Chapter 5 — Meeting Criterion 5 with Purpose: Engagement and Service

Statement of Criterion: As called for by its mission, the organization identifies its constituencies and serves them in ways both value.

Introduction

Purdue's mission includes service to its constituents through mutually beneficial programs and activities. This mission has been elevated significantly and expanded purposefully since the last accreditation visit in 1999. The 1999 report by the Kellogg Commission on the Future of State and Land Grant Universities, Returning to Our Roots: The Engaged Institution, had a profound effect on the University [1].

In 2001 Purdue’s Board of Trustees adopted a strategic plan emphasizing learning, discovery, and engagement, and identified, “[a] vital role for Purdue University in strengthening Indiana’s economy and improving the qualifications of the state’s workforce.” The strategic plan introduced the term engagement to the University as a whole. While engagement and service have been core missions for Purdue’s colleges of Agriculture, Consumer and Family Sciences, and Veterinary Medicine for decades, since 2001 they have increasingly become part of the fabric of the entire campus.

The Office of Engagement, headed by a vice provost for engagement (VPE) who is a direct report to the provost and serves on the president’s cabinet, was created in 2001 to support engagement and service across the campus and the state. The visibility, incentives, support, and rewards for engagement and service have all been affected positively and dramatically by this new administrative structure. Campus-wide engagement activities serve a diverse base of important constituents and are organized around four broad areas: economic development, community engagement and service learning, P–12 engagement, and lifelong learning.

A fifth area, quality of life, has been added since the adoption of Purdue’s newest Engagement strategic plan, too recently for inclusion in this self study. Each of the core components are addressed with respect to Purdue’s original four, broad areas: economic development, community engagement and service learning, P–12 engagement, and lifelong learning.

The Technical Assistance Program, the Purdue Center for Regional Development, and coordination of engagement activity with the Purdue Research Park and Purdue Discovery Park are all led by associate vice provosts for engagement. Facilitation and coordination of engagement and service across the academic side of campus is accomplished through a group of engagement associate deans, including representation from each of Purdue’s 10 colleges and schools [2].

The Engagement Council, a broad-based group of faculty, staff, and administrators from across campus who are directly involved with engagement and service, meet monthly to facilitate and coordinate activities [3]. Engagement has become an integral part of the Purdue campus culture, and the University’s engagement capacity, responsiveness, impact, value, and future directions are described below.
Core Component 5a: The organization learns from the constituencies it serves and analyzes its capacity to serve their needs and expectations.

Since the last accreditation visit, Purdue has made great strides in more deliberately reaching out to an increasingly diverse set of internal and external constituents to discern their needs and respond within its limits of resources and scope. Furthermore, the University has worked carefully toward better assessments to maximize the value, impact, and reach of its programs and people.

Economic Development

Purdue employs many mechanisms to listen to and learn from past, current, and potential constituencies. These include active involvement with advisory groups, University strategic planning, participation with partners in economic development studies, exploratory meetings with new partners, and internal studies.

For example, the Technical Assistance Program (TAP) — a statewide initiative serving over 700 employers per year — interacts with current and potential constituencies on an ongoing basis [4]. TAP uses an industry advisory council of 20 members, with three-year terms, that has met twice annually since 1986, to provide valuable input on the priority of the manufacturing business sector in Indiana. In recent years, this advisory council has conveyed the well-documented and significant business need to control healthcare costs, which TAP is addressing through the development and implementation of a healthy workforce program [4].

In early 2005 the Indiana Hospital Association requested a mechanism to engage interdisciplinary faculty teams in performance improvement projects at member hospitals. Purdue recommended expanding the successful TAP model to healthcare, and, by May 2005, Healthcare TAP was established with $50,000 of startup funds from the Indiana Hospital Association. Since then, Healthcare TAP has engaged 75 faculty, students, and staff in 200 projects with hospitals, public health departments, and other healthcare providers, with many positive impacts. Current funding exceeds one million dollars per year [5]. TAP faculty and staff have participated in numerous discussions with the Indiana State Department of Health about improving the quality of Indiana’s public health system, and with local communities seeking TAP help to support rural economic development. In 2006 Purdue participated in the development of Indiana’s Strategic Energy Plan [6], which names the University as a partner and includes goals for energy efficiency. Subsequently, the Office of Energy and Defense Development has provided TAP with funding for this purpose [7].

In the 2009 fiscal year, TAP funding reached nearly nine million dollars. The funding source contributions are shown in Figure 5-1.
Figure 5-1. TAP Funding Sources for Fiscal Year 2008 — 2009

Total Funding — $8,912,280

Source: Technical Assistance Program

The Purdue Research Foundation (PRF) interacts in many ways with federal, state, and local constituencies on behalf of Purdue, including regional presentations, participation in strategic planning, and ongoing discussions with regional economic development leaders, investors, business people, and benefactors [8]. These interactions have resulted in the significant expansion of PRF’s new business development activities, such as adding incubation space in West Lafayette and opening Purdue technology centers in northwest Indiana [9], Indianapolis, and southwest Indiana, in 2005, 2008, and 2009, respectively [10].

Purdue’s Cooperative Extension Service is present in all of Indiana’s 92 counties, and seven Purdue agricultural centers, strategically located across the state, develop innovative production, product, and marketing strategies relevant to local clientele. Over 250 College of Agriculture, College of Consumer and Family Sciences, and School of Veterinary Medicine faculty hold at least partial Cooperative Extension appointments. Extension advisory boards and 4–H councils advise Extension professionals on emerging issues, trends, and opportunities. The Purdue Council for Agriculture Research, Extension, and Teaching — composed of 250 elected delegates representing 10 geographic regions in Indiana — provides input on strategic priorities. The clientele-driven Rural Indiana Strategy for Excellence, RISE 2020, in partnership with the Indiana Department of Agriculture initiative, developed a strategic agenda for rural economic and community development [11]. In addition, every six years Purdue Extension engages in an appreciative inquiry process with a wide array of constituencies to develop priorities for the Federal Plan of Work [12].

