JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES
VISION COMMITTEE REPORT
THE UNIVERSITY OF TEXAS AT AUSTIN

DECEMBER 2003
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The John A. and Katherine G. Jackson School of Geosciences Vision Committee was appointed on May 28, 2003 by President Larry R. Faulkner. (Appendix 1)

Committee Membership is as follows:

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The Committee was constituted to advise The University of Texas at Austin on the most efficacious way to utilize the resources generated by a substantial endowment created through gifts from the late John A. Jackson. The intent of his gifts was to build a premier program in the geosciences. It was the Donor’s instruction that geosciences include "... geology; geophysics; energy, mineral and water resources; as well as the broad areas of the earth
sciences, including Earth's environment. The Jackson challenge was to raise the national ranking of the programs to "the top five in five years".

The Committee met in Austin in the Jackson School on September 11-13, 2003 and on October 6-7, 2003. The Committee visited the facilities of the Department of Geological Sciences, the Bureau of Economic Geology and the Institute for Geophysics. On October 5th, Committee members Holland and Gilbert and Advisor Press visited the Marine Science Institute at Port Aransas. The Committee heard presentations from academic and research administrators and visited informally with faculty and research scientists. Prior to the September meeting, Committee members were provided with a briefing book and other materials on the School and its programs.

The Committee reviewed and assessed the scope and quality of the existing program in the geosciences in the Jackson School, reviewed the organization and leadership of the School and made recommendations for changes, and considered and made recommendations on what areas of the geosciences at The University of Texas would be appropriate for new investments. The Committee also considered and made recommendations on other actions that will improve existing programs and the School's operations.

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1 Letter of February 27, 2002 from John A. Jackson to President Larry R. Faulkner
THE JACKSON SCHOOL IN 2003
An Assessment

As presently constituted, the Jackson School includes one academic department, the Department of Geological Sciences, two research units, the Bureau of Economic Geology and the Institute for Geophysics, and the Geology Foundation, an entity chartered by the Board of Regents in 1953 to receive gifts initially to support the existing Department of Geology and subsequently the Department, the Bureau and the Institute. Prior to receiving the Jackson gift, the Foundation's corpus was about $50 million, nearly all of which was held in dedicated endowments.

The Jackson School is headed by a Director who reports to the Dean of the College of Natural Sciences. The Director is assisted in governance duties by a Steering Committee composed of the directors and three other representatives from the School's component units. The Department of Geological Sciences is headed by a Chair. At The University of Texas at Austin this has been traditionally a weak administrative position with the authority for the most part residing in a Budget Council. The Chair of the Department reports to the Dean of the College of Natural Sciences. The Bureau of Economic Geology is headed by a Director who reports to the Vice President for Research. The Director of the Institute for Geophysics reports to the Dean of the College of Natural Sciences. The Geology Foundation is administered by a Director who reports to the Dean of the College of Natural Sciences; its assets are held by The University of Texas System and managed by UTIMCO (The University of Texas Investment Management Company). In a subsequent section of this report, the Committee makes recommendations that it believes will improve the organization and operation of the School.

Since the establishment of the Jackson School, collaborative research among faculty members and scientists of the Department, Bureau and Institute has increased significantly. The number of collaborative efforts now number nine with an additional 14 proposed. Bureau and Institute scientists teach in the Department on an irregular basis.
The Department of Geological Sciences -- There are 28 faculty members, one lecturer, six research scientists, and eight administrative and technical staff in the Department. The faculty total includes the Directors of the Bureau and the Institute. Each of the teaching faculty holds an endowed position. Compared to departments in peer schools, the faculty of the Department of Geological Sciences is well supported. The faculty do not have a strong record of competing for and winning outside research grants and contracts. The Department is successful in discharging its undergraduate and graduate teaching mission. Currently, the Department has 168 undergraduate majors and 165 graduate students. The graduate students are about equally divided between Ph.D. candidates and M.S. candidates. The Committee believes that the strong professional Master's degree is a very important element in the graduate curriculum.

