INDIANA UNIVERSITY

71 – IT Research Resources

Action Item Template Response

General Action Item Information

Lead Division/Office: Pervasive Technology Institute
Action Item Number: 71
Action Item Short Name: IT Research Resources
Dependencies with other EP Action Items: 3, 4, 70
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I. DESCRIBE YOUR PLANS FOR IMPLEMENTING THIS ACTION.

The *Empowering People* text relevant to this action bears repetition to set the stage for this discussion:

"Advanced research and creativity with pioneering new uses of IT calls for advanced technologies to support complex, distributed organizations and collaborations. IU's current cyberinfrastructure is world class, but focused areas for IT investment and support will require additional resources with a plan for sustained success. Achieving true national and international excellence in promising areas will require coordination of efforts among academic leaders, deans, and administrative support areas."

Identifying a base of resources to provide both initial and sustained investments in key areas of IT-enabled research is essential to the long-term success of Indiana University. The Lilly Endowment, for example, has been extremely generous in aiding IU as it climbs nationally in stature, accomplishment, and national rankings. It is clearly the Lilly Endowment's role to be a primer of pumps, and an initiator of new activities, rather than a source of ongoing sustaining funds. It thus falls to the university to sustain the rise in research excellence, and in particular the IT-enabled research and scholarly activity that has been initiated and accelerated through awards to IU from the Lilly Endowment.

It is plainly and simply the case that continued pursuit of infrastructure grants (such as those that created the AVIDD system, Data Capacitor, and PolarGrid) will be essential to the continued excellence of the IU research cyberinfrastructure. However, sustaining our current trajectory - or even our current level of achievement - will be possible only with the allocation of funds from within the university, and by securing funds from outside the university budget. Two particular sources are envisioned: contributions to endowment funds and agreements to distribute indirect cost recovery so as to support the university research infrastructure in circumstances where investment in research cyberinfrastructure and support has been particularly important in securing grants and contracts.

New sources of resources

Endowment funds

The long-term impact of endowments is easily demonstrated by example. Stanford and MIT, for example, are greatly aided in support of research activities by the significant endowments owned by these universities. Locally, the Office of the Vice President for Information Technology (OVPIT) just hosted the inaugural Christopher S. Peebles Lecture in Information Technology. This lecture series is supported by an endowment at the IU Foundation that was initiated by then Vice-President McRobbie at the advent of Peebles's retirement as Associate Vice President of Research and Academic Computing. While this endowment is much smaller than that contemplated as a general source of support for IT research resources, it demonstrates IU's ability to create endowments in areas related to information technology.

Endowments take a long time for their benefits to be realized in concrete terms. It is all the more important, then, to start soon. We propose the creation of an endowment to support the future of IU's information technology resources in support of research.

Agreements to allocate Indirect Cost Recovery

The vast majority of grants to external funding sources include two general categories of expense: direct and indirect costs. Direct costs are the immediate costs of executing a particular plan of action - personnel, equipment, travel expenses, etc. Indirect costs are more general and are intended to fund those facilities and activities that are essential for every funded grant, but not particular to an individual grant, such as the expense of buildings, laboratory space, administration, etc. Indirect costs are generally a fixed percentage of direct costs, and are arrived at through negotiation between the university and federal funding agencies. The components of IU's current Indirect Cost structure are shown below:

	Research		Service	
Facilities and Administrative Cost Proposal	**2008**	**2008**	**2008**	**2008**
(dollars in thousands)	**Calculated**	Negotiated	**Calculated**	Negotiated
Modified Total Direct Cost (Organized Research Base)				
Base Year Rate Calculation Summary				
Administrative				
General Administration	7.8%	6.9%	7.8%	6.2%
Departmental Administration	17.9%	15.9%	21.4%	16.9%
Sponsored Projects Administration	3.6%	3.2%	3.6%	2.9%
26% Adjustment for Cap	-3.3%		-6.8%	
Total Administrative	**26.0%**	**26.0%**	**26.0%**	**26.0%**
Facilities				
Building Depreciation	4.6%	3.9%	1.5%	1.4%
Equipment Depreciation	4.9%	4.2%	0.2%	0.2%
Interest Expense	2.2%	1.9%	0.7%	0.7%
Operations and Maintenance of Plant	19.4%	16.6%	3.0%	2.9%
Library	1.7%	1.5%	0.9%	0.8%
Total Facilities	**32.8%**	**28.0%**	**6.2%**	**6.0%**
Proposed Rate	**58.8%**	**54.0%**	**31.2%**	31.2%

Grant proposal budgets can be broken down into binary subcategories in multiple ways; the distinction between direct and indirect costs is one. The distinction between agency funds and university-provided matching funds is another. In many cases, match in the form of effort from base-funded Pervasive Technology Institute (PTI) or University Information Technology Services (UITS) staff, match in the form of dedicated allocation of cyberinfrastructure resources, or contribution of finances from the OVPIT budget is critical to grant success. Indeed, OVPIT budgets have contributed to grant efforts resources that range from thousands to millions of dollars. It is a fact that such match efforts are often a critical differentiator in grant competitions.