Community Engagement and Service Learning

Purdue’s community development initiatives regularly generate information on the needs and desires of Indiana citizens. Several projects address Indiana’s higher-than-average tobacco use, obesity, and other health risk factors. These include Walk Across Indiana, an exercise program sponsored by the College of Consumer and Family Sciences and Purdue Extension, in collaboration with Indiana’s governor and the Indiana State Department of Health.
The College of Consumer and Family Sciences also created Healthy Community coalitions in more than 50 Indiana counties, dedicated to identifying and implementing action plans for improving health and well-being.

Purdue’s 2001–2007 strategic plan emphasized campus and faculty projects aimed at serving Indiana communities, as well as student-resourced community service. The vice provost for engagement commissioned a faculty-led project to institutionalize service learning into the academic fabric of the entire campus. This priority continues under Purdue’s new strategic plan and, as a result, the University has taken several steps to advance the initiatives. For example the University has expanded and centralized oversight of the Boiler Volunteer Network, through which individual students or groups can seek support, leadership, and resources for community service projects, and whom community groups can petition for needed services.

P–12 Engagement

Purdue’s P–12 engagement efforts are focused on the needs of students, teachers, parents, administrators, and communities in the state, the nation, and the world. The University has appropriately reflected its historic strengths with a focus on the STEM disciplines of science, technology, engineering, and mathematics. Numerous approaches are employed to assess the needs of this broad-based constituency and Purdue’s capacity to respond, including:

- teacher education program advisory boards that include P–12 colleagues as members;
- dean’s advisory councils in academic colleges that provide opportunities for environmental scanning of P–12 outreach programs;
- P–12 staff on the Teacher Education Council and other committees that provide input to the strategic directions of College of Education outreach;
- the College of Education annual employer survey, which is administered to determine the continuing needs of Indiana teachers; and
- the vice provost for engagement participation in the Indiana Education Roundtable, a state-level advisory group to the governor and state government.

The University has initiated new programs to address the needs of the racial, socioeconomic, and geographic differences of an increasingly diverse Indiana constituency base in P–12:

- The Science Bound program [13] offers educational support and mentoring for inner-city, high school students in the Indianapolis Public Schools (IPS), and provides successful graduates with comprehensive scholarships to Purdue. IPS has a predominantly minority based student population. The first Science Bound class entered the University in 2007. Currently, more than 50 Science Bound students are attending Purdue.
- The Purdue Athletes Life Success Program, launched with a federal grant, has become a community program serving more than 300 area youth of high socioeconomic and health needs.
Lifelong Learning

While always part of Purdue’s heritage, a deep-rooted commitment to lifelong learning was renewed in Purdue University’s 2001–2007 strategic plan, with stated goals to:

- educate, retain, regain, and retrain the Indiana workforce in targeted fields with skills necessary to build a strong state economy;
- provide professional development opportunities that are responsive to the growing continuing education and lifelong learning needs of our nation’s professional disciplines; and
- expand initiatives that improve the quality of life and increase continuing education and lifelong learning opportunities through enrichment learning programs for alumni, patrons, and general learners within the Lafayette — West Lafayette community, Indiana, and beyond.

The West Lafayette campus uses a variety of approaches to engage constituents and identify learning needs. Continuing education leaders in the School of Pharmacy and Pharmaceutical Sciences work with a variety of constituents to identify pharmacists’ and physicians’ practice gaps, and then design programs to improve knowledge, skills, and attitudes for professional practice and enhance patient outcomes. Another example of listening to and learning from constituents can be found in the Purdue Cooperative Extension Service. The 274 Purdue Extension county educators, as well as campus Extension specialists and volunteers, live and work in Indiana counties and provide the link between discovery and applications for Indiana citizens. Every five years, Extension creates a Plan of Work, developed through stakeholder interviews and open community sessions with constituents. Following this plan, Extension employees across the state spent 97,536 working days delivering lifelong learning in direct contacts with 1,330,550 citizens in 2006–07. Extension publications and Web sites reached another 26,285,974 people [14]. Another centralized asset is the Purdue Continuing Education membership in Eduventures, a national marketing research consortium through which the University can conduct needs analysis and market studies for prospective new programs, such as a 2007 study for new distance learning degrees in environmental engineering [15].

Looking Forward

Concerns and issues in the engagement and service area which make it critical for Purdue to take a learning posture for the future include:

- demographic changes, including longer life expectancy; immigration; changing ethnic make-up; and increased poverty, obesity, and diabetes, all of which alter the needs of those Purdue serves;
- increasingly complex economic, social, and political issues faced by the University’s clientele, with broader and more serious consequences; and
- advances in technology that bring opportunities to its clientele and challenge the University to respond in new and different ways.
Such changes require that Purdue carefully focus on the evolving needs of stakeholders and constantly assess its ability to respond. This learning posture is captured explicitly in two of the goals in the Purdue 2008–2014 strategic plan, *New Synergies*:

• Discovery with Delivery: Conduct discovery, identification, and mapping of existing and potential resources of economic value for the various regions of Indiana to help spur economic development action items for those regions; and

• Meeting Global Challenges: Pursue a research-based economic development agenda that stems from Purdue’s strengths and focuses on areas with the greatest impact to Indiana, the nation, and the world, with particular attention to life/health sciences and delivery, agriculture, advanced manufacturing, defense and homeland security, environment/energy, space sciences including aeronautics and astronautics, and the science of education.

