Introduction

Biology has become the dominant science of the 21st century. The mission of the College of Biological Sciences is to seize the opportunities that these breakthroughs offer by providing high quality education and research programs from molecules to ecosystems. To accomplish this mission, it is necessary to integrate strong basic research programs with innovative teaching and intensive mentoring of students.

The college is dedicated to providing high quality education in our disciplines for our students, and for those from other colleges and fields at the University of Minnesota, such as agriculture, engineering, health sciences, liberal arts, and natural resources.

The college is committed to partnering with industry and agencies since basic research is often translated into solutions by such entities outside of the University. In addition, some of our faculty and staff work closely with the general community and other educational institutions. Members of the college actively participate in the worldwide community of scientific peers, serve in the leadership roles of professional organizations, and contribute to the administration and governance of the University.

The College of Biological Sciences (CBS) is responsible for undergraduate education in introductory biology and in the core disciplines in biology. CBS offers seven bachelors degrees (Biology; Biochemistry; Ecology, Evolution and Behavior; Genetics, Cell Biology and Development; Microbiology; Neuroscience; and Plant Biology).

CBS plays a major role as a collegiate partner in graduate education that leads to masters and doctoral degrees in ten biological disciplines (MBS, the professional masters program in biological science; Biochemistry, Molecular Biology and Biophysics; Conservation Biology; Ecology; Microbiology, Immunology and Cancer Biology; Molecular, Cellular, Developmental Biology and Genetics; Neuroscience; Plant Biological Sciences; Microbial Engineering; and Genetic Counseling). CBS faculty are also significantly involved in several other graduate programs across the University.

CBS is a champion for curiosity-driven research in the core disciplines of biology. The faculty and staff of CBS provide expert service and outreach to the state of Minnesota, the nation and the world. The College of Biological Sciences consists of nine budgeted areas (see below).

- COLLEGE OF BIOLOGICAL SCIENCES (TCBS)
- BIOLOGICAL SCI COLLEGE OF-ADM
- BIOLOGICAL SCI STDTSVCS
- BIOCHEMISTRY-CBS
- BIOTECHNOLOGY INSTITUTE
- ECOLOGY, EVOLUTION & BEHAVIOR
- GENERAL BIOLOGY PROG
- GENETICS & CELL BIOLOGY
- PLANT BIOLOGY
- CBS COMPUTING FACILITIES

The compact between the Executive Vice President and Provost and the Dean of the College of Biological Sciences for 2002-03 includes the following:

Update – Major Long-Term Goals/Priorities from Previous Compacts

A. Improve and expand the undergraduate experience in biology.

Within the last five years, the University has come to appreciate that biology is undergoing rapid changes and offers some of the biggest opportunities and challenges in our future. The administration has declared biology one of the highest priorities of the University of Minnesota and has invested significantly in its future. The centerpiece of this investment has included the initiative in Molecular and Cellular Biology that is focused on Functional Genomics. With a combination of new and re-allocated resources the University (CBS in partnership with the Medical School) is hiring 41 new members of the faculty, building two new buildings and refurbishing laboratories and classrooms in existing buildings. Using reallocation, we have strengthened our premier department (Ecology, Evolution and Behavior) with resources to hire eleven new faculty (eight have been hired to date). We believe it is our responsibility to translate both the excitement and the substance of these new faculty and facilities into opportunities for our undergraduate student body.

Fall 2002 is the sixth year that CBS has been a freshman admitting college. In our efforts to meet the challenges and opportunities of the biology of the future, we have focused on improving the educational experience for undergraduates. To date, this has included developing freshman seminars that are taught by our leading faculty members, planning for a “Freshman
Experience at Itasca”, intercollegiate collaboration in creating a Pre-Health Science Advising Office on the Minneapolis campus, planning for a new major called “Biology, Society, and the Environment”, and focusing on curricular expansions in the area of biotechnology.

We believe that learning is optimized in the context of a community. For the College of Biological Sciences, this is particularly challenging because our people and programs are located on both the Minneapolis and St. Paul portions of the Twin Cities Campus. Thus, we take community building seriously and have been deliberate in creating opportunities to establish a greater sense of identity for our students, faculty, and staff.

