IUPUI Office of the Vice Chancellor for Research Report

for

2012 Reaccreditation by NCA's Higher Learning Commission

December 15, 2010

Teaching and Learning

Major Accomplishments:
- Establishment of a campus-wide, centralized center for undergraduate learning through faculty-mentored student research: IUPUI Center for Research and Learning (CRL); Founding Director, Kathryn Wilson
- Establishment of IUPUI Preparing Future Faculty (PFF) program in 2000
    - Aided approximately 75 graduate students and post doctoral scholars in preparing for careers in the professoriate, through structured programming and formal mentoring
    - As of 2010, administered through Graduate Office
- Receipt of several high-profile federal grants for programs involving students in undergraduate research, each housed in and/or affiliated with CRL
    - Ronald E. McNair Postbaccalaureate Achievement Program (U.S. Department of Education)
    - Louis Stokes Alliance for Minority Participation ([LSAMP] National Science Foundation)
    - IUPUI-Ivy Tech Community College Bridges to the Baccalaureate
- Initiation or expansion of three major campus-funded undergraduate research programs, two (DSRP and MURI) in partnership with IUPUI Schools
    - 1999 (expanded with CTE funding in 2004): Undergraduate Research Opportunity Program (UROP): Competitive grants-in-aid of research for proposals submitted by undergraduate students to work with faculty research mentors
    - 2004: Diversity Scholars Research Program (DSRP; Originally initiated in 1997 as the Minority Research Scholars Program): expansion of program, mainly serving students from underrepresented groups, to include non-STEM disciplines
    - 2004: Multidisciplinary Undergraduate Research Institute (MURI): fosters multidisciplinary team research among students of different disciplines under the mentorship of engineering and technology faculty members or researchers
- Hosted the National Conferences on Undergraduate Research (NCUR) in 2004
- The 2008 edition of U.S. News and World Report's America's Best Colleges cited IUPUI's undergraduate research/creative projects as one of four outstanding examples of programming commonly linked to student success.
- Initiation of several awards to recognize outstanding achievements in undergraduate research and learning
    - CRL Director's Mentoring Award for Outstanding Leadership and Mentoring of Undergraduate Research (2005)
    - IUPUI Chancellor's Award for Outstanding Undergraduate Research (in 2001)
    - Bowling-Jones-Russo Memorial Undergraduate Research Award (in honor of Dr. Raymond Russo, Michael Bowling and Christopher Jones; in 2003)

Current Status:
On-going offering of programs for undergraduate learning through faculty-mentored student research, including the MURI, UROP, DSRP, McNair, and LSAMP programs
- In process: multiple grant-seeking efforts aimed at expanding existing or initiating new research learning experiences for undergraduate students, high school students, and high school teachers
- OVCR will host in April 2011 3rd Annual IUPUI Research Day, which will include presentations by undergraduate student researchers
- Further establishing collaborations with internal and external partners

Plans for the Next 5 Years:
Initiate major effort to secure additional external funding for student learning through research, including from foundations, private donors, and federal and state agencies
- Further integrate student learning through research into the RISE to the IUPUI Challenge campus initiative
- Initiate major efforts to assess student learning through CRL research programs and widely disseminate results and best practices

Research, Scholarship, and Creative Activity

Major Accomplishments:

