I. INTRODUCTION

The College of Liberal Arts and Sciences has, over the last two years, focused on selecting areas of research and education where we have unique strengths to build programs of national and international prominence. The areas chosen carry a UF mark of distinction, for which the College will be recognized as the institution of choice for scholars and students from across the nation and the world specializing in these fields. This strategy, if sustained, will enable the College to emerge as one of the top ten public institutions by 2010.

Continued investment in students, faculty and facilities is needed so that the University can build sustained world-class programs in the selected areas. University investment alone, however, will not suffice. A vigorous effort will be launched to raise support from philanthropic foundations (such as Freeman, Keck, Hughes, Packard, and Woodrow Wilson), especially in the humanities and social sciences. These efforts will not only bring prestige to UF in highly competitive areas, but can be used to leverage additional resources from federal and state agencies. With the expansion of the office of development, the College has also boosted its private fund raising efforts. The success in internationally visible programs should create interest among donors to provide support for these areas, particularly the interdisciplinary programs, for which traditional state assistance is rarely available. A special focus of this endeavor will be the establishment of endowments to fund academic programs (endowed chairs, student scholarships and visitor programs), which will attract international scholars and students of distinction.

The College of Liberal Arts and Sciences forms the academic core of any top-tier university. The mission of the College is to provide a high-quality education for both undergraduate and graduate students across the most fundamental disciplines, and to integrate teaching and research. Developing an understanding of society, its peoples, and its cultures (languages, arts, literatures, belief systems) and interactions with the environment, and providing an in-depth understanding of the fundamentals of nature and the universe, are our most important objectives. Our graduating students are not only well-versed in their chosen fields, but have the data gathering, critical thinking, independent reasoning, and communication skills needed to be competitive in a global society.
In accordance with the mission of the University of Florida, the College of Liberal Arts and Sciences is committed to the production and dissemination of knowledge for the public good. Our faculty, students, and staff understand the university's obligation to lead and serve the needs of all the citizens of Florida, this nation, and world. A special effort is made to bring to each student a meaningful international experience through exchange programs, special courses in studies of cultures and the environment, and new collaborative field research educational activities. The experience of these programs within a liberal arts and sciences education provides graduates with the abilities to lead fuller and more successful lives.

The following sections respond to the questions raised by the task force in its January 31st letter. A faculty advisory group, department chairs and directors of centers and programs, have provided input for this report.

II. Areas where the greatest contributions are being made to achieve the College’s goals to establish national and international leadership.

(These have been characterized by (i) significant investments, almost all driven by federal awards; and (ii) strong interdisciplinary activities across diverse departments, e.g., social sciences with agriculture, natural sciences, and business with humanities).

(a) Astronomy and Astrophysics. Faculty members in these areas are collaborating with the Ministry of Science in Spain to become a partner in El Gran Telescopio Canarias in the Canary Islands that will be the world’s largest optical telescope when completed in 2004. UF has assembled a small team of faculty who have become world leaders in building the optical detection system for all three of the world’s 10-meter telescopes (Hawaii, Chile, and the Canary Islands). The group is small and at risk with respect to loss of personnel to prestigious institutions. Additional hiring is needed to protect the program. The vision is to build a teaching observatory at the edge of the UF campus to provide a central, real-time network connecting all three large telescopes and create a training center at UF that would be one of its kind worldwide and a showcase for UF.

(b) Physics and Information Technology (with UFBI, Astronomy, English, Fine Arts). CLAS scholars are providing the leadership in the NSF-funded ($14.6M over 5 years) International Virtual Data Grid Laboratory (iVDGL), which will form the world's first true "global grid," providing an integrated computational resource for major scientific experiments in physics, astronomy, biology and engineering. Success here resulted from a five year
investment in high energy physics, notably the national physics grid network proposal (GryPhyN), and UF’s participation in the Large Hadron Collider at the Centre Européen de Recherche Nucléaire CERN (for which UF faculty have international responsibility for one of the largest projects being undertaken). There is also the collaboration with MIT and CALTECH in developing the laser system for NSF’s largest facility, the Laser Interferometric Gravitational Observatory (LIGO). The iVDGL has important links to other UF projects including biomedical imaging, the telescope projects and the humanities by digitizing historical and literary works.