During the next fiscal year, we anticipate taking the following additional actions on several of our previous plans and initiating several new steps designed to further strengthen the undergraduate experience and the learning community. These actions include:

- Conduct an assessment of the Freshman Seminars to determine how well they meet the needs of our students.
- Introduce a new Freshman Experience at Itasca, scheduled for September 2002. It will be offered to a subset of our entering freshman class, with implementation for the freshman class as a component of orientation in 2003-04.
- Seek financial solutions that will allow us to offer the “Biology, Society, and the Environment” major, a joint initiative with the College of Liberal Arts. This was originally scheduled for implementation fall 2002. However, because of this year’s financial challenges, we have postponed implementation, but we hope to identify the resources to begin offering the major in 2003-04.
- Offer new classes in biotechnology.
- Initiate an assessment of the Honors Program to determine its effectiveness in our quest to attract and support outstanding undergraduate students.
- Launch a workshop-style introduction to modern laboratory research techniques. This course will provide lower division students certification that will prepare them for a fast-track transition into research. Implementation is anticipated for Spring Semester 2003.
- Initiate an assessment of our Student Services Office to determine its effectiveness in meeting the needs of our rapidly growing student body. This will include focus groups with students and with other collegiate Student Services leaders regarding University-wide challenges and opportunities, particularly incorporation of web-based tools for advising. Like other colleges, we are challenged by the heavy reliance on paper-based advising files, but in addition we face logistical challenges in this area as a result of our two-campus footprint. In addition, we intend to create an environment where our faculty play a more prominent role as mentors in our students’ undergraduate experience. Another opportunity may be a closer integration of faculty mentors with our undergraduate major clubs.
- Continue exploration of the need to integrate quantitative, engineering and mathematical thinking into our undergraduate and graduate courses.
- Increase diversity in our student population from both a geographic and ethnic perspective. Develop a strategy to improve our recruitment in these areas.
- Increase the number of undergraduate scholarships awarded by the college by increasing the undergraduate scholarship endowment.
- Analyze and determine an effective use of an existing endowment for undergraduate research projects; this funding will provide incentives for faculty to become research mentors.
- Strengthen our sense of community through a series of community-building events. To date this has included an annual Fall “Community Day” workshop and luncheon, Homecoming events, our year-end picnic and “Biobuds”, a buddy program whereby upper division students are assigned as a “buddy” to freshmen. We plan to add more functions this year.
- Launch the plan that was funded by the Howard Hughes Medical Institute to use our Itasca Biology Station as our campus for serving five K-12 districts in communities that surround the station. Our goals are to provide opportunities in biology for students from these districts (and recruit them to CBS/U of M), provide opportunities for our undergraduate students to become teachers of biology in rural areas, and provide continuing education for science teachers in Northwest Minnesota.
- Find a solution for curriculum delivery for the microbiology and neuroscience majors. Faculty members in these departments are expected to devote an increasing fraction of effort to research at the expense of educational efforts. With this challenge, they are less willing and available to teach the curriculum in their named majors.

We will measure our success by the quality and quantity of students we attract, retain and graduate in four years. We intend to determine the satisfaction our students express about their undergraduate experience in
providing the knowledge and experiences that they need to embark upon their chosen careers. In order to accomplish these goals, the college needs to identify and train personnel with expertise in assessment and quantification of outcomes as our basis for data-driven decision-making on all of the above efforts to enhance the undergraduate experience.

The provost will review the relationships of these curricular initiatives to other academic colleges (e.g. College of Natural Resources, College of Agricultural, Food & Environmental Sciences, College of Education and Human Development, Institute of Technology) in the 2003-04 compact process.

B. Improve graduate programs in core disciplines of biology.

Graduate education is increasingly important in this “information age”. With a higher proportion of the population seeking and obtaining undergraduate degrees, the case for reinforcing and augmenting graduate programs is even more compelling. Individuals with graduate degrees will emerge as the leaders of government and non-profit agencies, companies, academic institutions, and our nation. Thus, it is imperative that the State of Minnesota and the University of Minnesota, as the doctoral granting institution of the state, focus new efforts and resources on this priority.