The University continues to prioritize its service and engagement activities to assure they are aligned with one or more goals of the strategic plan. As the plan is implemented and opportunities arise, new considerations should include:

• if Purdue should be involved;

• if this opportunity provides benefits for both parties; and

• if there is a clear connection to Purdue’s mission, identity, expertise, role, and existing deployment of resources.

Purdue’s future engagement activities will involve both grassroots efforts and top-down initiatives. The creation of a vice provost for engagement position has been one significant investment. The University will develop further engagement efforts by identifying and prioritizing needs it can address, organizing programs to address these needs, providing incentives for participation, and demonstrating the programs’ effectiveness once they are in place. Each step in the process offers opportunities for the University to learn from its constituencies and make appropriate adjustments to better meet their needs.

**Core Component 5b: The organization has the capacity and the commitment to engage with its identified constituencies and communities.**

Reorganizing the major engagement initiatives under a vice provost has created opportunities to combine like services, capitalize on synergies among programs, eliminate duplicated efforts, and take advantage of economy of scale. In turn, these efforts have provided additional resource capacity and strengthened Purdue’s commitment to service.

**Economic Development**

Since the last accreditation, Purdue has significantly increased its capacity for enhancing economic development in Indiana, and the University will continue to expand this effort as more resources become available to meet constituent needs. The Technical Assistance Program has increased to five times its size in 1999, with current annual funding of over $9 million and 40 staff located in 12 regional offices. The resources to drive this growth have come partially from state appropriations (approximately 20 percent), but are primarily from self-supporting income derived from fees charged for the activities themselves. Careful planning and continuous assessment guide the process of identifying needs, evaluating mission relevance, and developing additional resources.
The Purdue Veterinary Teaching Hospital (VTH), established in 1959 and the only veterinary teaching hospital in Indiana, demonstrates Purdue’s commitment across nearly all areas of engagement. The VTH is staffed by a committed group of veterinary clinicians, technicians, and various support staff who provide general and specialized veterinary services for both small and large animals, and serve as a referral center for veterinarians in the state. General services provided by the hospital include internal medicine, surgery, and wellness care. Specialized services include anesthesiology, behavior, oncology, cardiology, clinical pathology, ophthalmology, dermatology, diagnostic imaging, neurology, dentistry, pharmacy, radiation oncology, and theriogenology [16].

The Purdue Research Foundation (PRF) has also significantly increased its new business development capacity, expanding incubation space from 42,000 square feet in the Purdue Research Park at West Lafayette, in 1999, to 520,000 square feet in four cities, by late 2008. During this same time, the number of incubator companies increased from 34 to 140, and the number of employees in these companies increased from 70 to 3,000. PRF has also developed several new programs and initiatives to support the commercialization of faculty research, and has partnered with investors, federal, state, and local economic development programs, and benefactors to support new businesses.

Purdue has increased its capacity to respond to the needs of entrepreneurs by establishing the Burton D. Morgan Center for Entrepreneurship and constructing a 31,000-square-foot building for the center; by establishing a partnership with the Kauffman Foundation; and by developing an entrepreneurship certificate program, open to students from any major. More than 1,000 Purdue undergraduates, from all colleges and schools, were participating in this program in 2008–2009, and many of their activities directly or indirectly benefit communities served by the University.

Community Engagement and Service Learning

Purdue identifies opportunities for community engagement and service learning, in part through a series of community visits each year by the president of the University. Each visit includes meetings with economic development officials, educators, and civic leaders. The focus of these meetings is to listen to suggestions from community members about how Purdue can become a better partner to meet their needs.

Several University faculty and staff serve the public on elected councils in Lafayette and West Lafayette, and many serve as leaders in associations at the state, national, and international levels. The University Development Office has performed dozens of fundraising audits for area nonprofits. Other examples of University resources committed to successful community engagement and service learning activities include:

- The Purdue University Speakers Bureau, which was established in 2003 and provided programs by faculty and staff to 24 organizations that year. In 2007–2008, 68 organizations and 3,384 audience members benefited from speakers through the bureau.
- The College of Consumer and Family Sciences prepared a fact sheet after Hurricane Katrina to help parents and professionals understand how children could be affected by the disaster, and educators collected relief kits for hurricane victims. In May 2008, Team Reach Out made its sixth trip to the Mississippi Gulf Coast where the Purdue nursing program partners with coastal family health clinics and Alcorn State University in ongoing relief efforts.
• The Ismail Center for Health, Exercise, and Nutrition provides research opportunities for faculty and employment and service opportunities for students, while offering health, exercise, and nutritional services for older community residents.

• Students of foreign languages and those who speak a second language provide English-language tutoring for non-native English speakers in area P–12 schools.

• The School of Nursing operates four clinics in area communities to provide a variety of health services. Purdue faculty and students provide care for more than 10,000 patients annually.

The Boiler Volunteer Network (BVN) connects Purdue students, faculty, staff, and retirees with community service and campus volunteer opportunities, and creates and implements a variety of valued services. BVN programs like the Fall Harvest Food Drive and Boiler Blast enable hundreds of University volunteers to participate in a number of community service projects throughout the Greater Lafayette area. Through these efforts, community needs are served, while Purdue faculty, students, and staff all benefit from practical learning opportunities and professional growth.