(c) Biological and Genetic Sciences (Botany, Zoology, Plant Genetics, Horticulture, Mathematics and Statistics). The Floral Genome Project, funded by the NSF, is a collaboration among UF, Cornell, Michigan, Penn State and Alabama to investigate the diversification of the genetic architecture of the flower. This is the first significant advance generated by recent investment in genetics by the College. New efforts on studies of ancient diseases and their evolution, in terms of molecular genetics has had significant impact in research and teaching in anthropology. The CLAS focus on this and related efforts is evolutionary functional genomics. Future success depends on close ties with agricultural and medical sciences through the UF Genetics Institute. Current goals are to invest significantly in focused areas of genomics, notably Transposon Research, Epigenics and Plant Genomics that can place UF among leaders in focused areas in the basic sciences of genetics that bond firmly to projects in other colleges.

(d) Chemical Sciences (Chemistry, Materials Science, Engineering, Biochemistry). The program in Chemical Sciences is arguably the highest ranked program in the College and most likely at UF (Analytical Chemistry 7th, Federal Expenditures 15th). Consistent investment in hiring high-quality faculty for more than 15 years has been the key to this success. Faculty members have played significant, but not leadership roles in the Engineering Research Center, The National High Magnetic Field Laboratory and most recently, the UF Genetics Institute. They could take the lead in a Bio-nanoscience initiative.

Innovative new teaching approaches have been successfully developed by the chemistry department as part of a Research Experience for Undergraduates with a strong international component, and this model could be extended to other fields. The proposed joint doctoral studies program linking Paris-Bordeaux-Strasbourg with Florida - Texas (Austin) - North Carolina (Chapel Hill) will also create exciting new opportunities for graduate students.

III. Areas that have potential to make significant contributions.
(These areas have received recent UF investment and have drawn national interest in some cases. They are receiving increasing recognition for scholarship and innovative research, and have potential for significant future external awards.)

(a) Humanities and the Public Sphere (English, History, Philosophy, Religion, Languages and Literatures, African American Studies, Anthropology). No university in the United States can emerge among the top ranked academic institutions without a nationally recognized Center for the Humanities. Institutes and centers at the top universities serve as magnets to attract scholars and outstanding students while focusing on specialized research and cultural areas of the arts and letters that sets the institution apart in fields fundamental to the academic disciplines.

A top priority of the College is to create a Center for the Humanities and the Public Sphere that will provide a unique place for the interdisciplinary research, preservation and expansion of cultural and historical knowledge. In addition the Center will play an important role at the intersection of the academy and public life. Through seminars, exhibitions and colloquia, the Center will bring together communities and scholars from across the university and the world to address central questions of moral and civic values, historical memory, human creativity and other issues central to our cultural and social existence. A special fund raising effort has been launched to establish the Center with endowments in the targeted areas of Film and Contemporary Media Studies, Ethics and Society (with links to Ecology, Environmental Sciences and the Religion of the Americas), Colonial History, and the Modern Literatures.

The recently revitalized African-American Studies Program coordinates course offerings from various disciplines in the College of Liberal Arts and Sciences and contributes to the understanding of the cornucopia of peoples and cultures that have forged the cultural history and the current dynamics within the state of Florida. Similarly, a renewed Asian Studies program supported with external funding, brings together faculty from various disciplines with expertise on Asian languages, cultures and societies and will serve the growing economic and social linkages. Faculty and students from the Center for Latin American Studies are also linked in these efforts with CLAS centers and programs.