This is also a critical time for the University in increasing our stature among our academic peers, which will be reflected in the NRC ratings of the next two to three years. One major criterion for ranking research universities is the quality of their graduate programs and their research activities. The graduate programs in which our faculty participate vary in perceived quality; the ecology program stands out as one of the most highly regarded in the country. This program demonstrates the multiplier effect that nationally ranked units have on our educational mission. The EEB faculty provide exciting academic experiences for our undergraduate students. In addition, this faculty attracts some of the most highly qualified graduate students to the University of Minnesota. These graduate students, in turn, anchor the laboratory portion of our General Biology courses in which they serve as Teaching Assistants, thereby providing the best of the best learning environments for freshmen.

It is also logical, given the investments of the State and the University in new facilities, cutting edge infrastructure and high quality faculty, that we, in turn, focus on recruiting an even better generation of graduate students and equipping them with the tools for success. This, the apex of the educated work force, impacts the local level, aiding communities in attracting business and industry within the proximity of a major university resource.

In order to further improve graduate programs in the core disciplines, we have:

- Implemented a joint recruiting and admissions process and created a shared student support office for the MCDBG and BMBB programs through seed money provided by the Graduate School.
- Consolidated some of the curriculum in the core courses for MCDBG and BMBB, a process that will continue.
- Funded, through internal resources, renovation of facilities at Itasca ($25,000) in order to provide a laboratory experience for incoming graduate students; currently MCDBG and BMBB students jointly participate. It should be noted that we have a long history of providing laboratory facilities for the graduate program in Neuroscience’s five-week long “boot camp” at our Itasca Station.
- Continued hiring of new faculty through the initiative in molecular and cellular biology and through reallocation of resources to EEB.
- Explored additional Professional Masters (MBS) options or graduate certificate programs; expanded MBS courses in bioinformatics, genomics, and biotechnology to create tracks within the overall MBS program.

This year we plan to:

- Conduct self-studies and external program reviews for MCDBG and BMBB (conjoined). [These reviews have been formally postponed until Fall 2003.]
- Conduct a self-study and external program review for Plant Biology. [This review has been formally postponed until Spring 2004.]
- Encourage the Plant Biology graduate program to develop Itasca-based laboratory workshops to coincide with those offered by Neuroscience, BMBB, and MCDBG.
- Utilize graduate fellowships to increase geographic and ethnic diversity in our student population.
- Work to increase endowments for graduate fellowships.
- Partner with the Medical School to underwrite and integrate LSSURP as a major recruiting tool for our graduate programs.
- Focus on the Molecular Biology Research Experience for Undergraduates (under LSSURP) as a recruiting avenue for our graduate programs.
• Increase stipends for graduate teaching assistants; the first emphasis has been on graduate students appointed in Plant Biology and Ecology.
• Increase the connectivity of our graduate programs in Ecology and Conservation Biology. CNR and CBS, as the two colleges most involved in the CB graduate program, will work out an equitable arrangement for sharing of tuition revenue to the program.
• Work with the Medical School and the Graduate School to try to find an alternative source of funding for our joint graduate programs.
• Continue to develop other emphasis areas within the MBS program, e.g. regulatory affairs.

Our success with each of these actions will be assessed by appropriate measures. For example, success with our program reviews will be a set of clear recommendations about mechanisms for increasing program quality; success with our efforts to diversify our graduate student populations will be measured by increases in numbers of students from diverse backgrounds; success with fellowship-directed development efforts will be measured by increases in endowments.

C. Technology and information/library issues.

Computing and Networking: This year, the CBS Coordinator of Information Technology is developing an overall computing and networking plan for our college, with special emphasis on providing access to high end computing in our two new buildings: Molecular and Cellular Biology and Microbial and Plant Genomics.

Technology to Support Research: As part of the University-wide effort in bioinformatics, genomics, and proteomics, CBS and the Academic Health Center are assessing the additional technology required to implement this initiative. We are developing a strategic long-range financial plan, but it is highly likely that plan will identify needs in excess of resources available within these units.

D. Diversity

As a fundamental component of our ongoing faculty/staff hiring and student recruitment, we remain committed to attracting individuals from underrepresented groups to opportunities here. We are pleased to note that our LSSURP program, from last year to this, doubled the number of minority students enrolled. This year’s class meets our long-range goal of having underrepresented groups make up at least fifty percent of our participants.