The vice provost for engagement has also allocated funds to increase service learning awareness among faculty and students. Approximately $150,000 has been awarded to faculty through community service/service learning grants of $2,000 for course development and $5,000 fellowships for faculty who permanently embed service learning in their courses. The Office of Engagement also awards student grants of up to $1,500 per request. As of fall 2008, $550,000 has been granted to 463 applications submitted by 1,250 students [17]. As a result, service learning was embedded in 143 courses throughout the 10 academic colleges at Purdue during 2007–2008, an increase of more than 400 percent in five years. In addition, over 22,000 students are involved in student-driven community service projects each year.

**P–12 Engagement**

Purdue has sought to fulfill its substantial commitment to its P–12 constituencies by developing programs to meet their needs. Decentralized programs include efforts such as the Gifted Education Resource Institute [18], Engineering Projects in Community Service [19], College of Science K–12 Outreach [20], the Purdue Literacy Collaborative Project [21], and the Institute for P–12 Engineering Research and Learning [22]. More centralized, University-level efforts are coordinated through the Office of Engagement, Continuing Education and Conferences, the Indiana Council of Economic Education, the Purdue Cooperative Extension Service, the 4–H Youth Program, and the Center for Research and Engagement in Science and Mathematics Education [23].

The University continues to increase its physical, financial, and personnel support for effective engagement programs. To increase the visibility of P–12 engagement efforts and to provide coordination across Purdue’s colleges and schools, a new position, associate vice provost for P–12 engagement, has been created.
Lifelong Learning

While Purdue’s colleges and schools maintain academic authority for their continuing education activities, the University’s capacity to deliver lifelong learning programs is centralized in Continuing Education and Conferences (CEC). This unit headed by an academic dean who reports to the chief academic officer through the vice provost for engagement. CEC supports the University’s learning, discovery, and engagement missions through administration of continuing education, including professional development programs, and conference-related activities, on and off campus. The CEC Conference Division, which oversees all on-campus conference activities, plans and coordinates more than 700 conferences, serving more than 70,000 attendees, each year. Continuing Education annually serves over 2,000 graduate and 7,000 undergraduate students in credit courses and programs, and administers more than 15,000 noncredit program enrollments. In addition to providing administrative management for the financial aspects of lifelong learning programs, CEC also assists in areas such as marketing and logistics.

Lifelong learning programs exist in virtually all of Purdue’s academic units, supported by CEC. For example, the College of Education offers Internet-based courses in teacher education in addition to its doctoral program. The colleges of Engineering, Technology, and Agriculture each have master’s of science degree programs that are offered in hybrid formats, combining face-to-face and distance learning modalities. CEC is supported approximately equally through allocated general funds and fees charged for the programs it administers. The unit has a well-established planning process to guide its growth areas and evaluate the efficacy of the services it provides.

Looking Forward

The commitment to engagement and service is clearly spelled out in the 2008–2014 strategic plan, New Synergies. Most of the characteristics that describe Purdue’s commitment to engagement, as established in the 2001–2007 strategic plan, continue to be important components of the University’s vision for the future. The 2008–2014 plan, however, expands and redirects the reach of the University’s engagement activity. During the 2001–2007 plan, for example, the University’s primary target for engaging with secondary schools in Indiana was through P–12 partnerships, while the 2008–2014 plan expands the partnership base to P–14. During the span of its current strategic plan, Purdue will redirect some of its wide-ranging expertise to focus on issues facing the state of Indiana and the United States. It will also further extend its resources and commitments to many of the world’s grand challenges.

Specific examples of plans for the future include significant expansion of services offered by the Technical Assistance Program (TAP) to address healthcare issues such as employer costs; hospital safety, quality, and productivity; and public health capacity and quality. TAP is moving forward by developing partnerships with governmental units, foundations, local communities, businesses, hospitals, clinics, and others.

As another example, the Purdue Center for Regional Development (PCRD) will work with Purdue Extension to create a statewide system or network of regional economic development specialists. The PCRD will continue to be a “public entrepreneur” that creates and incubates new programs and takes calculated risks in program development and delivery.
Finally, the Purdue Research Park (PRP) will continue to improve programmatic offerings to its clients, and will construct state-of-the-art facilities, as needed. Working with the Burton Morgan Center for Entrepreneurship, the PRP will improve the Entrepreneurship Academy and the Discovery Park Entrepreneurial Boot Camps. The PRP will also create an Emerging Innovation Fund and develop angel investor networks.

Core Component 5c: The organization demonstrates its responsiveness to those constituencies that depend on it for service.

With a centrally focused engagement and service organization, Purdue has enhanced its responsiveness to new requests for service opportunities. The Office of Engagement, with coordinating and communicating organizations such as the Engagement Council and Engagement Deans Group, can quickly mobilize and determine which University area is best able to meet an identified need.

**Economic Development**

A core value of the Office of Engagement is responsiveness to economic development constituencies. This is accomplished via statewide offices for the Office of Engagement, Purdue Extension, and TAP; by staff participation on chambers of commerce, certified technology parks, and economic development organizations; and by Purdue participation in planning groups, professional organizations, and state and local governmental units involved with economic development.

