Penn State shield logo with black text and blue shield

Unit Strategic Plan: College of Information Sciences and Technology

2016 through 2020

A more detailed version of this plan can be found at:

<http://ist.psu.edu/about/ist-strategic-plan>

College of Information Sciences and Technology

STRATEGIC PLAN

2016 to 2020

At IST, we’re about creating intelligence. The digital age

has made the world smaller, faster, more interactive and increasingly mobile.

But no matter how fast and smart machines become, they still rely on the power of human creativity. It’s people that create new ways to look at and evaluate the infinite opportunities of the digital age. IST draws on a variety of knowledge disciplines to help individuals unlock the power of their own creativity and fuel the world’s most powerful problem solving machine—the human mind.

*— Managing Information, Powering Intelligence*

Vision

The College of Information Sciences and Technology (IST) will be a leading student-centered college preparing students for careers in every area of human endeavor. With students at the forefront, attracting, retaining, educating, engaging, and graduating our students will guide the College’s actions.

The College will drive major advances in areas such as medicine, energy, environmental monitoring, crisis management, and other fields by focusing on education, research, and outreach in three major areas: *Human-Centered Design, Data Sciences, and the Risk involving cyber insecurity and information privacy*.

The resulting interdisciplinary research will require transcending academic boundaries and linking of lab‐based data with online global datasets that are complex, multimodal, and evolving. Meeting these challenges will require complementary expertise and efforts of researchers, practicing professionals, and citizen scientists. IST’s education and outreach programs will prepare individuals to meet the emerging challenges within each of these areas.

Mission

The College of Information Sciences and Technology educates students who can meet the challenges of the 21st-century information age; conduct leading‐edge research integrating people, information, and technology; and carry out service activities that address the global challenges of our digital world.

Values

The College of Information Sciences and Technology’s core values form the foundation for all that we do. They are a common thread that guide every aspect of our decision-making and planning processes, ensuring that every action is done thoughtfully and with our students in mind. Our core values are community, inclusion, respect, open communication, work-life balance, and customer service.

Strategic Objectives

Our approach to strategic planning is to leverage the College’s existing strengths while expanding our university, national, and global leadership in interdisciplinary education, research, and service. Thus, we have formulated our strategic objectives in the three areas of education, research, and engaged scholarship.

# Education

We will achieve *worldwide recognition as a provider of innovative educational programs*. We operate as an intimate student‐centered college within a large land‐grant university. We will identify and pursue novel educational offerings as the needs of the market and technology evolve. We will address the growing need for college graduates with expertise in data science and analytics by increasing the number and diversity of learners at both undergraduate and graduate levels. We will complement new programs and growth in the student body with innovations in how we develop and deliver our programs, including the development of a shared and inclusive understanding of diversity. We will serve an even broader student population and meet the needs of learners who pursue educational goals in an increasingly multi‐cultural and dynamic context.

# Research

We will demonstrate *integrative research leadership*, creating or co‐creating research centers and participating in cross‐disciplinary proposals and projects. We will leverage such efforts to increase visibility and impact at the university, national, and international level. We will invest strategically in projects that include partners from other colleges or external partners, using our expertise and interest in the data sciences, and in the analysis and human‐centered response to social‐technical contexts, as integrative themes for addressing critical problems in modern society.

# Engaged Scholarship

We will *broaden and strengthen student and faculty engaged scholarship*, building on and going beyond the internships we now require of all undergraduates. We will develop and grow other venues for such experiences, including undergraduate research and service learning opportunities, as well as the entrepreneurial experiences afforded by our Entrepreneurship and Innovation minor and related activities, seed funding that we invest in technology transfer projects for researchers, and expansion of Startup Week and related competitions and challenges.

Strategic Goals

The College of Information Sciences and Technology’s strategic goals align with four of the five thematic priorities established in the Executive Summary of Pennsylvania State University’s Strategic Plan for 2016 to 2020.