We are implementing an initiative to increase the geographic and ethnic diversity of our freshman classes. Our proposed plans for this year include:

• Conduct a pilot recruitment project involving CBS alumni who live in targeted parts of the country.
• Convene a working group of LSSURP alumni or faculty from Historically Black Colleges and Universities (HBCU) with the goal of connecting with the science faculty from these HBCUs.
• Connect the LSSURP participants with our Directors of Graduate Study and Chairs of Admissions Committees.
• Develop plan to achieve financial resources to support students for their graduate programs.

We continue to utilize workshop offerings that enhance our College’s understanding of the importance of diversity. Last year, members of College administration attended “A Working Respect” program offered on the St. Paul Campus and the national conference the University sponsored on “Keeping our Faculties: Addressing the Recruitment and Retention of Faculty of Color”. We believe efforts such as these have improved our ability to recruit and retain students, faculty and staff of color. Our success in these actions is improving the diversity climate of this college.

E. Partnerships: Service, Outreach and External Relations

A partnership is a relationship involving close cooperation between parties having specified rights and responsibilities. Partnerships expand upon the traditional approach of outreach and service. The mutual advantage of partnership is one of interactive communication and action rather than the traditional one-way distribution of information or service. The College of Biological Sciences through its faculty and staff engage in a wide variety of partnerships with business/industry, K-12, professional organizations, government and other communities.

It is our belief that what we, as faculty and students, do in scholarship is informed by the challenges of society and the natural outcome of which is an understanding, engagement, and application of this scholarship to those challenges. We identify the current challenges, problems, and their solutions,
but it is the students we train who will impact the future. This is the importance of an educated work force. Our primary purpose in educating is not to do it exclusively within the walls of a university but in the realms of society. It is a lifelong discovery and dissemination of knowledge. The multiplier effect is produced through our partnerships with our external partners (business/industry, K-12, organizations, government, and communities) where basic research is often translated into solutions.

The College has focused on two priorities that reflect this partnership:

- **Enhanced Educational Programming at Itasca**

As noted in last year’s compact, CBS, in collaboration with the College of Education and Human Development and five school districts in northern Minnesota, submitted an application to the Howard Hughes Medical Institute. The proposal involves novel programming that utilizes our Itasca Station as the campus for continuing education for current teachers in those districts, recruiting our current students to careers teaching biology in a rural setting, and programming for high school students in these districts. The Howard Hughes Medical Institute will announce us as one of the recipients in July 2002. We will begin implementation this fall.

- **Life Science Enterprise Park (University Enterprise Laboratories, Inc.)**

Research in the life sciences is progressing faster than computer technology did in the past decade, leading to predictions that advances in biology and biotechnology will dominate the 21st century. As with any industry, the future of the life sciences industry in Minnesota is, to a large degree, shaped by the infrastructure available to support it. Early-stage life sciences companies, several of which have been started by scientists at the University, are struggling to commercialize technology due in large part to the serious lack of available laboratory space. During the past year, the College of Biological Sciences and the Entrepreneurship Program, Carlson School of Management, collaborated on a feasibility study to determine the need and model for a laboratory-based incubator. As a result of the study, it was determined that creation of a laboratory-based incubator is a key facilitator in affording early-stage companies a better chance to succeed in Minnesota. During this next year, attention will be focused on creating a non-profit to oversee this laboratory-based incubator and to raise private support to build the facility. Actions include:

- Formalize the creation of the non-profit to oversee the laboratory-based incubator.

In addition to these priorities, we have ongoing individual faculty and staff efforts. They include:

- Membership on national review panels, task forces, editorial boards
- Meetings with outside economic groups or companies
- Speakers at alumni and community gatherings
- Guest lecturers or members of senior defense committees at regional four-year colleges
- Participants in “alumni or legislative calling nights” and State Fair activities
- Judges at the Minnesota Science Fair
- Guest speakers for K-12 and community events

Each of our departments, in their annual review of faculty, includes this component as one of the performance measurements, which, in turn, contributes to the faculty member’s compensation adjustment.