The core value of responsiveness to its constituencies within Purdue Extension has led to the following initiatives:

- County-based, multi-organizational learning centers or learning networks have been established in 15 communities across the state to deliver workforce development, business development, and community planning initiatives to local citizens. These learning center concepts engage the wide array of ethnic, cultural, and socioeconomic diversity in our state and have been individually tailored to be responsive to local educational needs.
- In 2004, Purdue Extension initiated the Economic and Community Development Program [24]. Approximately 50 extension educators are focused on five targeted areas: entrepreneurship, leadership and civic engagement, workforce development, community visioning and planning, and public issues education.
- In 2003, the New Ventures team was formed to help constituents develop value-added economic development efforts in several regions across Indiana [25].
- New signature programs include a Beginner’s Guide to Grant Writing Workshop [26], which has generated over $5.5 million for local efforts, a Local Government Finance Program for elected officials [27], and the Local Decision Maker Program to enhance community economic development work [28].
- The Purdue Center for Regional Development (PCRD) serves as the formal organizational host for two regional small business development centers: the Greater Lafayette Small Business Development Center [29] and the North Central Indiana Small Business Development Center [30]. A third center is being negotiated for southeastern Indiana. Extension and the PCRD initiated three Latino learning centers, supported by grants from the Indiana Office of Community and Rural Affairs. At the request of Indiana’s lieutenant
governor, the PCRD facilitated the Rural Indiana Strategy for Excellence, RISE 2020 [31].
As a result, Ball State University, the Indiana Rural Development Council, and other partners are collaborating with PCRD to develop the Indiana — HomeTown Competitiveness project, a locally-based planning, resourcing, and startup effort focused on nine Indiana communities [32].
• The Workforce Innovation in Regional Economic Development grant of $15 million, from the U.S. Department of Labor, is being used to develop and upgrade workers’ skills for the 21st century [33].
• Purdue Extension’s Land Use Planning Program helps Indiana communities and planning commissions use technology to find the most balanced use of area resources.

Community Engagement and Service Learning

Purdue is responding to the imperative to better prepare its students for lives of service to their communities and professions. Several very successful programs are contributing to this initiative. These programs have the added benefit of serving clients who are recipients of the directed efforts.

For example, Engineering Projects in Community Service (EPICS) is a model program designed to provide students with hands-on, practical experience in applying engineering principles through community service initiatives with area nonprofits [19]. Teams of undergraduate students design, build, and deploy real systems to solve engineering-based problems for local community service and education organizations. On average, more than 400 students participate each year, representing 20 different academic departments, totaling more than 2,000 participants since EPICS was founded in 1995. EPICS students gain engineering experience, communication skills, and experience on multidisciplinary teams, as well as leadership and project management skills. Community organizations gain access to technology and expertise that would otherwise be prohibitively expensive. Purdue has launched a national EPICS movement, leading to more than 15 university programs and a high school program involving students in five states.

The University uses its resources to respond to community nonprofits, school districts, state and local government, national associations and agencies, and other identified stakeholder groups as unanticipated needs arise. Examples of successful initiatives include:
• Two School of Nursing rural clinics serve about 3,000 patients annually in significant Hispanic populations; 60 percent of patients treated in one clinic, and 30 percent in the other, are Hispanic.
• The National Nursing Coalition for School Health, a partnership of eight national healthcare organizations whose 250,000 members care for school-age children and teens, is based at Purdue. An annual conference provides content on school-based health promotion, disaster preparedness, and infectious disease.
• The Joe Tiller Chapter of the National Football Foundation, named for the former Purdue football coach who founded the chapter in 2004, has awarded more than $44,000 in grants, scholarships, and honorariums [34]. It is one of 121 chapters in the United States and the largest in Indiana.
P–12 Engagement

Purdue collaborates with local and statewide education offices to develop and deliver programs that respond to the needs of Indiana’s P–12 schools. Through these collaborative efforts, led by the Office of Engagement, school superintendents, principals, teachers, and program leaders work directly with University faculty and administrators. Purdue has collaborative ventures with Indiana higher learning organizations and educational sectors to broaden the impact of campus programs, including:

- Indiana–Science, Technology, Engineering, and Mathematics Resource Network (I-STEM), a statewide collaborative involving 14 other Indiana higher education institutions working to increase the presence of STEM disciplines in P–12 schools throughout the state and to improve the technical competency of STEM subject teachers [35]; and
- state Mathematics–Science Partnership grants that encourage collaboration between higher education and P–12.

To benefit students in Indiana’s secondary schools, dual credit and concurrent enrollment agreements exist with all of Purdue’s campuses to facilitate the transfer of credits and ease matriculation from high school to college. These articulation agreements allow students to accelerate their education toward college and increase their academic competencies prior to matriculation from secondary school. Purdue has transfer policies that include Advanced Placement credit in certain areas. The College of Agriculture offers a program in advanced life sciences for high school students. In 2008–2009 Purdue collaborated with Indiana University on a pilot program to offer online credit courses from both universities to students in rural high schools, which enhances access to college-level courses in schools where resources and access are difficult to come by.

Community leaders attest to the usefulness of Purdue’s engagement programs, derived from a long history of successful efforts throughout the region. Some important examples of how the University responds to new identified needs include:

- The Twenty-first Century Scholars program assists students who are first in their families to attend college [36]. Income-eligible sixth, seventh, and eighth graders who enroll in the program and fulfill a pledge of good citizenship are guaranteed the cost of four years of college tuition at any participating public university in Indiana. In 2008–2009, 998 Twenty-first Century Scholars were enrolled at Purdue’s West Lafayette campus. Striving to improve a six-year graduation rate of 60 percent for the Scholars (compared to 71 percent for the campus, overall), Purdue created an advocacy and support program for the Scholars in 2006. Pell-eligible Scholars (with family incomes under $40,000) also have access to the newly created (in 2008) Purdue Promise program, which provides funds for books, room and board, and work-study opportunities [37].
- Purdue hosts academic boot camps for students who are under-prepared for college [38].
- The University helps sponsor the Indiana State Association of Principals’ Indiana Academic Competitions, statewide, at a level of approximately $100,000 annually [39].
- The Woodrow Wilson National Fellowship Foundation “STEM Goes Rural” initiative is a new program (introduced in 2009) for college seniors or graduates in mathematics or science who are interested in rural secondary teaching. Recipients are awarded a $30,000 stipend to complete a master’s degree and receive three years of mentoring.
Purdue participates with state government, local industry, and high schools in partnerships focused on shared educational, economic, and social goals, to lift the overall educational aspirations of Indiana secondary students. In particular, these programs aim to reduce statewide dropout rates and encourage more interest in STEM courses that increase skill levels for new technology manufacturing jobs in the state. Connexus [40] and TechPoint [41] are examples of organizations composed of corporate, government, community, and educational leaders working jointly to stimulate workforce training and advance public relations initiatives to enhance the available human capital necessary for advanced manufacturing job growth in Indiana.