# Transforming Education

Penn State will be a leader in the transformation of education, including enhancing access to it, as it fulfills its land-grant mission in a 21st-century context and continues to drive discovery-focused research across disciplines

# Driving Digital Innovation

Penn State will be a leader in preparing students for success in the digital age and use digitally optimized outreach to foster economic prosperity in communities across Pennsylvania and beyond.

# Enhancing Health

Penn State will be a leader in promoting quality of life through comprehensive approaches to enhancing personalized and population health, achieved through a commitment to and investment in relevant research, education, clinical practice, and outreach.

# Stewarding Our Planet’s Resources

Penn State will be a leader in creating comprehensive solutions to mitigate the dangers of climate change and address the challenges of providing safe and abundant water, clean and renewable energy sources, and plentiful and nutritious food.

Key Initiatives and Performance Indicators

IST vision, mission, and values are the foundation of this plan, indicating its direction and driving its success. These factors align with those established by Pennsylvania State University’s Strategic Plan for 2016 to 2020. We will use this context to improve educational quality, increase research output, and enhance student engagement in and out of the classroom.

With these factors in mind, we articulate priorities to vigorously pursue over the timeline of this plan. The following tables outline the key initiatives used to achieve our stated goals and the performance indicators used to measure their success.

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| Table 5-1: Strategic Objective: *Transforming Education*  Goals, Key Initiatives, and Performance Indicators *(*AY 2015/16-2020/21) | | | |
| **Goals** | **Key Initiatives** | **Performance Indicators (Fall 2015 baseline)** | |
| *Enhance the student body of IST in both number and quality* | * Improved messaging * Use of scholarship support for recruiting * Targeted, data-driven, recruiting | * Increase the number of first-year undergraduates coming to University Park to pursue IST-based majors by 100% * Increase the number of students pursuing our World Campus programs by 40% * Increase the number of students pursuing our residential graduate programs by 100% * Maintain or improve quality of student population in our degree programs as measured by EI and number of Schreyer students * Improve placement rates for undergraduates to 90% | |
| *Provide our students with a more diverse collection of experiences* | * Leverage recruiting and scholarship support to increase diversity of undergraduate student population in the college * Leverage international experiences and opportunities on-campus to expose more of our students to culturally diverse experiences | * Increase the gender diversity for our undergraduate UP population (50% increase in the percentage of incoming first year UP students pursuing IST majors) * Increase the number of IST students having international experiences each year (double the percentage when measuring the number of students having such experiences vs. the size of the graduating class) * Reconstitute the IST Faculty-Staff Diversity Committee and engage in a robust program of inclusion activities for all college constituents | |
| *Serve as a testbed for novel modes of teaching and learning* | * Support the design and development of experimental pedagogical innovations * Refine and expand efforts to assess and integrate prior learning into curriculum | * Increase the number of courses integrating novel technologies or pedagogical approaches * Increase the number of events that engage both residential and online students * Increase the number of publications by IST faculty focused on pedagogical research | |
| *Expand undergraduate involvement in research* | * Increase the number of new externally funded REU opportunities * Introduce new internally funded REU opportunities * Introduce new for-credit REU opportunities | * Overall increase in the number of students engaged in REU activities (100% increase for paid and for-credit opportunities combined) | |
| *Support and reward research collaboration beyond the college* | * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of collaborative projects supported through seed funding * Increase the number of proposals for external support resulting from seed funding initiatives * Increase the number of collaborative proposals for external funding * Increase external funding for collaborative research activities * Increase the number of students (UG, MS, and PhD) supported through external funding | |
| Table 5-2: Strategic Objective: *Driving Digital Innovation*  Goals, Key Initiatives, and Performance Indicators *(*AY 2015/16-2020/21) | | |
| **Goals** | **Key Initiatives** | **Performance Indicators (Fall 2015 baseline)** |
| *Expand undergraduate involvement in research* | * Increase the number of new externally funded REU opportunities * Introduce new internally funded REU opportunities * Introduce new for-credit REU | * Overall increase in the number of students engaged in REU activities |
| *Support and reward research collaboration beyond the college* | * Prioritize collaborative efforts as part of seed funding initiatives * Prioritize efforts related to seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of collaborative projects supported through seed funding * Increase the number of proposals for external support resulting from seed funding initiatives * Increase the number of collaborative proposals for external funding * Increase external funding for collaborative research activities * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding |
| *Broaden and strengthen our research portfolio* | * Prioritize efforts that build connections to new external funding sources including proposals for seed funding and collaborative proposals * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of organizations to which proposals for external support are submitted * Increase the number of organizations from which the college receives external support * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding related |
| *Increase student engagement with entrepreneurship* | * Increase engagement with ENTI minor * Expand Startup Week, IdeaMaker Challenge, and related activities * Guest speakers addressing entrepreneurship | * Percentage of students experiencing at least one entrepreneurship related activity (measured based on students engaged in a given year vs size of graduating class) - Increase 25% * Number of students pursuing jobs with startup companies * Number of IST students pursuing ENTI minor |