- **Capital Campaign and Development**

Development is integrated into and central to the strategic plan of the college and its priorities are noted throughout this document. They include:

- Increase financial support for undergraduate and graduate students.
- Raise financial support to build a laboratory-based incubator.
- Identify complementary funding for the HHMI grant.
- Identify funding needs and sources for the biocatalysis initiative.
- Identify funding needs and sources for a new Student and Faculty Center at the Lake Itasca Forestry and Biological Station.

**F. Strategic Opportunities**

The leadership of the college (deans, department heads and directors) has worked to identify strategic opportunities where our recent and future investments in new faculty and facilities can propel us into unique leadership positions among our academic peers. We have also given careful
consideration to the timing of our efforts, given the time-dependent, competitive, global nature of progress in our disciplines. In addition, we have asked which of our possible options makes sense for this community, state and region. Finally, we have asked which other units at the University of Minnesota could effectively partner in achieving these goals. As a consequence, we have identified three new priorities:

**Initiative in Global Ecosystem Change** – More than a year ago, and in collaboration with the Institute of Technology, we determined that we have an internationally renowned platform of faculty expertise in the sciences that underlie our need to understand the mechanisms by which ecosystems provide services upon which all life depends. Thus, our faculties have developed proposals that we have and will continue to use for development of resources necessary to capitalize on this platform. We will continue to “shop” these proposals with foundations, corporations, individuals and governmental agencies. In the meantime, our existing resources are being directed to hire additional faculty in these disciplines.

**Initiative in Biocatalysis** – Again, in collaboration with the Institute of Technology, we have examined the breadth of biotechnology to determine the sector in which the University of Minnesota could establish a *bona fide* leadership position. Our analysis and conclusions are summarized in the “white paper” – *A Forum on a New Science and New Industry in Minnesota: Biocatalysis and its Synergy with Healthy Ecosystems*. We believe that the science and engineering that underlies biocatalysis is a substantive, academic enterprise that can be sustained for many years into the future. Moreover, faculty in our departments (Biochemistry, Molecular Biology & Biophysics; Chemistry; Chemical Engineering and Materials Science; Biotechnology Institute) comprise a world-class platform upon which further development can occur.

In order to pursue this very strategic opportunity, we have directed hiring of new faculty in BMBB toward this area, and two of our recent hires (Claudia Schmidt-Dannert and Arkady Khodursky) are major forces. In collaboration with IT, we are seeking senior, nationally recognized leadership in the form of an academic director for the Biotechnology Institute (BTI). In addition, we request resources for junior faculty, who would be hired in collaboration with the new director. They would have a primary appointment in BMBB or Microbiology, (a new CBS line in this largely Medical School Department). These junior faculty will be hired for their expertise in biocatalysis, in particular in microbial engineering, protein engineering and metabolic engineering or modeling. A recurring commitment of $100,000 from the Executive Vice President and Provost will support this initiative.

**Enrollment Management**

The latest figures from the Office of Admissions indicate that the freshman class of 2002 numbered 351 students, an increase of 28.1% over Fall 2001. Interest in the biological sciences remains strong and the college continues to attract some of the most highly qualified students admitted to the University. The long term goal of matriculating approximately 500 freshman students and 25 MBS students each year will be realized within 4 – 5 years if enrollment figures continue to grow at the anticipated rate of 8 – 12% per year.

Growth in enrollment results in increased tuition revenues but it also places additional demands on resources as a consequence of the following:

1) Teaching costs - faculty and graduate students must be hired to teach new courses and service additional sections.
2) Instructional laboratory costs – need for additional personnel, equipment, supplies.
3) Administrative costs – additional advisors and career counselors.

**Compact Development**

Throughout the compact planning process, the College has attempted to keep the faculty informed and has solicited their input through the use of the following mechanisms: monthly meetings with department heads/directors; compact planning meetings with departments; semi-annual all college meetings; CBS Administrative Committee; the college’s biweekly newsletter. In addition, the Dean has welcomed input via email and in one-on-one meetings with faculty members.

**Facilities Issues**

The following is a list of the long-term facilities issues facing CBS.

