Report of the Academic Advisory Committee for the
College of Computing and Information
University at Albany
November 18, 2007

Executive Summary

In creating the College of Computing and Information, the University at Albany has set itself apart from many other broad research universities. This college enables the University to respond flexibly to the impact of the Information Revolution on the academy. The intellectual future of the College depends on its ability to bring forward the abiding strength of its existing fields while shedding elements that have outlived their usefulness. Our recommendations focus on ways to complete the definition of the College of Computing and Information.

1. Provide the physical space that brings together the faculty of the College and creates for it a physical identity and a base of operations. This is imperative.
2. Establish formal college-level academic offices to take responsibility for essential functions.
3. Create a new disciplinary undergraduate major focused on information to complement the established computer science major.
4. Take the lead at the University at Albany in bringing the power of computing and digital information to the emerging model of a liberal education in the 21st Century.
5. When sufficient progress has been made on the first goals, the organizational structure of the College should be reviewed, including a reconsideration of the names of the components dealing with the information sciences.
6. Develop an aggressive program of targeted research.
7. Create a specific plan of operation for the next decade that will set the ideal faculty and staff size for the College mission. Without explicit goals and an explicit business model, the College will find it difficult to control its destiny.

Introduction

The members of the Academic Advisory Committee (AAC) for the College of Computing and Information (CCI) visited the University at Albany September 25-27, 2007.[1] The AAC members met with the leadership of the University and key colleges and schools, as well as with the leadership and faculty members of the CCI. This report serves as a record of that visit, and contains the CCI's assessment and recommendations.

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[1] The AAC members are Robert Constable, Dean, Faculty of Computing and Information Science, Cornell University; José-Marie Griffiths, Dean, School of Information and Library Science, University of North Carolina at Chapel Hill; John Leslie King, Vice Provost for Academic Information and Professor in the School of Information, University of Michigan (Chair); and Debra Richardson, Dean, Donald Bren School of Information and Computer Sciences, UC Irvine.

The members of the CCI are aware that the University at Albany is undergoing significant leadership change at this time. The Officer in Charge is leaving for another position, and a search for a new President and new Provost are underway or will be underway soon. This document will, hopefully, serve as an outside and independent reflection on the CCI and its potential for the University at Albany when the institution's new leadership is in place.

Assessment

In creating the College of Computing and Information (CCI), the University at Albany has set itself apart from many other broad research universities. The CCI enables the University at Albany to respond more flexibly than most universities to the remarkable transformation in education and research that have been and are being created by concepts, methods, and technologies of the computing and information sciences. These sciences are changing the core activities of the university, including knowledge discovery and transmission, and providing new ways to serve the public interest. The CCI enables the University at Albany to take a leadership position in key aspects of this transformation, and to help the university as a whole define what it means to deliver a broad liberal education responsive to these profound changes.

The CCI's founding dean has taken advantage of previously established, innovative university wide initiatives such as the Information Technology (IT) Commons to bring together a mix of remarkable faculty members, and to leverage faculty-led enterprises such as the Center for Technology in Government. These position the University at Albany to build on existing excellence and create exemplary programs of education and research. The founding dean has also made it possible for excellent faculty in other units to affiliate with the College and add their energy to it. Under his direction, the College has begun to assemble cutting edge programs and attract more first-rate colleagues. The University at Albany has much to be proud of in the fact of creating the CCI, and in bringing it to its current position of strength and potential. The founding dean has led the CCI to this position. The AAC was pleased to see that his efforts and the promise of the CCI itself are recognized within the university. The resounding message the AAC received when talking with the Officer in Charge and the rest of the university's leadership was that the University at Albany established the CCI to do great things, and the university will not reverse course on this endeavor.

That said, the AAC was disturbed by the fact that the CCI's success to date have been accomplished on the proverbial "shoestring." While it is praiseworthy and remarkable that the CCI has accomplished so much with so few resources, this pattern is no longer sustainable. The AAC members agree that the University at Albany will suffer a serious opportunity loss if the resource challenges confronting the CCI are not addressed aggressively, and soon. The college has been operating without a physical "home base" since it was created. The lack of appropriate physical facilities makes it very difficult to unite the faculty, staff and students in the kind of community venture that the CCI must be if it is to succeed. It is difficult enough for a college to be spread across multiple

locations; it is much more difficult when those locations are the places where the various programs brought together to create the college "grew up." Logistic barriers are also psychological barriers in such cases. The faculty from the various programs within the school want to collaborate, but that is exceedingly hard to do when those programs live in their own local niches and are spread all over town, held together by a dean who is literally operating out of his car. Similarly, the CCI has not had a coherent operating budget since it was created. This has not stopped the various programs of the College from continuing to do what they have been doing all along, but it is a major barrier to the truly exciting things the College can accomplish by bringing those programs together in new and innovative ways. The point here is not so much that the CCI needs a significant increase in financial support (although the AAC believes it does). Rather, the CCI needs the fundamental affordances of a place to work and a budget to work with or will eventually fall apart, despite the best efforts of the dean and the faculty.