(b) Environmental and Earth Sciences (Anthropology, Geography and Geological Sciences, Ecology). The Land Use and Environmental Change Institute (LUECI) was created to bring together faculty members from different disciplines who use advanced scientific technologies (e.g. GIS/Remote sensing,
mass spectrometry, rare isotope analyses). The group studies global climate change, human-environment interactions and bio-complexity, with a special focus on fragile ecosystems such as those in Florida. Results from the research based in Florida have generated international interest in geographical areas including the Amazon basin, the circum-Caribbean, Central America, the Okavango Delta in Botswana, and southeast Asia. A strong international exchange program integrating student training and faculty research is emerging. A unique feature will be the study of land and water factors in terms of future resources, which is critical not only for Florida but also for our international partners. A prime example is CLAS’s Center for African Studies which has recently increased the scope of its research and teaching to include environmental studies of the ecosystems of African countries such as Uganda and Tanzania where the University of Florida has constructed permanent research facilities. The long-term vision is that the collaboration between Liberal Arts and Sciences faculty with Engineering and Agriculture partners will make UF a national leader in the field.

In addition, faculty and students in geological and oceanographical sciences have benefited strongly form UF’s participation in the Joint Oceanographic Institution and have established a strong presence in the NSF-supported Oceanographic Drilling Program (ODP). The ODP will allow exploration of the earth’s crust at previously unattainable depths and probe the origin of earthquakes at subduction zones, reconstruction of ice-age cycles, climate periodicity and the Cretaceous/Tertiary boundary.

(c) Nano-science and Nano-technology (Chemistry, Material Sciences, Engineering, Biosciences, Physics). Nano-science research was recently identified as one of UF’s priorities with a special emphasis on developing technologies that would have potential for creating new industries. UF has strengths in nanoelectronics (electron beam lithography and nanotube applications in engineering and physics) but is well behind large-scale efforts in California, Massachusetts and North Carolina. A major commitment in this very expensive and competitive area is needed in focused areas if UF is to be competitive.

One area of the nanosciences where UF can be unique and is already competitive at a modest scale (~$10M in total federal funding) is in the Bio-Nanosciences which includes strong links to the Brain Institute and the Genetics Institute. The CLAS strength is in the use of ultra-small scale technologies to explore living cellular systems: near-field optics for imaging single biological cells, development of smart bio-nano machines (DNA molecular motors), and nanoscopic gene-array techniques. In order to be successful, we need to bring the technologies and teaching laboratories in these
fields together in a central place and build the synergies necessary to tackle the really significant problems.

(d) **Linguistics and Language Learning** (Linguistics, Languages and Literatures Departments, Computer Sciences, Brain Institute, Psychology). At UF, Linguistics is taught as a program separate from the languages and literatures, although there are some important linkages. This structure is followed at the top institutions. The program has grown vigorously with large student demands and an increasing national awareness of the need for language-pattern recognition, communication skills, and training in language acquisition. The program has enormous potential with connections to the Brain Institute and Computer Sciences with the building of research endeavors in Computational Linguistics, Language and the Mind, and Neuro-linguistics. These are fundamental research-intensive areas that will remain frontier fields of inquiry for the next 10 to 15 years. In order to establish the new research activities, the Linguistics program needs to be given departmental status in order to attract advanced scholars and sustain high-quality research. The program has had great success in placing graduate students in federal and state agencies such as the CIA and the FIA, and large corporations, and it could easily double in size given the demand.

(e) **Women’s Studies and Gender Research.** The program in *Women’s Studies and Gender Research (WSGR)* is an important resource for the College, the University and the State of Florida. The program supports basic academic studies and research on the complex issues related to women and gender in the workplace, families, schools, government, policy centers and voluntary organizations. Every Research-1 university has a WSGR undergraduate program, and all of the top ten public institutions combine academic programs with research centers or institutes. Although only instituted in 1977, the UF program is nationally competitive, particularly at the graduate level with the new master’s program.