- Classrooms 12 and 70 in the Biosciences Center need to be upgraded with the instructional technology package.
- Itasca – construction of a multi-purpose station center to enhance education, research, and outreach.
• Itasca – repair and maintenance of existing buildings to extend useful life and address code violations.
• Itasca Laboratories – replace a number of old, outdated labs with a single new structure.
• Cedar Creek – construction of condominium style housing for visiting researchers, and/or U of M researchers and research staff as well as a multi-function building to enhance education, research, and outreach.
• Construction of Partners Building in the Biotechnology Quadrant of the St. Paul Campus. A private developer would fund this, with a long-term property lease from the University.
• Itasca Lake Side Laboratory – modernization of existing lakeside lab building to accommodate current and anticipated teaching/research needs.
• Constant Temperature Rooms- replace evaporators and repair cabinet interiors of 27 constant temperature rooms to extend useful life of the facilities.
• Space has been identified in Minneapolis for branch operations (e.g. CBS Student Services and Pre-Health Science Advising).
• Biocatalysis and Biomaterials Research Laboratory – design and construct a new building in the Biotechnology Quadrant of the St. Paul Campus to house the Biocatalysis and Biomaterials Research Laboratory. This would be closely associated both physically and programmatically with the Microbial and Plant Genomics building (currently under construction) and the proposed Partners Building.
• Biosci Lab Renovation – renovation/modernization of existing lab space to accommodate changing needs of current and newly recruited faculty.
• Ecology Lab Renovation - renovation/modernization of existing lab space to accommodate changing needs of current and newly recruited faculty.
• Gortner Lab Renovation - renovation/modernization of existing lab space to accommodate changing needs of current and newly recruited faculty.
• Biotechnology Commons Bldg. – design and renovate the Beef Barn into a Biotechnology Commons that would include space for student services and career counseling offices and a dining/faculty club.
• Biosensor Research Laboratory – design and construct a new Biosensor Laboratory in the Biotechnology Quadrant of the St. Paul Campus.
• Replacement of autoclaves and dishwashers – removal and replacement of steam autoclaves and dishwashers in the Biosci Center and Gortner Lab to enable viable research activities to continue in these buildings.
• Instructional Lab Facilities - replace, remodel, and upgrade current teaching laboratories to accommodate the teaching of biology in the 21st century. We may well need to develop additional laboratory space for experiential learning, or laboratories for cohort-based research projects.
• Teaching/Research Furnishings – Replace chairs in laboratories and offices in the Biosci Ctr. And Gortner Lab. Furnishings were purchased when these buildings opened 30 – 40 years ago, and a systematic plan for replacement must be developed.
• Itasca/Cedar Creek – additional/continued funding for ongoing maintenance at these facilities must be identified to allow for the repairs necessary to avoid more costly future repair/replacement.
• Biosci Building HVAC System – current system delivers re-circulated laboratory air to the building, which is violation of current code requirements.
• Ecology Building HVAC System – the HVAC system in this building has never performed to specifications and the building, occupied since 1993, continues to present health problems.
• Construction of a Tunnel/Skyway to connect north and south portions of the St. Paul campus.

Data Profile

For a display of planning data related to the College of Biological Sciences, refer to a link off the University web site managed by the Office of Institutional Research and Reporting at http://www.irr.umn.edu. This site contains standard financial, staffing and student information.

Financial Issues

Tuition: The agreed upon tuition revenue estimate for the College of Biological Sciences is $8,912,040 for fiscal year 2002-03. Note, this figure includes approximately $1 million in tuition that prior to fiscal year 1999-2000 tracked directly to the Medical School. However, certain course designators in the partnership departments of BMBB and GCD were changed at the time of semester conversion, which resulted in a portion of Medical School tuition attributing to CBS. Tracking and then transferring this tuition from CBS to the Medical School has solved this problem but a more seamless solution needs to be identified and implemented.

Interest in the biological sciences remains strong and the college is projecting continued growth in student enrollments. The freshman class entering in fall of 2002 is projected to number 351, an increase of 28% from fall 2001. If enrollment increases continue as expected (growth of 8 – 12 % per year) the
college will reach its targeted freshman class of 500 per year in approximately 5 years.

The growth in enrollment triggers an increase in tuition revenue but it also places additional demands on resources as a result of the following:

1) Teaching costs - faculty and graduate students must be hired to teach new courses and service additional sections.
2) Instructional laboratory costs – need for additional personnel, equipment, supplies.
3) Administrative costs – additional advisors and career counselors.