Indiana University has a policy about distribution of ICR, but that policy permits exceptions and redistribution of Indirect Costs. When effort, facilities, or funds from OVPIT and UITS have played a strong role in securing a grant to an academic unit of IU, it seems appropriate to return some of the indirect costs to OVPIT, to continue the cycle of investment and achievement in an equitable (merit-based) fashion for the entire university community.

To consider the history, in the early- to-mid 1990s, University Computing Services made strong investments in supporting research efforts of faculty in the College of Arts and Sciences. COAS received significant grant funding that was greatly facilitated by this effort. However, without any agreement to share ICR, there was limited ability for University Computing Services to build on that success. More recent focused effort has produced more sustainable results. Initial investments from the Indiana Genomics Initiative have led to major grant successes for the IU School of Medicine generally, and some specific gains have been made relative to biomedical research and IT. OVPIT and UITS aid has been particularly important in the service gains and grant wins. An ICR sharing agreement between OVPIT and the IU School of Medicine was recently completed, as well as one between OVPIT and the Maurer School of Law. Existing agreements regarding faculty of the School of Informatics and Computing who have affiliations with PTI are currently being revised.

The key point of such agreements is to enable the continuation of a cycle of investment in focused initiatives, building of competencies, delivery of successes, and successful pursuit of grants and contracts, particularly for federal funds. Agreements to share Indirect Cost Recovery funds with OVPIT allows OVPIT to invest in this cycle over and over again, building IU's strengths overall. The generosity of the Lilly Endowment has been tremendously helpful to priming the pump of this cycle of investment and accomplishment. But the Lilly Endowment clearly regards themselves as a primer of pumps, not as a well of money. Responsibility to the spirit of all of our research-related proposals to the Lilly Endowment requires Indiana University to develop means by which initiatives they support become self-sustaining, allowing the Endowment to continue making focused investments within our great state as a whole. As regards the Pervasive Technology Institute, it is concrete and explicit that Indiana University will develop strategies and mechanisms that enable PTI to be self-sufficient at the end of the current round of funding - which happens in 2015.

New uses of funds for supporting expanded research, discovery, creative, education, service, and outreach efforts of Indiana University.

Three key points can be drawn from the proposal IU President Michael A. McRobbie submitted to the Lilly Endowment to create the Pervasive Technology Institute:

- "...the Pervasive Technology Labs have assembled and created essential capabilities in knowledge, personnel, and relationships to continue to serve as a catalyst for progress in developing Indiana as a hub of innovation in IT. "

- "The Pervasive Technology Institute will become the brand identity for IU's applied research, development, and delivery activities in applied information technology."

- "The proposed Pervasive Technology Institute will build on the success of the Pervasive

Technology Labs and add organizational ties and collaborative relationships with the School of Law, the IU Libraries, University Information Technology Services, and the Office of the Vice President for Information Technology. It will marshal IU's research strengths in IT into a new, unified identity as one Institute."

The funds that will be amassed via ICR through this implementation plan will be invested in a "PTI Continuity and Leverage Fund." At that point we will re-examine all ICR agreements between OVPIT and other entities, in the expectation that interest income will allow for revisiting such agreements overall while preserving the vitality and strength of PTI.

The PTI Continuity and Leverage Fund will be used by OVPIT under the guidance of the PTI Executive Steering Committee (consisting of the VP for Information Technology, VP for Engagement, Deans of the Maurer School of Law and School of Informatics and Computing, and ex-officio Executive Director of PTI). Uses of this fund will include:

- Sustaining salaries for PTI central coordination and services staff
- Making focused investments for grant competitiveness, either funding pilot projects or providing match funding
- Providing a continuity fund in case labs experience short-term interruptions in funding streams.

The PTI Endowment Fund should be used by OVPIT, under the guidance of the PTI Executive Steering Committee, to support focused investment in expanding PTI when major strategic opportunities arise, and to ensure continuity of PTI in case of severe economic distress affecting the state of Indiana as a whole. (In the current economic downturn we have seen decades of investment evaporate, and major groups of talent dissipate, as high performance computing centers and technology innovation groups funded directly by state budgets have faced draconian budget cuts.)

In so doing, IU will implement locally some of the critical steps that PTI Executive Director Stewart emphasized in his July 2008 testimony before the House Science and Technology Committee. In particular, Stewart emphasized (and the members of the committee reinforced) the need for investment at the university level in sustaining research, development, and delivery of innovative technologies. Stewart also emphasized the need for funding strategies that mitigate the corrosive effects of stress and uncertainty that federal agency funding plans create for some of our best technology innovators, which decrease productivity in the short (2- to 3- year) run and tend to drive people out of public-sector and academic research in the long run.

II. WHAT ARE THE POLICY AND PRACTICE IMPLICATIONS OF YOUR PLANS?

There are no new policy implications of this plan; all activities are within existing IU policy.

III. IDENTIFY STAKEHOLDERS.

- OVPIT
- PTI
- Vice President for Research
- Based on existing investments by OVPIT, the following academic units: IU School of Medicine, Maurer School of Law, and School of Informatics and Computing.