

UNIVERSITY OF WYOMING
ACADEMIC
PLAN 2004
2009 III



University of Wyoming Mission Statement

The University of Wyoming aspires to be one of the nation's finest public land-grant research universities, dedicated to serving as a statewide resource for accessible and affordable higher education of the highest quality, rigorous scholarship, technology transfer, economic and community development, and responsible stewardship of our cultural, historical, and natural resources.

In the exercise of our primary mission to teach and educate students, we seek to provide academic and co-curricular opportunities that will:

- expose students to the frontiers of scholarship and creative activity, and the complexities of an interdependent world;
- ensure individual interactions among students, faculty, and staff;
- nurture an environment that values and manifests diversity, free expression, academic freedom, personal integrity, and mutual respect; and
- promote opportunities for personal growth, physical health, athletic competition, and leadership development for all members of the university community.

As Wyoming's only university, we are committed to outreach and service that extend our human talent and technological capacity to serve the people in our communities, our state, the nation, and the world.

The primary vehicles for identifying the specific actions and resource allocations needed to achieve this complex mission are the university's *Academic Plan*, *Support Services Plan*, and *Capital Facilities Plan*, each revised periodically.

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I. Introduction

A university is, above all else, a place to learn. The University of Wyoming offers outstanding learning opportunities to a broad constituency — to students and citizens, in large and small classes, in art studios and science labs, in face-to-face encounters and across cyberspace, in Laramie, and throughout the state, the nation, and the world. There is no privileged setting, and there are few bounds on our modes of inquiry. There is, however, the responsibility to improve.

The *University of Wyoming Academic Plan II 2004-2009*¹ (APII), implemented in concert with college-level and department-level plans, will guide UW's efforts to improve the learning environment, reinforce institution-wide areas of scholarly distinction, and orchestrate effective resource allocations for the next five years. It will also serve as a touchstone for updated support-service and capital-facilities plans to be developed over the next two years.

History of Academic Planning at UW

In his 1997 installation address, President Philip L. Dubois announced the need for the university to focus its strategic planning process more sharply on academic programs. Stating that the development of a comprehensive academic plan was the university's most fundamental challenge, he charged the academic community "to launch a discussion with widespread involvement and an open exchange of ideas to promote an understanding of the environment in which UW is likely to operate in the future, to generate ideas about how to respond to that environment, to choose among the ideas brought forth in an ongoing and iterative process, to develop the courage to be selective in our focus on excellence, and to strive for a collective institution-wide perspective."

In January 1998, the university community began deliberating the process, purposes, scope, and expected outcomes of academic planning. A year of lively on- and off-campus discussions helped build broad understanding and consensus, providing input to the Office of Academic Affairs as it developed and circulated a draft document for further comment. Thoughtful suggestions were integrated into the final document, the *University of Wyoming Academic Plan I 1999-2004*² (API), which the

Board of Trustees approved in July 1999. Implementation of the action items articulated in the plan began immediately.

UW has made remarkable progress implementing API, as documented in the *Academic Plan Implementation Report Cards*³. As of December 2003, 93 percent of the action items in the plan were completed or were underway. Many action items, such as the planning for a statewide public affairs research center, will require continued attention. The remaining action items are being addressed.

API laid the foundation for comprehensive and continuous planning efforts across the university. In the second stage of the planning cycle, ten non-academic units developed the *Support Services Plan 2000-2005*⁴, using API as a hub. The third stage, a five-year *Capital Facilities Plan 2002-2007*⁵, completed the first planning cycle. A detailed strategic plan for Athletics⁶ was circulated for public comment and adopted by the Board of Trustees in the fall of 2003.

The Second Cycle of Academic Planning

Before launching the second academic planning cycle, the Office of Academic Affairs developed three iterations of a document entitled *Moving Forward*⁷. Designed to elicit comments and spark campus discussion, these drafts circulated among the members of the university community, off-campus constituents and advisory-board members, and members of the state legislature. The final iteration, *Moving Forward III*⁷, appeared in April 2003. By outlining the institutional areas of distinction and identifying issues requiring attention in APII, *Moving Forward III*⁷ served as a catalyst for institution-scale thinking. It also framed issues for colleges, departments, and other academic units to address in their plans and established timelines, protocols, and content requirements. After receiving feedback from Academic Affairs, the colleges and departments revised their plans while the university-wide plan was being formulated.

This planning process therefore represented an attempt to integrate the aspirations and concerns of the seven colleges and 87 academic units with overarching institutional interests.

Planning Premises

Coherent planning requires an awareness of the institution's mission, its history, and the context within which it operates. The following five premises about the nature of the University of Wyoming underlie APII:

1. The University of Wyoming's first priority is undergraduate education. Our most important responsibility is to offer rigorous, up-to-date baccalaureate programs that cultivate lifelong learning and personal growth. UW offers a significant array of undergraduate academic programs that provide challenging, well-taught curricula and involve students in research, scholarship, and creative activity. As the foundation of undergraduate education, these programs require continued support, assessment, and improvement.

2. UW is a research institution with a growing national reputation and international presence. Maintaining and enhancing this stature is important for three reasons. First, scholarly advances are the natural products of unfettered learning and are central to the future of education and the progress of society. Second, vibrant research and graduate education are necessary to sustain the economic health of the state, the region, and the nation. Third, original research and creative endeavors enhance the learning environment. They are essential to the continuing professional development of UW's faculty, which in turn is essential to excellence in teaching.
3. As a land-grant institution, UW has a special commitment to promote liberal and practical education in the arts, agriculture, engineering, humanities, sciences, and professions. This commitment colors decisions about which academic areas to emphasize, the instructional uses to which we dedicate state and federal resources, and the appropriate balance between theory and application in scholarship.
4. The land-grant mission also includes supporting the citizens of Wyoming with education, research, and service. The university must work with other agencies and institutions to strengthen the intellectual and cultural assets of the state and its people.
5. As an academic institution in a free society, UW has additional core commitments. These include broad access to advanced education; a diverse and international representation within our community and in our curriculum; tolerance and openness to different perspectives; and freedom of expression, inquiry, and open debate. Objective scholarship and free exchange of ideas are the hallmarks of American universities. The university must be devoted to the creation, transmission, application, and preservation of knowledge, pursued in a setting free from internal or external ideological intimidation.

Planning Principles

A plan is hollow unless it influences the institution's use of resources and its system of incentives and rewards. The following eight principles shape the contours of the plan:

1. Above all else, UW is an academic institution. All planning processes, resource decisions, and incentives—in every branch of the institution's organization chart—must support and enhance UW's academic mission and the plan for accomplishing it.
2. Planning is a process, not an event. The planning process is continual and cyclic. The written document that articulates UW's goals and the actions needed to achieve them will be developed every five years, but institutional planning is ongoing.

3. Effective planning requires active feedback from all sectors of the academic community. Neither top-down nor bottom-up planning alone is sufficient. There is no substitute for sustained communication and iterative refinement.
4. UW plans from a position of strength. The university has many excellent programs; talented and energetic faculty, staff, and students; and strong support from the state and federal governments. The challenge facing UW is to use its resources wisely to advance its highest aspirations in education and scholarship.
5. Central to academic planning is a hard question: what areas will the university cultivate for distinction? The question is especially critical in a state university that regularly faces internal and external pressures to undertake more than it can afford to do well. Decisions about focusing for distinction should guide the allocation of resources and determine which endeavors to support most aggressively.
6. The pursuit of distinction is most effective when it furnishes opportunities for many members of the academic community to participate. By identifying areas of distinction and by reinforcing them with resources and incentives, we intend to avoid exclusive reliance on marquee departments to sustain the institution's reputation. Decisions about which areas to cultivate for distinction must be grounded in honest appraisals of where UW has already built a reputation for excellence, where student demand is sustainable, where existing faculty talent is ripe for enhancement, and where we can capitalize on the institution's unique location and context.
7. The university has some departments and programs that, for various reasons, are unlikely to attain national visibility in the near future. We recognize, however, that a department or program need not be destined for prominence to be essential to the university's mission and hence to merit support. Nevertheless, every academic unit stands to benefit by carefully considering ways in which it can align with and contribute to UW's areas of distinction.
8. Our efforts at institutional improvement have led us to dedicate all available resources to the university's mission. Consequently, any new initiatives entail difficult decisions about the redirection of resources. Willingness to make these decisions forthrightly, with vision and planning, is precisely what gives departments, colleges, and the institution the power to shape UW's future.

Overview of Academic Plan II

The Office of Academic Affairs produced a first draft of APII and made it available for review by the university community and its constituents in December 2003. The topics addressed in the plan parallel those identified in *Moving Forward III*⁷. Under each topic, the plan discusses key issues and prescribes action items to address them.

The document identifies six academic areas of distinction to be enhanced over the next five years. In alphabetical order, they are as follows:

- cultural endeavors, the arts, and the humanities;
- environment and natural resources;
- history and culture of Wyoming and the Rocky Mountain region;
- life sciences;
- professions and issues critical to the region; and
- science and technology.

It also defines eight institutional issues that require attention:

- the learning environment;
- scholarship and graduate education;
- diversity, internationalization, and access;
- structure of the curriculum;
- faculty development and program planning;
- educational infrastructure;
- outreach, extension, and community service; and
- enrollment management.

Implementation of APII is important to all who care deeply about the University of Wyoming and its future. The institution's academic agenda will continue to drive decisions about resource allocation. Implementation of the action items, based on priorities set by the Executive Council each year, will be phased in over a five-year period. The Office of Academic Affairs will publish an annual progress report to identify actions that have been undertaken or completed. Some actions will have simple, obvious solutions, while other decisions will require in-depth discussion and preparation of draft documents or policy statements. The committees that address the most complex issues will draw their membership from UW faculty, staff, students, and external constituents, as appropriate.

II. Areas of Distinction

As one of the nation's smallest public doctoral research-extensive universities⁸, UW has committed itself to excellence in a carefully defined set of academic areas. In identifying these areas of distinction, we acknowledge our finite resources, define our institution's aspirations, and help frame the planning that occurs in colleges and departments.

UW's areas of distinction serve as nuclei for department- and college-level planning, in the sense that they are sufficient in number and scope to allow most academic programs to build in at least some of the areas. Indeed, plans written by UW's academic units reflect a remarkable number of proposed alignments of this type. We urge all colleges and departments to continue contributing to these areas of distinction, both to refine their own long-range foci and to participate in the cross-disciplinary synergy that allows UW to compete with larger institutions.

Areas of distinction need not flourish at the expense of core academic areas. Our strategy must be to meet basic needs in ways that *advance* these areas. The units most likely to prosper, both within the university and in external stature, will be those that best align their core commitments, program-specific goals, and cross-departmental collaborations with UW's areas of distinction.

Following each of the six areas of distinction listed below is a summary of future directions and specific action items to be implemented.

Cultural Endeavors, the Arts, and the Humanities

UW will continue to cultivate distinction in the humanities and visual and performing arts. Undergraduate programs in these fields are excellent, and student enrollments continue to grow. Strategic faculty hiring, recent enhancements to infrastructure, and more stable funding for the performing arts and cultural outreach have allowed the university to play a significantly stronger role since API. Continued support in these areas is essential if UW is to maintain its position as the state's leader in the arts and humanities.

UW's Art Museum, the American Heritage Center (AHC), and the University Libraries have pivotal roles in advancing this area of distinction. We urge these units

to explore further avenues of cooperation, promoting even more vigorous contributions to UW's academic life and increasing outreach to the state and region. In aggregate, the cultural assets in these units, as well as in Geology, Anthropology, Zoology, Renewable Resources, and Botany, represent both an enormous resource and an impressive investment on the part of the state. They also represent a daunting management challenge, with scattered and inconsistently maintained collections, tension between research and public education missions, persistent issues related to space, evolving capabilities in statewide outreach, and rapidly emerging expectations for digitization, digital archiving, and on-line access.

Action Item 1 (form a cultural assets working group). The Vice President for Academic Affairs will convene a working group, representing all of the units maintaining collections at UW, to identify new and effective methods of intra-university collaboration, particularly in outreach and web-accessible cataloging. The group will also identify and prioritize management, program, and facility concerns and consider the feasibility and utility of ongoing formal or informal articulation among the units.

We endorse the AHC's plan for collections analysis, its willingness to define foci for the archives, and its recognition of the need for a judicious deaccessioning policy to make the collections and facilities more useful. We recommend further that the AHC and Libraries examine the future definition, development, and administration of the Hebard Collection, now managed by the Libraries and housed in the Centennial Complex. Similarly, the time is ripe for the Art Museum and the AHC, both of which maintain art collections in the Centennial Complex, to clarify responsibility for and administration of art at the university. Finally, the Art Museum, working with the Art Department, has made significant strides in coordinating with the undergraduate art curriculum, especially through its hosting of student art exhibitions and incorporating UW faculty lectures in its educational programs. These connections can be even stronger.

Action Item 2 (expand student internship opportunities). The directors of the Art Museum and the AHC will discuss expanding student-internship opportunities to help open doors to professional opportunities for art and history majors, among others.

Beyond these administrative matters, it is reasonable to ask whether there are opportunities for better integration of archivists, librarians, and art-museum personnel into the university's mainstream curriculum. Many of these professionals already contribute to classroom instruction, and recent discussions between the AHC and the College of Arts and Sciences have helped overcome some of the bureaucratic barriers.

Action Item 3 (enhance classroom teaching roles for librarians, archivists, and Art Museum professionals). The Office of Academic Affairs will coordinate a study of barriers and incentives associated with enhanced classroom teach-

ing roles for library faculty, archives faculty, and Art Museum professionals, using as a model the successful structure that has been developed for AHC archives faculty members interested in teaching classes in the College of Arts and Sciences.

Within the College of Arts and Sciences there are several intriguing opportunities to advance this area of distinction. Given the emerging national prominence of professional writers in Wyoming and the region, UW has the potential to serve as a nucleus for a larger, richer community of creative writers. Discussions have begun about an M.F.A. program in creative writing housed in the English Department, and we support this initiative (see Chapter VI). UW already has a significant core of talented faculty and an active curriculum in this field. At the same time, the university must sustain an institution-wide commitment to writing and oral communication across the disciplines, in both undergraduate and graduate programs.

Action Item 4 (emphasize writing and oral communication in existing curricula). The college deans will urge department heads to import new modes of teaching and learning into existing curricula, to stress the importance of writing and oral communication. Departments must coordinate these efforts with the Departments of English and Communication and Journalism. Further, the University Studies Committee will consider oral communications requirements that mesh with appropriate departmental coursework.

Environment and Natural Resources

UW has made great strides in ENR-related teaching and scholarship. Some of these initiatives reflect formal commitments to the School of Environment and Natural Resources (SENR) and the William D. Ruckleshaus Institute of Environment and Natural Resources (RIENR), two of the most visible centerpieces for UW's commitment to ENR. Since the *University of Wyoming Academic Plan I 1999-2004*², we have added undergraduate and graduate degrees, provided base funding, strengthened external support and visibility, increased our development efforts, secured endowed chairs, found stable leadership, offered a forum to engage Wyoming citizens in ENR issues, and bolstered instructional and scholarly support via central position management (CPM). The successes of SENR and RIENR owe much to superior leadership, a committed institute board, and the contributions of key faculty members, departments, and colleges. These efforts deserve continuing support.

However, as an area of distinction, ENR encompasses far more than SENR and RIENR. The institution's base of expertise in environment and natural resources has tremendous historical depth and disciplinary breadth. Many mainstream disciplines — biological and physical sciences, social sciences, agriculture, business, engineering, education, and law — are fundamental to UW's teaching and research in this area, whether or not they have formal links to SENR and RIENR. One example of ENR excellence at UW is the annual Stroock Forum on Wyoming Lands and People. Since

1997, the Stroock Forum has provided a venue for students, faculty, citizens, and policy makers to discuss key ENR challenges facing Wyoming and the West, including endangered species, water, mineral taxation, and energy policy.

It is the broader arena of ENR that requires more consistent support. Interdisciplinary expertise in environmental and natural resource economics, sustainable agriculture, land resources, and rural communities warrant further development. Water, energy resources, parks, and pristine large-scale ecosystems have lasting importance to Wyoming and the nation, and it makes sense for appropriate disciplines to strive for national prominence in fields supporting the study and management of these critical resources.

The institution's commitment to ENR is long-standing, and effective ENR-related bridges between teaching and scholarship already exist. Links between UW and K-12 teachers in this area furnish an excellent example; we encourage efforts to maintain and expand them, especially in the College of Education. We also encourage increased coordination between ENR fields and International Programs. By focusing on ENR-related teaching and scholarship, UW has an opportunity to build greater national and international prominence in a broad-reaching area in which it already enjoys a distinct, competitive advantage.

Action Item 5 (continue to emphasize ENR). The Office of Academic Affairs will continue to support ENR-related requests for faculty in central position management, whether or not the requests entail formal commitments to SENR or RIENR. The underlying philosophy will be that disciplines in every college have opportunities to align their hiring plans with UW's emphasis on research and instruction related to natural resources and the environment.

Action Item 6 (enhance ENR interaction and collaboration). The Director of the SENR will develop, expand, and document opportunities for UW faculty and students to participate in SENR and to collaborate in interdisciplinary research and educational programs. The director will also seek RIENR Board assistance to SENR in developing programs of internships, publications, and public events.

History and Culture of Wyoming and the Rocky Mountain Region

UW has considerable momentum in this area. Anthropology has built an exemplary academic program, adding faculty, expanding its library holdings, and implementing a new Ph.D. program in Paleoindian archaeology. We have a long-standing commitment to American Indian history and the history of the American West. The Libraries' Hebard Collection is the world's premier collection of Wyoming-related documents, and the AHC maintains distinguished collections related to the American West.

Action Item 7 (expand the AHC's curricular support, and enhance its national presence). The AHC, as one of the nation's finest academic archives, will expand its outstanding work in curricular support, continue to focus its unique collections, and enhance its presence as a national forum for scholarly discourse. The AHC should also continue to take a leadership role not only in regional efforts to expand the popular reach of historical collections but also in university-level efforts to stay abreast of archives technology and access in the digital age.

We encourage other efforts to advance the institution's stature as a center for study in this area of distinction.

Two initiatives in the History Department deserve special mention. The first is a set of collaborative discussions between history departments at UW and Colorado State University, centering on a coordinated approach to the delivery of graduate curricula. Cross-institutional degree programs of this type, carefully articulated, may offer an important model for the future of graduate education worldwide. The second initiative is an action item in college and department plans for the Religious Studies Program to become a part of the History Department. We see several advantages to this proposal. It helps alleviate some of the administrative overhead associated with small programs; it identifies intellectual commonalities and scholarly links between two core disciplines; it recognizes the benefits of pooling resources without sacrificing the distinctness of religious studies as a discipline; and it facilitates bids for faculty positions that strengthen both units.

This area of distinction transcends the temporal bounds of human history. Our heritage includes the development of Wyoming's landscape in geologic time, the vast paleo-archives of the ecological and evolutionary history of life in the region, our native biota, and the rich anthropological laboratory of the High Plains and Rocky Mountain region. This heritage has influenced human activities and economies, both historic and prehistoric, and it has shaped our current culture and economy. It defines the backdrop for our future.

Action Item 8 (develop interdisciplinary coursework in regional human ecology). We encourage departments such as Geology, Geography, Sociology, Zoology, Botany, Anthropology, History, and Economics to develop at least one interdisciplinary course that examines the influences of geologic time, evolutionary history, and native biota on human history in the region.

Life Sciences

One outgrowth of API was the articulation of a vision for the life sciences, with which ENR has important connections. The life sciences constitute one of UW's historic strengths as well as a foundation for other facets of the university's mission. As described in the Life Sciences Report⁹, these disciplines have potential for even greater distinction, both at the undergraduate level and in graduate education and research.

At the undergraduate level, a rigorous and current curriculum is fundamental to strong programs in the life sciences. A curricular innovation worth pursuing is the proposed restructuring of core requirements in general biology. The proposal is supported by instructional commitments from the Colleges of Agriculture, Arts and Sciences, and Health Sciences, and it carries the endorsement of most life-science programs. Three new undergraduate core courses will add depth, improve currency, and broaden faculty participation and instruction in undergraduate life sciences.

Action Item 9 (implement revised biology core curriculum). The Deans of Agriculture, Arts and Sciences, and Health Sciences will implement the revised undergraduate core curriculum in biology.

In the realm of graduate education and research, planning discussions among faculty leaders, department heads, college deans, and central administrators suggest four major focus areas: neuroscience, reproductive biology, ecology, and molecular and cellular life sciences (MCLS). These focus areas are disparate in scope and maturity; hence, they warrant different types of actions.

Neuroscience already has an interdisciplinary Ph.D. program with a history of successful funded research. Continued attention to faculty staffing in this area, especially in Arts and Sciences, will be critical in light of the relatively small size of the existing group. A related but more complicated issue is how to broaden participation in the program to include the Colleges of Health Sciences and Agriculture.

Action Item 10 (support the neuroscience Ph.D.). The chair of the Neuroscience Program will coordinate efforts with the Dean of Pharmacy and the Director of Communication Disorders to formalize the long-term participation of Pharmacy and Communication Disorders faculty in the neuroscience doctoral program. Similarly the program chair will explore opportunities for collaboration with faculty in the College of Agriculture and specifically the Veterinary Science program. The main purpose of the efforts will be to quantify specific commitments of these units to develop and maintain a critical mass of faculty positions to support coherent, sustained contributions, especially in light of accreditation constraints in existing clinical degree programs and competing position requests in other life-science focus areas. The effort must involve oversight by the Dean of the Graduate School and the affected college deans.

Reproductive biology is another area of strength supported by an existing Ph.D. program. Since API, this area has grown even stronger with the development of a nationally recognized fetal biology program in the Department of Animal Sciences. Solidification of reproductive biology as a focus area will require continued commitment from Animal Science as well as the strategic involvement of other life-science departments in the Colleges of Agriculture, Arts and Sciences, and Health Sciences.

Action Item 11 (set targets for faculty staffing in reproductive biology). The Vice Presidents for Academic Affairs and Research will ask the Deans of Agri-

culture, Arts and Sciences, Health Sciences, and the Graduate School to develop five-year, department-specific, faculty-staffing targets in reproductive biology. This task must involve input from faculty researchers and department heads in the affected units. The targets should take into account existing faculty strength, anticipated life-science vacancies, competing faculty-position needs in other life-science focus areas, start-up funding, space, and the curricular goals of the affected departments.

Ecology is a third area of existing strength in the life sciences. UW has a strong foundation in this focus area, with a record of research excellence spanning several decades, a unique setting and infrastructure, and outstanding opportunities for connections with other ENR-related fields. In contrast to neuroscience and reproductive biology, UW does not presently have a dedicated Ph.D. program in ecology. However, faculty researchers in ecology are well organized, have developed a consistent vision for such a program, and have formulated concrete, realistic plans for organizing existing life-science curricula into a coherent doctoral program. In light of UW's historic strength in ecology and the institution's commitment to ENR-related science, land-use issues, and sustainable agriculture, the formal establishment of a Ph.D. program in ecology is arguably overdue.

Action Item 12 (advance an interdisciplinary Ph.D. program in ecology). The Vice President for Academic Affairs, in coordination with the Dean of the Graduate School, will advance, for the approval of the Board of Trustees, an interdisciplinary degree program leading to the Ph.D. in ecology.

Advancing ecology as a focus area—and ensuring a strong graduate program—will require further work by faculty members and departments. UW possesses extraordinary assets. The Wyoming Geographic Information Science Center (WyGISC) has outstanding facilities to support ecological applications of GIS. The initiative to establish a Greater Yellowstone-Teton Ecosystem Research Center augurs a more vigorous UW presence in what is arguably the world's most renowned ecosystem. The UW–National Park Service Research Center in Grand Teton National Park is uniquely positioned to serve as a centerpiece for ecosystem research in the Central Rockies. Various departments support world-class infrastructure for environmental toxicology, stable isotope analysis, and wildlife biology and pathology. And the existing upper-division and graduate curriculum in ecology will inevitably evolve to accommodate the interdisciplinarity of a new Ph.D. program.

These assets notwithstanding, a broadly accepted vision of the connections among them remains to be fully articulated.

Action Item 13 (establish staffing targets in ecology). The Deans of Agriculture, Arts and Sciences, and the Graduate School will develop five-year faculty staffing targets in ecology. This task must involve input from faculty researchers and department heads in the affected units. The targets should take into account

existing faculty strength, anticipated life-science focus areas, start-up funding, space, and the curricular goals of the affected departments.

Action Item 14 (coordinate institutional assets in ecology and environmental sciences). The Vice President for Research will establish a faculty committee to develop a vision statement for the coordination of research centers and infrastructure in ecology and environmental sciences.