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| Table 5-3: Strategic Objective: *Enhancing Health*  Goals, Key Initiatives, and Performance Indicators *(*AY 2015/16-2020/21) | | |
| **Goals** | **Key Initiatives** | **Performance Indicators (Fall 2015 baseline)** |
| *Expand undergraduate involvement in research* | * Increase the number of new externally funded REU opportunities * Introduce new internally funded REU opportunities * Introduce new for-credit REU | * Overall increase in the number of students engaged in REU activities |
| *Support and reward research collaboration beyond the college* | * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of collaborative projects supported through seed funding * Increase the number of proposals for external support resulting from seed funding initiatives * Increase the number of collaborative proposals for external funding * Increase external funding for collaborative research activities * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding |
| *Broaden and strengthen our research portfolio* | * Prioritize efforts that build connections to new external funding sources including proposals for seed funding and collaborative proposals * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of organizations to which proposals for external support are submitted * Increase the number of organizations from which the college receives external support * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding related |

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| Table 5-4: Strategic Objective: *Stewarding Our Planet’s Resources*  Goals, Key Initiatives, and Performance Indicators *(*AY 2015/16-2020/21) | | |
| **Goals** | **Key Initiatives** | **Performance Indicators (Fall 2015 baseline)** |
| *Expand undergraduate involvement in research* | * Increase the number of new externally funded REU opportunities * Introduce new internally funded REU opportunities * Introduce new for-credit REU | * Overall increase in the number of students engaged in REU activities |
| *Support and reward research collaboration beyond the college* | * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of collaborative projects supported through seed funding * Increase the number of proposals for external support resulting from seed funding initiatives * Increase the number of collaborative proposals for external funding * Increase external funding for collaborative research activities * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding |
| *Broaden and strengthen our research portfolio* | * Prioritize efforts that build connections to new external funding sources including proposals for seed funding and collaborative proposals * Prioritize collaborative efforts as part of seed funding initiatives * Support faculty efforts to develop large, interdisciplinary, research proposals (e.g., centers) | * Increase the number of organizations to which proposals for external support are submitted * Increase the number of organizations from which the college receives external support * Increase the amount of external funding in support of research activities * Increase the number of students (UG, MS, and PhD) supported through external funding related |

Implementation

The College of Information Sciences and Technology’s strategic plan is not static. It is a fluid document that provides a framework for the College’s direction and areas emphasis. Detailed initiatives and performance indicators will be developed annually to address IST’s stated goals in support of the University’s overall strategic goals.

The College’s strategic plan will be reviewed on a biannual basis to benchmark progress, adjust goals, and adapt overall initiatives as necessary. Continued input from College leadership, faculty, staff, and other constituency groups will be crucial in guiding the direction and assessing the success of this plan.

Administrators, faculty, and staff must be adaptive and use real-time information to drive the decision-making process and influence future strategies. While specific initiatives and metrics are included throughout this plan, they should be reviewed, updated, and replaced as needed to continue moving the College forward. As such, individual units must regularly identify supplemental goals and be provided the resources required to achieve them.

Special attention must also be paid to the shifting priorities of the University. We will work to understand the broader framework in which the College and its strategic plan lives, and adjust our priorities to align with the University’s overarch