The recommendations below focus on the CCI's purpose, academic structure, and operational infrastructure. It is the view of the AAC members that the CCI can and should develop undergraduate and graduate degrees in keeping with those created by Carnegie Mellon University (CMU), UC Irvine, Georgia Tech, Indiana, Cornell, Penn State and others. Toward this end, the recommendations address issues of curriculum, college organization, possible partnerships, and resource allocation that arose in discussions with the CCI dean and others during the AAC's visit. The AAC poses the question, "What is the driver for the College of Computing and Information?" In answer, the AAC suggests that driver is to create an exemplary program of liberal education and relevant research for the age of digital information, which is itself a defining theme of education in the 21st century.

Recommendations

1. Recognize that the CCI has been built using components –computer science, information science, and the IT Commons – that have considerable strengths on their own recognizance. Computer science has an enviable tradition and reputation in the theory of computation, and is an established player in the national and international computer science scene. Information science grew out of a rich tradition in the library and information science fields, tracing its roots back to Melvyl Dewey and the creation of one of the country's first programs in professional library training in the late 19th century. The IT Commons was one of American higher education's most innovative, interdisciplinary efforts to pull together people with interests in research and instructional aspects of information technology. The first recommendation of the AAC is "do no harm" with respect to these existing strengths. That said, it is the view of the AAC that these strengths all too easily encourage looking backward rather than looking forward. Both the fields of computer science and information science (including libraries and archives) are in upheaval on conceptual as well as institutional grounds, and any university trying to become stronger in these fields is ill-advised to simply redouble its efforts in what the fields used to be. The future belongs to those programs that can bring forward the abiding strengths of those fields, while shedding elements that have outlived their usefulness and pursuing new opportunities that are as-yet untested and unproved.

This is risky business, but it is better than staying with old models that clearly have run their course. Similarly, the IT Commons was an important innovation in its time, and arguably helped lay the groundwork for the creation of the CCI, but it suffered the same problems that all such endeavors suffer: unclearly defined mission, lack of formal organizational standing and resources, and risks for the faculty members associated with the effort (e.g., failure to be promoted because no established academic unit really "owns" them). The IT Commons might have helped create the CCI, but it is questionable whether that the IT Commons, per se, has much residual function now that the CCI is established. The University at Albany should be proud of its strengths and reputation in the components that came together to create the CCI, but the creation of the CCI in itself is an important departure from the past, not a continuation of that past. This is the heart of the opportunity created by the CCI: to do something truly new while building selectively on the strongest elements from the past.

2. The university's leadership needs to provide physical space that brings together the faculty of the college and creates a physical identity and regular base of operations for the functions of the college. The importance of this issue cannot be over-stated. The AAC members recognize the problems of space that face most universities, and the special challenges faced by the University at Albany. It was also gratifying to hear that the university's leadership is avidly pursuing possible space solutions with the Harriman Campus. The AAC recommends that these efforts be accelerated, and that every avenue be pursued to find space to bring together all the components of the CCI as soon as possible.

3. The CCI should establish formal, college-level academic offices to take responsibility for essential functions. The CCI currently operates with a dean and three chairs for its departments. This is a reasonable mechanism for continuing existing programs, but it does not provide for college-level capabilities that are essential to achieving the promise of the CCI. The right mix of offices must be decided by the leadership of the college itself, but the AAC recommends establishment of four official functions that cut across the departments: undergraduate studies, graduate studies, research, and financial development and control. The research office should cover faculty research development, including assistance with finding opportunities and developing proposals, as well compliance. The financial development and control office should handle routine financial issues within the college, as well as compliance and reporting (working with the research office) and external development. As the college grows, the external development function might be split off as its own office. The AAC does not recommend particular strategies for staffing these offices. It might be necessary or desirable to have one person do more than one official function, or the functions could be spread across multiple individuals. The key is to find a stable and effective structure so that faculty and students know how to get things done, and so the dean can concentrate on decanal issues knowing that essential functions of the college are being taken care of.