UF should also offer an undergraduate major in WSGR to meet the national standard (two other Florida institutions offer BA degrees, three offer MA programs and there are no Ph.D. programs in Florida). The University of Maryland program leads the nation largely due to its affiliated institutes and think-tanks. UF needs to strengthen its concentrated research programs and integrate these with an undergraduate major, with the goal of structuring a doctoral program by 2007. UF would then rank with the three leaders (the Universities of Michigan, Minnesota and Washington) and be the only program in the Southeast. The associations with our growth in Children and Families Studies, Aging, Migrant Populations and Cultural Studies would assure a vigorous program.
(f) The Center for African Studies (CAS). Scholars in the Center for African Studies (CAS) intrinsically recognize the integrated histories, peoples, commercial and political relationships of African countries and the United States. The CAS is strongly positioned after decades of targeted research and field-work throughout Africa, to advise and support the University of Florida's goal of comprehensive internationalization. For more than two decades the Center has succeeded in obtaining support from the Department of Education's competitive grants program. It is one of only nine DOE Title VI African Studies Centers, and is the only such center in the southeast United States. The African Continent is the last frontier to be incorporated within the current global system of economic growth and prosperity, and this sets the stage for expanding opportunities for external funding and support from the private sector and relevant public interests for CAS programs and research.

IV. Critical Areas with Fundamental Roles.

(These are areas fundamental to the academic core of CLAS and UF, and for structural and cultural reasons have been divided across campus. They lack the unity and/or intellectual energy at present, but with inspired leadership a unified organization could be of high quality and impact. They are also critical as markers of the quality of academic scholarship.)

(a) Biological Sciences. Instruction and research in the biological sciences are fragmented at the University of Florida, mainly because they have pockets of isolated strengths (e.g. plant molecular biology, the systematics program and tropical ecology are among the strongest in the nation) but these are widely distributed across three colleges: Liberal Arts and Sciences, Agricultural and Life Sciences, and Medicine. Better integration and coordination among similar disciplines across departments and colleges would help to eliminate some of the "diffuseness" which waters down the strengths that are present. We also need to offer a modern basic biological science curriculum to our students and at the same time an environment for enhancing modern research activities in genetics, proteomics, molecular biology and cellular biology. These areas define the frontiers of biological research today. At the same time we must offer instruction in integrative organismal population, and com-munity and ecosystem studies in zoology and botany. The latter have a key role to play in Environmental Sciences and Ecology.

The recent and planned faculty hires in genetics are moving CLAS toward a modern biology program but this needs to be developed in an integrated program with a new curriculum and with a seamless bridge across colleges. For the instructional program, we need to uphold the rigor of the offerings for
majors especially for basic biology courses that are quite distinct from courses offered for non-science majors and applied science majors. We must increase course offerings in basic genetics, cellular biology, molecular biology and microbiology. Student pressure for such courses is high and is predicted to grow. All students taking the basic biology courses should be pre-tested for readiness. The graduate student growth associated with the developing research programs in the Genetics Institute and the Bio-nano-science initiatives is consistent with expanding the number of teaching assistants to meet the new demand. The fundamental life science component of the Genetics Institute will need these changes to be successful and long-lived.

(b) Social and Behavioral Sciences (Anthropology, Communication Sciences and Disorders, Criminology, Geography, Political Science, Psychology, and Sociology). A number of faculty in Arts and Sciences together with colleagues in other colleges have considerable expertise in the socio-cultural issues and challenges faced by modern society in general and Florida in particular. Efforts have been made to bring these experts together to form an Institute for Children and Family Studies spanning Arts and Sciences, Medicine, Agriculture, and Law. The activities would focus on critical issues facing contemporary families and children, such as poverty, violence inside and outside the home, children’s education and health needs, consequences of unplanned pregnancies and childbearing, and parenting in diverse family arrangements. Scholars would also focus on children’s rights, the effects of migration patterns and economic segregation on families and children, and children’s literature. The goal is to bring the key experts together so that UF can take the lead in researching solutions to the state’s problems that reflect national concerns.