The fourth life-science focus area, molecular and cellular life science (MCLS), is central to modern biology, yet at UW it is not as well defined as the other three focus areas. An inclusive, comprehensive, and interdisciplinary MCLS program will ensure the continuing distinction of the life sciences at UW. Historically, the Ph.D. program in molecular biology has been the most visible curricular element of this focus area. Research strength in MCLS spans several UW departments, including some life science departments and chemistry, but connections remain diffuse. The challenge is to orchestrate and focus UW's MCLS strengths. World-wide, MCLS is a vast and rapidly growing area of life sciences, with several subfields in which UW has established competitive niches and many others in which the institution has little history or prospect for attaining prominence. For an interdisciplinary focus in MCLS to be successful at UW, and for sustainable excellence in a dedicated doctoral program in this area, particular attention should focus on the following elements:

Foundation: a common understanding, across all of the appropriate academic departments, about which subfields of MCLS are sufficiently well established to be strategically viable at UW;

Commitment: realistic near-term estimates of how many faculty members each unit can commit to graduate-level instruction, doctoral supervision, and the requisite external research funding; and

Curriculum: a concrete proposal for a genuinely cross-disciplinary curriculum that the affected departments can deliver collaboratively, with foreseeable resources, in the near term.

Action Item 15 (assess the viability of a Ph.D. in molecular and cellular life sciences). The Dean of the Graduate School will establish a faculty task force to explore the scholarly foundation, departmental commitments, and curriculum needed to establish a Ph.D. program in molecular and cellular life sciences. This task force will assess whether such a program is viable and the extent to which the program will differ from or replace the existing Ph.D. program in molecular biology. The task force will also determine the mechanisms by which an array of departments involved in life-science research can contribute to the program.

The prospects for strengthened Ph.D. programs in neuroscience and reproductive biology and for new Ph.D. programs in ecology and possibly MCLS raise questions about the future of the more traditional, department-based Ph.D. programs in the life sciences. Further motivating these questions is the observation that the life sciences

have changed dramatically—perhaps more so than any other major branch of science—since most of UW’s life-science doctoral programs were first established. A genuine commitment to distinction in the life sciences suggests the need to examine how many distinct life-science Ph.D. programs are appropriate and whether it is prudent to add new programs without deleting older ones.

Action Item 16 (refine the life-science doctoral offerings). In forwarding the findings of the MCLS task force, the Dean of the Graduate School will also submit to the Vice President for Academic Affairs a plan defining the overall array of life-science Ph.D. programs that UW offers, with the aim of refining the level of focus and critical mass in the university’s life-science doctoral offerings.

Finally, microbiology has clear importance to several undergraduate programs, yet there are still difficult issues surrounding its structure. The microbiology program, traditionally housed in the College of Agriculture, serves a constituency spanning the Colleges of Agriculture, Arts and Sciences, and Health Sciences. The instructional workforce supporting the program, however, is not uniformly distributed across the affected departments, in part because of the mix of expertise required in various areas of microbiology and in part because of disparate department-level commitments. In addition, differences of opinion among faculty stakeholders about the curricular emphases within microbiology remain unresolved.

The program is important to UW’s undergraduate life-science offerings and hence must have viable staffing levels. Involvement of participating faculty members—and their continued willingness to view the program outside the confines of department-specific interests—will be critical to its success.

Action Item 17 (develop a microbiology staffing plan). The Dean of Agriculture, in consultation with the Deans of Arts and Sciences and Health Sciences, will develop a long-term instructional staffing plan for the microbiology program. The plan should identify the instructional needs of the program, the distribution of expertise required, and appropriate levels of curricular emphasis among the various areas of microbiology. Current proposals to house medical microbiology expertise in the College of Agriculture and microbial ecology in Arts and Sciences offer a possible organizing principle for curricular planning. In their staffing plans, college deans should consider mechanisms for ensuring adequate faculty instruction by predicating future position allocations on departments’ willingness to absorb instructional commitments to the program.

Action Item 18 (establish management responsibility for microbiology). For the near term, the Dean of Agriculture will have primary responsibility for coordinating the microbiology program but will collaborate with the Dean of Arts and Sciences and any other deans who have college resources committed to the program. Each semester, the Office of Academic Affairs will schedule a progress report with all participating deans.

Professions and Issues Critical to the Region

Professions and issues critical to the region are best viewed from an integrated perspective. Professional education programs in several colleges are critical to developing and maintaining a workforce that can provide vision and leadership for Wyoming and the Mountain West. This area of distinction has implications beyond the confines of formal degree programs: educators, engineers, business leaders, health-care professionals, and legal experts all require continuing professional education and lifelong access to learning.

The needs also extend beyond UW's campuses. Owing in part to their rural setting, many communities in Wyoming need assistance with sustainable development, objective policy research, teacher training, leadership development, legal services, health-care delivery, ranching, agriculture, mineral and energy production, and business development.

The university's role in education is especially illustrative. UW has a natural leadership role in professional development and statewide articulation with the community colleges and other sectors of the educational system, both to address the growing shortage of secondary teachers in critical subjects and to build a more rigorous, seamless K-16 system. UW has a clear interest in promoting strong, prosperous, educationally rich communities, not only for the economic and social well-being of the region but also for the opportunities that they create for our graduates.

Teacher education, in particular, is one of UW's most significant and lasting contributions to society. It is an enormous undertaking, involving professional education in pedagogy, sustained commitments from departments in content areas, coordination with school districts for field placements, and responses to an ever-shifting set of curriculum-related mandates at the state and national levels. These demands, together with the level of effort required to maintain nationally reputable scholarship and the unrelenting pressures associated with professional service and accreditation, can easily escalate beyond the capacity of any faculty. We applaud the emphasis in the College of Education plan on focusing faculty efforts and defining a judicious set of commitments in which the college can pursue greater prominence.

Several specific issues in teacher education are worth noting. In a large, sparsely-populated state like Wyoming, orchestration of field placements for practice teaching poses serious logistical problems. We support the establishment of four to six focused professional development sites to increase the quality of interaction among faculty members, mentors, and students; to simplify the logistics; and to reduce the amount of faculty time required for travel between sites.

Commitments to external service are also a salient concern in the College of Education, owing at least in part to a laudable professional culture that values these activities more than many other disciplines. The college has to set priorities in service and emphasize service activities that have strong synergies with the faculty's teaching and

research obligations. To solidify this initiative, the College of Education faculty should engage in a discussion analogous to one recently undertaken in the College of Engineering, to clarify college-wide standards and performance expectations in faculty re-appointment, tenure, and promotion decisions.

***Action Item 19 (codify the tenure and promotion expectations in education).** Under the leadership of the Dean of Education, with input from the Office of Academic Affairs, the College of Education will develop a policy document codifying the teaching, research, and service expectations associated with tenure-track reappointment, tenure, and promotion decisions. The policy should not attempt to specify overly quantitative requirements. Instead, it should define the relative emphases attached to teaching, research, and service and identify appropriate measures and hallmarks of success associated with faculty career stages.*

One of the more difficult issues facing the College of Education is the mismatch between undergraduate demand, which is especially strong in elementary education, and the areas of critical need statewide, such as secondary science, mathematics, and special education. It is unrealistic to believe that we can administratively shift student demand from one set of programs to another. Addressing regional shortages in these areas of critical need will require creating new incentives—and reducing some disincentives—for other students to enter these fields. Worth special attention are the discipline-specific secondary education baccalaureate programs, such as English education, that now require more than 128 credits to complete. Here the disincentives are often stark: students with similar interests can sometimes complete M.S. degrees almost as easily by sidestepping teacher-education curricula altogether.

***Action Item 20 (establish incentives for areas of critical need in teacher education).** The Dean of Education, together with the Associate Vice President for Enrollment Management, will explore incentives to encourage more students to major in special education, science, mathematics, modern languages, counselor education, and the certificate in early childhood education. Among the measures worth exploring are student loan-forgiveness programs, tuition discounting, scholarship enhancements, and other tuition-based approaches.*

***Action Item 21 (align content standards with teacher-preparation standards, and streamline bachelor's-plus-master's programs).** The Deans of Education, Arts and Sciences, Agriculture, and Business will establish concurrent second majors that align content-specific curriculum with teacher-preparation standards for secondary and middle-school certification. In fields where constraints demand more than 128 credit hours, the committee will work with the Dean of the Graduate School to explore the feasibility of bachelor's-plus-master's programs that require no more than 150 credits to complete.*

Some of the issues affecting the College of Education reach beyond the system of formal education. The complex area of child and youth development and family life is

clearly critical to society's future. This constellation of issues involves programs in the Colleges of Education, Agriculture, Health Sciences and Arts and Sciences. It has implications for several of the institutional issues addressed later in this plan, including scholarship and graduate education as well as outreach and community service. UW is home to significant expertise in this area, but its existing programs are scattered across units. Greater coordination and focus will help strengthen the institution's efforts and interactions with public and state agencies.

Action Item 22 (coordinate programs in childhood and youth development and family life). The Deans of Education and Agriculture will identify core faculty to explore and recommend, by spring 2005, the appropriate organizational structure for coordinating and focusing programs directed toward children, youth, and families.

The university also plays a pivotal role in economic development. As a research university, UW is an idea generator and a creative force that not only expands knowledge but also stimulates entrepreneurship and economic diversity. This creative and entrepreneurial role bridges the institution's three central missions — teaching, research, and public service — and links the university with the economic life of the state and nation. It includes all of the departments in the College of Business; the College of Agriculture, through its Cooperative Extension Service (CES) and Department of Agricultural and Applied Economics; the Outreach School; and the array of business-development and support programs housed within the Office of Research. We urge faculty members in all relevant colleges to explore stronger involvement with the entities that are helping to shape Wyoming's business future: Wyoming Research Products Center (WRPC), Economic Development Outreach Programs, the Wyoming Business Council, and, in the future, the Wyoming Technology Business Incubator.

The College of Business has a central role to play through its undergraduate emphasis on entrepreneurship and its graduate programs in accounting, business administration, economics, and finance. In addition, several curricular initiatives in the College of Business warrant more aggressive pursuit. Chief among them is the restructuring of the professional curriculum. The M.S. in e.Business, established as an outgrowth of API, has been an innovative and successful program. Yet, in terms of college-wide impact, its reach is circumscribed. As technology evolves, it is becoming more important to integrate the principles of e.Business across the business curriculum than to have a once-novel, small, stand-alone M.S. program.

Action Item 23 (integrate e.Business and differential tuition into the M.B.A. program). The Dean of Business and the director of the M.B.A. program will develop a plan for integrating the e.Business curriculum into the business curricula. This plan will include a vision for weaving e.Business principles into the M.B.A. program and the graduate programs in accounting and finance, importing e.Business and information-technology principles into the undergraduate business curriculum, and phasing out the information management program

to accommodate these changes. The Dean of the College of Business will also develop a proposal for a tuition differential for students pursuing the M.B.A.

Another array of initiatives under consideration in the College of Business is the development of accelerated 4+1 M.B.A. programs for UW baccalaureate candidates in other colleges. Such programs would enable some undergraduates to tailor their coursework to allow completion of the M.B.A. within a year after the bachelor's degree. Potential for viable and attractive programs exists in engineering, health-science professions, and agriculture. The critical issues are adequate staffing, added curricular complexity, foreseeable student demand, and accreditation.

Action Item 24 (explore cross-college 4+1 M.B.A. programs). The Deans of Business, Engineering, Health Sciences, Agriculture, and the Graduate School will explore opportunities for cross-college 4+1 M.B.A. programs, recognizing that the viability of any such program hinges on whether the degree takes advantage of existing curricula and instructional capacity, instead of requiring new resources.

Issues facing the health-science professions are complex, not only because they are embedded in problems that are national in scope but also because of the special issues affecting rural health-care delivery in the sparsely populated Mountain West. One pressing problem is the shortage of practicing nurses in Wyoming. The School of Nursing is at the center of increasing pressures to expand the nursing workforce, both by educating more practicing nurses and by enhancing the supply of Ph.D.-qualified faculty in nursing. While these pressures have political immediacy, their origins and solutions have much longer time scales associated with statewide salary structures and the pipeline of candidates willing to pursue advanced degrees and subsequent employment.

Action Item 25 (increase the supply of nursing Ph.D.s). The Dean of Nursing, working with the Deans of Health Sciences, the Graduate School, and Outreach, will outline a strategy for addressing long-term pipeline issues associated with the supply of Ph.D.-qualified nursing faculty. The strategy may include opportunities for UW's master's-qualified nurses to pursue the Ph.D. through the WICHE NEON program or other arrangements, as long as the programs are consistent with UW's faculty-hiring and personnel policies.

A different set of issues confronts the School of Pharmacy. Started in 1998, the Pharm.D. program admits 48 candidates annually into a four-year curriculum that nominally starts after the second year of baccalaureate work. The School of Pharmacy faces issues associated with the funding of clinical practice sites and constraints on workforce distribution dictated by its accrediting organization. Already one of the largest faculties in the university, the school is unlikely to resolve its issues by growing at the expense of other departments. The pressures imposed by increasing research expectations, the costs of clinical education, rapid growth in faculty starting salaries, and the demands imposed by accreditation are daunting.

***Action Item 26 (develop a differential tuition plan in Pharmacy).** The Office of Academic Affairs, in concert with the Dean of Health Sciences, will develop a near-term plan for funding clinical faculty positions in Pharmacy through the use of tuition revenues generated by an increase in the Pharm.D. tuition differential. Within two years, the School of Pharmacy will develop a longer-term differential-tuition plan, with the aim of generating revenues sufficient to meet its permanent clinical education needs. The plan should also examine prospective Pharm.D. enrollments that would be consistent with the ability to generate tuition-based salary funding as well as future regional demand for pharmacists.*

A third area of health sciences that requires attention is UW's commitment to medical education. Our current commitments reside: (1) in the WWAMI and WICHE programs, which provide opportunities for UW students to pursue the M.D.; and (2) in UW's family-practice residency centers (FPRCs) in Cheyenne and Casper, which offer graduate medical education for M.D.s in clinical residencies. Issues associated with continued participation in both WWAMI and WICHE include escalating tuition, student indebtedness, payback and loan-forgiveness provisions, linkages to family practice residencies, program size, and the programs' effectiveness as workforce engines.

The central issue associated with the WWAMI program is its expense: Wyoming pays the University of Washington for seats in its medical school, and the cost of these seats is rapidly increasing. A crucial question, for the state as well as for the university, is whether meeting the cost increases needed to remain in the WWAMI program is the most effective way to encourage Wyoming students to pursue medical education. On the other hand, the current arrangement for the funding of WICHE medical students provides no assurance or incentives for graduating doctors to practice in Wyoming.

***Action Item 27 (coordinate WWAMI and WICHE medical education programs).** The Dean of Health Sciences will develop a plan to coordinate WWAMI and WICHE medical education programs. The plan will address their role in developing Wyoming's medical workforce, make recommendations to the President and the WICHE Commission regarding administrative and financial linkages to the residency programs, and identify policies and administrative procedures that will need to be revised to implement these recommendations.*

The challenges associated with the FPRCs are also fiscal in nature, but the issues are more complex. The business model was once simple: the state subsidized graduate medical education through the university, which supplied facilities and salaried faculty members to serve as attending physicians. Today, the state subsidy no longer suffices; the centers in Cheyenne and Casper have different business arrangements; the opportunities and rules affecting federal support for graduate medical education have become dysfunctionally intricate; and the salaries for faculty physicians are unrealistic in light of the current market. There may be no simple answers to questions about the future management of the FPRCs, but UW must start working toward a better business model.

Action Item 28 (develop a clinical practice plan for graduate medical education). The Dean of Health Sciences will develop a clinical practice plan for the Cheyenne and Casper FPRCs. The plan will contain provisions for clinical faculty members in these centers to generate additional clinical revenues, coupled with enhanced capacities for them to earn supplemental income based on these revenues.

Finally, the College of Law is unique among UW's colleges in its exclusive emphasis on graduate-level professional education. It is unusual among law schools in its small size, especially given the breadth of its curriculum. The college has done quite well in its central mission of training professionals in law and has been able to offer specialized courses in certain areas of distinction, such as ENR and business. However, the size of the college limits its ability to expand these foci without additional resources.

The college has identified several positive initiatives that mesh well with institutional priorities, including the reduction of first-year class sizes. However, current budgetary constraints—including limited in-house budgetary flexibility for part-time instruction, library resources, support for faculty, and other needs—make progress on such initiatives difficult. The consistently strong demand for admission to the College of Law, together with its unusually low tuition, suggest that a change in tuition policy could help resolve this difficulty.

Action Item 29 (increase the tuition differential in Law). The Dean of Law will develop a proposal for an increased tuition differential for students pursuing the J.D. The purpose of the differential will be to generate earmarked revenues to support educational functions in the College of Law.

Science and Technology

This area of distinction, encompassing earth and energy sciences, materials, and computational sciences, has clear relevance to engineering, agriculture, science, and business departments. Several units have traditions of strength in these areas.

Earth and Energy Sciences

Earth and energy sciences is a broad umbrella that includes some of UW's longest-standing areas of expertise. Several departments—Geology and Geophysics and Atmospheric Sciences in particular—have historically had internationally recognized and well-funded research. Several others, such as Chemical and Petroleum Engineering and Mathematics, have maintained nuclei of internationally recognized expertise, but the numbers of contributing faculty have fluctuated. Some units, such as Geography and WyGISC, have potential for greater contributions. In the interdisciplinary realm, initial discussions about earth-systems science have yet to yield an affordable strategy for an academic program that combines the earth and atmospheric sciences, ecology, and the social sciences.

The time is ripe to solidify UW's strength in this area. Earth and energy sciences are strategically important to Wyoming, the region, and the nation, but owing to their inherent interdisciplinarity several specific initiatives have not enjoyed sustained attention from individual departments or the institution.

- **GIS.** After more than a decade of dramatic advances worldwide, UW has made inadequate progress in developing interdisciplinary curricula and research in geographic information sciences (GIS) and in linking the various GIS activities that we currently support. While WyGIS now has excellent facilities, a solid base of external funding, and the beginnings of a coherent faculty research community, UW must weave GIS more tightly into the fabric of undergraduate and graduate curricula.
- **Water Resources.** The Wyoming Water Resources Center once served as a focal point for interdisciplinary research in water supply and water quality issues. Its disbanding in the late 1990s left the university with little organized advocacy for targeted faculty hiring and research in this area. There are many departments in the Colleges of Agriculture, Arts and Sciences, Engineering, and Law that can help strengthen this area.
- **Reclamation.** The Wyoming Reclamation Ecology Center, established as an outgrowth of the API, has nascent capacity to address some of the most serious technical issues associated with Wyoming's coal production. To date the center has had insufficient impact on faculty hiring to solidify UW's presence in this area.
- **Energy.** The Enhanced Oil Recovery Institute (EORI) and Institute for Energy Research (IER) have served as institution-wide platforms for interdisciplinary research related to Wyoming's underground energy resources. However, UW is no stronger in this area today than it was a decade ago. The John and Jane Wold Chair in Energy, together with the recent addition of an endowed chair in energy economics, highlight the potentially deep connections that exist between the state's interest in energy resources and the university's strength in natural-resource economics.

Several actions can help build a stronger presence in earth and energy sciences.

Action Item 30 (develop an earth-systems science curriculum). The Vice President for Academic Affairs will charge a task force with developing an undergraduate major in earth systems science, building on existing expertise in Geology and Geophysics, Atmospheric Sciences, Geography, Chemistry, Renewable Resources, Engineering, Botany, Zoology, Anthropology, Economics and Finance, and Agricultural and Applied Economics. The program should require a small administrative footprint and should have clear connections to research in areas concerning humans in the biosphere, ecology, climatology, biogeoscience, sustainable agriculture, and GIS, as well as the more traditional earth and atmospheric sciences.

Action Item 31 (earmark faculty positions for the future development of GIS and earth and energy sciences). For the next five years, the Office of Academic Affairs will earmark at least one faculty position per year in energy-related science and technology, water resources, GIS, or earth-systems science through central position management. Of critical interest in the energy-related sciences will be geologically-based energy resources. These five positions will be open to a bidding process analogous to that used to fill EPSCoR positions during the period covered by the API, with coherent interdisciplinarity and curricular impact being key factors in the allocations. The position requests need not regard these areas as distinct from one another or from position requests in computational sciences.

Two remarks about this last action item are in order. First, it is unusual because it prescribes a specified number of CPM allocations. The intent is not to siphon resources away from unallied units more properly dedicated to other areas of distinction; instead it is to overcome the difficulties, mentioned above, that cognate disciplines have had in maintaining consistent support for this area of science and technology as position vacancies occur in their own departments. Second, it is unlikely that five positions allocated to energy science via CPM can build the coherent strength in earth and energy science that the university desires or that the state deserves. For this reason, we propose a further step.

Action Item 32 (complete a feasibility study for a center for earth and energy science). The Vice President for Academic Affairs, in cooperation with the UW President, will appoint a task force to explore the feasibility of a legislative budget request to establish a university center for teaching and research in earth and energy science.

Materials Science

Materials science, including emerging molecular-based materials science and biotechnologies along with materials testing and computational materials science, provides fertile ground for research in engineering and the physical and life sciences. Owing in part to the sheer breadth of materials science and in part to the lack of an organizing nucleus at UW, the university's strengths in this area are disjointed and dispersed.

To provide a more focused approach, faculty members have proposed the development of an interdisciplinary graduate program in the science and engineering of materials. Such a program might involve several departments in the College of Engineering, the Departments of Chemistry and Physics in Arts and Sciences, and the Department of Molecular Biology in Agriculture.

The planning process for the program should focus on the implications it would have for the affected departments. Each currently offers its own discipline-specific Ph.D., and in some cases these existing Ph.D. programs have not been producing doctoral degrees at acceptable levels. At issue is the willingness and ability of all

involved departments to support the required curriculum, to dedicate future faculty hiring to appropriate research areas, and to make sustained commitments of graduate assistantships, space, and other resources now dedicated to department-specific priorities. To consider the establishment of this new graduate program, the following elements are needed:

Foundation: a clear definition of the subfields of materials science that are strategically viable at UW and of which departments have important roles to play;

Commitment: five-year target levels for faculty hiring in materials-related areas, under the assumption that new hiring will replace resignations and retirements from the affected departments, together with realistic estimates of doctoral graduation rates and how many graduate assistantships and how much space each department can contribute; and

Curriculum: a coherent materials-science curriculum that the affected departments either currently deliver or can support with foreseeable resources.

Action Item 33 (commission a materials-science prospectus). The Deans of Engineering, Arts and Sciences, Agriculture, and the Graduate School will commission a prospectus for a more formal program in materials science and engineering. The prospectus should address the scholarly foundation; departmental, college, and institutional commitments; and curriculum needed to establish a Ph.D. program in the science and engineering of materials. The prospectus should also establish target levels for Ph.D. production. The goal is establishment of a strong interdisciplinary program in materials science that can build on existing expertise in the area and capture economies of scale in building and maintaining the necessary research infrastructure.

Computational Science

Computational science has an even broader compass. A reconfigured Computer Science Department and a new computer-engineering curriculum are among UW's more visible accomplishments under API. Among the older computational fields that deserve strengthening and newer ones that need more thought by appropriate departments are GIS, computational fluid mechanics, computational geosciences, computational materials science, information sciences, computational ecology, telecommunication and networking, computational biosciences, and bioinformatics.

In particular, computational fluid mechanics and computational geosciences are ripe for renewed commitments. Several departments in Engineering and Arts and Sciences have made strong commitments to faculty hiring in these areas. We welcome the efforts of faculty members in Mathematics and Mechanical Engineering to reform the Institute for Scientific Computation (ISC) as a campus-wide forum for computationally oriented scholarship. Vibrant research and graduate curricula in this area are critical links to the strengthening of long-standing faculty interest in fluid

mechanics, geophysics, and underground energy resources. The ISC also has untapped potential for supporting research in materials science, atmospheric science, robotics, and other areas.

Lasting interdisciplinary ties are essential to overcoming fluctuations in strength that have historically hindered UW's advancement in this critical area. We envision a robust community of computational scientists and engineers at UW, spanning several disciplines and providing a permanent basis for internationally competitive research and high-caliber undergraduate and graduate education. History suggests, however, that building such a community will require an action item similar in spirit—and similarly prescriptive—to the one advanced for earth and energy science.