In the 1982 National Research Council ranking, the Department of Geological Sciences was ranked 11th. In the 1993 NRC rankings, the Department was in a two-way tie for 15th. In the U.S. News and World Report's 1996 ranking, the Department was in a seven-way tie for 9th. In the magazine's 1999 ranking, the Department was tied for 11th place with six other departments. In that same year, 1999, in the U.S. News and World
Report's rankings of individual programs, the Department was ranked 1st in stratigraphy-sedimentology, 6th in structure-tectonics, 6th in hydrology, and 10th in paleontology. Notwithstanding these relatively high rankings in the Department's core programs, in the Committee's judgment, the Department is good, but not outstanding. The core strengths of the Department have been traditionally in sedimentary geology, structural geology and tectonics, hydrology and petroleum geology. Because of retirements, however, and the failure to hire strong replacements, the Department's reputation, as indicated in national rankings, now exceeds the reality. Members agreed that if the outstanding scientists in the Bureau of Economic Geology and the Institute for Geophysics were included in the faculty, the methodology used by the ranking agencies would rank the Department significantly higher. One of the challenges facing the School, therefore, is to integrate effectively the resources of the Department, Bureau and Institute.

The Bureau of Economic Geology -- The Bureau is a research and service organization composed of 80 scientists, 52 support staff, and 28 student research assistants. The student research assistants are mostly graduate students in the Department of Geological Sciences but some are undergraduates and some are students from other departments. Of the scientists, one (the Director) has a "zero time" faculty appointment; 10 are involved in the supervision of graduate students; and several more serve on graduate study committees. Faculty members with "zero time" appointments have full faculty standing but their salaries are not paid from the departmental budget. Since 1909, the Bureau has functioned as the "Texas Geological Survey" but not under that name. Although some of its scientists are involved in basic research, most of the research is applied research under grants and contracts from outside agencies. The Bureau has very strong programs in basin analysis, reservoir characterization, hydrology, exploration geophysics, and environmental geology. It has a strong leader and is nationally competitive in winning grants and contracts. Because of its involvement with State government agencies, Federal government agencies, foreign government agencies, and industry, the Director of the Bureau has a direct reporting line to the Vice President for Research.

The Institute for Geophysics -- The Institute is a research organization with 29 scientists, six post-doctoral students, and 30 graduate student research assistants. It has a very strong international presence in global marine geophysics and seismology and is highly competitive in winning grants and contracts. Of its scientists, three have "zero time" faculty appointments, 11 are involved in supervision of graduate students and others serve on graduate studies committees. The Committee is of the opinion that the national standing of the Department would be raised if Institute scientists were integrated into the Department. Integration would be facilitated if the Institute were moved to the main campus into Taylor Hall adjacent to the Jackson Geological Sciences Building. Taylor Hall, plus space in the Jackson Building, would provide the 40,000 square feet needed. The Committee is informed about plans to build new quarters for the Institute at The
University's Pickle Research Center, but believes it is important to call attention to the substantial benefit to be derived from moving the Institute to the main campus where Institute scientists, jointly appointed into the Department faculty, would be able to contribute more effectively to the academic program.

The Geology Foundation -- About 50 percent of the income from the pre-Jackson gift corpus of the Foundation supports faculty through endowed chairs, professorships, lectureships, and fellowships. About 36 percent of the income supports students through scholarships and fellowships (29% percent for graduate students and 6% percent for undergraduate students). The remaining 14 percent is used in support of the Department for a wide range of purposes. The Foundation is governed by an executive committee consisting of the Foundation Director, the Chair of the Department of Geological Sciences, and the Directors of the Bureau of Economic Geology and Institute for Geophysics. The Director of the Jackson School serves on the committee ex officio. Currently, the same individual serves as Director of the Jackson School and the Foundation.

Summary

The Jackson School's greatest tangible asset is the Geology Foundation, which provides financial resources and outside advice and counsel from professional geologists working in industry and government.

The undergraduate and graduate teaching programs in the Department are strong. The Committee singled out the professional Master of Science Degree as noteworthy. Although there is good research being performed in the Department, and some is excellent, the research record is below what will have to be achieved for the Jackson School to be ranked nationally within the top five geoscience programs. Research programs of the Bureau and Institute are strong and competitive at a high level.

The principal weaknesses noted by the Committee are in the organization of the School and the failure to combine effectively the resources of the Department, Bureau and Institute to optimize the teaching and research programs across the School. The sense of the Committee is that if the talent and resources already in place were employed more effectively, the Geosciences at The University would enjoy a higher national ranking among its peers.
ORGANIZATION AND LEADERSHIP

The Jackson School is a unit within the College of Natural Sciences of The University of Texas at Austin, and the Director of the School reports to the Dean of the College. The Director of the School is appointed by the Provost of The University upon recommendation of the Dean. The Director of the Jackson School chairs a Steering Committee composed of the Chair of the Department of Geological Sciences, the Director of the Bureau of Economic Geology, the Director of the Institute for Geophysics, and one additional individual from each of the component units; the Dean of the College has the option to appoint two additional members of the Steering Committee. The Steering Committee serves as a governing council.