- **Increased external funding:** instituted numerous programs and activities to grow campus research awards, which by FY 2010 have reached $400.3M. FY 2011 awards through November are 13% above the same period in FY 2010, excluding federal stimulus funds currently no longer awarded.
- **Revision of institutional review processes for grants and contracts**: responsiveness and compliance with respect to both pre- and post-award project management was improved. Subsequently, responsibilities for proposal submission and post-award management were transferred to a newly created (2008) university system-wide office (i.e. Office of Research Administration). In collaboration with the Bloomington campus, the procedures for processing limited submissions for grant opportunities were revised to insure fairness and responsiveness to funding opportunities.
- **Revision and strengthening of research seed grant programs to better support the research enterprise**: 1) addition of requirement that awardees submit an external proposal; 2) inclusion of procedures that better reflect those used by federal agencies; 3) inclusion of programs that expand multidisciplinary, multi-school and multi-campus collaborations and that include opportunities in the arts, social sciences, and humanities. The new (2009) *Developing Diverse Researchers with InVestigative Expertise* (DRIVE) program increases opportunities for faculty members historically underrepresented in their disciplines. The new *International Development Fund* (2009) provides support to stimulate additional funding for international research and scholarly activity, a key IUPUI focus. OVCR awarded 337 (1997-August 2010) internal grants for just over $7,590,000.
- **Establishment in 2006 of the Signature Centers Initiative.**   It has supported collaborations from across campus to build research centers of excellence that are uniquely identifiable with IUPUI.
- **Establishment in 2007 of the Translating Research Into Practice (TRIP) Initiative.** Takes knowledge generated from scientific inquiry and humanistic scholarship and transforms it into practices and solutions that improve people's lives, benefit industry, and contribute to social well being and economic growth.
- **Reporting in 2008 of the Center for Research and Learning to OVCR.** To better facilitate programs for undergraduate learning through faculty-mentored student research.
- **Establishment in 2008 of the campus-wide annual "Research Day".** The event includes faculty and student presentations and awards, and a nationally-recognized speaker. Participants consist of campus faculty, staff, and students, and the outside community, including business, government, and other sectors.
- **Reporting in 2009 of the Solution Center to OVCR.** To better facilitate community connections to faculty and student research.
- **Establishment in 2009 of an OVCR Proposal Development Team.** The team, consisting of a proposal development manager and two proposal writers and editors, assists faculty with the preparation of large grant proposals in strategic areas of interest.
- **Strategic initiatives to increase funding from multitude of agencies.** OVCR leads writing circles for strategic grant programs (e.g. NSF Career and REU Grants), sponsors visits by federal agency program managers and directors to present and meet with faculty, and organizes follow up activities (e.g. summits in strategic areas of research strengths, and on-campus poster sessions targeting interdisciplinary research areas.) OVCR staff has increased targeted distribution of funding announcements, and assistance in editing and submitting white papers.

Current Status

- Continue to assist in the development and support of strategic campus initiatives, including the Signature Centers Initiative.
- Continue to provide programs and services, including the internal grant programs and the workshops and training programs on how to succeed in research.

Plans for the Next 5 Years

Evaluate on a regular basis strategic initiatives and programs supported by OVCR, making needed adjustments, with the aim of growing the IUPUI research enterprise, and supporting campus-wide efforts to conduct world-class research, scholarship, and creative activity relevant to Indianapolis, the state, and beyond.

Best Practices

Major Accomplishments:

- Internal grant programs that have been effective in the growth and development of research and creative activity at IUPUI, including the Research Support Funds Grant (RSFG) program, and the Signature Centers Initiative (SCI) grant program.
- Institution of campus-wide center for undergraduate student learning through hands-on, mentored research experiences (i.e. Center for Research and Learning).
- Initiation of an electronic portfolio (ePortfolio) assessment tool for products of undergraduate student research learning.
- Institution of a campus-wide center to build community partnerships through research, internships, and business assistance (i.e. Solution Center). Since 2004, the Solution Center has engaged with 710 businesses, government organizations, and nonprofits to conduct 2,182 community-based internships, research, and class projects.
- The Solution Center has drafted and revised its strategic plan every 2-3 years and has developed systems and improvement processes including contracts, letters of agreement, and evaluation measures that ensure clearly-defined outcomes and effective stewardship of resources.

Current Status:

- Continue to identify strategic areas of excellence across disciplinary areas to develop multi-disciplinary research initiatives, attracting external sponsorship, and leading to research and scholarly activity outcomes contributing to the economic growth and social advancement of Indiana and the nation, and benefit humanity as a whole.
- Continue to offer programs for undergraduate learning through faculty-mentored student research, including the MURI, UROP, DSRP, McNair, and LSAMP programs.
- Continue to build community partnerships through research, internships, and business assistance.

Plans for the Next 5 Years:

- Continue to evaluate and assess current programs and services to further optimize their effectiveness in support of campus-wide research and creative activity efforts.
- Expand undergraduate research programs to reach a growing number of students.
- Develop a systematic training program for all new incoming faculty members on how to succeed in research.