Action Item 34 (earmark faculty positions for the future development of computational science). For the next five years, the Office of Academic Affairs will earmark at least one faculty position per year in computational fluid mechanics, computational geosciences, or computational-related supporting fields, through central position management. These positions, funded largely through vacancies in cognate departments, will be open to a bidding process analogous to that used to fill EPSCoR positions during the period covered by the API. Coherent interdisciplinarity and curricular impact will be key factors in the allocations. Position requests need not treat these requests as distinct from requests focused on energy-related science and technology, water resources, GIS, ecology, or earth-systems science.

III. Institutional Issues: The Learning Environment

UW's fundamental mission is to provide outstanding opportunities for learning. In this context, four questions confront the university and, indeed, the educational community statewide. First, how can UW, community colleges, and K-12 educators more effectively prepare students for university-level learning? Second, how might UW provide better opportunities for personalized, connected education? Third, what is the most effective structure for an academic success center that provides broad support for student learning? Fourth, how can UW build on a culture of individual course assessment to assess student learning at the programmatic level?

Preparing for a Successful University Education

To succeed at the university level, students must have a solid foundation. Much of the groundwork is laid long before the student's arrival on campus. Students and parents play an obvious role by selecting appropriate high-school coursework, cultivating sound learning habits, and developing time-management skills. But the foundations for college-level work include other factors. Among them are: (1) effective articulation between secondary and post-secondary institutions; (2) a common understanding of K-12 performance indicators; and (3) some degree of congruence between high-school performance standards and university expectations. Nationwide, these factors receive less attention than they deserve, and as a consequence many students with promising high-school credentials struggle when they encounter college-level work.

Every university and high school in America confronts this issue. The traditional structure of higher education in the U.S., together with the aloofness that universities sometimes exhibit toward other educational institutions, makes it difficult to guarantee effective articulation and coordination among high schools, community colleges, and baccalaureate-granting institutions. Wyoming has enormous advantages in this arena. By comparison with other states, our scale and the richness of our existing educational networks make it much more feasible to establish effective collaborations across the K-16 spectrum.

Articulation between academic departments at UW and their community-college counterparts already helps smooth the transition to the university learning environment.

On the other hand, there are few such connections with high schools. Faculty members in the College of Education have close ties with public-school curricula and administrators, but their focus is on teacher education. The Division of Student Affairs also connects with K-12 students, but the focus here is largely on recruitment. What is lacking is a well established academic dialogue, at several levels, that makes the transition from public high schools to UW more seamless.

Action Item 35 (schedule a yearly meeting for K-12 administrators). The Office of Academic Affairs will orchestrate a yearly meeting involving university deans, academic administrators, and Wyoming school superintendents. The goals of the meetings will be to establish a more seamless K-16 curriculum and to develop strategies for increasing student success. We envision that these discussions will yield a small number of focused projects during the period of this academic plan. Initial discussions might consider such topics as the congruence of K-12 and post-secondary performance indicators, placement tools and strategies, high-school curricular correlates to university success and core high-school curricula, communication with parents and high-school students regarding the importance of appropriate course selection, discipline-specific performance feedback, and shared student databases.

Action Item 36 (include high-school teachers in articulation conferences). We encourage all departments that conduct statewide articulation conferences with community colleges to extend those conferences to high-school teachers involved in college-level curricula or in critical transition courses. We also welcome discipline-based articulation conferences involving university and K-12 teachers.

Action Item 37 (involve faculty in the principal-counselor conferences). The Office of Academic Affairs and the Vice President for Student Affairs will expand the annual principal-counselor conferences at UW, with the aim of actively involving faculty, department heads, and appropriate staff members in decisions affecting student preparedness, curriculum, and performance expectations.

Promoting a common understanding of student performance indicators requires a sophisticated system of data sharing. Increasing public interest in K-12 standards and student performance, together with the federal “No Child Left Behind” legislation, has reinforced the need for statewide data-collection efforts, some of which may help answer questions about the high-school coursework that best prepares students for college. But the emphasis so far has been on issues like accountability, which have greater currency in the political arena. Another source of information—UW’s database, managed by the Office of Institutional Analysis—largely supports decisions about productivity, institutional efficiency, and internal policy. To date this database has not been sufficiently linked with K-12 preparation. An objective, shared data system could provide better information about student success at various levels, help distinguish sound educational practices from ineffective ones, and assist in

understanding the relationships between various measures of student success throughout the educational continuum.

Action Item 38 (promote K-16 data systems to track educational performance). Academic Affairs will explore opportunities with the State Department of Education to establish and coordinate data systems that longitudinally track Wyoming students' educational performance. The emphasis will be on understanding how student access, preparedness, and performance at each level of the K-16 system bears on these factors at subsequent levels. In particular, answering these questions will require an understanding of the correspondence between performance measures used at various levels and student performance at subsequent levels.

The third issue, congruence between high-school performance measures and university expectations, is less straightforward. Two approaches—connecting high-school teachers with the university environment and providing early opportunities for students to experience this environment—can help bridge gaps.

A fundamental way to connect high-school teachers with the university environment is through sustained articulation, as discussed earlier. In addition, discipline-specific initiatives, such as the Hewlett Foundation program in the College of Engineering and the UW Summer Mathematics Institute, can help in-service teachers develop innovative instructional materials and methods. Other innovative approaches are also worth examining.

Action Item 39 (investigate faculty internships for high-school teachers). The Office of Academic Affairs and the Deans of Education, Arts and Sciences, and Agriculture will investigate the feasibility of establishing year-long or one-semester UW faculty internships for outstanding high-school teachers in such core areas as precalculus mathematics, English composition, and pre-college science. The idea is to support visiting faculty positions for accomplished high-school teachers, funded through a mix of part-time teaching money, salary reversions from UW sabbatical leaves, professional-leave funding from the local school districts, and other sources.

U.S. universities have a long tradition of programs providing early opportunities for students. Historically, summer institutes have furnished some of the more surefooted mechanisms for helping students prepare for college life. Residential learning experiences of this type bring prospective students to the UW campus and engage them in a combination of academic, recreational, and social experiences designed to connect them to UW and to cultivate enthusiasm for university-level learning. UW's premier program of this type is the Summer High School Institute, established via legislative funding in 1984 and operated under the aegis of the Honors Program. This three-week summer residential learning community attracts 100 exceptional high-school sophomores each year, and it has a proven record of recruiting

outstanding high-school students to UW. Similarly, the Engineering Summer Program, cooperatively sponsored by the College of Engineering, the Office of Academic Affairs, and the Wyoming Engineering Society, has helped to attract future engineers to the University of Wyoming.

Action Item 40 (support summer residential programs for high-school students). The Office of Academic Affairs will continue to support the Engineering Summer Program through the use of centrally managed summer-school revenues. Academic Affairs will also explore the use of these revenues in the UW Summer High School Institute, both to place the program on sounder budgetary footing and possibly to involve a larger and broader array of high-school students. The director of the institute will consider the feasibility of establishing the program as a credit-generating, self-supporting (or grant-funded) residential program for high-school juniors and seniors.

UW has many other programs that attract high-school students. The Summer Research Apprentice Program, EPSCoR High School Summer Internship Program, Daniels Fund Summer Preparation Program, Diversity in Teacher Education Summer High School Institute, High School Drama Festival, History Days, Summer Music Camp, High School Forensic Tournament, National Geographic Geography Bee, State Math Contest, the Wyoming Science Fair, and the U-DOC program in the College of Health Sciences, to name just a few, all target promising high-school students for pre-college experience with the university learning environment. These and other programs warrant support from all sectors of the university, and we invite other divisions to consider their roles in the upcoming support-service plans.

Providing a Personalized, Connected Education

One of UW's distinctive assets is the capacity to offer personalized, connected education in the setting of a research university. Our students report greater opportunities to interact with faculty members, staff, and administrators than students at peer institutions; they are highly satisfied with their advising; and they spend more time writing than their peers at other research universities. Still, compared with the potential we enjoy as one of the nation's smallest public research universities, our successes remain fragmented and narrow. We propose three types of initiatives: expanding the scope of UW's learning communities, furnishing greater opportunities for inquiry-based learning, and exploring measures to make large classes more effective.

Learning communities are important to effective learning. The Honors Program is perhaps the most outstanding example of a formal learning community at UW. It attracts some of the institution's brightest incoming students and, through undergraduate research opportunities, close faculty mentoring, and small challenging classes, has instilled in hundreds of undergraduates a keen sense of scholarly purpose. This program warrants additional institutional support.

Action Item 41 (examine resource commitments to the Honors Program). The Vice President for Academic Affairs will review resource commitments to the Honors Program and, as opportunities arise, increase its support budget. In addition, the Office of Academic Affairs will entertain proposals by departments to absorb permanent teaching commitments to the program in future faculty position requests. Priority consideration should be given to relocating the Honors Program to better facilities as space is vacated, renovated, and reassigned after the completion of the Health Sciences Complex.

Like all academic programs, the Honors Program should be subject to assessment of its educational effectiveness. The Honors Program Advisory Council should address the need for systematic assessment of student outcomes by developing and implementing a learning outcomes assessment plan.

Other learning-community initiatives extend many of the principles underlying the Honors Program to a broader set of students. For example, the University Studies Program¹⁰ (USP) Intellectual Community (I) seminar courses furnish platforms from which academic units can broaden the reach of UW's learning communities to all first-year students. Several models of more systemic first-year learning communities¹¹, some including a residential component, already exist: Freshman Interest Groups (FIGs), Engineering Power Groups, and Project Synergy are examples. Recent data indicate that students in Engineering Power Groups achieve greater academic success than non-participants. Data from FIGs and Project Synergy are also encouraging but less compelling.

Action Item 42 (provide greater support for successful learning-community projects). The Vice President for Academic Affairs will orchestrate greater support for successful learning-community projects through such initiatives as incentive-grant programs administered by the John P. Ellbogen Center for Teaching and Learning (ECTL), enhanced contributions from academic departments, and explicit recognition of individual faculty contributions in yearly teaching evaluations.

Concomitantly, we must objectively evaluate the success of any initiative against the resources committed and the other opportunities foregone.

Action Item 43 (assess effectiveness of learning communities). The Office of Academic Affairs will establish a uniform system for benchmarking and assessing learning communities. Tangible evidence of success will be necessary for continued support of any program for longer than three years past its start.

Undergraduate research and inquiry-based learning constitute another intensive form of personalized, connected education. It is in the laboratory, the studio, or the field where faculty members have the clearest opportunities to convey passion for rigorous, lifelong learning and exploration. Research and creative activity engage undergraduates in the exploratory and integrative sides of learning that have been

traditionally confined to postgraduate education. Venues for these types of learning opportunities abound, as demonstrated in the growing number of art exhibitions and recitals, senior engineering design presentations, health-science grand rounds, and presentations of research projects during Undergraduate Research Days.

Faculty members who work with students in this context invest personal time, energy, and commitment in a mode of education that is not readily documented in institutional statistics. The most effective way for department heads and deans to reward faculty involvement in inquiry-based instruction and undergraduate research and creative activity is to acknowledge these activities in annual performance evaluations, reappointment recommendations, salary raises, and tenure and promotion packets.

UW will continue to have some large classes. As at most universities, a mix of class sizes, including some large-enrollment sections, is inevitable if UW is to maintain the breadth of programs our constituents expect. It is an institutional responsibility, however, to ensure that these classes are academically engaging and challenging.

Action Item 44 (enhance teaching in large classes). The ECTL will organize regular programs to share best practices in the use of technology, advanced undergraduate and graduate peer teaching assistants, supplemental instruction programs, and other strategies that help “make large classes small.”

Establishing an Academic Success Center

Most institutions of higher education maintain an array of services dedicated to student success. UW’s commitment to broad access argues for institution-level strategies that transcend the traditional paradigm, which targets high-achieving and under-prepared students but contributes little to the mainstream. Following an idea advanced in the University of Wyoming Academic Plan I 1999-2004², we propose establishing an academic success center, to be called the Learning Resource Network¹² (LeaRN), having a substantially larger scope.

The model underlying LeaRN is one of distributed expertise. UW currently offers numerous academic and personal development programs for students, but they are disconnected and disparately supported. Many do not involve the faculty. Moreover, institution-wide thinking about academic success programs has tended to focus on small numbers of traditionally at-risk students, such as those admitted provisionally and those needing developmental or remedial courses. By comparison, UW offers relatively few resources for mainstream students negotiating the transition to university-level learning in 1000- and 2000-level courses. The distributed expertise model weaves together a university-wide network of people and learning resources, representing academic departments, the Libraries, existing academic-support units, and student development offices, targeted at the success of a much broader segment of the student population.

To be successful, the model must involve faculty members in key disciplines, not only in day-to-day operations but also in the design of the center. The task force that developed the original model for LeaRN set the stage for this approach; we propose continuing it through the work of an implementation team.

***Action Item 45 (appoint an advisory council to guide LeaRN).** The Vice President for Academic Affairs will appoint an advisory council for LeaRN consisting of faculty, student, and student-service representation. This council will advise the Office of Academic Affairs and future LeaRN staff regarding the scope of LeaRN projects, activities, staffing, and facilities. The roles, reporting line, and job description of the director will be especially important.*

***Action Item 46 (fund and staff the LeaRN proposal).** The Vice President for Academic Affairs will take the necessary steps to implement the LeaRN proposal, exploring mechanisms for funding a director and staff.*

The model must also have a physical home. LeaRN will have a hub in renovated space in Coe Library. The hub will feature a classroom to be used by faculty members and students for specific initiatives, such as supplemental instruction, learning communities, and freshman interest groups, or for activities focusing on such learning skills as writing, oral communication, quantitative reasoning, and information literacy.

***Action Item 47 (renovate Coe Library to accommodate LeaRN).** The Vice Presidents for Academic Affairs and Budget and Planning will develop funding plans for the remodeling of Coe Library to accommodate LeaRN.*

Connected to the hub will be a set of more specialized nodes, including the Writing Center, the Math Lab, the Oral Communications Lab, a Disabilities Support Services Lab, a Student Learning Center in the Washakie Center, and possibly a Reading Lab. Some infrastructure for these nodes is currently in place, but there are glaring gaps. For example, the Writing Center already boasts a full-time director and a distinctive educational philosophy, while the Math Lab relies for its admirable success on ad hoc staffing by faculty and graduate-student volunteers.

***Action Item 48 (provide institution-level funding for a director of the Math Lab).** Academic Affairs will seek permanent institution-level funding for an academic professional to direct the Math Lab. This position will have responsibility for coordinating with faculty and graduate assistants in the mathematical sciences to orchestrate the staffing, curricular coordination, and methodological guidance needed to provide more effective help for students in basic quantitative reasoning courses.*

***Action Item 49 (examine reading lab models).** The Vice President for Academic Affairs will convene a committee charged with exploring the structures, costs, and effectiveness of reading laboratories on other campuses to determine if such a facility might be an appropriate LeaRN node at UW.*

We suggest that student advising and support offices also develop LeaRN nodes. It may be appropriate to establish LeaRN nodes in selected 1000- and 2000-level courses and in the residence halls, using (and thereby cultivating) the talents of upper-division undergraduates to help with tutoring and walk-in assistance.

Action Item 50 (reorganize the federal work-study program). The Office of Academic Affairs and the Associate Vice President for Enrollment Management will investigate more effective—and educationally richer—uses of federal work-study funding to employ accomplished upper-division baccalaureate candidates as undergraduate tutors in LeaRN nodes.

Finally, it is imperative to establish LeaRN nodes in cyberspace, extending LeaRN resources to students enrolled through the Outreach School. Some rudiments of such a node are already in place, in the context of the early precalculus algebra curriculum, through a cooperative effort between the Outreach School and the Committee on Advising and Mathematics Placement.

Action Item 51 (make LeaRN accessible to off-campus students). The Director of Outreach Credit Programs, the Director of the Ellbogen Center for Teaching and Learning, and representatives from the Department of Mathematics will develop a pilot LeaRN node accessible for online use by UW Outreach students as well as by students on the Laramie campus.

LeaRN's success will require sound leadership from academic faculty—those who have a stake in the outcomes through their students (such as Nursing faculty), as well as those whose disciplines more naturally align with the missions of the nodes (such as English faculty). It will also require expert contributions from many existing support offices in the Division of Student Affairs. We invite all members of the university community, especially stakeholders in the units most likely to be affected and appropriate support-service units, to help build this vision.

Assessing Student Learning

Assessment of student learning guides course sequencing, promotes effective articulation across the curriculum, showcases truly excellent teaching, and identifies practices that need improvement. We owe it to students and the public to understand, document, and improve the learning that takes place at UW. This rationale, not the mandates of accrediting agencies or political pressures, properly motivates our professional interest in assessing educational effectiveness. The university now enjoys a solid foundation for this imperative: every academic program now has a plan for the assessment of student learning, developed during the period of the previous academic plan.

Virtually all American universities find the formal process of assessment challenging. The difficulties arise largely from the tension between individual practice and institutional coordination. Professors know from experience that the assessment of

student learning is continuous, intertwined with other facets of teaching, frequently difficult to measure, and often more difficult to document. We spend much of our professional careers adapting individual courses and teaching methods in response to students' success.

As important as these activities are, they are not sufficient. We have not routinely assessed the aggregate learning in courses required for the major against established learning goals. Nor have we effectively assessed the USP against clearly defined expectations. The challenge is to systematize, document, coordinate, and respond at the department, college and university levels.

In line with the *UW Self-Study Report for North Central Association (NCA) Reaccreditation 2000*¹³, we recognize the following principles:

- A comprehensive assessment program has three components: (1) individual student assessment; (2) assessment at the level of the academic program and its overall curriculum; and (3) a faculty culture committed to student learning.
- Explicit learning goals, measurable objectives, and documentation of progress form the proper basis for regular review and revision of the curriculum to improve student learning.
- Many valid techniques exist for the assessment of learning. Faculty members and departments are best able to determine which techniques are appropriate for their disciplines.
- Some units already have methods for assessing learning in undergraduate and graduate programs. For others, additional work is needed, typically in articulating clear programmatic learning goals, in refining and systematizing data collection, and in maintaining short- and long-term follow-through and reporting.
- Good assessment yields better learning, not cumbersome administrative protocols.
- Peer institutions can be a useful resource. Some already may have attained recognition as leaders in assessment; others may help clarify UW's aspirations, either institutionally or in specific disciplines.
- The assessment of lifelong learning presents special challenges because of our graduates' varied career trajectories. For this reason, longitudinal assessment of post-baccalaureate success is perhaps best done at the university level.
- Although satisfaction surveys may be informative, by themselves they fail to provide authentic evidence of learning corroborated by performance.
- It is inappropriate to use data gathered for department- or university-level assessment to evaluate the performance of individual faculty members or students.

A mechanism for documenting assessment already exists. Academic departments and programs currently produce annual updates¹⁴ for their respective deans. The assessment of student learning is a key element of these updates. By paying regular attention to this element of the annual update, department heads and program directors can minimize the work involved in compiling the cumulative assessment reports¹⁵ required for accreditation.

Action Item 52 (complete the assessment cycle by AY 2007). Every degree-granting academic program will have completed at least one assessment cycle by AY 2007.

Action Item 53 (organize workshops to guide departmental assessment activities). The Office of Academic Affairs, college assessment coordinators and the ECTL will organize workshops, seminars, outside speakers, and other appropriate assessment programming to guide departmental assessment activities. Annual updates, submitted yearly by department heads and program directors to college deans, will document progress on plan implementation and showcase program improvements undertaken as a result of assessment.

Finally, UW has yet to develop a comprehensive plan and reliable strategies for assessing the USP. The faculty defined learning goals as part of the development of USP 2003, but the assessment instruments are not yet in place. Clearly, lessons learned by other institutions with more mature USP assessment programs can help inform our choices. Members of the USP committee, in collaboration with college assessment coordinators, the ECTL, and LeaRN staff, must assume responsibility for formulating specific methods to evaluate USP 2003.

Action Item 54 (develop an assessment plan for USP). The USP assessment team will develop a plan for assessing general education for implementation by AY 2005-06. The team will include USP committee members, college assessment coordinators, and ECTL personnel. The Office of Academic Affairs will provide data-collection services as well as assistance in data analysis and reporting.

IV. Institutional Issues: Scholarship and Graduate Education

Expanding knowledge, developing new applications of existing knowledge, and nurturing human creativity are among the central functions of research universities. These activities, subsumed under the term scholarship, are core responsibilities of faculty members, whether the work occurs in studios, offices, laboratories, or the field. And there is a direct link between scholarship and graduate education: strong scholarship is essential to vibrant graduate programs.

Universities' reputations hinge in large part on the strength of their research enterprises and graduate programs. Enhancing UW's stature as a research university will require thoughtful attention to three areas: bolstering graduate education and reshaping the role of the Graduate School, building stronger interdisciplinary support for the areas of distinction, and planning for research infrastructure.

Bolstering Graduate Education

Graduate education distinguishes the learning environment of a university from that of an undergraduate college. Yet it is important not to underestimate the contributions that vigorous graduate programs make to baccalaureate education. Graduate education also fuels economic development, creates the intellectual capital for new businesses, and fosters other entrepreneurial endeavors.

The *Ph.D. Enrollment Report*¹⁶ completed in response to the *University of Wyoming Academic Plan I 1999-2004*², touched several key issues related to graduate education. But it left room for the identification of institution-wide action items related to doctoral education, and it left other types of graduate programs unexamined. A systematic look at UW's graduate offerings—and the academic culture that supports them—must include not only the Ph.D. and Ed.D. but also the J.D. and Pharm.D. and the wide array of master's programs, including the M.A. and M.S. (Plan A and Plan B), M.S.W., M.B.A., and M.P.A.

Issues associated with graduate education at UW are sensitive and complex. They include the structure and function of the Graduate School, the small number of graduate programs that enjoy national prominence, and UW's culture of graduate-level assess-

ment. The *Life Sciences Report*⁹ proposes a new model for the structure and function of the Graduate School, but we intend to push the model still further. By more efficiently involving departments, colleges, and enrollment management offices in some of the routine bureaucratic tasks now assigned to the Graduate School, the Dean of the Graduate School can pursue innovative and cross-disciplinary graduate programs more aggressively and foster stronger links between graduate study and scholarship. The four focus areas identified for the life sciences in Chapter II — neuroscience, reproductive biology, ecology, and molecular and cellular life sciences — are clear examples of such programs. The task of delineating and sharpening these focus areas suggests critical roles for the Dean of the Graduate School.

The issue of national prominence has several dimensions. The small size of most of UW's graduate programs imposes some constraints. But more striking — and more critical — is the apparent lack of emphasis that many departments place on their own graduate programs. A variety of department-level measures, adopted widely across the university, can help restore a healthier culture of graduate-level assessment and improvement. These measures can also provide the Dean of the Graduate School with clearer, discipline-sensitive gauges to use in the institution-wide assessment of graduate education.

Action Item 55 (develop graduate-program goals for all graduate degrees).

Under the leadership of the Dean of the Graduate School, each department that admits graduate students will develop a vision statement for its graduate programs. These statements need not be lengthy, but they should include: (1) a set of understandable, defensible admissions and graduation standards; (2) a sequence of well defined benchmarks during the graduate experience that reflect critical skills and depth of learning; (3) a mentoring structure that facilitates progress toward these benchmarks; (4) clear expectations for faculty contributions to graduate education and mechanisms for gauging these contributions in tenure and promotion reviews; (5) standards and time limits for the award of state-funded graduate assistantships; (6) specific goals for the appropriate mix of state-funded and externally funded assistantships; (7) mechanisms for tracking the success of the program's graduates; and (8) productivity measures, such as rates of degree completion per faculty research FTE. These vision statements may evolve over time, but the initial drafts are due in the Graduate Dean's office no later than September 2005.

Action Item 56 (involve the Graduate School in the tenure and promotion process). *The Dean of the Graduate School, in cooperation with college deans, will identify and document faculty contributions to graduate education. This process will include mechanisms to recognize contributions to graduate education in the packet of materials that faculty members advance for reappointment, tenure, and promotion.*

Closely linked to UW's national stature are problems associated with graduate recruitment. Historically, graduate recruitment has been the province of department-level committees. Only a handful of departments have found these efforts satisfactory, and it is perhaps no coincidence that the most successful departments are those that have strong needs driven by external research funding. But the problem has other roots that extend beyond the recruitment of U.S. graduate students, most notably the long-standing difficulties associated with international recruitment, recently intensified by federal restrictions. International stature goes hand-in-hand with effective international recruiting.

For nearly a decade, UW's graduate stipends were so low that they hindered recruitment. While the increases in fiscal year 2003 alleviated the stipend gap to a significant extent, the university cannot afford to let the problem creep back. A long-range mechanism for increasing graduate-assistant (GA) stipends via legislative raise packages and the addition of health-care insurance to state-funded assistantships, both implemented since API, should help avoid the problems of the previous decade.