One structural element that would boost the research activities in all of the social sciences and build linkages between otherwise isolated and insular units, is the establishment of an Institute for Social Research. The Institute’s infrastructure and staff could provide the data collection capabilities needed for a number of research areas, especially those that rely on survey research. Because a major research university demands excellence in social research, having a strong institutional capacity to conduct survey research is critical.

Survey research is a mode of data collection involving the administration of standardized questions to a carefully selected sample of respondents. It has become a major tool of contemporary scholarship and a highly valued means of collecting information by government and private organizations. A substantial demand for a variety of survey research services exists across campus, in Liberal Arts and Sciences, Business, Health Sciences, Dentistry,
Engineering, Journalism, IFAS, and other colleges and centers. The Institute’s infrastructure would represent important improvements in UF’s scientific resources while substantially improving extramural grant competitiveness for the social sciences.

V. Areas That Could Be Restructured.

(a) Applied Mathematics and Computational Sciences (Mathematics, Statistics, Biomathematics and Actuarial Science). One area that is virtually absent as an academic research and educational program is applied mathematics and associated fields of the computational sciences, biomathematics and applied statistics. Such programs exist at many of the top ten public institutions, often as divisions inside mathematics departments. The successful programs have strong bonds to industrial and federal (particularly defense) activities. At UF there are clearly major opportunities with analysis of images from medical research, applications in mechanical and electrical engineering, bio-informatics, and statistical sciences. There are a number of small clusters of two or three faculty (from different departments) who pursue these activities, but they are often isolated and only productive at a small fraction of their intellectual potential. It would be worthwhile to explore this general area to determine if restructuring into one focused program would lead to a Florida example of the strong research centers/departments often seen in more industrialized settings.

(b) Aging/Gerontology. The Institute on Aging (IOA) in the College of Medicine and the Center for Gerontological Studies (CGS) in the College of Liberal Arts and Sciences are both quality programs that can complement each other to create a sum greater than their parts if carefully structured. The IOA and the CGS could be brought together in a truly meaningful manner as one entity with faculty members from both colleges, but with a united mission. This union would strengthen the research and student-training efforts, allow for student growth in this field, and advance UF to a leadership position in aging studies.

(c) Biological Sciences. There is overlap in the elementary level biological science courses offered through Liberal Arts and Sciences, Agricultural and Life Sciences and Medicine. In addition, UF is not providing a competitive set of offerings in modern areas of molecular and cell biology, etc. (See IV. a. above.) Efforts in these areas could be merged across colleges to offer an appealing program in Biological Sciences. Such a program would attract majors of two types: (i) those preparing for research-scientific careers, and (ii) those planning for professional degrees in Agriculture, Medicine and Environmental Sciences.
VI. Areas Where Resources Should Be Concentrated

(a) Provide hiring opportunities for areas where the Deferred Retirement Optional Plan (DROP) will create large gaps in teaching faculty that will occur in 2003. This is critical for maintaining the quality of undergraduate instruction.

(b) Reduce the sizes of classes in areas where we have large teaching commitments (English, upper level classes in Spanish, Chemistry, Political Science, Psychology, Sociology and Mathematics). New strategic appointments will be necessary to meet this need.

(c) Maintain commitments to large and successful interdisciplinary cross-college projects. (Resources are needed for faculty hiring and space needs for LUECI, UFGI, Astrophysics, Biological Sciences and Genomics.)

(d) Create endowed director/professor positions independent of department and regular E&G budgets to protect the five best large interdisciplinary programs.

(e) Create a modern biological sciences BA/BS/MA degree program, rooted in the modern areas of Molecular Biology, Cell Biology and Microbiology.

(f) Reduce the financial burden of meeting tuition waiver deficits, typically $2M annually in Arts and Sciences.

VII. Rankings (Arts and Sciences Combined)

(a) Top Ten Public Institutions

University of California, Berkeley
University of Michigan
University of Virginia
University of Illinois, Champaign -Urbana
University of North Carolina, Chapel Hill
University of Washington
University of California, Los Angeles
University of Texas
University of Wisconsin
University of Minnesota
(b) **Peer Institutions** (We compare UF data in key areas with these institutions to test progress. UF ranks in the middle).