**Lifelong Learning**

Purdue is a key asset for Indiana, nationally, and internationally by responding to the learning needs of all these constituencies. Examples are provided below.

**Responding to Community Needs**

- The Krannert School of Management established a weekend MBA program for qualified residents in the Lafayette–West Lafayette area. The program currently has two cohorts of nearly 60 students each.
- Purdue Statewide Technology makes certificate and associate degree programs available to local workers by offering night classes at SIA, Subaru of Indiana Automotive, in Lafayette, Indiana.
- Continuing Education promotes evening and distance learning classes within the community to encourage participation from local adults, including Purdue employees.
- Purdue supports the Wabash Area Lifelong Learning Association (WALLA) in offering about 50 noncredit courses, enrolling approximately 250 seniors per year [42]. Continuing Education also operates an Elderhostel (Exploritas) program and regular programs at the area’s largest retirement community.

**Responding to State Needs**

- The College of Technology established the Technology Weekend Master’s Program, offered on the West Lafayette campus, at Rolls–Royce facilities in Indianapolis, and in Columbus, Indiana.
- Statewide Technology is an extension of the College of Technology into locations in 11 Indiana communities. Degree programs are offered that meet regional needs, determined by current and future workforce projections. These degree programs follow the same curricular requirements as those on the West Lafayette campus and are taught by faculty who are members of the home academic departments. The system allows for low student to faculty ratios and provides access to advances in cutting edge technology in local communities.
- Indiana has one of the nation’s lowest rates of college-educated citizens in the nation. To enhance access to higher education in Indiana communities, Purdue Extension and Continuing Education maintain a network of nine community-based learning centers that represent multi-organizational access to college-level learning opportunities.
Responding to Needs Nationally and Internationally

- The Engineering Professional Education division offers distance engineering graduate degree programs to employed engineers. Eleven percent of its students are outside the United States and 67 percent are within the U.S., but outside Indiana.
- The Department of Building Construction Technology offers an online master’s degree to meet the high demand for management training in construction industries.
- The Department of Agricultural Economics coupled an MS in agricultural economics with an MBA from Indiana University, for asynchronous delivery to food and agribusiness professionals through distance learning.
- To address the nationwide shortage of veterinary technologists, the School of Veterinary Medicine launched a totally online associate degree program, which currently has over 300 students who are able to participate while still working in their home communities.
- The Krannert School of Management developed the International Master’s in Management to provide executive participants with an internationally focused curriculum, two experiences abroad, and dual MBAs from Purdue University and international partner institutions.
- Purdue’s top-ranked Department of Hospitality and Tourism Management has trained executives of China’s Jinling hotels in modern management practices by sending faculty to China and bringing Chinese managers to West Lafayette.
- The School of Pharmacy and Pharmaceutical Sciences offers its pharmacy doctorate program partially by distance to professionals throughout the United Arab Emirates. At the request of the government of Kazakhstan, the school has hosted two groups of Kazakh pharmaceutical industry personnel to familiarize them with modern standards of pharmaceutical production and quality.

Looking Forward

Responding to its constituencies remains a priority for the University. One goal of Purdue’s 2008–2014 strategic plan, under the Discovery with Delivery theme, is to “proactively deliver statewide Cooperative Extension services, [by] sharing knowledge and skills that are the most advanced and applicable and by promoting collaboration of experts across disciplines to effectively serve the people of Indiana.”

As an example of how Purdue will continue to meet the needs of those constituencies that it serves, Purdue Extension will strive to diversify its workforce, develop new strategies to engage changing demographics, and collaborate with partners to provide educational programming to new clientele. Complex issues will be addressed with interdisciplinary, collaborative team strategies. Changes in behavior or practice as a result of Extension programming will be carefully documented, and research based information, decision-support tools, and forecasts will be provided through Web-based resources. Extension will also pursue new international partners and new collaborations to expand business and academic opportunities.

As another example, Purdue is developing an institutional strategy to promote lifelong learning, including providing resources and creating an incentive structure for these efforts. In this area, the University will increasingly transcend the traditional disciplinary boundaries of academic institutions to provide the specific learning that adults need. Along these same lines, Purdue is increasing access to learning by offering additional coursework online, thereby
providing opportunities for students who are not on campus and expanding increased scheduling flexibility for students on campus.

Synergistic activity is encouraged in Purdue’s research endeavors, leveraging the early success of Discovery Park. Likewise, units such as the Technical Assistance Program and Purdue Extension, which are close to local organizations, can also help assemble interdisciplinary teams to directly address local learning needs that can benefit from synergies with Purdue expertise.

Purdue is supporting Indiana’s economic infrastructure through workforce development as Indiana attempts to transform its economy from a base of traditional manufacturing and agriculture to more technology-based industry, such as biotechnology and advanced manufacturing. This transformation will require significant training and retraining of the state’s workforce. Purdue contributes to this effort through such lifelong learning activities as degree and certificate programs, campus workshops, on-site training, online programs, and custom consultation. It is important for Purdue to identify its niche in workforce development, which may be in developing both management and high-level technologists, and in assisting workers with the implementation of new technologies and management models.