Still, salient barriers to recruitment remain. They include the nation's declining undergraduate enrollments in key disciplines, the reluctance of many U.S. students to undertake graduate study in technical fields, and the difficulties that non-native English speakers encounter as graduate assistants. They also include our own hesitancy to explore "fast-track" master's programs and other innovative configurations, as well as the persistent compartmentalization of doctoral programs at a time when many prospective students and funding agencies see interdisciplinary and international education and research as the wave of the future.

Action Item 57 (evaluate the Graduate School's function in recruitment). The Dean of the Graduate School, working with representative department heads and the Associate Vice President for Enrollment Management, will develop a plan for augmenting both department-level graduate recruitment and centrally supported activities. We will seek to implement the plan by channeling to the Graduate School an appropriate portion of the "Plus-Budget" funding allocated by the legislature or other monies to be earmarked by the President for student recruitment.

Graduate-level assessment poses equally stubborn problems, evidenced by the fact that few departments mounted meaningful responses to last decade's superficial rankings published by the National Research Council. Assessment should be continuous and should hinge on substantive factors such as the strength of applicant pools, programmatic rigor, rates of degree completion, publication of theses and dissertations, professional accomplishments of graduates, consistency of extramural funding, and breadth of involvement by the faculty. And, assessment ought to prompt change.

Action Item 58 (advance the assessment of graduate programs). Recognizing that assessment of graduate programs is the responsibility of the college deans and faculty in the affected disciplines, the Graduate Dean and the Graduate Council will develop a vision document advancing a university-wide culture for graduate-level assessment.

Graduate programs, especially doctoral programs, involve significant investments of institutional resources. It is fair to expect commensurate investment of faculty effort in reviewing the programs within a department.

Strengthening Interdisciplinarity

At a university of UW's size, few departments are large enough to cover the breadth of their disciplines *and* attain critical mass in the areas of distinction. For many units, cross-departmental and cross-college ties are the only ways to achieve and sustain scholarly depth. In an era when interdisciplinarity and international collaboration are keys to progress in many fields¹⁷, UW might reasonably regard this condition less as a constraint than as a competitive advantage.

Faculty members in the humanities and social sciences have long recognized opportunities for interdisciplinary and cross-departmental research and scholarship. The *Life Sciences Report*⁹ identifies important interdisciplinary opportunities in the biological, biomedical, and health sciences, including reproductive biology, neuroscience, ecology, and molecular and cellular life sciences at the graduate level and microbiology and general biology instruction at the undergraduate level. (See the discussion and action items in Chapter II.)

The possibilities, however, are hardly limited to the humanities, social sciences, and life sciences. Stronger interdisciplinarity makes sense in many other key areas, spanning science, engineering, and business, among others. All departments should explore interdisciplinary efforts that can invigorate their scholarship, support more vigorous graduate education, and build on the institution's areas of distinction. We welcome realistic proposals for formal and informal structures — including links to other institutions at home and abroad — that can advance these efforts.

To accommodate any significant expansion of this type, the Graduate School will need substantive resources with which to nurture innovation and interdisciplinarity.

Action Item 59 (expand the responsibility of the Graduate School). The Vice President for Academic Affairs will appoint a committee, consisting of representatives from the Graduate Council and representative faculty members from existing interdisciplinary programs, to recommend the roles and functions of a Dean of Graduate Studies with special responsibilities to facilitate cross-college graduate programs.

Action Item 60 (set aside GAs for innovative and interdisciplinary graduate programs). The Dean of the Graduate School will develop a permanent pool of state-funded graduate assistantships to serve as temporary start-up support for innovative and interdisciplinary graduate programs. To establish the pool, the dean will reserve up to 10 percent of the state-funded assistantships currently assigned to departments. The creation of the pool may be staged over several years, may include the existing “flex pool” of assistantships, and may include mechanisms to allow for the temporary allocation of GAs to new initiatives while accommodating the instructional needs of existing departments.

Planning for Research Infrastructure

The infrastructure needed for research and creative activities strains academic budgets at virtually all institutions. Growth rates in faculty start-up costs, information technology, and facility needs far outstrip the rates of increase in university budgets, not just in Wyoming but worldwide. The University Libraries are also part of UW’s research infrastructure; we discuss library-related issues in Chapter VIII.

Start-up funding is an increasingly important component in hiring packages, particularly in biological and physical sciences and engineering. In some of these disciplines, faculty start-up costs are escalating faster than the Higher Education Price Index and faster than the grant-generated indirect cost reversions required to sustain them. Other funding sources are important but limited. They include salary reversions from positions left temporarily vacant and programmatic grants through such initiatives as NSF EPSCoR and the NIH IDeA programs, BRIN/INBRE, and COBRE. To meet start-up needs without plundering the faculty replacement budget, UW must continue to pursue all external sources that are consistent with our plans, building strength in areas that these sources support.

Action Item 61 (pursue matching funds for programmatic federal grant opportunities). When feasible, the President will pursue opportunities to seek state resources to participate in programmatic federal grant opportunities that require matching funds.

At the same time, departments that expect institutional help with large faculty start-ups must develop hiring strategies that tap these external sources whenever possible and appropriate. Enhanced coordination of these major institutional, infrastructure-building awards with the Research Office and, in turn, the Office of Academic Affairs is essential because of the complexity of start-up budgeting and because of the sustained matching commitments that these programs require.

A seldom-quantified issue associated with start-up packages is their rate of return as institutional investments in research. Currently, the hiring department, the college, and the Research Office split large start-up packages, with the last two offices typically bearing most of the burden. Start-up packages in many fields are escalating faster than

the institutional budgets that support them. Most of the central funding and a large fraction of the college-level funding for large start-up packages comes from indirect cost returns generated by existing external research grants. This funding approach is sustainable only as long as the indirect cost returns from external awards match the institution's start-up needs. Rapid increases in average start-up packages threaten the viability of this approach.

Action Item 62 (track the external funding secured by faculty receiving start-up funding). The Research Office will prepare an annual report, distributed to each college dean, detailing the external funding secured by faculty members receiving start-up funding. The report will also list the facilities and administration (indirect) costs generated. In addition, the Vice President for Research will attach to every start-up package involving support from the Office of Research or institution-level external grants a set of written expectations for future external funding success and such department-level commitments as willingness to make supporting faculty hires in the near term. These expectations will supplement standard measures of research accomplishment, such as number and quality of refereed journal articles, books, and other discipline-specific activities. The expectations will help provide a comparative gauge of research productivity and rate of return on research investment at the departmental level, to help guide decisions about future start-up commitments to individual departments.

The need to maintain attractive start-up packages assumes special importance in economies like the current one. For the moment, Wyoming's economy is doing well, while other states are experiencing reductions in funding to higher education. UW thus has an opportunity to be a buyer in a buyer's market for new faculty members. For any university, such periods arise only occasionally, and they tend to be brief. Taking advantage of them is a particularly effective way to advance the institution's stature.

Renovation of research and teaching laboratories is also a pressing issue. This problem includes the repair and maintenance of instruments used in interdisciplinary research as well as the remodeling of space. If UW is to continue to build its research enterprise, a regular schedule of laboratory renovation is necessary. To some degree, renovations can be accomplished using federal grant funding. But in the aggregate, renovations depend largely on the availability of state funds. Marshalling these funds and maximizing their use will demand planning, difficult priority setting and, in many cases, creative proposals for sharing space and equipment.

V. Institutional Issues: Diversity, Internationalization, and Access

Diversity, internationalization, and access share, as a common thread, the richness and inclusiveness of the UW community. These issues have important implications for UW's recruitment practices, outreach efforts, and resource-allocation decisions. They must also play significant roles in our curriculum.

Enhancing Diversity

UW faces persistent challenges in cultivating a diverse campus community. Progress in attracting and retaining a diverse student body has been difficult and slow; recruitment and retention of a diverse faculty and staff have been even more frustrating; and much of the work of embedding diversity in the institution's curriculum and scholarship remains ahead.

It would be unfair and ungrateful to minimize past efforts or to overlook the successes we have achieved. Chief among these is broader campus recognition of the importance and nature of diversity, fostered by the efforts of many people in many segments of the university community. In addition, we have enlarged our concept of diversity beyond race, ethnicity, and gender—which have universally recognized impacts on American society—to include religious diversity, sexual orientation, disabilities, and unique backgrounds or socio-economic challenges.

Our self-appraisal has also expanded. We now look beyond simple head counts to include longitudinal assessments of student diversity, documentation of successes and failures at attracting and retaining a diverse faculty, heightened awareness of fair employment practices, review of salary structures in salary-raise processes, and enhanced showcasing of diversity in university-wide cultural and intellectual events. In addition, each year the Office of Academic Affairs dedicates a substantial portion of its support budget to strengthening diversity. The bulk of this diversity funding pool has gone toward hiring and supporting faculty members from under-represented groups, and the program has had documentable success. We intend to sustain this funding pool through the period covered by this plan.

We also intend to continue emphasizing diversity in the hiring of faculty members and academic professionals.

Action Item 63 (clarify diversity-related hiring policies). The Office of Academic Affairs will continue to emphasize fair, inclusive hiring practices and to pursue target-of-opportunity hires, where appropriate, to facilitate hiring from under-represented groups. We will also pursue policies that allow for spousal accommodation for critical positions, where deemed appropriate by the affected units.

Much of this effort involves continued coordination with the Employment Practices Office, along with a review of the institution's *Affirmative Action Plan*¹⁸, discussed below.

One of the most important indicators of UW's academic commitment to diversity has been the creation of the American Indian Studies (AIST), African-American Studies (AAST), and Chicano Studies (CHST) programs. However, despite the best of intentions, these programs do not enjoy the workforce commitments, national recognition, or student-demand characteristic of vibrant academic programs. *Moving Forward*⁷ prompted campus-wide discussion about administrative support for these programs and posed questions about alternative administrative structures. All three units responded with thoughtful plans.

Action Item 64 (strengthen AIST, AAST, and CHST). We support proposals to manage American Indian Studies, African-American Studies, and Chicano Studies as distinct academic programs, each having a program director who coordinates instructional contributions from faculty members in other academic units. We also recognize the need to stabilize and enhance other units' commitments to these programs. The Office of Academic Affairs will expand position management to include clear incentives for departments to make specific commitments to American Indian Studies, African-American Studies, and Chicano Studies.

This model of shared faculty participation, facilitated through central position management, has already proven successful for the Outreach School and the School of Environment and Natural Resources. As a mechanism for workforce allocation, the model helps embed diverse perspectives in traditional academic disciplines. And, significantly, it provides a vehicle through which traditional academic departments can use position announcements to strengthen the diversity of their faculty applicant pools.

Our commitment to diversity must also extend to the curriculum. *Moving Forward*⁷ stressed the need for greater depth and substance in diversity-related curricular and extracurricular programs. The faculty, through the Faculty Senate, must embed diversity more firmly in the University Studies Program—not through the addition of new courses, but through greater emphasis on and more consistent infusion of diverse perspectives in existing coursework. UW's curriculum already lists an array of courses having strong foci in diversity, gender equity, ethnic studies, and international perspectives, and there are many others in which a stronger focus is appropriate. However, these courses frequently suffer from ad hoc scheduling, and they often lack coordination and visibility across academic departments and programs.

Action Item 65 (highlight diversity-related courses). Consistent with suggestions in the African-American Studies Academic Plan¹⁹, the Office of Academic Affairs will work with the Office of Registration and Records to catalog and highlight courses that involve diversity and internationalization. And the office will explore the idea of designating particular semesters for orchestrated courses that focus on common themes and issues. For example, we support the concept of using one semester (or summer session) to offer coursework from a variety of disciplines on Africa, the African diaspora, and the African experience.

The ethnic and minority programs face challenges beyond those associated with administrative support and workforce coordination. UW needs to monitor student demand in courses and degree programs and maintain an appropriate level of institutional balance in decisions about curricula. Articulation among the directors of ethnic and minority programs can help promote complementary, synergistic, and more broadly encompassing curricular initiatives.

Action Item 66 (build a broad-based curriculum in diversity and internationalization). We urge the directors of the ethnic and minority studies programs to develop and deliver common and complementary coursework related to diversity. Of particular importance are introductory courses encompassing broad-based approaches to issues of diversity and internationalization spanning ethnic, minority, and disadvantaged groups. To maximize their reach, these courses should mesh with University Studies Program requirements.

Beyond the classroom, UW must pursue other opportunities to expand the commitment to diversity. The American Heritage Center has nascent ties to the Denver Black Heritage Museum, which deserve further development. Similarly, the AHC should give more prominence and accessibility to the collections described in its “Native American Historic Materials” guide, and academic departments should integrate this collection and the Native American materials held by the Art Museum and the Anthropology Museum into the curriculum where appropriate. Analogous opportunities exist in other diversity-related arenas, and similar educational connections are possible in the Art Museum and Libraries. Opportunities to promote diversity also extend to the economic-development arena. For example, the Small Business Development Center (SBDC) has received funding to work specifically on the Wind River Reservation. Greater ties between this initiative and the College of Business seem only natural.

In the long term, campus-wide success at developing and maintaining a diverse learning environment will require more than central budget commitments, administrative programs, and curricular structure. Faculty, staff, and students must also embrace diversity.

Action Item 67 (involve the Faculty Senate in promoting and retaining a diverse faculty). We invite the Faculty Senate to develop programs and initiatives that help promote the retention of a diverse faculty; foster a welcoming and respectful learning environment in classrooms, laboratories, and studios; encourage meaningful and sustained embedding of diversity in the curriculum; and promote fairness, civility, and dignity in the university workplace.

We also challenge the Associated Students of the University of Wyoming (ASUW) to contemplate a more substantive role in advocating and nurturing diversity—as well as internationalization and access—as core student values.

Finally, to be effective, the institution's commitment to diversity must include a receptive educational and community environment for students from diverse backgrounds. We challenge the university's support-service divisions to make commitments to new policies and resource-allocation mechanisms comparable to those adopted in this plan. We especially encourage efforts at pursuing diversity in support staff across all employment divisions at UW. In a related vein, we have some concern that the institution's *Affirmative Action Plan*¹⁸, mandated by federal law and largely unchanged since its formulation in the 1980s, reflects an overcautious approach to the quantification and facilitation of diverse hiring.

Action Item 68 (review and enhance UW's Affirmative Action Plan). The *Employment Practices Office* will review the university's *Affirmative Action Plan*¹⁸, both to identify unintended barriers to diverse hiring and to formulate clearer and more flexible approaches to the use of target-of-opportunity, business-necessity, and spousal-accommodation exceptions to the advertising policy.

Among the other initiatives worth considering in support-service divisions are:

- new efforts to retain a diverse student body, including the establishment of residence halls with appropriate diversity-related themes, and the support and development of appropriate student organizations;
- scholarship and financial-aid strategies that broaden the nature and composition of the student body, including more need-based scholarships and those that attract community-college transfers; and
- state and regional efforts to increase the number of minority students who are ready to enter college.

UW must avoid concentrating, and therefore isolating, responsibility for diversity. These goals, and the task of addressing them through academic planning, belong to all disciplines, all colleges, all levels of administration, and all support units.

Expanding Internationalization

The challenges of internationalization are similar in character to those of diversity: they include the recruitment of an international faculty and student body and the inclusion of international perspectives in teaching, research, and service. Similar

corrective measures may be in order, but there are additional barriers. Only within the past decade has the UW community broadly embraced international recruitment. We struggle with our geography, the size and apparent homogeneity of the surrounding community, the lack of opportunities to study English as a second language (ESL), and other problems. To overcome these barriers, we must solidify the institution's commitment to recruit and retain international students and faculty members.

Action Item 69 (develop institution-level strategies for recruiting international students). The Dean of the Graduate School, the Associate Vice President for Enrollment Management, and the International Education Steering Committee will develop an institution-level strategic plan for the recruitment of international undergraduate and graduate students. We invite the Associate Vice President for Enrollment Management to lead this project.

In its commitment to internationalization, the institution faces special hurdles in light of recent federal rules governing immigration. New federal immigration policies, the U.S. Patriot Act, and the Student Exchange Visitor Information System (SEVIS) student database system have added complexity to our efforts. International students and faculty require more help and intervention than ever before. To date, our efforts have been administratively scattered and inadequate.

Action Item 70 (consider co-locating programs and services related to international affairs). Academic Affairs will consider co-locating the activities and services currently associated with International Programs, International Student Services, and the ESL Program.

External and internal constraints notwithstanding, UW's ability to attract undergraduates, graduate students, and faculty members from around the world is critical to our efforts to sustain a world-class scholarly community.

Internationalization cuts two ways. Certainly, we must aggressively recruit and enroll an internationally diverse student body. This effort in large part falls to the Office of Admissions and the enrollment management teams, as well as the Graduate School and, for graduate programs, many academic departments. But there are also measures that can make UW a more attractive environment for international students who wish to study in the U.S. yet have not become proficient enough in English to do so. The institution is currently exploring a plan to outsource pre-admission English-language services for non-native speakers, with the aim of building higher international student enrollments through enhancing UW's ESL capacities and making UW more attractive to international students and their families.

Related to this effort is the need to examine the institution's English training for foreign graduate assistants. The existing program has created invaluable opportunities for international GAs and has had tremendous, positive effects on UW's teaching culture. But the price of program delivery is escalating far more rapidly than the

institution's other instructional costs, and these increases threaten our ability to offer teaching opportunities to those for whom English is not their primary language.

Action Item 71 (enhance instruction in English as a second language). The Office of Academic Affairs will coordinate several efforts to enhance English instruction for non-native English-speaking students. One such effort will be an exploration of third-party agreements to deliver pre-admission English instruction at UW. In addition, the Dean of the Graduate School, the International Education Steering Committee, and the English Department will review and make recommendations regarding effective structures, realistic budgets, and appropriate delivery modes for English instruction and related services aimed at international student recruitment and the preparation of graduate students for instructional duties.

As with diversity, UW's curriculum must reflect the institution's commitment to internationalization. UW still faces curricular tension in counterbalancing the distinctive culture of the Mountain West with the rich array of cultures that characterize both the global community of scholars and the internationally diverse workforce our students will enter. In particular, we continue to lag behind comparable institutions in the breadth of international programming and in the proportion of students who graduate with international experience. UW has a small number of formal connections to universities in other countries, such as Saratov State University in Russia and institutions in Guatemala, Australia, Germany, France, the United Kingdom, and Spain, and we have fledgling ties to institutions in China, South Africa, and other countries. There is also strong student interest in foreign-language courses and growing interest in less commonly taught languages of critical importance to the nation and its security. Building on these assets, we must strengthen opportunities for international experiences by cultivating faculty involvement, administrative support, and formal recognition in the USP of the value of learning in an international setting.

As a start, the institution must provide its students—especially those who are U.S. citizens—with enhanced opportunities to travel and study abroad. Some of the most immediate opportunities to expand student involvement in study abroad are available in the summer and in academic programs that have clear international emphases.

Action Item 72 (support summer opportunities for students to study, work, and travel abroad). The Office of Academic Affairs, in cooperation with the summer-session coordinator and the academic deans, will support coursework for UW students that provides opportunities to study, work, and travel abroad. Significant funding for innovative international courses will come from the summer tuition revenues managed centrally in Academic Affairs. The goal will be to double the number of students with international experiences in the next five years.

Increasing Access

As a land-grant university and as Wyoming's only four-year institution of higher education, UW has an obligation to serve people from all walks of life. Although our cost of attendance is lower than the costs at most comparable institutions, a UW education is still out of reach for many. This problem calls for solutions on a number of fronts: the Outreach School, articulation with the community colleges, need-based financial aid, programs for high-school students, and accessibility for disabled students. Many of these efforts extend beyond the academic arena and into the purview of support-service divisions.

With support from the institution and colleges, the Outreach School has helped overcome many barriers faced by site-bound and nontraditional students. Recent enrollment trends, together with the effects that a per-credit tuition structure will have in encouraging part-time study through the Outreach School, suggest that the demand for outreach instruction will increase, at least in the near term. This observation is particularly important in planning for online courses. Systematic accommodation of these changes will require sustainable links between the budget for outreach instruction and the budget for central position management, as well as appropriate management agreements between the Outreach School and academic colleges. (See Chapter IX for additional outreach planning.)

Action Item 73 (offer permanent support for faculty outreach positions). The Outreach School will continue to offer permanent fiscal support, where appropriate, for faculty position allocations in which academic departments absorb well-defined commitments to outreach instruction.

Sound academic connections between UW and the state's community colleges are another important key to broad access. Because of its geographic and demographic scale, Wyoming is well poised to make these connections seamless. Critical work in this task occurs not at the level of administration but at the level of academic disciplines, where the bulk of the curriculum resides. As discussed in Chapter III, many academic departments already have strong traditions of articulation with Wyoming's community colleges. We urge other departments to follow suit, and we intend to continue supporting effective articulation and collaboration at all levels of the institution.

For access to become a reality, UW's financial-aid strategies need reshaping. Broad access will require augmenting UW's current scholarship packages, now almost exclusively merit-based, to include far more need-based scholarships. While there has been exhaustive examination of this issue, the institution has gained little traction in effecting change. The effort should include appropriate benchmarking; clearly articulated, measurable objectives; and more effective communication between academic departments and the units involved in administering financial aid. This matter deserves attention in the next round of support-service planning.

The institution's commitment to first-generation college students and talented high-school prospects deserves renewed attention. We must demystify the college experience through summer residential programs and other forms of outreach that can help students pursue higher education at UW. Chapter III discusses these ideas further.

Accessibility of the curriculum also requires sustained attention to the physical accessibility of UW's learning environments; curricular commitments to disability-related issues, for example through the Wyoming INstitute for Disabilities (WIND); greater opportunities for financial aid to part-time students; and institutional efforts to accommodate the special constraints faced by nontraditional and physically challenged students.

Action Item 74 (support the graduate-level disability certificate and minor in WIND). The Office of Academic Affairs will support the graduate-level disability certificate and minor being developed by WIND. The Deans of Health Science and Education, in concert with the director of WIND, will formulate guidelines addressing governance and funding structures for the delivery of collaborative initiatives and programs.

VI. Institutional Issues: Structure of the Curriculum

The structure of UW's curriculum remains a challenge, in part because knowledge evolves rapidly. But among the additional forces driving curricular evolution is the never-ending need to bring the existing curriculum into better alignment with disciplinary and institutional aspirations. The overarching principles seem clear enough: curricular structure should ultimately be driven by carefully crafted learning goals, sustained coordination among the faculty, and a commitment to student engagement and measurable academic success. Ideally, the curriculum should capitalize on the institution's emphasis on interdisciplinarity and the intellectual connections among disciplines here and abroad.

Against this philosophic backdrop stands a more contentious proviso: the curriculum must also be reasonable in scope and extent. We intend to focus on five issues germane to this goal: (1) the scope of undergraduate degree requirements, (2) the University Studies Program, (3) the breadth and complexity of the curriculum, (4) criteria for evaluating new program proposals, and (5) the review processes by which we assess both undergraduate and graduate programs. All of these factors influence the nature and delivery of degree programs, the length of time required to complete them, the instruction-related pressures on personnel budgets, and the institution's self-imposed strains on faculty workloads.

Reviewing Undergraduate Requirements

Focused undergraduates who pursue full-time study should be able to finish the baccalaureate in four years. One of the last action items undertaken in the *University of Wyoming Academic Plan I 1999-2004*² was to review the number of credits required to complete the baccalaureate, with a target ceiling of 128. Nearly all programs now comply with this limit; indeed, many of UW's most rigorous departments offer high-caliber bachelor's degrees that require 120 credits.

A few programs in the College of Education are exceptions, owing partly to accreditation and certification constraints. These programs warrant continued attention. We recognize the necessity of maintaining appropriate certifications and accreditations. Nevertheless, in framing alternative approaches, it may be helpful to

observe that in many disciplines it is possible to earn a bachelor's degree *and* a master's degree with a total of 150 credits—only slightly more than is now required for the dual-degree program in English and English Secondary Education. Chapter II proposes an action item to consider alternatives.

Degree requirements are not the most salient factors in UW's time-to-degree statistics. Even in majors where it is possible to finish in 128 or fewer credits, most students graduate with significantly larger credit totals. The reasons are varied. Many students enroll at UW with little or no idea of what they want to study. Many complete fewer than 15 credits per semester, frequently dropping or withdrawing from courses. Most students change majors several times; the average is almost three times per student. Many students pursue minors, second majors, and sometimes third majors. Many work full- or part-time jobs. All of these factors extend the time to completion and stretch the undergraduate career over more than four years. Although UW's six-year graduation rates continue to rise, we have a responsibility to explore additional strategies for reducing the average time to degree. To do so, we must understand which factors are most influential.

