials science is a case in point. Researchers in this cutting-edge field investigate the fundamental nature of the materials that make up our physical world. Arts & Sciences faculty in chemistry, physics, and earth and planetary sciences share interests in materials science with colleagues in all five departments in the School of Engineering and Applied Science and several faculty in the School of Medicine.

As we garner the necessary resources and support, we will implement an ambitious sequence of projects to achieve our goals. The first phase of the Integrated Science Initiative is already underway, with construction of interdisciplinary space for materials science, shared with the School of Engineering, in Rudolph Hall.

The second phase entails two new science facilities for chemistry and physics that will improve both these core disciplines and our interdisciplinary research. Our goal is to complete these buildings over the next several years and in doing so to lay the foundation for our long-range vision of facilities for all of Arts and Sciences. Support for this project will be transformative — for research and teaching, for Arts & Sciences, and for Washington University.

**Endowed Professorships**

Endowed professorships recognize extraordinary achievement both in the quality of teaching and the impact of scholarly research. This recognition is the highest honor we bestow on our faculty.

Endowed professorships include resources that make it possible for faculty to establish research programs that attract talented graduate students and other leading scholars to our campus. Income from these permanently invested funds enable faculty to pursue studies that can have a lasting impact on society. Because our reputation rests upon the strength of our faculty, endowed professorships and research support are essential in attracting and retaining our finest teachers and scholars.
• **We need to develop new science facilities for groundbreaking research that our current physical facilities can not support.**

• **In order to attract and retain world-class faculty, endowed professorships and research support is vital.**

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**Gerald Early**, the Merle Kling Professor of Modern Letters, joined Washington University in 1982. Writing on topics as divergent as boxing, baseball, jazz, and literature, he is the author and editor of more than a dozen books and the winner of numerous prestigious literary prizes. His contributions to the Humanities Center, to American Culture Studies, and to African and African American Studies are just a few examples of his leadership. As such, he exemplifies what an endowed professorship means to Arts & Sciences.

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**3] ADVANCE THE SCHOLARSHIP, RESEARCH, AND CREATIVE POTENTIAL OF STUDENTS AND FACULTY**

**Intellectual Centers of Faculty Excellence**

**Multidisciplinary centers allow Washington University to build upon areas of strength and develop creative and innovative research and scholarship.**

Washington University benefits from a long tradition of philanthropists stepping forward for this purpose. In recent times the Danforth and McDonnell families have enhanced the university’s research and education profile with gifts that created the American Culture Studies program, the John C. Danforth Center on Religion and Politics, the McDonnell Center for the Space Sciences, and the McDonnell International Academy. This visionary
leadership has enabled academic communities to form and to explore key issues from multiple perspectives. These intellectual centers matter because they make traditional departments stronger and because their work addresses real societal needs.

Centers such as these create dynamic relationships with traditional departments and serve as world-class incubators for new ideas and scholarly innovations. Their relevance ranges from what it means to be an American to the ways in which religion has an impact on politics, from understanding the nature of the universe to the rocks of Mars. Not one of these explorations can be fully understood by a single field of study; these issues require multiple approaches and disciplines.

Centers have impact because of enlightened philanthropy and a faculty eager to be innovative and to pursue challenges. In the future we will focus on three important university-wide priorities: diversity, community and culture, and global health and the environment.

Centers require support for faculty and graduate students. Centers host symposia and speaker series, and they require library acquisitions and dedicated physical space. The areas we have identified include a revitalized humanities center. Other centers on topics such as race, inequality and identity, or women and gender are also being considered. Finally, opportunities for additional collaborations are emerging, such as between art history and the St. Louis Art Museum in conservation and research or between our Department of Performing Arts and local theater and performance companies.

For Shanti Parikh, associate professor in anthropology, studying the AIDS epidemic and its treatment and prevention have taken her from investigating antiretroviral therapy in Uganda to working on AIDS education in North St. Louis. This work allows Parikh and her students to study the cultural contexts of AIDS transmission and to develop better ways of reaching at-risk people, all in connection with university-wide priorities in global health.

We plan to strengthen and create interdisciplinary centers focusing on the university-wide priorities of diversity, community and culture, and global health and the environment.
4] FURTHER STRENGTHEN AN EXCEPTIONAL TEACHING, RESEARCH, AND LIVING ENVIRONMENT

Commitment to Teaching and Learning: New Facilities

The beautiful and historic Danforth Campus is a defining aspect of Arts & Sciences. In order for iconic buildings such as Cupples, Ridgley, and Rebstock to continue serving as outstanding teaching and learning environments, further investment in our physical environment is essential. Our vision for the Danforth Campus extends beyond the Integrated Science Initiative and includes upgrading lab-based facilities for anthropology, enhancing humanities classroom and office space around the quadrangle, creating homes for our new intellectual centers, and transforming the Performing Arts Center. Performances in music, dance, drama, and film provide an essential component of the intellectual vitality of Arts & Sciences, and these endeavors require flexible, modern spaces designed to inspire and facilitate creativity.