Campus Climate for Diversity

Major Accomplishments:
- In support of IUPUI's diversity strategic priority and the overarching campus goal of providing support to increase scholarly activity and external funding, the Office of the Vice Chancellor for Research established the Developing Diverse Researchers with InVestigative Expertise (DRIVE) internal funding mechanism in fiscal year 2009-2010. The DRIVE program, which is co-sponsored by the Office of Diversity, Equity and Inclusion (DEI), is designed to provide seed funding to faculty from underrepresented populations, normally defined as African-American, Latino-American, Native American, Pacific Islanders, and women.
- The Solution Center contributes to the campus climate for diversity. Since 2004, 33% of students participating in internships developed through the Solution Center are ethnic minorities.
- Consultants registered in the online Nonprofit Consultant database, managed by the Solution Center, are diverse in terms of ethnicity: Caucasian (76.29%). African American (16.49%) and Asian (2.06 %). Also, while most speak English, a number of Solution Center consultants also speak Spanish (5.15%) and French (3.09%).
- The Center for Research and Learning has administered three diversity research programs that have supported the research and professional development of undergraduate students from underrepresented populations. These programs included the Diversity Scholars Research Program, Louis Stokes Alliances for Minority Participation program, and Rondald E. McNair Postbaccalaureate Achievement program.

Current Status:
- The OVCR currently administers the DRIVE internal funding mechanism and is specifically providing $94,457 to support the research and scholarly activity projects of 8 diverse faculty representing 5 females (African American, Asian, Latina and White) and 3 males (African American and Asian), from the Schools of Engineering and Technology, Law, Liberal Arts, Medicine, and Science. The DEI is proving $12,000 in co-sponsorship of these awards, for a total support of $106,457.
- The Solution Center contributes to the campus climate for diversity. Since 2004, 33% of students participating in internships developed through the Solution Center are ethnic minorities.
- The Center for Research and Learning currently administers three diversity research programs that support the research and professional development of undergraduate students from underrepresented populations.

Plans for the Next 5 Years:
- The OVCR will continue to support the diversity strategic priority through its research development programs, services, and strategic initiatives. Contingent on funding annually, the OVCR plans to administer $100,000 in DRIVE funding each year for the next 5 years ($90,000 – OVCR and $10,000 – DEI) to support a total of approximately 40 diverse faculty projects.
- The Solution Center will continue to contribute to the campus climate for diversity through its increased outreach and engagement in the for-profit sector, its support for the nonprofit community, and its collaboration with the Center for Research and Learning and school partners to create the Innovation and Discovery Experiential Academy (IDEA). This initiative will create opportunities for students to explore and participate in the process of innovation, build professional networks, and gain knowledge and confidence as future inventors and business owners.
- The Center for Research and Learning will continue to support the research development of underrepresented minorities.

Civic Engagement

Major Accomplishments:
- Reflecting the campus's mission for civic engagement, the IUPUI Solution Center was created as the "front door" to the campus to facilitate collaboration and partnerships with Indiana's businesses, nonprofit, and government sectors; Founding Director, Teresa Bennett.
  - With support from the Lilly Endowment and IUPUI, the Solution Center opened in May 2004, with a grant for $1.7 million, and matching support from IUPUI.
  - Since 2004, the IUPUI Solution Center has engaged 2,182 students and faculty with 710 community partners, resulting in 1,097 community-based internships, 128 research projects, and class projects for 954 students.
  - The Solution Center administers the IUPUI Community Venture Fund, which awards matching grants to seed and sustain internships and community-based experiential learning. Since 2004, the VF has awarded grants totaling $1,845,912, and leveraged match support of $1,853,619, for a total of $3,699,531 to support community-based experiential learning.
- In 2005, the Solution Center created the IUPUI Career Council to increase collaboration and sharing of best practices among school-based career and internship offices. In collaboration with the Career Council, the Solution Center launched an internship and job posting system, www.iupuitalent.net, in 2007, a campus-wide, comprehensive system, that has resulted in postings of 2,333 internships, 4,103 full-time, degreed positions, and 2,864 part-time positions in the last three years.
- In 2007, the Solution Center launched the Nonprofit Solutions Initiative (NPS) to address the capacity-building needs of Indiana nonprofits, resulting in service to more than 700 nonprofits through workshops, an annual, statewide conference, and as host of the Indiana Achievement Awards program.