Action Item 75 (analyze the time taken to complete degrees). The Enrollment Management Council will analyze the relationship between time taken to complete the baccalaureate and other factors, including the number of credits required by the major, course-completion behavior, discipline-specific patterns, age and family status, high-school preparedness, financial aid, and other issues as appropriate.

For students transferring into baccalaureate programs from community colleges, there may be other factors affecting time to degree, including the level of seamlessness between the community-college curricula and UW's requirements. To minimize this problem, the university maintains carefully crafted articulation agreements with all seven of Wyoming's community colleges. To ensure that these agreements remain current, UW will continue to host the annual Wyoming Academic Deans Conference and to support a statewide course catalog and common course-numbering system.

Improving the University Studies Program

Implementation of USP 2003 is underway, under the leadership of the faculty USP Committee. Continued review of courses approved for the various categories of USP is essential if the program is to meet its learning goals. However, USP is never quite finished. The Faculty Senate resolution that defined USP 2003 includes three recommendations yet to be fulfilled, all tied to a strengthened curriculum in communication.

Action Item 76 (design and implement a writing placement system). The English Department and the Writing Center will design and implement a writing placement system for the USP writing course. The system should reflect current best practices in writing-program administration.

Action Item 77 (support faculty interested in teaching oral communication courses). The Department of Communication and Journalism, through its Oral Communications Lab and the ECTL, will offer development opportunities for faculty members interested in teaching oral communication courses. The department will design student placement procedures for those courses and recommend assessment techniques to assure that this newly established USP requirement addresses appropriate learning goals.

Another issue inextricably linked to communication skills is information literacy. Students now have an enormous array of information resources available in the library, on the Internet, in online databases, and in other media. Using these resources effectively and in concert requires sophistication, resourcefulness, and critical thinking. In the Information Age, teaching information literacy can no longer be a haphazard enterprise; it must be thoughtfully embedded in the curriculum.

Action Item 78 (integrate information literacy requirement into the USP). The Dean of the Libraries, working with the faculty USP Committee, will develop a plan for integrating the basic information literacy (L) requirement into a broader set of lower-division courses. As part of its assessment plan, each academic department will define discipline-specific elements of information literacy and identify courses and strategies for incorporating these elements.

Two other content-related issues in USP 2003 require attention: technical and scientific literacy and cultural studies. Ensuring technical and scientific literacy for non-science majors is a long-standing challenge in higher education. The newly revised USP 2003 affords new opportunities to address this challenge through a small set of carefully designed integrated science (S) courses.

Action Item 79 (develop cross-disciplinary physical and earth-science courses). Working with the faculty USP Committee, the Deans of Arts and Sciences, Agriculture and Engineering will investigate the development of a cross-disciplinary, integrated science (S) course by the physical- and earth-science faculty, following the (S) course model from the biological sciences.

USP 2003 also allows for integrated or interdisciplinary courses that span the three traditional categories of cultural-context disciplines: humanities, social and behavioral sciences, and fine arts.

Action Item 80 (develop cross-disciplinary cultural context courses). Working with the faculty USP Committee, the academic deans will explore with appropriate departments the development and instruction of a cross-disciplinary, integrated cultural context (C) course following the model developed by the USP Committee. The USP Committee will also continue to support study abroad and exchange as meeting (G) and (C) requirements.

The USP Committee's May 2003 decision to accept study abroad or international internship "in a country in which university instruction and daily business are conducted in a language other than English" as an acceptable alternative to CH, CS, CA, D, and G requirements represents an innovative solution to perceived problems associated with study abroad and time to degree. This decision should prove especially useful to students in the professional colleges. Without compromising the intent of USP requirements, this approach rewards students for international experiences by allowing the fulfillment of the requirements through alternative means.

Beyond these initiatives, we urge restraint in the development of new general education courses, both to keep USP 2003 from becoming institutionally burdensome and to keep the goals of the program clear and assessable. To ensure that USP 2003 is responsive to student needs but remains circumscribed in its impacts on budgets and workloads, we propose incorporating a monitoring mechanism into the institution-level assessment of the program.

Action Item 81 (monitor the adequacy and curricular impacts of the newly revised USP). Each year, the Office of Academic Affairs will report to the academic deans on progress in implementing USP 2003. The report will include a summary of actions taken and recommendations made by the USP faculty committee, an identification of the USP categories that require additional courses to meet student demand, a list of courses that no longer meet the program's requirements, and an accounting of net courses added or deleted in response to these actions.

As indicated earlier, evaluation of USP for currency and effectiveness is a never-ending process. We suggest two broad conceptual areas for future discussion: civic engagement and intellectual bridges between the sciences and humanities.

Civic engagement and its relation to a healthy democracy figure in many national conversations about higher education. Recent survey results document a worrisome lack of community involvement and civic engagement among UW students. The topic arouses disparate points of view, but among the many strategies advocated is service learning, which entails rigorous, academically focused service opportunities embedded in credit coursework. We welcome further exploration of this idea.

Action Item 82 (pilot courses to enhance civic engagement). We invite each college to identify at least one existing course for modification as a possible pilot project to demonstrate the principles, logistics, learning goals, and outcomes of service learning. Where possible such courses should be anchored in an existing learning community, FIG, or capstone experience. The Office of Academic Affairs will establish a clearinghouse for the dissemination of project designs, assessment methods, and outcomes for these projects, in preparation for broader discussions about strategies to enhance civic engagement in the USP or in department-level curricula.

Many scientific and technological fields are in the midst of a renaissance. Astounding discoveries and advances have become almost commonplace, and successful researchers enjoy generous funding and recognition. In contrast, the arts, humanities, and social sciences often seem to command less attention and recognition than they deserve. This apparent imbalance notwithstanding, embedded within scientific and technological changes lie some of humanity's most difficult challenges and most encouraging prospects. An essential part of contemporary education is learning about the relationships among social traditions, political systems, and human values and the willingness to analyze how science and technology influence them. To meet this need, some universities have developed programs to bridge the sciences and humanities. These programs encourage discourse among diverse disciplines, provoking students to appreciate the complex ways in which science, technology, and society interact.

Action Item 83 (promote bridges between the sciences and the humanities).

The Office of Academic Affairs will seek proposals from the academic deans that encourage intellectual and academic bridges between the sciences and the humanities. Cross-departmental appointments of senior faculty and interdisciplinary team-taught courses are two examples. The USP Committee will weigh a possible role for coursework of this type in USP by AY 2007-08.

Analyzing Curricular Breadth and Complexity

Sound educational programs require continual attention to course content and curricular structure. It is a core responsibility of the faculty to revise courses and to build coherent curricula from them. To keep curricular breadth and complexity manageable, the faculty must also control the array of distinct programs offered, mount a sustainable number of courses within those programs, and avoid unnecessarily complex course requirements.

Decisions to add and delete academic programs are a routine part of curricular evolution. In the last five years, UW has eliminated 27 degree programs in six different colleges. In the same period, we have added 11 degree programs in six different colleges and schools. Only a small fraction of these changes garnered much attention, and there has been little correlation between the level of excitement generated and the long-term impact on the institution or the state. In an institution that offers over 160 distinct degree programs in over 65 different academic units, failure to balance innovative program development with appropriate program elimination leads to a diffuse and incoherent curriculum, excessive faculty workloads, and unproductive strain on academic budgets.

With the concurrence of the affiliated academic departments and colleges, several degree programs are slated for elimination.

Action Item 84 (eliminate selected bachelor's and master's degrees). The Office of Academic Affairs will recommend that the Board of Trustees eliminate the B.S. (but not the B.A.) degree in history, the B.S. degree in recreation and park

administration, the B.S. degree in health education, the M.S. degree in e.Business, and the minor in information management, as recommended in the respective college plans.

A second component of curricular breadth and complexity is the sheer number of different courses offered. This issue has even more direct implications for faculty workloads and levels of academic support, including department budgets and library holdings. Course additions, even when well conceived, rarely garner increased resources. And inadequately conceived, under-enrolled, and infrequently offered courses are unaffordable luxuries. Every academic unit has a compelling self-interest in carefully considering the array of courses and scope of the programs it delivers. We need not jeopardize quality in the process: many institutions have attained undisputed excellence with curricula much more circumscribed than UW's.

Action Item 85 (discontinue unused courses that lack justification). Every three years, academic department heads and college deans will review all course listings, discontinuing unused courses that lack ample college or department justification.

The final element in controlling curricular breadth and complexity is the manner in which courses are woven into degree requirements. Among the signs of an inadequately examined curriculum are opaque chains of prerequisite courses and hidden bottlenecks created by courses that are required but infrequently offered. Proper attention to well-defined learning goals, regular curricular review, and thoughtful assessment of outcomes are indispensable tools in thinning unnecessary curricular thicket.

Action Item 86 (identify hidden credit requirements for upper-division courses). The Office of Academic Affairs, with support from the Office of Institutional Analysis, will review each baccalaureate program to quantify the extent to which undergraduate programs embed hidden credit requirements. Of specific interest are upper-division requirements that carry lower-level course prerequisites in a fashion that adds unadvertised credits to the total required for degree completion.

Evaluating Interdisciplinary Program Proposals

Related to the issue of curricular breadth is the question of how best to evaluate proposals for new interdisciplinary programs. The *Life Sciences Report*⁹ outlines a distinctive model for interdisciplinarity in areas that bridge the interests of several established departments. The model involves the establishment of interdisciplinary focus areas having four attributes: (1) the intellectual content is important and topical; (2) the research crosses traditional departmental boundaries; (3) the activity requires sustainable interdepartmental or cross-college resource commitments; and (4) opportunities for synergy and ties with other areas are critical to the success of the area.

While some of the most compelling current cases for new interdisciplinary focus areas exist in the life sciences, the criteria can apply equally well to other constellations of disciplines. Those who develop interdisciplinary proposals must consider these criteria in evaluating the merits of their own efforts. Additionally, these criteria require focus areas that are intellectually vital, enjoy support from department heads and deans, and are small enough in number to allow appropriate concentrations of talent and resources.

The comment periods for the *Moving Forward*⁷ documents produced no shortage of proposals for interdisciplinary programs. Proposals have ranged in scale from multi-college, multi-department degree programs grounded in historic institutional strengths to loose alliances of faculty with research or scholarly interests that, while novel and intriguing, received no recognition in any department plan. To receive consideration, any proposal for interdisciplinary focus *must* have involved the affected department heads and deans and *must* be integrated into the department-college-level plans. We have used the following six criteria in the evaluation of all proposals:

- 1. Scholarly and educational foundation.** UW must have significant existing strength in the area; the establishment of a more formal structure must carry strong prospects for increased national and international prominence; and the proposal must be substantively linked to enhanced educational opportunities. It is unlikely that the university will develop recognized strength in areas for which there is neither a history of faculty success nor evidence of sustainable interest by department and college leaders.
- 2. Hiring plans.** There must be a realistic plan for integrating the interdisciplinary focus group into the hiring plans of the affected departments and colleges. While net additions to faculty size may be possible in a few instances, most units can cultivate strength in new areas chiefly by redirecting faculty positions previously associated with other purposes.
- 3. Degree programs.** If the interdisciplinary focus area involves reconfiguration of existing degree programs or proposals for new ones, the proposal must contain a prospectus for how to accomplish these changes. In particular, there must be explicit plans to accommodate any new courses required and an identification of specific activities from which the required instructional resources and graduate assistantships might be redirected.
- 4. Administrative structures.** The proposal must address any administrative issues that arise. Who will manage the interdisciplinary focus area? To what extent will this oversight require diversion of teaching and research energy into administration? How will the interdisciplinary focus area affect tenure and promotion procedures at the department and college levels?
- 5. Facilities.** Can the interdisciplinary focus area succeed within the facilities currently available? If not, are affected department heads and deans willing to reallocate existing facilities to the area? Or will the acquisition of new facilities be essential to the area's success?

- 6. Student Demand.** The proposal should also quantify student demand, both now and in the future. It should provide reasonable estimates of the expected number of graduates in five- and ten-year increments. This projection will serve as one benchmark for future program evaluation.

We intend to use these criteria to evaluate all future proposals for new programs.

As discussed in Chapter II, we propose adding a Ph.D. program in ecology (Colleges of Arts and Sciences and Agriculture), an M.F.A. degree in creative writing (College of Arts and Sciences, Department of English), and an interdisciplinary B.S. degree in earth-systems science (Colleges of Arts and Sciences, Agriculture, and Engineering).

Action Item 87 (add an interdisciplinary Ph.D. in ecology, an M.F.A. in creative writing, and a B.S. in earth-systems science). The Office of Academic Affairs will recommend the addition of an interdisciplinary Ph.D. program in ecology, an M.F.A. program in creative writing, and the interdisciplinary B.S. in earth systems science.

Other proposals that may merit consideration but require documented analysis, with detailed reference to the criteria listed above, include an interdisciplinary doctoral program in molecular and cellular life science (Colleges of Agriculture, Arts and Sciences, and Health Sciences) and a master's degree in public health (College of Health Sciences).

In the case of interdisciplinary and cross-college undergraduate programs, the mechanisms for vetting proposals must accommodate a scope that extends beyond individual colleges.

Action Item 88 (coordinate cross-college undergraduate interdisciplinary studies). The Vice President for Academic Affairs will appoint an advisory committee of representatives from each undergraduate college, along with representative faculty members from existing interdisciplinary programs, to assist an Associate Vice President for Academic Affairs with oversight and coordination of cross-college undergraduate interdisciplinary programs. Intra-college interdisciplinary programs will continue to be managed by their respective college deans.

Reviewing Programs

Scrutiny of curricular quality is properly a continuous activity, not a sporadic one. It requires consideration of the ways in which the USP meshes with college-level requirements, the embedding of USP requirements in the major, the role of elective courses, and the linking of prerequisite courses that occur at the department level.

Throughout most of the 1990s, program reviews, coordinated through the Office of Academic Affairs and based upon parameters described in UniReg 406²⁰, were commonplace. The reviews were extensive, costly, and time-consuming, yet they produced little discernible impact on academic programs beyond time commitments, paper consumption and photocopying bills. Well intentioned review teams often

advanced fiscally ambitious recommendations that held little probability for implementation.

In 1999, two sets of events began to change UW's program-review culture. First, academic planning largely supplanted program reviews, except when they made sense in concert with scheduled accreditation visits. Since 1999, the result has been occasional program review, structured to build on accreditation-driven self-studies. Second, the addition of assessment plans now adds yet another layer of partial redundancy to the pressures to self-analyze, assess, and improve.

For faculty, staff, and administrators to stay focused on teaching, research, and service, we must avoid the back- and spirit-breaking burdens of multiple, overlapping, and redundant cycles of review, self-study, and assessment, concentrating instead on a lean but effective array of mechanisms for improvement. The self-examination that we do undertake must be streamlined, and it must result in forward-looking progress in the central aspects of UW's mission. Not to be overlooked, however, is the benefit of external review. Support for the strategic use of external peer evaluators should be part of any comprehensive program-review strategy. Many of the most productive components of the old program-review regimen are now embedded into academic planning. We propose formally merging program review with academic planning.

Action Item 89 (integrate program review with academic planning). The Office of Academic Affairs will formally integrate program review into academic planning. The planning-process document developed for the 2000 NCA accreditation study¹³ will form the basis for this integration. At the same time, we will charge the Faculty Senate with developing recommendations regarding the use of external peer evaluators in the academic planning process.

VII. Institutional Issues: Faculty Development and Program Planning

Great universities are built with great faculty. It is little wonder that the most difficult issues that many academic units face are the finite budgets for faculty positions and the tensions created by efforts to initiate new programs and enhance existing ones. Budgeting for faculty positions, workforce governance, and program planning at the college level are inextricably linked.

Budgeting for Faculty Positions

The constraints on faculty and academic professional positions are hardly new, but central position management (CPM) has lent the issue greater definition, especially in colleges where starting salaries continue to grow much faster than UW's budget. The foreseeable influx of new resources is not likely to lift these constraints in the near term. Therefore every academic unit faces two important questions. First, what areas of distinction are realistic to pursue within budget constraints for faculty positions? Second, how can we maximize the use of human resources to meet core educational responsibilities?

Among the tools available to assure the optimal use of faculty resources are regular curricular review and modification, increased commitments to interdisciplinary and cross-college endeavors, and steadfast adherence to carefully circumscribed areas of distinction. And when new resources do become available, the administration has an obligation to channel them toward academics in proportion to their centrality to the institution.

The *2002 Central Position Management (CPM) Report*²¹ provides a useful perspective on academic budgeting. As its concluding discussion notes, it is unlikely that UW will receive enough additional resources to fund new initiatives and, at the same time, meet all existing commitments as currently configured. The academic units that fare best in the next few years will be those that find overlapping and synergistic ways, wherever possible, to align instructional commitments with efforts to address new academic directions and ongoing institutional priorities.

Colleges and departments have confronted this challenge in their academic plans. Merely adding programs to UW's existing curriculum — or redirecting resources away from core educational functions of teaching, research and creative activity — will dissipate our limited resources, exacerbate budgetary frustrations, and thwart the institution's best efforts to budget for an adequate faculty. Further complicating the problem is the often unpredictable nature of faculty resignations and retirements, the pressures imposed by the university's service mission, and the expectations of external constituencies, including funding agencies. We face these issues with or without CPM; the real challenge is thoughtfully and strategically to balance competing claims on UW's faculty resources.

For the links between CPM and academic planning to be effective, departments and colleges must continue to articulate their connection to institutional areas of distinction *and* refer explicitly to these areas and the progress made in advancing them when formulating position requests. The allocations must also recognize units that have made consistent contributions to major institutional goals.

Action Item 90 (link position requests to institutional areas of distinction and academic planning goals). In future CPM requests, colleges must explicitly link position requests to institutional areas of distinction or to goals identified in their academic plans.

Perhaps of equal importance to the sheer number of faculty positions is the distribution of the instructional workforce across categories of faculty. Competitive tenure-track faculty salaries have risen faster than UW's budget capacity, and in response many academic units have adapted their curricula, increased teaching loads, and engineered ways to deliver core commitments with fewer tenured or tenure-track faculty. One method used to increase instructional capacity has been to rely more heavily on academic professional lecturers, who normally carry greater teaching commitments with more limited expectations for scholarship or creative activity. Two issues related to academic professionals deserve some attention during the upcoming planning period: (1) the appropriate balance between faculty and academic professionals, and (2) the structure of the academic-professional employment category.

The relative balance between tenure-track faculty and academic professionals has implications for the nature of the instructional workforce, especially at a research university. Workforce quality is hardly at issue: lecturers are among UW's most committed and accomplished teachers. The question is whether the current balance reflects a consistent, institution-wide instructional philosophy or ad hoc, year-by-year budgetary constraints. Equally important is the balance between full- and part-time faculty and their distribution across departments, programs, and colleges.

Action Item 91 (study the instructional workforce distribution). The Office of Academic Affairs will analyze the distribution and relative percentages of different categories of faculty and academic professionals at all levels (university-wide, college-wide, and within departments and programs). Part of this effort will involve

benchmarking the current workforce distribution, documenting the extent to which degree programs rely on temporary academic professional lecturers to deliver the curriculum, comparing the profile of UW's instructional workforce to appropriate comparators, and considering long-term rebalancing options. This analysis will be part of the information packet distributed for each year's CPM process.

The structure of the academic-professional job category also deserves some fine-tuning. The category came into existence in 1992, as a mechanism to provide more stable career opportunities for non-tenure-track teachers and researchers. As configured in UniReg 408²⁰, the category includes lecturers, research scientists, extension educators, and postdoctoral research associates. The UniReg also defines promotion ladders, an extended-term track, and the elements of academic-professional job descriptions. However, in several respects the UniReg lacks internal consistency, appropriate parallelism among categories, peer-review structures analogous to those in place for tenure-track faculty, and clear promotion criteria.

Action Item 92 (draft a revision of UniReg 408, which governs academic professionals). The Office of Academic Affairs, in cooperation with appropriate college deans' offices, will present a draft revision of UniReg 408²⁰, which governs academic professionals. The purpose of the revision will be to ensure appropriate hiring procedures, clear procedures for probationary reviews, appropriate parallelism in promotion ladders, and adequate opportunities for peer review in the processes used for reappointment, extended-term, and promotion decisions. The draft will be subject to review by the University Tenure and Promotion Committee, college deans, and appropriate groups of academic professionals.

Faculty positions funded by endowments offer special opportunities for academic growth, but they also pose special problems. Until recently, UW had very few endowed or partially endowed faculty positions. The Campaign for Distinction²² has successfully increased the size of the university's endowment, including the number of endowments devoted to faculty hiring. As this category has grown, so has our awareness of peculiar issues affecting the management and use of endowment-generated income to fund faculty salaries. Recent downturns in the investment market have lent even greater prominence to such issues as expendable-income payout policies, trust-fund implementation timelines, funding salary and benefit increases after the position is filled, and intergenerational equity.

As the institution's fundraising sophistication increases, so too does the need to manage the myriad details of endowment management. Of particular concern are the complexities associated with tenured faculty positions supported by a mix of private and public funds. In an adverse investment climate, the salary needs of endowed faculty positions can encroach heavily on state funding, thereby reducing the budgets available for other faculty hiring. More comprehensive policies are needed if UW is to manage endowed and partially endowed faculty positions in a fashion that truly advances the university's mission.

Action Item 93 (develop revised policies to manage endowed or partially endowed faculty positions). The Office of Academic Affairs, in concert with the UW Foundation, will develop and implement a set of revised policies regarding the management of endowed or partially endowed faculty positions. These policies should take into account the lead time needed to generate expendable income for endowment-funded salaries, the need for smoothly varying payout practices in adverse investment climates, safety-net funding for accounts generating too little expendable income for the salary required, and mechanisms for accommodating salary raises and fringe benefits.

Governing the Academic Workforce

The intricacies of faculty-position budgeting are compounded by the complex tasks associated with governance of the instructional workforce. Although academia thrives on a management model that most enterprises would regard as laissez-faire, any institution requires a common core of workforce principles. Among the issues requiring attention over the next five years are the consistency of faculty job descriptions, the utility of UW's post-tenure review regulation, and fine-tuning of the processes for faculty reappointment, tenure, and promotion.

Inconsistencies in faculty job descriptions, resulting from different de facto metrics at the college level, serve only to confound attempts at rational resource allocation. At present, comparable percentages of effort reported in faculty job descriptions do not always correspond to comparable levels of research or creative activity across colleges. Similar discrepancies exist in teaching, service, and administrative effort. Greater consistency in job-description metrics, together with more consistent use of these metrics in the allocation of faculty resources, would help assure greater equity in performance evaluation as well as greater alignment between resources and needs.

Action Item 94 (standardize the metrics for faculty job descriptions). The Office of Academic Affairs will assure standard job-description metrics for teaching, research, advising, service, extension, and administration. Fundamental to this effort will be three premises. First, each three-credit course taught represents 25 percent of a full-time workload for the semester. Second, to encourage interdisciplinary instruction, we must recognize and provide incentives for faculty who participate in creative and non-traditional course delivery, such as team teaching, small groups, and independent study. Third, systems for gauging faculty performance should allow for reasonable flexibility and should avoid false precision and over-reliance on attempts to quantify inherently complex and multidimensional professional commitments.

Quality of performance is just as important as the distribution of effort across different dimensions of the job description. The overwhelming majority of UW's tenured faculty members are highly accomplished teachers and scholars with clear dedication to their disciplines and the institution's mission. Still, occasional fluctuations

in individuals' career commitments occur in any workforce of UW's size. UW's post-tenure review regulation—UniReg 808²⁰, adopted in 1998—provides for remedies in these cases, starting with opportunities to redefine job descriptions and to undertake performance-improvement programs. While primarily remedial in approach, this UniReg also defines a process for faculty dismissal in persistent cases.

To date, the post-tenure review regulation has rarely been invoked, except as psychological leverage in a small number of performance appraisals. After five years, it is appropriate to review the regulation's utility.

Action Item 95 (evaluate UniReg 808 on post-tenure review). The Faculty Senate will review and evaluate UniReg 808²⁰, which governs post-tenure review. Of specific interest are possible modifications or revisions that might strengthen the mechanisms and opportunities for performance improvement.

UW's tenure-review process also deserves some fine-tuning. The structure of the process is fundamentally sound: it involves several levels of review and evaluation by disciplinary experts, faculty peers, and academic leaders, iterated over a lengthy probationary period. However, difficulties can arise when small units evaluate faculty colleagues for reappointment, tenure, or promotion. In these cases, conflicts of interest, decisions not to allow untenured faculty to vote, leaves without pay, and sabbatical leaves can effectively reduce the number of voting faculty members at the disciplinary level to a handful. With so few faculty members making such significant long-term programmatic recommendations, the decisions may be unacceptably vulnerable to procedural anomalies and inconsistent standards.