Globalization and Study Abroad

In the years leading to graduation, 577 members of Arts & Sciences’ Class of 2012 studied abroad through our Overseas Programs for a semester, summer, or year. They studied in 50 countries, the most popular being Australia, China, France, Spain, and the United Kingdom. Other far-flung locales included Cameroon, Croatia, Fiji, Madagascar, Peru, Tibet, and Switzerland. These students were majors in nearly every undergraduate program, including biology, international and area studies, political science, anthropology, history, Spanish, economics, environmental studies, philosophy-neuroscience-psychology, and English. Undergraduates now have the opportunity to earn a global certificate, a curriculum through which students develop a nuanced understanding of international social, political, and economic systems and issues — with a keen eye to their ethical dimensions — and the intercultural skills and confidence to apply this knowledge to solve real-world problems. These international experiences are often life-changing for our students and form a key component of their Washington University experience. The challenge for Washington University is to enhance our overseas offerings and to make them available to all students.
Undergraduate Research

More than 200 Washington University undergraduates participated in the Fall Undergraduate Research Symposium last October. Presentations ranged across disciplines, including history, political science, anthropology, psychology, art history, literature, biology, biomedical science, chemistry, and physics. Forty-nine students received Summer Undergraduate Research Awards in 2012. The demand for more research experiences is far greater than we can currently fund. Our goal is to expand these programs with additional funds, both for summer research fellowships and for support of research projects.

- Improved facilities for the humanities, social sciences, and natural sciences are necessary for maintaining the intellectual vitality of the Danforth Campus.
- Overseas opportunities will be enhanced and made available to all students.
- We plan to expand opportunities for undergraduate research, including summer research fellowships.

5] ENHANCE EXCELLENCE BY INCREASING UNRESTRICTED ANNUAL SUPPORT

Flexibility to Adapt to New Changes

Unrestricted gifts provide support for emerging initiatives in innovative, substantial ways that directly address teaching and research needs. In recent years, unrestricted gifts have provided support for changes in pedagogy by supporting new active-learning classrooms. By combining both high-tech (“smart” boards, tablet work stations, digital projection, networked computing station) and low-tech (blackboards, with chalk and erasures), these classrooms take the greatest advantage of combined formats, from lecture to group work to individualized study, all in the same space during a given class period. This pedagogy is based on the finding that students learn more, and learn more rapidly and deeply, when they engage hands-on with the subject matter. Support from our dedicated alumni, parents, and friends in contributions to annual funds make these types of improvements possible.

Unrestricted gifts provide immediate benefits for our students and allow us to quickly respond to opportunities.
What will it take to achieve our goals?

People
- 35 new faculty members
- Scholarships and fellowships for undergraduate and graduate students

Programs
- Undergraduate excellence
- New centers of faculty excellence
- Global health and the environment

Buildings
- Two new science buildings
- Build-outs, equipment, renovations

How will the resources be allocated?

- Faculty: 43%
- Scholarships/Fellowships: 24%
- Buildings: 19%
- Programmatic Initiatives: 14%
# The Footprint of Arts & Sciences

## People

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<thead>
<tr>
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<th>Numbers</th>
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<tbody>
<tr>
<td>Tenured Faculty</td>
<td>385</td>
</tr>
<tr>
<td>Undergraduate Students</td>
<td>4,000 (+900, UnivColl.)</td>
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<tr>
<td>Doctoral Students</td>
<td>790</td>
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<tr>
<td>Research Expenditures</td>
<td>$40 million (FY 2012)</td>
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<tr>
<td>Alumni</td>
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## Who Are We?

- **Humanities, Social Sciences, and Natural Sciences**
- **The College, Graduate School, and University College**
- **21 Departments**
- **22 Programs**
- **11 Centers**
A FINAL WORD FROM THE DEAN

Through my time here at Washington University, as well as my involvement with institutions in Washington DC, I have come to appreciate the close link between research and teaching, and how, from a biologist’s point of view, knowledge cannot exist in isolation.

I have had the privilege of talking with many students and faculty and I’ve learned to appreciate the breadth and depth of Arts & Sciences. I’ve learned that the so-called “divisions” which define our academic organization – the humanities, social sciences, natural sciences and mathematics – are in some sense historical legacies of the Academy. These groupings reflect areas of knowledge that have existed since the foundation of the university in the eleventh century. But today our academic enterprise transcends these ancient boundaries.

Arts & Sciences has a deep responsibility, both to this university and to society. As we refine our mission within the framework of Leading Together, our ambition is to provide a distinctive experience for our students and our faculty, to be strategic and selective in establishing our priorities, and to learn together, to discover together, to create together, to heal together, to innovate together, and to lead.

Sincerely,

Barbara A. Schaal
Dean of the Faculty of Arts & Sciences
Mary-Dell Chilton Distinguished Professor
Washington University