4. The CCI should create a new, disciplinary undergraduate major focused on information to complement the established computer science major. The computer science major has been in place for many years and is an established brand. The AAC

does not recommend changing it. To be successful, the CCI will need a second strong undergraduate major to accommodate students who wish to work in information-related fields, but who do not wish to pursue the specific course of computer science. The current interdisciplinary undergraduate major does not meet the needs the AAC sees; it dilutes the identity of the CCI and is not really "owned" by any formally constituted programmatic structure (e.g., a department) within the college. Aspects of that interdisciplinary major could serve as the basis of the recommended disciplinary major, which would be owned by the college as one of its core programs. There are useful models of programs emerging at other institutions. Cornell [http://www.infosci.cornell.edu/ugrad/index.html] and UC Irvine [http://www.ics.uci.edu/informatics/ugrad/] have established majors that are being considered and adopted elsewhere. A new major developed at Michigan is a joint effort among the School of Information, Computer Science and Engineering within the College of Engineering, and the Department of Statistics in the College of Literature, Science and the Arts. The content of that program is worth considering, but the CCI at Albany already contains the elements necessary to mount such a program within the boundaries of the college itself. It will be useful as a first exercise to inventory faculty resources within the CCI and supportive departments outside the college to determine how much additional faculty support will be needed to operate a new major while maintaining and strengthening undergraduate offerings of the computer science department. Allocation of new faculty positions should be undertaken in a way that strongly supports the emerging undergraduate vision, as well as strengthening the CCI's research programs.

5. Beyond the creation of a new disciplinary major focused on information, the CCI should take the lead at the University at Albany in bringing the power of information and computing to the emerging model of a liberal education in the 21st Century. This can be embodied in the college's own undergraduate programs, of course, but there is a special opportunity for the CCI to address this for the institution at large, working closely with the other colleges. Computational strategies are already transforming research in scientific and other disciplines, and improved accessibility to the global corpus of knowledge through the Internet will certainly expand the horizons of learning. Innovations in research and graduate/professional education are beginning to trickle down to undergraduate education. All institutions of higher education with undergraduate programs face the question of how best to handle these opportunities. The University at Albany can harness the advantage of the CCI in this effort.

5. When sufficient progress has been made to identify the CCI's strategic development of its undergraduate and programs, the organizational structure of the college should be reviewed. This includes the naming of key components of that structure, especially the departments. The existing structure of the three departments reflects the conditions of the college's creation, which was essentially a process of bolting together two previously separated academic programs (computer science and information science) and an idiosyncratic interdisciplinary enterprise with faculty spread across many academic programs (the IT Commons). This made sense in the effort to create the college, but there is no reason to assume that it is ideal for what the CCI aspires to become. The AAC recognizes that the structuring and naming of programs into departments is fraught with

internal and external politics regarding identity and, at least in prospect, resources. It is important to preserve to the extent possible the effective operational components and reputations of computer science and information science, as noted at the beginning of these recommendations. At the same time, the CCI leadership and faculty are encouraged to think creatively about what the fields of computer science and information science should be in the future, and not merely what they have been in the past, and the role the CCI at Albany might play in forging those futures in bold and innovative ways.

6. The CCI should develop an aggressive program targeting research opportunities abound in the fields of computing and information, and secure additional research funding. This will be facilitated by the creation of a college office focused on research, but it will also require the development of a shared understanding among the faculty regarding the expectations of scholarship for new and current faculty members. The recommendations above might appear to favor undergraduate and graduate instruction over research, but this is not the case. Rather, the AAC believes that the essential identity and reputation of the college will be forged around the vision of its instructional programs, but that vision and the strength of those programs will depend critically on the quality of the scholarship performed by the college's faculty members. Attention to research should be pursued in a fashion that is contemporaneous with the evolving vision for instruction; that is, one should not wait to pursue the research question until the instructional issues are resolved. Nevertheless, it should be recognized that scholarship is fundamentally a function of individual effort, even when individuals work together in groups, while instructional strength must be a community effort. The community effort in instruction will define the community of the CCI itself.

7. The CCI should begin a discussion of the ideal size for faculty, students, and staff over the next decade. This will be a prolonged discussion, because essential elements for that discussion will emerge as the issues noted above are addressed. It should begin early for two reasons. First, organizational size has been proved by research to trump most other variables in explaining organizational strengths and weaknesses. Being under-sized or over-sized relative to organizational mandates, ambitions or preferences is a sure way to create a dysfunctional organization. Consideration of size should take place with close attention to revenues that might be provided by educational programs and research – the core missions of the college – as well as investment by the University at Albany, SUNY, and outside benefactors such as corporations, foundations, and private donors. The heart of this effort is to develop a sustainable business model for the college. Without such a business model, the college will remain at the mercy of forces it cannot control, and its evolution will be uncertain and unstable. Throughout this effort, the CCI leadership and faculty should ask what it will take for the CCI to become the most prestigious and sought after program in computing and information in New York State.