**Core Component 5d: Internal and external constituencies value the services the organization provides.**

Because the University’s constituency is extensive and diverse, and the available resources to provide services are limited, the value that constituents place on engagement activities is of utmost importance. Evidence of the perceived value of these services is provided below.

**Economic Development**

The Technical Assistance Program (TAP) Manufacturing Extension Partnership center uses a third party survey firm and a well-established methodology to measure the value of its economic development initiatives. Figure 5-2 demonstrates their impact for fiscal year 2009. Other TAP units obtain feedback via evaluation instruments that include both objective and subjective measures. For example, a medium-sized Indiana hospital partnered with a Healthcare TAP team to improve the percent of on-time first starts in surgery from 15 percent to 65 percent, saving an estimated $100,000. TAP economic impacts and success stories are reported extensively, including publication of an annual report [43].
The Purdue Research Foundation collects many measures of the value of its technology commercialization programs. These include the growing number of companies established in its incubator facilities and research parks; number of employees added; dollars invested in these companies; the number of disclosures, patents, and copyrights; the number of participating faculty; the square feet of incubation space; and the number of inquiries for space in the incubation facilities.

Because of Purdue learning center/network efforts, 10 public school teachers earned MS degrees in educational administration in Hendricks County, nearly 200 real estate professionals completed continuing education courses for licensure in Whitley County, and numerous childcare workers earned child development associate certificates, and several now own daycare centers.

**Community Engagement and Service Learning**

Since Purdue University began promoting the Project Lead the Way (PLTW) pre-engineering/engineering technology program, participation has grown to include more than 230 Indiana high schools. The Indiana PLTW program entails a sequence of technology education courses as designated by the Indiana Department of Education [44].
During the 2008–2009 academic year, approximately 3,500 students were enrolled in Purdue courses with a formal service learning component. When added to the nearly 20,000 that participated in student generated community service projects, a significant majority of the total campus student population participated in student learning or student-generated community service.

**P–12 Engagement**

Evaluation data for P–12 outreach includes rates of participation by external constituencies and development, expansion, and long-term continuity of programs and services. Examples of programs and services that have high participation rates include:

- College of Science K–12 Outreach has, since 1989, reached 7,000 teachers (elementary through high school) and 580,000 students through over 2,600 visits to Indiana schools [20].
- Surprising Possibilities Imagined and Realized through Information Technology (SPIRIT), sponsored by the colleges of Technology and Science, and funded by the National Science Foundation [45]. Seventy-five students, 23 teachers, and 14 counselors completed the 2009 SPIRIT summer camp.
- Founded in 1904, the Indiana 4-H Youth Development Program is the largest statewide organization serving youth regardless of where they reside. The national mission mandates for 4-H Youth Development include science, engineering, and technology; healthy living; and citizenship/leadership. In 2008, the Indiana 4-H Youth Development Program reached 216,502 youth in grades 3–12 through community clubs and in-school programs engaging 18,000 adult volunteers. The breakdown of where these youth reside in Indiana is shown in Figure 5-3. Indiana youth receive approximately $73,000 annually in 4-H scholarships for post-secondary education.

**Figure 5-3. Demographics of the 2008 Indiana 4-H Youth Development Program**

“As a member of the Purdue University Service Engagement Advisory Board, it has given me a greater insight and appreciation of service learning and engagement from the perspective of the University, its faculty, and staff. True engagement is mutually beneficial, and being on the board has allowed me to understand this in significant and pragmatic ways for impacting the community, while simultaneously giving a voice to the community and its needs.”

—Dennis H. Carson, redevelopment director for the city of Lafayette
The Child Development Laboratory School had 102 participating children in 2007–2008, 2,100 participants since 1988, and 4,400 total participants since its establishment in 1926 [46].

The Purdue Literacy Collaborative reached 3,788 educators in 2005 [21].

In 2008 the Web site for Provider–Parent Partnerships, an Extension outreach program to help parents and childcare providers better support the well-being of children [47], had 135,818 visitors and 1,627,673 total hits.

The Online Writing Lab (OWL) Web site received over 114 million hits, from over 125 countries, in 2007–2008; OWL tutors answered over 5,000 writing-related questions via e-mail; and the Purdue OWL News weekly e-newsletter reached over 14,900 subscribers [48].

Extensive use of Purdue facilities by the community demonstrates the value that constituents place on the University. Examples of programs using Purdue facilities include the Science Olympiad, which has experienced steady growth since 2005 and hosted 350 students from 20 schools in 2008. The Presbyterian Youth Triennium has brought nearly 6,000 youth to the Purdue campus every third year for several decades. During the summer months, the University hosts several thousand youth in a variety of sports camps sponsored by intercollegiate athletics.

**Lifelong Learning**

Purdue gauges the value of services it provides to both internal and external constituencies with formal measures of valuation and impact, recognition, longevity, and growth of programs and any spin-offs they may generate. Most lifelong learning programs use participant evaluations, and adjust subsequent programs based on these responses. Representative measures for several ongoing programs are described as follows:

- The College of Engineering’s Division of Engineering Professional Education (EPE) has an extensive student survey process to assess all aspects of courses and programs delivered at a distance to practicing engineering professionals. Survey results are analyzed and charted with the goal of high quality and continuous improvement in program content and delivery.

- Purdue Extension consistently measures its programs by assessing changes in behavior or conditions that impact the public good, at each program’s conclusion and again after six months. Extension conducts about 500 such assessments per year.

- The College of Technology Weekend Master’s Program measures the impact of capstone projects in which students conduct an applied research project to propose methods to save their companies money. Companies report that, on average, these projects save the companies over $200,000 per student, providing the sponsoring companies with immediate return on investment for students they support.