Action Item 96 (review the minimum number of faculty needed for tenure and promotion recommendations). The University Tenure and Promotion Committee will review policies regarding the minimum number of faculty needed to cast department-level votes in reappointment, tenure, and promotion cases. The committee will formulate suggestions regarding procedures to follow when there are too few voting faculty members to meet the minimum. The Faculty Senate and appropriate administrators will review and comment upon any proposed revisions to UniReg 803²⁰.

Planning at the College Level

During the summer of 2003, UW's academic deans, department heads, and program directors developed unit-specific, focused plans using the *Moving Forward*⁷ process as a guide. These unit plans, too voluminous to include in this document, are available on the World Wide Web. Included below are executive summaries of the plans developed by each academic college (Agriculture, Arts and Sciences, Business, Education, Engineering, Health Sciences, Law). These summaries provide overviews of where the academic deans will be leading their organizations in the next five years. Each executive summary includes the organization's mission, three to five of the college's primary goals in this planning cycle, and several key action items designed to

help reach the goals. Links to web sites containing the complete text of each college plan can be found at http://www.uwyo.edu/acadaffairs/Acad_Plan_Implementation/CollegeplansF.htm.

College of Agriculture

The mission of the College of Agriculture is to be the proactive leader in education and scholarship in support of healthy, sustainable systems for Wyoming's agriculture, environment and natural resources, rural communities, and the related life sciences. The vision of the college is to serve people by applying the land-grant principles of teaching, research, and extension/outreach service.

Key goals and actions include:

Develop areas of distinction.

- Align faculty hiring and resource allocations with four general areas of distinction: natural resource management, sustainable agricultural systems, rural economics and communities, and basic and applied life sciences.
- Encourage application of GIS, molecular biology, and stable isotopes in the areas of distinction.

Market the College of Agriculture and the academic programs.

- Focus college recruiting on programs.
- Expand recruiting in neighboring states.
- Form task forces to improve the image and web presence of college programs.
- Develop comprehensive assessment strategies for all eight majors with attention to enrollments in degree options.

Strengthen graduate education and research.

- Form a team to review graduate programs, focusing on enrollments, degree quality, and assessment outcomes.
- Consider inclusive mergers within areas of distinction to strengthen small graduate programs.
- Form workgroups to recommend programs and facilities for Sustainable Agriculture Research and Extension Center (SAREC) and the establishment of a Laramie Research and Extension Center.
- Develop and support the expectation of research and outreach grant activities throughout the college.

Provide relevant extension and applied research programming.

- Implement the *2002 Cooperative Extension Service Strategic Plan*²³ as modified by the President's Blue Ribbon Task Force.
- Seek more public and private investment in the college's service and outreach missions.

- Enhance the CES-Outreach School partnership.
- Allocate extension salary funds and specify job descriptions to provide more focused outreach programs.

Improve the college's administrative management.

- Develop inclusive processes to evaluate administrative structures in the college to align with areas of distinction, state needs, and fiscal reality.
- Form teams to review resource allocations (GAs, space, staff, support funds), and recommend improvements.
- Identify and implement key measures to assess progress.

College of Arts and Sciences

The mission of the College of Arts and Sciences is to provide students with the opportunity for high-quality liberal education through general education courses as well as baccalaureate and graduate degrees. Student and faculty research and creative endeavors are also central to the college's purpose.

In pursuit of this mission, the College of Arts and Sciences will:

Support the university's mission to provide the highest quality baccalaureate education.

- Offer a sufficient number of intellectually challenging courses for the University Studies Program and the Arts and Sciences Core Curriculum to meet student needs.
- Balance the efforts to increase the number of UW students with the limited capacity of popular major programs.
- Provide students with multiple-year projections of course schedules to facilitate student planning.
- Enrich undergraduate education with a full complement of courses about the diversity of American society.
- Implement procedures to assess student learning.
- Coordinate with the College of Education to provide disciplinary content for the state's K–12 teachers.
- Work with the Writing Center, the Oral Communication Laboratory, the Mathematics Laboratory, and the Honors Program to provide sufficient personnel to permit these entities to enhance undergraduate education.

Encourage students to seize the opportunities for a strong international education.

- Build the teaching and research capacity in the study of Asia, the Middle East, and Latin America.

- Offer a sufficient number of courses with a non-Western perspective to meet student needs.
- Double the number of Arts and Sciences students who study abroad.
- Seek development funds for scholarships for students to study abroad.

Provide leadership in arts, humanities, and cultural endeavors.

- Work with the Cultural Outreach Program and the fine arts departments to increase outreach across the state.
- Implement the proposed M.F.A. in creative writing.
- Encourage the Departments of Communication and Journalism, English, and Theatre and Dance to cooperate in the development of interdisciplinary certificates in writing.
- Plan for a separate facility to house the Art Department as well as a remodeling of the Fine Arts Building.
- Provide sufficient support personnel for the fine arts departments to meet their teaching and creative endeavors.

Strengthen graduate education.

- Rebuild the graduate programs in Physics and Astronomy.
- Support efforts by departments in Arts and Sciences (Chemistry and Physics and Astronomy) and the College of Engineering to create graduate and research programs in materials science.
- Identify more effective recruiting strategies for attracting graduate students.
- Cooperate with the Graduate School in the assessment of graduate education.

Enhance teaching and research in the area of energy, natural resources, and the environment.

- Support the proposal to establish a Ph.D. in ecology.
- Increase UW's capacity to conduct research with a Wyoming focus on coal, oil, and natural gas by encouraging faculty cooperation among the mathematical sciences, physical sciences, and the College of Engineering.
- Maintain expertise in paleontology.
- Provide teaching support for the proposed undergraduate degree in earth-systems science.

Expand inter-college cooperation to enhance teaching and research capacity in the life sciences.

- Establish an inter-college faculty committee to oversee curriculum for the biology degree.

- Establish a three-course foundational core for students majoring in the life sciences, to be taught by faculty from the Colleges of Arts and Sciences, Agriculture, and Health Sciences.
- Continue support of the cross-college microbiology degree, and secure permanent funding for the microscopy laboratory.
- Support graduate programs in neuroscience and reproductive biology, and participate in the establishment of an interdisciplinary program in molecular and cellular life sciences.

College of Business

The mission of the College of Business is to prepare students for successful careers by providing high-quality and well-rounded business education that will enhance career prospects and to contribute to Wyoming's economic development through teaching, research, and service.

The College of Business is in the midst of several transitions and has developed four guiding elements to further its mission:

Create an emphasis in entrepreneurship.

- Build faculty expertise in entrepreneurship by hiring new faculty and enhancing the skills of current faculty, including those in accounting, finance, management, and marketing.
- Strengthen the \$10K student business-plan competition by seeking new partnerships in the sponsorship, mentoring, and judging of the competition; awarding second- and third-place awards; and increasing efforts to reach a broader student population.
- Develop grants and external funding focused on entrepreneurship.

Enhance instructional programs with technology.

- Develop a technology-rich M.B.A. degree that effectively blends the current master's program in e.Business with the traditional M.B.A. program.
- Embed business technology and e.Business concepts into core undergraduate coursework.

Build on the environment and natural resources distinction in economics.

- Secure and deploy a professorship or chair in energy economics.
- Develop collaborative research in environment and natural resources across the faculty of the college's three departments.
- Continue the strong placement of economics master's and Ph.D. students.

Enhance further the successful undergraduate degree programs.

- Ensure quality by devising and deploying an enrollment-management plan for the college's undergraduate programs and service-course offerings.
- Maintain the 90th percentile or higher performance on the national Educational Testing Service's standardized competency test for graduating seniors.
- Build and launch a comprehensive assessment plan.
- Pursue appropriate levels of collaboration with other colleges in suitable programs.
- Define and initiate a balanced approach to our online degree program, certificate programs, and outreach commitments.

In addition to these key elements, the College of Business will continue to increase its role in state economic development through the careful focus of teaching, research, and service efforts.

College of Education

The mission of the College of Education is to provide quality education through the development of prospective teachers, counselors, adult educators, and school leaders; to provide continuing educational opportunities for members of those professions; to support inquiry and research that further our understanding and practice of effective teaching and learning; and to provide service to the state and nation through professional partnerships and organizations.

Accomplishment of this mission requires commitment to the overarching goals of exemplary curricula, effective delivery systems, reputable scholarship, quality faculty, and quality students. During the next five years we plan to:

- Ensure high-quality curricula aligned with professional accreditation and certification requirements and legislative mandates including "No Child Left Behind."
- Strengthen and focus graduate program offerings.
- Streamline and coordinate teacher-preparation curricula.
- Collaborate with the Colleges of Agriculture, Arts and Sciences, and Business to implement concurrent second majors for teacher-preparation candidates.
- Implement a post-baccalaureate teacher certification program.
- Strengthen and broaden degree options through interdisciplinary collaborations (Science & Mathematics Teaching Center, Interdisciplinary Early Childhood, WyGISC, ENR).
- Focus program offerings to match the college's capacity to deliver high-quality programs.
- Develop and implement a long-term, programmatic assessment plan grounded in performance data.

Employ a range of effective delivery systems.

- Work with the Wyoming School-University Partnership and the Outreach School to establish and implement focused field-placement sites and professional-development opportunities.
- Utilize statewide distance delivery systems to provide advanced degree programs and endorsements in high-need areas.
- Explore the feasibility of enhanced collaboration with community colleges to provide distance delivery of the elementary and early childhood program.
- Develop targeted international student exchange agreements with sister institutions.

Increase the visibility and reputation of the college.

- Encourage and reward publication and presentation of scholarly work in high-impact journals and nationally recognized forums.
- Target, support, and broadly disseminate research that examines issues critical to the region (Access to Quality K-16 Education; Research in Teacher Education; Importance of Early Learning; and Environment and Natural Resource Education).
- Sponsor regional and national symposia in each of the college's areas of distinction.
- Promote seed-grant activity in identified areas of distinction.

Foster a climate that attracts and retains high-quality faculty and students.

- Maintain competitive salaries.
- Increase efforts to attract and retain faculty from diverse backgrounds.
- Secure funding for a minimum of five new faculty members in critical areas.
- Recognize, celebrate, and reward faculty and student accomplishments.
- Target scholarships to attract students from diverse backgrounds and students majoring in high-need areas.
- Offer rigorous programs with clearly defined selection and assessment criteria.
- Sustain student-advising services and coordinate college student success support with LeaRN.
- Remodel and update physical facilities.
- Integrate state-of-the-art technological tools to enhance and model exemplary teaching and learning environments.

College of Engineering

The college strives for excellence in teaching, research, and service. The faculty emphasizes lifelong learning and provides its graduates with problem-solving tools needed to address situations relevant to all aspects of society and its relationship to technology and science. Excellence in instruction requires a faculty that is actively involved in research, engaged in the practical application of research, and involved in consultation. These activities, when balanced with commensurate teaching responsibilities, translate into inspiration for students and resources for graduate education and faculty development.

The College of Engineering's overarching goals, set forth below, have not changed since the summer of 1999 when the API was put in place. Additional goals and details, along with supporting action items, are included in the college's second academic plan.

Continuously improve all aspects of the undergraduate experience.

- Establish and nurture the Center for Excellence in Engineering Education (CEEE), and lay the groundwork for sustainability.
- Utilize Hewlett Foundation support and the CEEE to redefine the core curriculum common to all engineering and computer science disciplines, and package the material in an efficient and creative way to revitalize the engineering science program.
- Procure internal or external support necessary to develop a strong and sustainable international engineering option.
- Increase the participation of undergraduate students in research, internships, and international experiences.
- Work with the Colleges of Agriculture and Arts and Sciences to establish an undergraduate interdisciplinary degree in earth-systems sciences.

Enhance graduate education and research productivity.

- Continue to augment state stipends for Ph.D. students to assure competitive offers.
- Invest in creative and aggressive graduate student recruiting activities.
- Continue to support all opportunities for faculty to interact directly with federal research program managers.
- Host internal interdisciplinary workshops to get young faculty from different colleges together to explore research opportunities.
- Continue to play a central role in bringing major blocks of energy-related research funding to the university, targeting issues that relate to state energy resources.

College of Health Sciences

The mission of the College of Health Sciences is to promote excellence in health and human services through university teaching, research and service with special emphasis on rural populations. Education and training for the health professions will continue to be the highest priority for the college in meeting the university's land-grant mission and commitment to civic engagement. Wyoming faces continuing challenges in affordability and access to health care, coupled with a critical shortage of health-care providers. Consequently, issues of education capacity will be linked to the priority of improving the health of the public through education, research, and extension of selected clinical services in a rural environment. The generation of new knowledge through biomedical and clinical research applicable to the health of the public will continue to be a high priority for the college.

The following goals and key action items support the college's mission:

Increase emphasis on interdisciplinary engagement in graduate programs.

- Evaluate the feasibility of a master's program in public health.
- Engage the Division of Communication Disorders in the doctoral program in neurosciences.
- Develop and participate in a doctoral program in molecular and cellular life sciences.
- Couple the existing B.S. degree in health sciences with the master's program in business administration, producing an M.B.A. with emphasis on health-systems administration.

Increase emphasis on interdisciplinary engagement in undergraduate programs.

- Identify and commit the resources necessary for participation in an undergraduate core curriculum in biology.
- Expand the academic role of the Wyoming Institute for Disabilities.
- Develop interdisciplinary courses in clinical skills and the sciences, such as integrated pathophysiology, for students in multiple health disciplines.

Meet the challenges of increasing costs for delivery of professional programs.

- Re-evaluate the affiliation with the Community Health Center of Central Wyoming (CHCCW) for delivery of graduate medical education.
- Revise existing clinical practice plans to permit reinvestment in medical education programs and competitive, market-based compensation for clinical faculty.
- Develop financial strategies that permit the School of Pharmacy to meet the increasing costs of the experiential component of the curriculum.

- Develop new financial strategies for funding undergraduate medical education (the WWAMI program).
- Develop new strategies to address legislation supporting career development for nursing faculty, including the WICHE NEON initiatives.

Provide enhanced research infrastructure in the college.

- Install technology for videoconferencing and data management in the Center for Rural Health Research and Education.
- Install technology for telepharmacy to facilitate clinical education and research in the School of Pharmacy.
- Renovate laboratories in the Pharmacy Building.
- Renovate animal resources facilities in the Pharmacy Building.
- Use BRIN/INBRE support from the NIH to purchase equipment and instrumentation for shared research facilities.

Develop institutional instruments for formative and summative assessment of professional programs.

- Develop links between standardized assessment instruments (such as ACT and SAT scores and GPA), curricula in professional programs, and performance on professional licensure examinations.
- Link admissions decisions for professional programs to indicators and predictors of student success.
- Link curriculum in professional programs to achieve consistent compliance with standards for accreditation and licensure.

College of Law

The primary mission of the College of Law is to provide a high-quality legal education to its students. The college works to serve the legal profession and the public, and to enhance its own professional competence and development through the production of high-quality legal scholarship. Faculty members provide law-related educational and other services to the Bar, the University community, and the general public.

The College of Law's basic goals and key action items to achieve these goals over the next five years are as follows:

Improve the learning environment for law students.

- Revamp the first-year writing program by hiring a director to enhance coordination of writing pedagogy across the curriculum.
- Establish an academic success center to assist students in academic trouble, writing, bar-exam preparation, and similar matters.

- Establish a plan for assessment of student learning.
- Section some large required classes to improve student learning.
- Identify student-learning goals, and review the curriculum to improve achievement of those goals.

Enhance the curriculum.

- Improve learning of novice students by adding an Introduction to Law course for the first year, first semester.
- Promote experiential learning by enhancing clinical and externship programs and skills offerings.
- Promote economic development and entrepreneurship in Wyoming by developing the business curriculum, in cooperation with other campus units.
- Increase internationalization by expanding course offerings, encouraging study abroad, and exploring faculty-student exchanges.

Increase public service.

- Explore the creation of a Rural Law Center as an umbrella for public service projects and faculty scholarship.
- Enhance faculty scholarship by better coordination, encouraging interdisciplinary efforts and revisiting tenure and promotion policy.
- Expand public-service opportunities for students and faculty, including *pro bono* projects and the Continuing Legal Education program.

Improve the use of information technology.

- Create a “smart” classroom.
- Provide information technology support within the College of Law.
- Enhance access to library resources through the use of technology.

Many of the above goals and action items will require additional revenues. The College of Law is planning to request a tuition increase to support many of the above proposals, including the hiring of a legal writing director, hiring of an information technology staff person, and hiring of additional faculty to enhance the learning environment and improve the curriculum.

VIII. Institutional Issues: Educational Infrastructure

UW's educational infrastructure includes the campus grounds; the buildings; the offices, laboratories, and studios that we occupy; the equipment; and software. Prominent in virtually any general discussion of these systems at UW are concerns about the University Libraries, Information Technology, and the allocation of space.

Supporting Academic Publication and Collections

A cornerstone of any good university is its library. In Wyoming, with only one university statewide, the University Libraries take on the added responsibility of leadership and service to smaller libraries around the state. In addition to housing more than 3.5 million monographs and over 11,000 journal subscriptions, UW's libraries serve many roles. They are the state's premier public libraries; they serve as a federal and state document repository; they maintain historic collections such as the Hebard Collection; they administer a diverse set of facilities subject to special environmental constraints; and they coordinate a complex array of collection-management tasks with the Art Museum, the American Heritage Center, and other units. These roles, together with the challenges inherent in the rapidly changing technologies of information access, make running a modern university library a daunting task.

Against this backdrop, the University Libraries face serious, systemic challenges. These challenges threaten every university library in the country, and they require a thoughtful but aggressive response, not only by librarians and academic administrators but also by the faculty.

Foremost is the challenge of ruinous inflation rates for many of the scientific journals central to our research enterprise. The problem has many ramifications, but in outline it is simple: federal and state tax dollars support a national research infrastructure that invests billions of dollars each year in university-based research and scholarship. Beneficiaries of this support document their work for peer review and eventually sign away copyrights to the work, which publishing firms then sell back to the university at ransom-like and rapidly inflating prices.

The rate of inflation for library materials is so much greater even than the Higher Education Price Index that no university administrator in the nation can reasonably

envision solving the problem by increasing the budget for serials. Even if UW were to channel *all* of its budget increases, including salary raises, to serials subscriptions, the Libraries would continue to lose ground in the long run. And library administrators would still spend much of their careers in purchasing and subscription negotiations requiring business sophistication and legal acumen. Despite their efforts, they would still find themselves annually reporting to the faculty that the publishing firms—who know that librarians have little influence over the supply of or demand for published articles—retained the upper hand.

Faculty members, having despaired of any hope for meaningful influence over this bizarre economy, have watched their role in the process shrink over the past decade of spiraling serials inflation. Today there seems to be little left but the miserable task of annually trimming subscription lists to fit an acquisition budget that grows too slowly.

Meaningful responses begin with better information. The Dean of Libraries and the faculty librarians have a commitment to keep abreast of publishing and information trends, so that the university can respond to changes in publishing and research dissemination.

Action Item 97 (develop a series on the Libraries' role in scholarly publishing). The Dean of the Libraries and the library faculty will develop a program of discussion groups, colloquium speakers, seminars, and information sessions to broaden campus-wide awareness of the market dynamics, legal issues, and emerging trends in scholarly publishing. We especially encourage initiatives that involve UW faculty members and faculty members at other research universities along the Front Range, in an effort to foster multi-institution strategies to manage serials inflation and other issues affecting scholarly publishing.

Better knowledge of issues and trends is far from sufficient. Effective responses to serials inflation also require broad understanding of principles of information literacy and the impact of rapidly changing technologies on the library landscape. Many of us have grown accustomed to browsing the university stacks near our offices and reading monographs and hard copies of journal articles on the spot. As personally satisfying as this mode of research may be, it has become too costly to sustain. In the meanwhile, some students are *too* willing to exploit new information technologies, uncritically gathering easily accessible information from the World Wide Web in lieu of more traditional sources. Chapter VI discusses strategies for integrating information literacy into the curriculum.

The inability of universities to expand—or even maintain—journal collections in the face of usurious inflation rates requires a fundamental rethinking of how we pay for and gain access to information. We propose that UW move aggressively toward policies and practices that ensure *access*, as distinct from *ownership*. Whether the information is contained in databases, in serials and monographs, on microfilm or

microfiche, on our campus or elsewhere, technology connects us to it. All information is accessible to UW faculty and students, if we know it exists. But in many cases this access now requires increasing levels of information and electronic literacy, and access to research tools that can identify and locate resources is often a critical barrier to the literature itself. In contrast to earlier eras, the emerging research landscape may require greater willingness to plan for lag time in accessing some publications, and it will certainly require a greater level of collaboration between UW Libraries and those at other institutions.

Action Item 98 (review and revise the Libraries' collections budget and allocation process). The Dean of Libraries, in consultation with the Library Council, academic administrators, and appropriate faculty and staff, will review and, as necessary, revise and refine the collections-development budget and allocation process. Possible targets for reallocation of funds may include faculty accounts for document delivery, funding for institutional access to the Web of Knowledge²⁴, and other measures that help promote access to scholarly literature as distinct from ownership. The plan should include an analysis of the trade-off between average serial inflation rates and the average inflation rate for alternative forms of access.

Action Item 99 (establish library partnerships through the GWLA). The Dean of Libraries will explore opportunities to collaborate and expand formal partnerships with other institutions. In particular, UW will pursue membership in the Great Western Library Alliance (GWLA).

Action Item 100 (investigate the digital archiving of scholarly work). The Dean of Libraries with the AHC, Information Technology (IT), and other campus units will explore digital applications, including electronic archives of UW research publications, to improve access to UW-generated research information and to provide an additional or alternative publishing venue to commercial presses.

Supporting Instruction

Information Technology permits broader access to higher education and alters our learning environments and teaching methods. Powerful IT systems can enhance graduate and professional education, linking UW's activities to other research institutions. At the same time, IT allows more people than ever before, throughout Wyoming, to benefit from the programs that UW offers.

Nevertheless, the need to live within a budget forces us to temper visions of learning anytime, anywhere. UW faces increasingly complex choices among new and emerging technologies, such as Internet-based videoconferencing, video streaming, wireless networking, satellite telecommunications, and desktop delivery of information. We have the continual challenge of upgrading our data network and Internet connectivity for better and faster performance. Demand for data storage and

connectivity will escalate as departments and colleges place greater emphasis on the use of technology in their curricula. In addition, we may soon face the necessity — and cost — of converting equipment and facilities, such as those associated with UWTV and Wyoming Public Radio, to digital electronics. Embedded in the issue of technological infrastructure are two tasks: (1) planning for and implementing new technologies, and (2) developing adequate funding for technology.

As a starting point for more effective budgeting for institutional technology, we propose eliminating support for redundant software for electronic course delivery. UW simply cannot afford the luxury of maintaining two electronic instruction platforms (WebCT²⁵ and eCollege²⁶).

Action Item 101 (establish eCollege as UW's online course platform). The Office of Academic Affairs will coordinate the transition to a single online course platform, eCompanion, by fall 2005. During the transition, the Outreach School will work with eCollege to acquire the software enhancements that will better support UW online instruction. Over the longer term, the Outreach School will study open-source software developed by higher-education consortia to support online instruction.

The real issues, however, are far broader. Higher education requires access to a rapidly evolving array of expensive hardware and software for instructional design, imaging, document preparation, distance learning, geographic information analysis, numerical and graphic work, statistical analysis, literature searches, and other tasks, as well as the enhanced bandwidth needed to support high-speed access. These needs will grow in importance, as will the associated budgetary pressures.

Responsibility for instructional technology decisions is distributed broadly, residing in part with Academic Affairs, Information Technology, the ECTL, the University Libraries, the Office of Research, the Outreach School, and academic departments. During the 2003-2004 academic year, at the suggestion of Academic Affairs, the AHC began planning—with a steering committee representing Information Technology, UW Libraries and Student Affairs—for a university-wide discussion on technology issues. These issues include routine recordkeeping, student transcripts, archiving theses as electronic documents, and identifying and making accessible faculty and student research.

In the support-service planning that will follow APII, academic units have an opportunity to act as drivers in defining institutional needs for technological infrastructure, support, and training.

Action Item 102 (convene an institution-wide information technology summit). Academic Affairs, in cooperation with IT leadership, will convene an institution-wide information technology summit during the 2004-05 academic year, evolving from a white paper created by the ad hoc committee representing the AHC, the Libraries, Information Technology, and Student Affairs. The sym-

posium will address technology services, particularly as they relate to the Integrated Library Learning Center (IL²C). The goal of this symposium will be to improve links between the technology-related issues articulated in the APII and the IT support-service planning document that will follow.