ICR: The agreed upon ICR revenue estimate for the College of Biological Sciences is $1,475,742 (49.5% of $2,981,297) for fiscal year 2002-03. Resources made available as a result of the Initiative in Molecular and Cellular Biology, as well as internally reallocated funding from the college have resulted in new hiring in each of our departments. It is anticipated that the college will realize modest growth in ICR revenues over the next 3 – 5 years as these new faculty members apply for and are successful in securing sponsored funding. However, increased revenues will in turn be offset by the demands resulting from the continued growth in setup costs, lab renovation costs, infrastructure needs, and research related support.

Fees:
• The college continues to use the revenues that are generated by lab and technology fees to strategically develop and implement improvements to its undergraduate course offerings, bring technology into the classroom, and provide students with modern computer lab facilities.
• The Molecular and Cellular Biology building is expected to open in the summer of 2002 and a major portion of the students served by the college’s undergraduate laboratory courses will attend classes in this new building. A significant investment in new instructional equipment will be required in order to offer more sections of Biol 4125 and to move Biol 1002 and BioC 4025 into this new facility. The college will use some of the proceeds from the course fee, as well as reallocate existing resources, in order to purchase the necessary equipment.

Renovation funding:
• As indicated in the Facilities Issues section, the college is faced with a variety of challenges related to capital improvements. A number of these issues are new initiatives and result from the increasingly important role that biology plays in society. Others result from the deterioration of existing facilities and the need to repair and upgrade the infrastructure to meet current code requirements and turn the laboratory areas into space that is functional for the modern day research being conducted in the college.

### Historical Allocation Summary

FY1999 through 2002 Compact Investments

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### Central Allocation Summary – FY2002-03

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Collegiate Enrollment Management Data Elements and Projections

Biological Sciences

Undergraduate Enrollments, Degrees, Retention Rates, and Graduation Rates

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<th>Fall 2002</th>
<th>Fall 2003</th>
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<tr>
<td>Freshman</td>
<td>112</td>
<td>216</td>
<td>251</td>
<td>244</td>
<td>274</td>
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<tr>
<td>Sophomore</td>
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<td>105</td>
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<td>240</td>
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<td>292</td>
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<td>Junior</td>
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<td>134</td>
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<td>266</td>
<td>264</td>
<td>296</td>
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<td>Senior</td>
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<td>371</td>
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<td>Total Enrolled UG</td>
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<td>938</td>
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<td>1326</td>
<td>1442</td>
<td>1562</td>
<td>1676</td>
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</table>

Undergraduate Degrees

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<td>Total Undergraduate Degrees</td>
<td>254</td>
<td>258</td>
<td>212</td>
<td>227</td>
<td>294</td>
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Retention and Graduation

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<tbody>
<tr>
<td>1st year retention</td>
<td>83.9%</td>
<td>91.0%</td>
<td>92.1%</td>
<td>89.1%</td>
<td>90.0%</td>
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<tr>
<td>2nd year retention</td>
<td>74.1%</td>
<td>81.9%</td>
<td>81.9%</td>
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<tr>
<td>4 year graduation rate*</td>
<td>28.6%</td>
<td>27.1%</td>
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<td>37</td>
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<tr>
<td>5 year graduation rate*</td>
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<td>37.5%</td>
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<td>45</td>
<td>47</td>
<td>49</td>
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<tr>
<td>Degrees/enrollment</td>
<td>40.2%</td>
<td>31.2%</td>
<td>22.6%</td>
<td>20.4%</td>
<td>20.0%</td>
<td>22.2</td>
<td>20.5</td>
<td>19.5</td>
<td>19.7</td>
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<tr>
<td>Degrees/Fall seniors</td>
<td>72.6%</td>
<td>69.5%</td>
<td>66.3%</td>
<td>64.9%</td>
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Registration Status - Undergraduate

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<th>Fall 1998</th>
<th>Fall 1999</th>
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<tbody>
<tr>
<td>Continuing</td>
<td>570</td>
<td>698</td>
<td>747</td>
<td>836</td>
<td>922</td>
<td>1012</td>
<td>1096</td>
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<tr>
<td>New High School</td>
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<td>242</td>
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<td>380</td>
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<td>440</td>
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<td>New Advanced Standing</td>
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<td>56</td>
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<td>Inter-campus transfer</td>
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<td>Intra-campus transfer</td>
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<td>108</td>
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<td>Re-admit</td>
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<td>Other</td>
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<td>5</td>
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<tr>
<td>Total</td>
<td>0</td>
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<td>1442</td>
<td>1562</td>
<td>1676</td>
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</table>

Notes: Annual graduation rates based on the cohort of students starting 4 years or 5 years previous.