- University of North Carolina, Chapel Hill
- Pennsylvania State University
- University of Maryland
- University of Arizona
- Ohio State University
- University of Colorado, Boulder
- Indiana University
- Purdue University

(b) **University of Florida Liberal Arts and Sciences Departments** (grouped in general classifications and listed *alphabetically* in each group)

### TOP DEPARTMENTS/PROGRAMS

**Tier 1**
- Anthropology
- Astronomy
- Chemistry
- Physics
- Statistics

**Tier 2**
- Classics
- Criminology
- English
- Psychology

(Tier 1 units have received targeted college investments over the last 5 years)

### MID-STREAM DEPARTMENTS/PROGRAMS (growing)

- Geography
- Geological Sciences
- History
- Linguistics
- Political Science
- Religion
- Women’s Studies and Gender Research

(These departments/programs have had recent modest investment and are characterized by strong interdisciplinary links to other areas, and good recent external funding.)
MID-STREAM DEPARTMENTS/PROGRAMS (under-supported, slow growth, large classes)

- Biological Sciences
- Botany
- Communication Sciences & Disorders
- Mathematics
- Zoology

DEPARTMENTS/PROGRAMS (with critical need, many have very large teaching/research ratios)

- African & Asian Languages and Literatures
- Germanic and Slavic Studies
- Philosophy
- Romance Languages and Literatures
- Sociology

(New investment in the above areas, targeted to build co-operative programs with other units would give the most return for the investment. Large class sizes and heavy teaching loads have slowed development in these units.)

VIII. Special Comments

(a) Reduction of Class Sizes

One area where the College could advance significantly in improving the quality of our instructional programs, and where we are ranked poorly nationally, is in class size. Plans to fill pre-DROP faculty lines should be structured to provide the staffing needed to reduce class size, particularly in the large sections of Chemistry, Spanish, Calculus, English, Zoology, Physics and French. (See Appendix IX.a.)

(b) Planning for the Deferred Retirement Option Program (DROP)

The delay in the plan to fill “pre-DROP” lines due to budget recalls, will lead to major crises in departments where there will be very large DROP numbers in 2003: Chemistry, Zoology, English, Physics. There will be serious gaps in staffing form 2003 onwards that will place a heavy burden on young faculty if this problem is not addressed rapidly. Furthermore, the prefilling could be
used wisely to invest in areas where student numbers and research growth plans would allow advances with our initiatives.

(c) **Enhanced Diversity**

The College would like to see the University take a major step to create a more welcoming atmosphere at UF for students and faculty from under-represented groups. One idea suggested by faculty members is the creation of an interdisciplinary Undergraduate Research Center where students can develop seminar programs, plan and publish the Undergraduate Research Journal, and develop community outreach programs in which all students can participate.

Such a Center could be run by students in a central location, not as a governmental activity, but as an intellectual outreach to fellow students and the community at large. The Center would provide mentorship capabilities for students, and train future community leaders. The activities would help increase our successes in the recruitment of graduate students and faculty members from diverse populations.

(d) **Interdisciplinary Philosophy**

It is very important to CLAS that every effort be made to enhance and strengthen interdisciplinary work, not just in research, but especially in instruction in the fields that are of special societal and cultural interest to the state and the nation (genetics, aging, children, ethics, ecology, environmental sciences, languages and literatures, crime/justice and race/ethnic relations). The College philosophy has been to nurture these with available resources but to have each firmly and unequivocally rooted in the fundamental core disciplines to assure rigor, longevity and freedom to explore new and challenging frontiers.

**IX. Appendices**

(A) Class Sizes

(B) Graduate Student Growth

(C) Research Awards: (1.) Annual Growth (2.) Individual Departments

(D) CLAS activity summary per capita