While instructional technology has grown increasingly sophisticated, we have largely neglected the less glamorous equipment on which we continue to rely for day-to-day classroom teaching. Basic audiovisual services needed for laptop projection, sound systems, smartboards, wireless networking, overhead display, and equipment for DVDs, VCRs, and televisions are scattered and randomly managed. Units that invest their own resources in equipment are justifiably reluctant to share, knowing that budgets for repair and replacement are limited. As a result, with the Classroom Building as a notable exception, institution-wide audiovisual equipment and services are in disarray.

Nowhere is the need for coordinated service more apparent than in the provision of basic audiovisual and sound equipment for ad hoc purposes. Currently, Information Technology provides a limited array of services that includes some user fees. The ECTL also provides some services and requires a deposit but does not charge a fee. The University Libraries have phased out virtually all of their audiovisual services. ASTEC, operated via student funds and user fees, provides sound systems within the Student Union and elsewhere as scheduling and equipment permit. The Classroom Building provides managed services limited to the building. Other services are distributed irregularly around campus as individual units are able to purchase and maintain their own equipment. The Arts and Sciences Division of Basic Research offers limited repair service.

The status quo is untenable. The choice seems evident: either we have a decentralized system that places budgetary and support responsibilities in individual units, or we operate a central system for providing and repairing basic instructional equipment campus-wide. We recommend the latter. Clearly, the proposed IL²C provides one vision for this recommendation by melding IT and Information Services into a common facility. However, short-term interventions and distributed services are also needed.

Action Item 103 (centralize audiovisual equipment and instructional technology). The Vice President for Academic Affairs and the Vice President for Information Technology will appoint a broadly representative task force to consider institution-wide information technology needs and to establish minimum standards for classroom instructional technology. This institution-wide effort should build upon the work of the ad hoc Classroom Building Committee, which reviewed technology in all publicly scheduled classrooms. The task force will develop classroom standards and a process for scheduling upgrades. The task force will also recommend a short-term location in the campus core until a more permanent location in IL²C becomes available. Deferred and critical maintenance

monies are one appropriate source for upgrading public classrooms. But regardless of source, UW administrators will direct institutional funding to this effort until all publicly scheduled classrooms meet minimum standards.

Another challenge is to fund technology acquisition, maintenance, and support. While it optimizes the institution's investments in infrastructure is a necessary step, it is not sufficient. UW must tap extramural support and resources for some of its most costly technological needs. Federal, private, and industrial sources are all worth exploring. There is no reason to limit our scope to outright equipment purchase. Computing consortia involving other institutions offer another promising avenue. In the research arena, national supercomputing centers and bandwidth enhancement provide high-speed access to expertise and advanced-architecture machines that few universities can support on their own.

Still, even the most optimistic projections of external funding and support for instructional technology will not be sufficient to maintain a well funded IT infrastructure. It is timely, given the advent of wireless technology, to re-evaluate the magnitude of the student computer fee, how the funds have been used, and whether alternative strategies used at some institutions, such as requiring all students to purchase laptops, merit consideration.

Action Item 104 (restructure IT fees). The Office of Academic Affairs, together with the Vice President for Information Technology and in consultation with ASUW, will explore possible modifications, restructuring, and increases to instructional technology fees, including the desirability of building IT funding into tuition, the need for more permanent staff to support student computing, and the issues associated with requiring undergraduates to purchase computers.

Allocating and Managing Space

The most basic elements of academic infrastructure are the physical facilities housing academic programs and departments. The way in which these facilities are allocated, and the connections and synergies that can be fostered by proximity, require careful planning and occasional reassignment. They are also among the most contentious issues on any university campus.

Some disagreements over space reflect parochial perspectives that college-level analysis can resolve.

Action Item 105 (analyze space assignments in each college). Each college dean, working with department heads, will prepare an analysis of allocated space. This analysis will examine space-to-faculty ratios, the number of graduate students and postdoctoral students using the space, and any external funding supporting the use of the space.

Settling other space-related disagreements often requires a broader perspective. On the near-term horizon at UW are space-related decisions emerging from the

construction of the Health Science Complex, the recently initiated remodeling for the College of Education, and planning for a Science Teaching Laboratory Facility.

Every decision about campus space is an opportunity to strengthen UW's areas of distinction. For example, the university will confirm a bona fide commitment to professions critical to the state and region when the Whitney School of Nursing is completed and much of the College of Health Sciences moves into the new Health Science Complex. And this new space will free a significant amount of re-assignable space in the academic core of the campus for dedication to other high-priority academic uses.

Action Item 106 (consider clustering ethnic studies and international programs). The Dean of Arts and Sciences will document the space requirements of minority and ethnic programs (AAST, AIST, CHST). This study will also analyze the prospects for clustering these programs and relocating them to better facilities as space becomes available through the construction of the Health Sciences Complex. Factors to be considered in this tentative evaluation include opportunities to enhance program visibility, achieve administrative efficiencies, and cultivate academic and programmatic synergies. Similarly, the Office of International Programs will explore the feasibility of co-locating International Programs, International Studies, English Learning Services, and International Student Services.

The Office Annex on 22nd Street currently houses displaced units, such as WIND, during construction of the Health Sciences Complex. It also houses other units whose functions do not require space in the campus core. As the Health Sciences facility is completed, we urge that the vacated annex space be considered for units whose role does not require a core-campus presence or for units with community-based responsibilities. The Survey Research Center (SRC) is one example. Moving the SRC will free space in the College of Business, which can then be used either to accommodate growing instructional pressures or, in concert with other space reassignments, to help co-locate all three departments in the college. The planning for SRC's move is also an opportunity to solidify its connections with the Wyoming Statistical Analysis Center (WySAC), a research center providing statistical analysis and support to state agencies.

Action Item 107 (relocate the SRC and WySAC). The Office of Academic Affairs will explore the option to co-locate SRC and WySAC in university facilities and evaluate the space that would be vacated in the College of Business. Possible new uses of this space will include the accommodation of instructional expansion or incorporation into a larger plan for faculty consolidation.

Action Item 108 (study the feasibility of combining the SRC and WySAC). The Deans of Arts and Sciences and Health Sciences will explore the feasibility of combining the SRC with the WySAC into one unit under a single director.

Now that the Health Science facility is under construction, planning is under way for the proposed IL²C. Envisioned as a combined library expansion and information-technology hub, the facility will help embed information literacy and learning-centered technology into UW's physical learning environment. Largely unresolved in the planning undertaken to date is the impact of IL²C construction on the Departments of History and Anthropology.

It appears likely that construction of the IL²C will not require moving the History Department. Current space allocations, however, do not permit the co-location of Religious Studies faculty with History faculty as endorsed elsewhere in this document. Exploring the possibility of relocating Religious Studies faculty to the Cooper Mansion may provide one avenue to connect these two units more closely and to build upon existing synergies between American Studies, Religious Studies, and History. This question bears further study.

The Department of Anthropology, on the other hand, is cramped and physically fragmented, and the IL²C construction will raze the department's primary quarters. Few will lament the loss: Anthropology faculty, staff, and students are currently located in disconnected facilities spread across campus. Some occupy the Anthropology Building on Iverson Street; some are temporarily housed on the third floor of the handicapped-inaccessible Education Annex Building; some reside in the old dairy-products section of the Agriculture Complex on Lewis Street, along with scientifically significant archaeological collections; and some are housed in the Earth Sciences Building with Geology and Geophysics faculty. As one of UW's finest social-science departments, central to one of the institution's areas of distinction, and as a program in which we have invested substantial resources, Anthropology deserves better. Regardless of the ultimate disposition of the IL²C proposal and decisions regarding future use of the facility at 9th and Lewis Streets, a better facility for Anthropology remains the most pressing space issue in Academic Affairs.

Action Item 109 (relocate Anthropology). In concert with the President and other Vice Presidents, the Vice President for Academic Affairs will expedite a relocation of the Department of Anthropology.

Also unresolved in the discussion of the IL²C is the ultimate disposition of the Science Library. With the development of plans for the new IL²C, it is essential that decisions about this new building dovetail with decisions regarding the Science Library. Several possibilities seem clear. First, the Science Library can continue to offer some library resources to faculty and students on the west end of campus. Space limitations currently fragment UW's existing science holdings and will continue to do so as Coe Library gradually absorbs overflow. Second, the possibility of locating some Information Technology offices in vacated Science Library space, in exchange for additional IL²C space, is under discussion but lacks IT support. Third, the use of the Science Library space as a repository for lesser-used materials of some configuration

merits consideration. Regardless of the popularity of the ultimate outcome, it is time to make decisions about the future of the Science Library facility.

Action Item 110 (decide what will become of the Science Library space). The President, upon the advice of the IL²C planning group and after consultation with affected Vice Presidents, will decide the future disposition of the Science Library facility.

The College of Education also faces space-related issues. Its facilities and offices are currently located in three separate buildings: the Education Building, Wyoming Hall, and McWhinnie Hall. At least one of these buildings has inferior office and classroom space according to current institutional guidelines (UniReg 181²⁰). The Office of Academic Affairs has allocated the second and third floors of the Education Annex building to the college, and a phased, multi-year renovation of the space is underway. A college facilities plan has been developed, but these plans will require updating, particularly with the vacancy created by the departure of the U.S. Postal Service from McWhinnie Hall.

Action Item 111 (update the College of Education facilities plan). The College of Education will update the college facilities plan to reflect occupancy of the Education Annex. The plan should describe the renovation necessary to make the Education Building and McWhinnie Hall an attractive, safe, accessible environment for faculty, staff and students.

The Centennial Complex also requires attention. The building does not measure up to the quality of the collections and programs it houses for both the American Heritage Center and the Art Museum. Though the unique structure is only a decade old, building leaks, active and expanding since the building opened, pose a real hazard to the irreplaceable collections. An outdated computer security system, insufficient surveillance equipment, and inadequate security staffing challenge the Art Museum to provide the security required to meet accreditation and contractual agreements from lenders of exhibitions essential to the museum's mission. Internal evaluations and external assessments indicate that an overhaul of the security system and staffing and facility improvements are necessary to bring the Centennial Complex into compliance with generally accepted museum and archive standards.

Action Item 112 (repair and improve the Centennial Complex). The Vice President for Budget and Planning and the Vice President for Academic Affairs will consider the use of critical maintenance funds for repairing the Centennial Complex and for renovation and modernization of the building's electronic and mechanical security systems.

Action Item 113 (discuss security staffing needs of the Centennial Complex). The Vice President for Budget and Planning and the Chief of UW Police will consider necessary increases in security staffing of the Centennial Complex.

Several departments in Arts and Sciences are struggling with space constraints. The Art Department is spread over several buildings, some of them old and inadequate. New facilities would consolidate the department and provide expanded and improved space in the Fine Arts building for Music and Theatre and Dance.

Action Item 114 (consider a new building for the Art Department). The Vice Presidents for Academic Affairs and Budget and Planning will expand upon the Capital Facilities Plan⁵ to identify funding alternatives for a new facility for the Art Department and a remodeling project in the Fine Arts Building to accommodate the change. The alternatives may include state, university, and private sources.

In addition, the remarkable and steady growth in UW's scientific research enterprise brings with it increasing demands on space. In no place on campus is this strain more evident than in the Physical and Biological Sciences Buildings. Departments housed in these buildings have used virtually every corner of the available research space. Part of the problem is that UW's instructional laboratories — designed for the apparatus needs and instructional paradigms of the 1960s — are squeezed in among research laboratories. To place these instructional facilities on a par with UW's comparators, the *Capital Facilities Plan*⁵ envisions the construction of a Science Teaching Laboratory Facility. This building will house instructional labs for large courses such as general chemistry, general biology, organic chemistry, entry-level physics, and other large-enrollment laboratory courses.

Action Item 115 (design the Science Teaching Laboratory Facility). Working with the Vice President for Budget and Planning, department heads and the Deans of Agriculture, Arts and Sciences, and Engineering, the Office of Academic Affairs will determine which instructional laboratories should be placed in the Science Teaching Laboratory Facility.

Renovation of the existing space freed by construction of this building will help alleviate some of the pressure for research space. In the interim, it is essential to examine critically how research space is allocated within departments.

Action Item 116 (document the office and laboratory space needed to accommodate new faculty positions). Future position requests through CPM will: (1) document the office and laboratory space needed to accommodate the people hired; (2) assess the availability of existing space; and (3) evaluate the suitability of the space for the intended use.

IX. Institutional Issues: Outreach, Extension, and Community Service

Inherent in UW's land-grant mission is a responsibility to serve the larger community. This service mission involves learning in the broadest sense. It includes degree programs offered through the Outreach School. It also includes non-credit programs, offered by the Cooperative Extension Service (CES) in the College of Agriculture, the Outreach School in its divisions of Community Service Education and Wyoming Public Radio, and many other UW initiatives and services aimed at community, industry, and business assistance. Notwithstanding the complexity of these services and the diverse array of providers, the institution's outreach, extension, service, and economic-development efforts face common challenges. These include: (1) organizing and delivering appropriate and effective programming and service, (2) identifying appropriate fiscal and reward structures, (3) assessing the effectiveness of current services, and (4) responding to new and evolving demands.

Organizing and Delivering Outreach, Extension, and Service

Outreach Credit Programs

A central concept in the *University of Wyoming Academic Plan I 1999-2004* (API) was that effective outreach credit instruction requires the participation of UW's core faculty. Following this premise, UW has integrated credit-bearing outreach instruction into the core responsibilities of departments and colleges. The integration has had interesting ramifications: many students on the Laramie campus now enroll in outreach courses, and more outreach students travel to Laramie to attend some classes.

This process is still unfolding. Departments in the Colleges of Agriculture, Arts and Sciences, Business, Education, Engineering, and Health Sciences have long-standing commitments to off-campus instruction. Some have furthered these commitments within the past three years, exploiting incentives to secure faculty lines through central position management, as discussed below.

Instructional commitments to outreach credit programs are essential, but they are not enough. The establishment of a scholarly community focusing on outreach is also crucial. UW now has the critical mass needed to cultivate a sustainable core of

mainstream faculty, instructional designers, and administrators who understand the emerging structures and technologies required for distance education. Among these structures are multi-institution and multi-state collaborations for the distance delivery of degree programs, especially online. UW's involvement in the Western Interstate Commission for Higher Education (WICHE) and the Northwest Academic Forum (NWAFF) can serve as springboards for deeper involvement in such cooperative ventures.

Action Item 117 (share distance degree programs with other institutions).

UW will seek collaborative arrangements with other institutions that facilitate access to or the sharing of online degree programs. Initial efforts will focus on WICHE programs such as NEON.

Action Item 118 (explore effective pedagogies and processes for distance learning). The Outreach School, the CES, and the ECTL will join forces to explore effective pedagogies, processes, and technologies involved in distance learning.

Since off-campus academic programs were initiated, the Outreach School has increased the number and variety of degree and certificate programs it delivers, and it has dramatically increased the number of students enrolled in outreach academic programs. Today the Outreach School offers three certificate and 16 degree programs statewide. It offers another nine degree programs through the University of Wyoming Casper College Center (UWCC). Five of the degree programs are offered solely online. And in the 2003-2004 academic year more than 500 credit courses were offered off campus. To solidify and maintain these gains, the Outreach School must involve more faculty members in planning and policy making.

Action Item 119 (activate an Outreach Advisory Council). The Dean of Outreach will activate an Outreach Advisory Council consisting of representatives from academic colleges, the Outreach School, and appropriate administrative units.

Non-Credit Outreach, Extension, and Service Programs

The Outreach School is also responsible for non-credit programs and services through Wyoming Public Radio and Community Service Education. Wyoming Public Radio faces the dual challenges of expanding its service across the state and meeting the federally mandated transition to digital operations. Funding and FCC decisions will be decisive factors in overcoming these challenges. Community Service Education will be charged with programming for the proposed UW Education and Conference Center.

The CES has long been integrated into the fabric of faculty responsibility within the College of Agriculture. Funded in part by federal allocations, the CES represents a tradition of non-credit educational and technical assistance to rural communities and agriculture. The organization faces a variety of challenges associated with changing

landscapes in rural communities, natural resources, and production agriculture and ranching. We discuss these issues in more detail below.

In recent years, the university has increased its commitment to economic development. This effort has spawned an array of business-support services, including Mid-America Manufacturing Technology Center (MAMTC), Small Business Development Center (SBDC), and the Wyoming Research Products Center (WRPC), administered through the Office of Research and supported by expertise in the College of Business and the CES. Continued enhancement and coordination of these efforts deserve attention over the next five years.

Action Item 120 (coordinate non-credit outreach, extension, and service programs). The Dean of the Outreach School, the Dean of Agriculture, and the Vice President for Research will create an outreach, extension, and service task force to examine ways in which non-credit off-campus programming can be more effectively focused, coordinated, and supported.

Financing Reward Structures

Outreach Credit Programs

Continued integration of degree programs offered through Outreach will require stable and consistent financing for commitments from the colleges. UW possesses a fortuitous advantage in managing the Outreach School's budget: unlike other tuition revenues, outreach tuition reverts directly to the Outreach School. This affords an important degree of freedom in financing new distance-learning structures and changing outreach commitments. In particular, tuition revenues allow the Dean of Outreach to channel a stable portion of outreach tuition revenue toward funding for permanent faculty and academic professional positions, thereby linking the Outreach School with the regular campus budget. The Outreach School took a first step in this direction in the 2002 CPM process²¹, contributing permanent funding into the faculty position pool in return for lasting instructional commitments (2002 CPM memo²¹). These incentives will continue to allow departments and colleges to strengthen requests for faculty and academic professional positions by absorbing appropriate commitments to outreach instruction and service.

In the long run, the quality of off-campus learning depends on sustained commitments of permanent faculty and appropriate reinvestment in the instructional workforce. Department heads and deans must give appropriate credit for outreach-related efforts in the institution's reappointment, tenure, and promotion processes as well as in performance appraisals and salary decisions. In addition, the Outreach School must explore new, more aggressive models for investing in and rewarding outreach instruction. The current rank-based salary policy warrants reconsideration, and it is also appropriate to consider more innovative compensation policies that include enrollment-based incentives, funding for academic-professional and graduate-student positions, and support for faculty research and travel.

Action Item 121 (review outreach compensation policies). Working with the newly formed Outreach Advisory Council and the academic deans, the Dean of Outreach will review outreach compensation and reward policies, with the goal of invigorating college and department commitments to, and faculty interest in, off-campus instruction.

One proposal in API was to establish entrepreneurial outreach programs, that is, non-core programs enjoying sufficient demand to support differential pricing and hence financial self-sufficiency. We urge the Outreach School to experiment with entrepreneurial funding strategies, especially in programs where demand may be fluctuating, ephemeral, or narrow in scope.

Action Item 122 (implement entrepreneurial outreach programs). The Dean of Outreach will work with academic deans and the Office of Academic Affairs to identify possibilities for entrepreneurial outreach programs and develop policies for the use of revenues from those programs.

The conversion to a per-credit tuition structure in Fall 2003 has raised questions about the impact on revenues for the Outreach School. Because outreach students, on average, pay less per credit than under the old tuition structure, overall revenues from outreach enrollments may decline in the near term. However, the long-term impacts of per-credit tuition pricing, including its effects on part-time student demand and Outreach revenues, are not clear. During the period covered by this academic plan, it will be appropriate to monitor these impacts and develop outreach budgeting strategies that accommodate change.

Action Item 123 (review and revise outreach budgeting). The Outreach School Dean will monitor outreach tuition revenues and recommend adaptive changes in the institution's outreach budgeting policies as the long-term effects of per-credit tuition pricing become clearer.

This effort will also require consideration of the changing nature of off-campus programs. Among the emerging trends that will merit close monitoring are growing outreach and online enrollments, increasing on-campus demand for online courses, outreach tuition rates that unintentionally discourage on-campus summer enrollments, the advent of multi-institution online degree programs, and a growing market for certification programs associated with continuing professional education.

Non-Credit Outreach, Extension, and Service Programs

The CES faces financial challenges that are fundamentally different from those associated with Outreach credit programs. In particular, the fiscal health of the CES rests on permanent state and federal funds, the latter having been essentially static over the past decade. Yet statewide pressures for extension services have increased. As a result, the College of Agriculture has been squeezed to do more with less.

This problem has implications for academic budgets institution-wide, especially to the extent that extension responsibilities are embedded in faculty job descriptions. Allocating extension-based salary dollars and faculty job descriptions in more focused and accountable configurations may help sustain reasonable levels of commitment to CES, while allowing the College of Agriculture to continue meeting its responsibilities in credit-bearing instruction and research. The *2002 CES Strategic Plan*²³ and the subsequent Blue Ribbon Task Force addressed many of these challenges, with input from external constituents statewide.

Action Item 124 (implement the 2002 CES Strategic Plan). The College of Agriculture will continue implementation of the 2002 CES Strategic Plan²³, as modified by the President's statewide Blue Ribbon Task Force on the CES. The goal will be to strike an effective balance between CES commitments and the college's academic and scholarly responsibilities.

UW's increasing commitments to economic development and the business community, noted above, also raise financial issues. While these efforts are largely supported by outside funding, the growth of these programs, the increasing demand for the services they provide, and their widely dispersed geographic locations suggest the need to monitor the personnel, infrastructure, and space dedicated to them.

Action Item 125 (examine the institutional costs and benefits of economic development programs). The outreach, extension, and service task force formed by the Dean of the Outreach School and the Vice President for Research will include in its responsibilities an examination of the fiscal implications of these programs on the institution.

Assessing Effectiveness

UW has a clear institutional commitment to the effective assessment of learning outcomes, both on and off campus. The Outreach School has begun to address this commitment through coordination with the college assessment coordinators, ECTL, and contributing academic units. Non-credit programs, such as those offered via the CES, the Research Office, and the Outreach School, are subject to less rigorous assessment mandates. Nevertheless, they also have a responsibility for continuous assessment and improvement.

Action Item 126 (assess Outreach School and CES non-credit programs). The Outreach School, the CES, and the Research Office will develop assessment plans to evaluate the effectiveness of their non-credit programs.

UW's vision for outreach has brought with it new needs for student support services. With the embedding of off-campus instruction into core faculty responsibilities comes a parallel responsibility to integrate the administrative aspects of outreach. Nowhere is this challenge more visible or more commonly articulated

than in student registration. UW has made great progress in facilitating seamless student enrollment for off-campus and on-campus programs, but much work remains. Similar challenges exist in other outreach-related processes.

Action Item 127 (evaluate the delivery of registration and advising services to off-campus students). The Vice President for Student Affairs and the Dean of Outreach will evaluate the delivery of advising and other services for outreach students and identify any measures needed to achieve reasonable parity in outreach students' access to these services.

Responding to New and Evolving Demands

The demand for outreach instruction hinges on the aspirations of Wyoming's citizens, their life circumstances, their interest in lifelong learning, and UW's commitment to broad access (see Chapter V). Outreach demand is also intertwined with the changing economy of the state and region. The Outreach School and faculty members who teach off campus play a critical role in the development of a workforce that can meet the emerging and unmet needs of Wyoming's businesses and communities. Other units, such as the CES and units involved in veterinary, clinical, or medical services, and programs involved in business-related services have a responsibility to provide high-quality services that integrate the needs of the community with the mission of the university.

In no city has this university-community partnership been more successful than in Casper. For more than 27 years, UWCC has served the post-secondary needs of central Wyoming in an innovative and successful partnership with Casper College. We owe much of this success to strong, capable leadership in the Casper educational community.

Still, as our presence in Casper has grown, so have our space needs. UWCC is currently split into two campuses, one on the Casper College campus proper and one in the northern part of the city, on Poplar Street. The Poplar Street facility requires independent maintenance and scheduling. These separate facilities also represent a challenge for students taking classes at both locations. Tentative conversations with Casper College administrators indicate some interest in considering shared facility expansion on the Casper College campus to enhance the long-term connections between the institutions. These discussions may have implications for UW's continued use of the Poplar Street facility.

Action Item 128 (discuss future UWCC facility plans with Casper College administrators). The Outreach School Dean and the Associate Dean at UWCC, working with the UW Facilities Planning Office, will coordinate conversations with Casper College administrators regarding future facilities development. These conversations will address the long-term disposition of the Poplar Street facility and the use of any funds from its disposition as part of the funding package for new construction.