Graduate and Professional Enrollments
### Graduate and Professional Degrees Granted

<table>
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<tr>
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<tbody>
<tr>
<td>Masters</td>
<td>18</td>
<td>21</td>
<td>30</td>
<td>23</td>
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<tr>
<td>Doctoral and 1st Professional</td>
<td>27</td>
<td>22</td>
<td>17</td>
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<td>31</td>
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### FYE Students

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<tr>
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</thead>
<tbody>
<tr>
<td>Lower Division Undergraduate</td>
<td>534</td>
<td>537</td>
<td>512</td>
<td>518</td>
<td>638</td>
<td>600</td>
<td>600</td>
<td>600</td>
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<tr>
<td>Upper Division Undergraduate</td>
<td>427</td>
<td>433</td>
<td>507</td>
<td>515</td>
<td>480</td>
<td>530</td>
<td>580</td>
<td>630</td>
<td>680</td>
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<tr>
<td>Graduate and Professional</td>
<td>215</td>
<td>185</td>
<td>254</td>
<td>320</td>
<td>364</td>
<td>360</td>
<td>360</td>
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</tr>
<tr>
<td>TOTAL</td>
<td>1,176</td>
<td>1,155</td>
<td>1,273</td>
<td>1,353</td>
<td>1,482</td>
<td>1,490</td>
<td>1,540</td>
<td>1,590</td>
<td>1,640</td>
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</table>

### Tuition Revenue

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Tuition revenue</td>
<td>4,739,452</td>
<td>5,393,960</td>
<td>5,937,348</td>
<td>6,569,959</td>
<td>7,550,000</td>
<td>8,840,000</td>
<td>9,640,000</td>
<td>10,480,000</td>
<td>11,740,000</td>
</tr>
</tbody>
</table>

Assumption on undergraduate and graduate school rate increase: 11.25%  5.0%  5.0%  5.0% 
Assumptions on professional school rate increases:
### Financial Issues Data Template

<table>
<thead>
<tr>
<th>Major Revenue Sources</th>
<th>FY 98 Amount</th>
<th>FY 99 Amount</th>
<th>FY 00 Amount</th>
<th>FY 01 Amount</th>
<th>FY 02 Amount</th>
<th>FY 03 Amount</th>
<th>FY 04 Amount</th>
<th>FY 05 Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. O&amp;M</td>
<td>10,033,157</td>
<td>10,230,111</td>
<td>9,373,310</td>
<td>9,720,877</td>
<td>10,466,110</td>
<td>10,545,425</td>
<td>10,018,154</td>
<td>10,018,154</td>
</tr>
<tr>
<td>B. Tuition</td>
<td>4,491,544</td>
<td>5,380,608</td>
<td>5,925,241</td>
<td>6,546,820</td>
<td>8,089,527</td>
<td>8,912,040</td>
<td>9,357,642</td>
<td>9,825,524</td>
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<tr>
<td>C. State Special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>147,900</td>
<td>227,040</td>
<td>387,040</td>
<td>547,040</td>
</tr>
<tr>
<td>D. ICR</td>
<td>1,370,200</td>
<td>1,410,473</td>
<td>1,478,119</td>
<td>1,456,026</td>
<td>1,559,203</td>
<td>1,475,742</td>
<td>1,549,529</td>
<td>1,627,006</td>
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</tbody>
</table>

**Noted assumptions by revenue source**

A. O&M decrease of 5% in FY '03-04, flat for FY '04-05  
B. Tuition increase of 5% per year in FY '04 and FY '05  
C. State Special - funding for 2 new hires in each of FY '04 and FY '05  
D. Growth in ICR revenues of 5%/year in FY '04 and FY '05  
E. Revenues are flat for FY '03 through FY '05 due to decreased market value of endowment and reduced distribution rate.