The value of Purdue outreach programs to their constituents is also demonstrated through external and internal recognition. For example:

- The Krannert master’s executive education programs are widely recognized as some of the best. Krannert programs are consistently ranked in the top 25 in the world by such prestigious publications as *The Wall Street Journal* and *The Financial Times*. 
• The College of Technology and its corporate partner Rolls–Royce were recognized with the 2008 Excellence in Engineering Education Collaboration Award from the American Society for Engineering Education for involvement with the Weekend Master’s Degree in Technology.

• The Indiana General Assembly passed a resolution to honor Professor Maribeth Schmitt for her contributions to literacy learning and instructional leadership in Indiana, and approved $14.5 million in legislative funding for Reading Recovery teacher training in Indiana. Professor Schmitt, who directs literacy programs for teachers in the College of Education, was also named the Jean Adamson Stanley Faculty Chair in Literacy.

• Professor Robert Bill, director of the Veterinary Technology Distance Learning Program, was named a fellow of Purdue’s prestigious Teaching Academy and also received the 2004 State of Indiana Higher Education Telecommunication System, Teaching with Technology in a Distance Learning Program Award.

Another measure of the value of Purdue outreach is the long-term support for University programs from its constituents. For example, Purdue has offered distance-delivered master’s degrees in engineering since the 1970s. Likewise, several conferences have recurred over many decades: the University has hosted the 95th Purdue University Road School for state highway employees, the 91st Conference for Veterinarians and Veterinary Technicians (setting an attendance record with over 800 participants in 2007), the 74th Pest Control Conference, and the 48th Underground Corrosion Short Course. The Department of Entomology’s success with its basic pest control technology distance learning course has spawned six other, more specialized courses.

The success of the Reading Recovery program in improving reading scores among first-graders has produced a demand for similar programs for all grade school students, and programs for middle and high school students are also being considered. Participation in the Department of English Symposium on Second Language Writing has grown from 20 in 1999 to 270 in 2008, reflecting the increasing presence of native Spanish speakers in the state of Indiana and society as a whole.

Looking Forward

All of these examples, and others, help the University as it continuously evaluates its programs and fine-tunes its outreach efforts to meet the ever-changing needs of its constituents. Furthermore, the University continually scans the range of its constituents to ensure that it remains true to its core mission and its commitments to the communities it serves.

Among unique examples illustrating Purdue’s innovative response to the needs of its communities is nanoHUB.org, a mechanism to distribute significant amounts of information to scientists, university researchers, schoolteachers, and the public. Created as part of a National Science Foundation grant to Purdue for a network of nanoscientists, nanoHUB.org is a rich Web-based resource for research, education, and collaboration. The nanoHUB has had 89,020 users and run 381,040 simulation jobs in 2008–2009, with participants from all the top 50 engineering schools, over 17 percent of all .edu domains in the United States, and 172 countries around the world.
Summary of Evidence

Over the last decade, Purdue has positioned itself as a national leader in engagement and service. With a distinct and deliberate focus on contributing to the betterment of Indiana while serving a global community of stakeholders, Purdue has established itself as an exemplar for how engagement is structured, funded, and implemented. Through its network of Extension professionals, numerous advisory boards, and frequent community listening tours, the University continues to assess the impact of its engagement and service activities. By seeking and using this information to ensure alignment of activities with stakeholder needs, Purdue has been successful in achieving a five-fold increase in the resource base for its Technical Assistance Program (TAP), providing more than one-half million dollars in new funds for community outreach and service learning, and establishing numerous new productive outreach activities through external grants connected with Discovery Park. The University has also demonstrated its responsiveness and communicated the value of its engagement and service with internal and external stakeholders. These characteristics of responsiveness and value have been manifested by the establishment of new engagement offices and Purdue business incubators in five Indiana cities during the past eight years.

Assessing impact and garnering the necessary resources has been increasingly important in the current environment of economic constraint. Purdue has shown that it can adjust its engagement resource capacity to best meet the most critical needs that have the highest synergy with its expertise and realm of new discoveries. The University realizes that communicating the results and impacts of engagement activities is increasingly important to build support for engagement on campus, generate financial resources for new programs, and inform stakeholders about progress. To provide an external gauge of its accomplishments in engagement, Purdue convened a team to assemble an application to the Carnegie Foundation requesting designation as “An Engaged University.” The team, composed largely of Engagement Council members, assembled the evidence, and the University submitted the application in August 2008. In December 2008, Purdue was notified of its success by receiving the new Community Engagement Classification.

Since the last accreditation visit, Purdue has demonstrated that it has established itself as one of the most consistently valued resources for economic growth and community enhancement in the state of Indiana, and now stands as a model of effective engagement strategy and structure, often emulated by its peers. Indeed, Indiana’s governor has called Purdue a “pole star” for the state.
Challenges and Opportunities

Issues Purdue needs to address, in both the near future and longer term, to continue to fulfill its engagement mission and meet the full intent of Criterion 5, include:

• expanding and sustaining successful economic development initiatives and promoting further growth of the Purdue Research Park, including the recruitment and retention of client companies, the development and recruitment of entrepreneurial talent, and identification of financial support for client companies;

• addressing workforce development needs through strategic partnerships with other institutions of higher learning, such as the College of Agriculture pathways and transfer arrangements launched with Ivy Tech Community College and Vincennes University;

• enhancing and potentially expanding P–14 engagement by reviewing and evaluating engagement opportunities across colleges and units, and identifying important gaps that the University should address; and

• defining and documenting the scholarship and impact of engagement activities, and clarification of what constitutes the scholarship of engagement for more effective recognition in the promotion and tenure process.
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