Casper is just one of Wyoming's two largest cities. UW's historic commitment to the other city, Cheyenne, has been more erratic. For many years, the Air Force Institute of Technology (AFIT) program, operated in conjunction with the F.E. Warren Air Force Base, delivered an on-site M.B.A. Since the waning of that program, UW has explored other outreach coursework in psychology, criminal justice, public administration, and aerospace science. But the institution's outreach history in Cheyenne has been inconsistent.

Action Item 129 (explore the establishment of permanent UW facilities in Cheyenne). The Outreach School Dean will explore the establishment of permanent UW facilities in Cheyenne. These facilities might include permanent employees, a slate of baccalaureate and graduate programs, and cooperative instructional arrangements with Laramie County Community College. An additional goal should be to consolidate the diverse UW offices and administrative functions now located in Laramie County.

A statewide needs survey, conducted on the heels of API, launched an era of better-informed planning and increased responsiveness to the interests of Wyoming's citizens. However, because needs and interests evolve, the assessment of statewide and regional needs for outreach education must be ongoing. All outreach units should consider mechanisms for the systematic, periodic assessment of statewide needs. The Outreach School has begun these efforts, but so far the focus has been on credit-bearing degree and certificate programs. Similarly, the College of Agriculture has begun to assess statewide needs more systematically. The time is ripe for both units to collaborate on continuing needs assessments and to convert this research into action.

Action Item 130 (assess outreach needs). All outreach units will undertake coordinated, systematic, periodic assessment of statewide needs for both credit and non-credit education.

More broadly, there are untapped opportunities for cooperation between the Outreach School and other statewide educational resources. The Outreach School already maintains substantive ties with Wyoming's community colleges, and these ties are worth cultivating in concert with UW's academic departments. A more intriguing opportunity involves the CES and the Outreach School. Both units have offices and educators throughout Wyoming, and they play important roles in lifelong learning and community development. Better articulation between the two units offers a strategic avenue for more efficient and effective educational services statewide.

Action Item 131 (coordinate the Outreach School and the Cooperative Extension Service). The Dean of Outreach, the Director of CES, and the Associate Vice President of Enrollment Management, will develop a plan exploring how the Outreach School and the CES might articulate more efficient, effective, and synergistic educational services statewide. This examination should explicitly address the possibility of a closer integration of CES and the Outreach School.

X. Institutional Issues: Enrollment Management

UW has made laudable progress in enrollment management since 1999. The creation of the Enrollment Management Council, increasingly sophisticated recruitment, and better coordination between Student Affairs and Academic Affairs have all helped reverse an earlier trend of declining enrollments. Nevertheless, the mission and fiscal health of the institution mandate further progress. Among the issues that call for detailed planning are refined recruitment and enrollment targets, better management of the budgetary implications of enrollment increases, and sound strategies for student retention.

Refining Recruitment and Enrollment Targets

So far, UW's enrollment goal has been simple: increase the total number of students. The effort has paid off. In the face of anticipated declines in the number of Wyoming high-school graduates, the number of UW students grew from 11,743 in fall 2000 to 12,402 in fall 2001 and to 12,766 in fall 2002. Yet while appealing in its simplicity, the simple goal of increasing student enrollment ignores deeper questions about enrollment management. Many of these questions are tactical in nature and belong properly in the upcoming support-services plan:

- What recruitment strategies will help promote diversity and internationalization?
- What strategies will help attract the most academically promising students?
- Are there collaborative recruiting strategies with other institutions that can help sustain healthy enrollments while strengthening the state's higher-education network?
- How can we more successfully attract students in neighboring states, especially those who live closer to UW than to their own states' major universities?
- What campus-sponsored activities, community services, and cultural amenities help attract prospective students to the Laramie campus?

Other questions have deeper implications for the university's mission: What is the proper relationship between recruiting strategies and the academic areas having the greatest potential for growth? What is the university's role in shaping statewide and regional demographics of the demand for higher education? To what extent is

more effective recruitment of graduate students an institutional responsibility? Are there mechanisms for managing the distribution of enrollments to help match institutional capacities and statewide need?

The relationship between recruitment strategies and potential areas of enrollment growth provokes interesting questions, especially in light of the remarkable increase in outreach instruction. A broad-brush analysis of UW's enrollment growth during the last planning cycle illustrates the point. Following conventional wisdom, UW has targeted the bulk of its new recruitment budget at traditional high-school graduates who intend to study on campus. And, in fact, enrollments in this sector have grown, despite a statewide decline in the relevant high-school population. But the absolute increase has been small, and to a great extent it has been in academic areas where student demand already strains any foreseeable capacity to accommodate it.

Paralleling the massive effort, and with a much smaller investment, UW has witnessed double-digit annual growth rates, expressed as percentages, in off-campus enrollments. The university's most impressive enrollment increases have occurred in classes delivered electronically through the Outreach School. As a result, while UW's on-campus enrollments have long hovered around 10,000 students, off-campus headcounts now contribute almost 3,000 additional students, a growing number of whom are enrolling in online coursework. This shift in enrollment growth to the online sector has had an unanticipated effect on Laramie-based instruction: as more online courses become available, more on-campus students are taking them in preference to traditional courses relying on synchronous delivery.

It is time to ask if there are better ways to manage growth in UW's off-campus programs and online courses. Originally developed to supplement on-campus programs, outreach instruction is now part of the mainstream in many arenas, and the trend is likely to continue as we strive for seamless integration with traditional teaching modes. Now that UW bills for tuition on a per-credit basis, the built-in pricing disincentive for part-time, outreach-based learning has largely disappeared. It may now be appropriate to examine the true delivery costs of on- versus off-campus instruction.

*Action Item 132 (establish target enrollments for off-campus degree programs).
The Dean of Outreach will assess current off-campus degree-program enrollments and tuition structure, working with affected academic departments to establish realistic long-term target enrollments.*

Seldom articulated in academic discussions about recruitment are the demographics of demand for higher education in Wyoming. Compared with other states, Wyoming sends a disappointingly small fraction of its high-school graduates to college. For every 100 Wyoming high-school students who enter ninth grade, 75 graduate from high school in four years. Of these 75, 39 pursue post-secondary education within one year. Among low-income students, the latter percentage drops to 22. Among

Wyoming's adults aged 25 or older, 12 percent have less than a high-school credential, and only 30 percent hold a college degree. One of UW's most fundamental contributions to economic development and quality of life—indeed, one of our core competencies—must be to help the state do better. In this light, it is not sufficient to maintain enrollments. Enhancing demand for and accessibility to post-secondary education is an equally fundamental responsibility.

This issue has implications for UW's financial-aid practices. Five years ago, API challenged the historic balance between merit- and need-based student aid. Although there has been some change since then, the overwhelming bulk of UW's student scholarships continue to be awarded for merit, and they help a relatively small fraction of our students. In fact, Wyoming currently ranks 50th among the states in state-funded, need-based aid. Except for student-loan programs, need-based aid continues to reach only a small fraction of UW's students. And loan programs alone are insufficient to attract and retain promising but needy students.

The Campaign for Distinction²² is the institution's most effective vehicle for developing better-targeted scholarships. The campaign's kickoff literature set three goals for fundraising: one-third would be focused on faculty, one-third on infrastructure and facilities, and one-third on students. It is not too soon to begin assessing and perhaps refining the third goal.

Action Item 133 (increase need-based student scholarships). The Vice Presidents for Student Affairs, Institutional Advancement, and Academic Affairs will formulate strategies to increase the emphasis in the Campaign for Distinction on need-based student scholarships in the near term, as the institution enters the campaign's homestretch. The President will work to help elected officials understand the value of new dollars to fund need-based aid for students to attend community colleges and the university.

Action Item 134 (automate scholarship-awarding processes). The Office of Student Financial Aid will automate scholarship-awarding processes in collaboration with the colleges. The colleges, in turn, will define the criteria for each scholarship and make the final scholarship decisions. Automation will alleviate unnecessary paperwork within colleges and help maximize the use of scholarship resources, meet enrollment goals, and ultimately provide increased tuition revenues.

More need-based student aid can help lower many barriers to access, but UW must also pursue other strategies, including better targeting of part-time employment opportunities for students. The traditionally loose links between student employment programs, institutional aid, and educational initiatives deserve careful consideration. For example, UW lacks a carefully crafted approach to use federal work-study funds in academic programs, such as the LeARN initiative proposed in Chapter III. Nor have we emphasized the use of work-study funds as a retention tool. Additional

opportunities exist to expand meaningful working and learning experiences with internships in such academic centers as the Wyoming Geographic Information Sciences Center, the Survey Research Center, and the Wyoming Statistical Analysis Center, among others.

Action Item 135 (connect jobs to student aid). In concert with the LeaRN advisory council, appropriate Student Affairs staff, and representative academic department heads, the Office of Academic Affairs will develop a proposal for integrating student-employment resources with need-based financial aid, the needs of academic research centers, and instructional needs such as peer tutors and the staffing of LeaRN nodes.

In the graduate arena, new institution-level investments in recruitment have been negligible. And, not surprisingly, UW's on-campus graduate-student numbers have continued to decline. While there is no definitive optimum for the ratio of graduate students to undergraduates, a review of thriving graduate programs at comparator institutions suggests that UW has too few graduate students to support its institutional aspirations. Currently, graduate students enrolled in degree programs constitute 13 percent of UW's enrollments; at comparators the fraction is closer to 20 percent.

Our research mission, our externally funded scholarship, and to a large extent the vibrancy and future of undergraduate education depend on healthy graduate enrollments. Yet, institution-wide, UW's graduate enrollments are too small, our graduate-degree completion rates are unnecessarily low, and our graduate programs are arguably too fragmented. Recruitment efforts are virtually non-existent except at the department level, and we have devoted little or no institutional funding to marketing at the graduate level. As discussed in Chapter IV, the new roles envisioned for the Graduate School, together with the frustrations that many academic departments face in recruiting graduate students, suggest a re-examination of the institution's processes and funding for post-baccalaureate recruitment. Chapter IV also proposes new modes of funding for graduate-level recruitment and enhanced cooperation between the Graduate School and the Associate Vice President for Enrollment Management.

Finally, having successfully reversed the trends toward lower overall enrollments, UW now faces subtler issues related to the distribution of the new enrollments among academic programs. As state policymakers grapple with public-policy issues like K-12 education, prison reform, and health care, they increasingly turn to public universities as vehicles for workforce development, economic growth, and reform. These issues readily translate into enrollment-management challenges, through increased pressures to recruit students into understaffed professions critical to the state and region. Among the strongest of these pressures in Wyoming are those in health care, business leadership, and secondary instruction in mathematics, science, foreign languages, and special education.

External pressures notwithstanding, student demand is not evenly distributed, predictable, or necessarily commensurate with workforce needs. Nor does it always mesh with UW's current or envisioned allocation of instructional resources. Nor do cyclic or ad hoc fluctuations in student interest necessarily jibe with the core instructional resources needed to sustain basic curricula, service courses, or general education. As student numbers rise in some disciplines and fall in others, and as faculty resources are stretched, the balance between student demand and institutional resource distribution requires thoughtful attention.

This observation must be a central motif in the next era of enrollment management. The problem turns out to be far more complex than simply getting students to campus. We now face burgeoning student demand in business, elementary education, criminal justice, communication and journalism, family and consumer science, law, the visual and performing arts, and some of the health sciences. Majors in agriculture, modern and classical languages, philosophy, statistics, and mathematics are far from capacity. Complicating matters are the relatively inflexible needs for service courses and USP instruction, as well as the risks of demand-driven distortion to the institution's areas of distinction, instructional constraints on our capacity for interdisciplinarity, and the tensions associated with UW's responsibilities to the state.

There are many mechanisms for managing enrollment pressure. At the graduate level, most UW departments control student admissions based on applicant credentials. The Schools of Nursing, Pharmacy, and Human Medicine set yearly admissions ceilings. For many years the College of Business required a grade point average of at least 2.5 for acceptance into the major. At some universities, art and music departments screen by portfolio. Tuition differentials, now in place for graduate students, Pharm.D. candidates, and J.D. students, also help mediate student demand, as do differences between resident and nonresident tuition rates. At UW, these devices have developed largely ad hoc and follow no consistent institution-wide philosophy.

We propose a closer examination of policies and principles that act to distribute student demand and govern tuition differentials. While discussions about tuition differentials often provoke concerns about equity, it is important to remember that costs of attendance are far from uniform. Some students receive scholarships; others have access to school-, state-, or federally based aid; some majors apply special fees; graduate students pay more than undergraduates; non-residents pay more than residents; and in some disciplines differential pricing has been the rule for so long that it goes unnoticed. The question is not whether to have different tuition rates but whether the institution can and should apply them strategically, as one tool among many in managing student enrollments.

Action Item 136 (explore differential-pricing mechanisms). The Vice President for Academic Affairs, in consultation with the President, will appoint a task force to explore principles for the design and implementation of differential-pricing mechanisms and other policies that might influence student demand.

It is not sufficient, however, to limit the management of internal enrollment pressure to tuition-pricing mechanisms alone. Differential pricing certainly influences student demand, but for many years we have employed an array of non-monetary management techniques to influence student choice. Clinical areas of study such as Pharmacy and Nursing have capped enrollments based on accreditor-prescribed student/faculty ratios and the capacity of clinical settings. Other units establish minimum grade-point standards within the major that are necessary for student advancement. Still others have established minimum course requirements and performance standards for acceptance into the major or for graduation.

These well intentioned policies have developed over time in an ad hoc fashion and have gone largely unnoticed. As enrollment continues to climb, however, and as student demand challenges the capacities of some academic units, there is need for a well conceived institutional philosophy to guide the application of these screening and filtering policies.

UW is a public land-grant institution, with responsibility to provide a wide array of educational opportunities to the students it serves. Uncoordinated policies that restrict, divert, or artificially redirect student demand raise many important questions. Where will the students who fail entry into one program be able to go? Who will determine programmatic capacity? Will students be limited from entering a degree program or screened out on the basis of performance? How will departments and programs connect their performance requirements with university grade-point and credit-hour requirements? And what will we do with students whose grades are sufficient to remain at UW but are not sufficient to enter or advance through their selected areas of study?

These questions make it clear that individual academic units must operate under a broader institutional rubric that establishes acceptable practices and conditions under which filtering and screening practices can exist. It is also clear that policies related to programmatic enrollment must be vetted and coordinated with the larger institutional community before they are put in place. The precise mechanisms by which this occurs will require thoughtful deliberation and judicious application.

Action Item 137 (establish institutional policies to guide enrollment filtering and screening mechanisms). The Vice President for Academic Affairs, working with academic deans and enrollment management services, will identify existing filtering and screening mechanisms, survey other institutions' filtering and screening policies, determine the appropriate conditions for application of these internal enrollment management tools, and establish a broad institutional framework under which individual academic units will operate. This effort will require broad institutional participation; it may result in the development of a new university regulation; and it will require approval by the UW Board of Trustees.

Allocating Revenues

The budgetary implications of enrollment increases are far from clear. Two sources of ambiguity stand out: (1) the poorly understood relationships between enrollments and revenues and (2) the weak links between enrollments and academic budgets. The first issue is technical. UW's existing revenue models do not adequately account for the effects of tuition pricing on student demand. Institutional decisions about tuition increases and tuition discounting require sophisticated tools that incorporate the elasticity of demand for education. We urge the Vice President for Budget and Planning to explore the use or development of such models.

At UW, links between tuition revenues and academic budgets are at best indirect. Resident undergraduate tuition increased an average of 8.2 percent per year during the period 1982-1983 through 2002-2003; during that period we have had no clear philosophy on how best to set tuition rates. Rationales for tuition increases have focused mainly on external comparators and political acceptability. Yet there are important connections between tuition revenues and academics. These connections have become more transparent in the past few years, as UW successfully increased enrollments and therefore revenues, while academic units bore increased instructional loads. Currently, except for off-campus instruction, there is no reliable mechanism for returning enrollment-driven revenue increases to the academic units that bear the associated workload increases.

Academic units have little capacity to meet enrollment pressures on their own. CPM allows academic administrators to shift existing salary resources adaptively, but the resources at stake have tenuous connections with ongoing enrollment shifts. In fact, CPM resources largely reflect a status quo ante that under-funds the future, because they result from resignations and retirements by faculty members whose salaries are often below market rates. In addition, these resources are random to some extent, because faculty departures are neither precisely manageable nor predictable in the near term. If CPM remains the only mechanism for responding to enrollment changes, faculty members and academic administrators will continue to have little incentive to support student recruitment and retention.

Further, it is reasonable to question the methods and strategies that we have employed in setting tuition rates for the last two decades. The *Constitution of the State of Wyoming* contains a provision requiring that UW tuition be "as nearly free as possible." While written in a very different era, this provision still colors discussions about tuition and, to a great extent, still guides the Trustees' tuition decisions. But how free is free enough? What are the educational opportunity costs associated with tuition rates that place UW at the eighth percentile nationally for resident tuition among public doctoral universities? And how much of the cost of education should students bear? At UW currently, only about 17 percent of the cost of education is paid for by student tuition.

Most discussions regarding tuition focus outward, on our relationship to competitors in the external market. We have been guided by the philosophy that cheaper is better, and we have adhered to Wyoming's constitutional proviso by minimizing tuition growth even while other states and institutions have imposed double-digit tuition increases.

While holding the cost of tuition down is a laudable objective, it has impacts. The university has high fixed personnel costs that vary little from year to year. The difference between being an average university and an excellent one lies in decisions made on the margins, through the strategic use of new or discretionary dollars. It will be critical for UW's future to develop a sound and defensible theoretical underpinning for setting future tuition rates. We must thoughtfully consider our appropriate location within the external market, and we must also judiciously consider the margin of educational quality that can be achieved by the strategic allocation of those dollars. History shows that students will support tuition increases when they see real educational benefits.

Action Item 138 (develop a philosophical rationale to guide tuition rates).

The President will work with the Board of Trustees to develop a conceptual understanding of UW's tuition, how it is established, and how it is used. The goal of this effort should be to address the mandate to be "as nearly free as possible" within a coherent philosophy. This philosophy must take into account net price, the external market, the cost of attendance compared to Wyoming's median family income, the relative contribution by students to education and general expenditures, and the impact that tuition funds have on the quality of the education.

***Action Item 139 (discuss the use of tuition and fee revenues with respect to associated instructional costs).** The Vice President for Academic Affairs will work with the Vice President for Budget and Planning to involve faculty and administrators in discussions about tuition policies and budget management. The Office of Academic Affairs will develop proposals for the allocation of enrollment-driven revenue increases, possibly including revenues generated by instructional support fees to academic units that bear associated instructional costs.*

Reviewing Student Retention Strategies

Success in undergraduate recruitment is meaningful only if we retain students and those students complete the baccalaureate. Only about half of the students who enter UW complete undergraduate degrees. Although our third-semester retention rate (79 percent) is now healthy in comparison to comparable institutions, barriers to degree completion persist. Yet intervention programs abound. The list includes the University Studies Program, Freshman Interest Groups, Project Synergy, summer freshman orientation, Weeks of Welcome, Trio Project, Passport to Success, the McNair Program, the Center for Academic Advising, Minority Student Services Programs, the Honors Program, the Writing Center, the Math Lab, the Oral Communications

Lab, and other programs. The myriad groups, programs, and strategies associated with student retention may in fact pose a bewildering array of choices for struggling students. For this reason, the LeARN proposal is a significant step toward a more unified approach to student success and retention. (See Chapter III for a more detailed discussion of LeARN.)

Also worth contemplating is the nature of the retention and support services that UW provides and the characteristics of the students that they reach. The Honors Program targets students who are academically strong, and it reaches many of them. Other academic units provide classroom support for specific courses or specific student audiences, but these efforts are often narrowly targeted and unsystematically assessed. And at the institutional level we have no aggregate mechanism for assessing the number and diversity of students who benefit from various retention-related initiatives. Similarly, the Office of Student Affairs has many retention-oriented services, but their reach is often circumscribed, and their connections to academics are often tenuous.

Action Item 140 (benchmark retention-related services). The Office of Academic Affairs, in concert with Student Affairs and the academic deans, will establish a mechanism to benchmark the current reach of retention-related services. From the data gathered, we will set performance goals for the next five years. Resources and efforts will focus on services that reach broad student audiences at the freshman and sophomore level with demonstrably effective academic and classroom support. Contributions to these efforts will be a formal element of yearly performance appraisals in teaching and advising.

The point of recruitment and retention is to accept students who *can* succeed and to retain those who are *willing* to do so. This dynamic poses challenges at several levels. Individual faculty members face the challenge of maintaining high standards while accommodating different levels of readiness. Departments must capitalize on UW's distinctive opportunities for student-faculty connections that engage capable students, including inquiry-based learning and undergraduate research. And there is a more delicate institution-level challenge, namely, offering fair opportunities for underprepared students without injudiciously siphoning resources away from those better equipped to succeed.

UW's arrangement with the Albany County branch of Laramie County Community College (LCCC) provides effective remedial services that merit continued support. This partnership may also hold untapped potential to assist in other remedial or developmental efforts for at-risk students. For example, each year UW admits a significant number of students conditionally. Historic performance data indicate that students in this category are at risk of failure from the outset of their UW careers. Yet conditional admission currently has little practical significance. Of UW's many retention initiatives, only Project Synergy explicitly targets these students. But its capacity is limited; participation is voluntary; and its effectiveness is inadequately documented.

Action Item 141 (review admission policies). The Office of Academic Affairs, in collaboration with the Admissions Office, will review and recommend revisions in admissions policies and in curricular requirements for conditionally admitted students. The Office of Academic Affairs will also continue to articulate with the Albany County branch of LCCC to explore mechanisms for accommodating special requirements associated with conditional admission.

Whether they are narrowly targeted or broadly accessible, UW's retention efforts require sustained connections to academics, vigorous and triangulated appraisal of their effectiveness, and long-term follow-through.

Glossary of Acronyms

AAST	African-American Studies
AFIT	Air Force Institute of Technology
AHC	American Heritage Center
AIST	American Indian Studies
AP	Academic Plan
ASTECC	ASUW Technical Services
ASUW	Associated Students of the University of Wyoming
B.A.	Bachelor of Arts
BRIN	Biomedical Research Infrastructure Network
B.S.	Bachelor of Science
CEEE	Center for Excellence in Engineering Education
CES	Cooperative Extension Service
CHCCW	Community Health Center of Central Wyoming
CHST	Chicano Studies
COBRE	Centers of Biomedical Research Excellence
CPM	Central Position Management
ECTL	John P. Ellbogen Center for Teaching and Learning
Ed.D	Doctor of Education
ENR	Environment and Natural Resources
EORI	Enhanced Oil Recovery Institute
EPSCoR	Experimental Program to Stimulate Competitive Research
ESL	English as a Second Language
FCC	Federal Communications Commission
FIGs	Freshman Interest Groups
FPRC	Family Practice Residency Center
GA	Graduate Assistant
GIS	Geographic Information Sciences
GWLA	Great Western Library Alliance
IDeA	Institutional Development Award Program
IER	Institute for Energy Research
IL2C	Integrated Library Learning Center

G L O S S A R Y IOI

INBRE	IDEA Networks of Biomedical Research Excellence
ISC	Institute for Scientific Computation
IT	Information Technology
J.D.	Juris Doctor
K-12	Kindergarten-through-high-school
K-16	Kindergarten-through-baccalaureate
LCCC	Laramie County Community College
LeaRN	Learning Resource Network
M.A.	Master of Arts
MAMTC	Mid-America Manufacturing Technology Center
M.B.A.	Master of Business Administration
MCLS	Molecular and Cellular Life Sciences
M.D.	Medical Doctor
M.F.A.	Master of Fine Arts
M.P.A.	Master of Public Administration
M.S.	Master of Science
M.S.W.	Master of Social Work
NCA	North Central Association
NEON	Northwest Educational Outreach Network
NIH	National Institutes of Health
NSF	National Science Foundation
NWAF	Northwest Academic Forum
Pharm.D.	Doctor of Pharmacy
Ph.D.	Doctor of Philosophy
RIENR	William D. Ruckleshaus Institute of Environment and Natural Resources
SAREC	Sustainable Agriculture Research and Extension Center
SBDC	Small Business Development Center
SENR	School of Environment and Natural Resources
SEVIS	Student Exchange Visitor Information System
SRC	Survey Research Center
UniReg	University Regulations
USP	University Studies Program
UWCC	University of Wyoming Casper College
WICHE	Western Interstate Commission for Higher Education
WIND	Wyoming INstitute for Disabilities
WRPC	Wyoming Research Products Center
WyGIS	Wyoming Geographic Information Science Center
WySAC	Wyoming Statistical Analysis Center
WWAMI	Washington, Wyoming, Alaska, Montana and Idaho

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*Wake up to find out that you are
the eyes of the world.*

— Robert Hunter