Current Status:
- In 2009, Solution Center received a five-year, sustaining grant of $900,000 from Lilly and matching support from IUPUI.
- The Solution Center is coordinating the IUPUI Legacy Initiative which will facilitate targeted engagements in partnership with multiple academic departments on campus, for organizations in the Near Eastside of Indianapolis.
- The OVCR conducts an annual Research Day event that brings faculty, researchers, and community together to share and explore research efforts at IUPUI, including efforts to expose middle school and high school students to world-class researchers and scholarly activity.

Plans for the Next 5 Years:
- Having developed a high level of activity in the nonprofit sector, the Solution Center will increase outreach and engagement efforts in the for-profit sector through Research Day, a speaker's series, and innovation workshops; student internships; and faculty connections, projects, and research opportunities.
- The Solution Center will remain committed to supporting the Central Indiana nonprofit community through connections to IUPUI students, faculty, and staff, as well as an annual nonprofit conference and as host of the Indiana Achievement Awards.
- The Center for Research and Learning (CRL), in collaboration with schools, centers, the IU Research and Technology Corporation, and the IUPUI Solution Center, is leading an effort to create IDEA: the Innovation and Discovery Experiential Academy. IDEA will create opportunities for students to explore and participate in the process of innovation, build professional networks, and gain knowledge and confidence as future inventors and business owners.

Collaboration

Major Accomplishments:
Research Development
- Instituted Annual IUPUI Research Day – brought researchers together to present their projects and to network for future collaborations
- Assumed responsibility for Signature Centers Initiative– emphasis on interdisciplinary centers to maximize research collaborations and funding support from external sources.
- IU Energy Institute emerged from the August 2009 IU Energy Conference.
- Formalized Council of Associate Deans for Research as a collaborative advisory body
- Expanded use of Community of Science online profile tool for finding research collaborators
- Established IARP internal grant program with Purdue University, first of its kind in the IU system. 5 Recipients
- Office of Research Administration modification of the Electronic Research Administration system and routing form has allowed for multiple PIs to be credited in the system and for the sharing of indirect cost recovery, reflecting increased collaboration efforts among faculty

Center for Research and Learning
- Expanded programming on campus with various schools and administrative units to increase student participants from high schools and other universities, from inside and outside the state.

Solution Center
- Created new and maintained existing collaborations with internal and external partners to increase community-based engagement, capacity-building, and commercialization through the Solutions Conference (2005-2008), the Nonprofit Capacity Building Conference (2007 to present), Research Day (2009-present), educational and networking workshops, and numerous topical collaboration discussions.

Current Status:
Research Development
- Offering a series of Summits focusing on interdisciplinary collaborations for external proposals, currently in the fields of imaging, STEM education, addictions, obesity/metabolic disorders, and environment/energy

Center for Research and Learning
- Adding new partnerships among local middle and high schools to encourage participation in research experiences by personal on-site presentations

Solution Center
- Continuing outreach to nonprofits, businesses, and government agencies, and building new connections to inventors, entrepreneurs, and start-up companies.
- Facilitating collaboration among IUPUI faculty across campus through multidisciplinary community engagements and initiatives.

Plans for the next 5 years:
Research Development
- Encourage IUPUI faculty and researchers to register in profile databases such as VIVO and COS; market them as primary collaborator-finding tools on campus, in the IU system, and for local community and potential venture capital partners
- Expand training programs for faculty on preparing and managing collaborative/interdisciplinary projects and teams.
- Continue to identify at least four areas of excellence annually around which to plan Faculty Summits and to follow up with specific funding opportunities above the million dollar threshold.
- Partner with the ICIC to enrich oral and written communication among faculty collaborators

Center for Research and Learning
- Expand partnerships with local high schools annually to offer access to research programming

Solution Center
- Increase outreach and engagement efforts in the for-profit sector and continue outreach to the nonprofit community to encourage access to faculty research expertise and develop long-term relationships.