The School Director, the Chair of the Department, and the Director of the Institute report directly to the Dean of the College of Natural Sciences; the Director of the Bureau, however, reports to the Vice President for Research. Thus the Jackson School is essentially a coordinating body and the Director has no direct authority over the units that make up the School. Currently, the Director of the School is also the Director of the Geology Foundation. The Director’s influence over the policies and procedures of the School comes through authority to allocate resources flowing from the Jackson Endowment Fund in the Geology Foundation. Because some 90 percent of the Foundation’s assets (exclusive of the Jackson Fund) are dedicated endowments, the Director of the Foundation has had little flexibility in the use of those funds.

The Committee questioned if the Jackson School is organized and administered in a way that will optimize the prospect of building a premier program in the geosciences. After deliberation, the Committee concluded that the answer is “No”. To realize the potential of the School, the Members believe that changes will have to be made in the organization and leadership.

The College of Natural Sciences, including the Jackson School, is a large, complex college composed of two schools, seven academic departments and 31 research units. The Dean is an energetic and charismatic leader who does an excellent job in administering the College. The Jackson School is an anomaly in the College because it has its own Foundation with a very large endowment. The Bureau of Economic Geology with its very large research staff is also an anomaly because its Director does not report to the Dean. The Jackson School and its students benefit from centralized student service functions in the College.

After weighing the alternatives, the Committee is persuaded that the objectives of the Jackson gift would be best served by taking the Jackson School out of the College of Natural Sciences and establishing it as an independent School headed by a Dean reporting to the Provost. Recruiting the caliber of leadership necessary to build the Jackson School into a national
leader in the geosciences would be facilitated if the position were that of the Dean of a free-standing School. Direct access to the central administration of The University, as well as the authority to establish interdisciplinary programs with deans of other schools and colleges, will promote the progress toward the objectives set out by Mr. Jackson. The new Dean of the School, when recruited, will have the authority to carry out the necessary reorganization of the School and make the changes that the Committee believes imperative to the advancement of the geosciences program. Establishing the student services functions will be accomplished as part of the reorganization.

The Committee considered the benefits to the School of adding additional research units. Specifically, the Committee heard presentations by the Director of the Environmental Sciences Institute and the Dean of the College of Natural Sciences on the Marine Science Institute. Although there are programmatic linkages between those institutes and the Jackson School, the Committee believes that no organizational changes should be effected before new leadership is recruited. The first task is to merge the cultures, faculty/staff, and programs of the Department, Bureau and Institute to form
an integrated smoothly-functioning School. There is now no barrier
to establishing programmatic relationships with other academic and research
units within the College of Natural Sciences, as well as with the College of
Engineering and the LBJ School of Public Affairs. In fact, a number of such
collaborations are already in place.

The Committee recognizes that if the Director of the Bureau of
Economic Geology continues to report to the Vice President for Research while
the other units within the Jackson School report to the Dean, it will be more
difficult for the Dean to effect the integration of the faculty, staff, and
programs of the School that the Committee believes is the first order of
business for the new leadership. However, the Committee also recognizes
that, as a practical matter, the mission of the Bureau requires the Director to
interact at a high level with the State, Federal and International agencies. To
facilitate these transactions, a fast and efficient access to The University's
central administration is desirable. For these reasons, the Committee is
recommending that the Director of the Bureau continue to report to the Vice
President for Research on matters requiring expeditious high-level
administrative approvals and report also to the Dean of the Jackson School
for matters involving faculty and research scientist appointments and
research collaborations within the School. It can be expected that the Dean of
the School will involve the Chair of the Department and the Directors of the
Bureau, Institute and Foundation in the governance of the School so that
collegial relationships can be developed and maintained. In the future, the
Vice President for Research should appoint the Director of the Bureau of
Economic Geology upon the recommendation of the Dean of the Jackson
School.

The Director of the Geology Foundation and the Director of the
Jackson School are now the same individual, and he reports to the Dean of
the College of Natural Sciences. With the appointment of a new Dean, and
the changes in organization proposed by the Committee, the Director of the
Geology Foundation will report to the Dean of the Jackson School of
Geosciences. The Dean will serve on the Executive Committee of the
Foundation as a voting member.

The incumbent Director of the Jackson School has done an
outstanding job in establishing the School and, within the limits of his
authority, of establishing the School's policies and procedures. The high
esteem in which he was held by Mr. Jackson is largely responsible for the
creation of the School and the endowment that supports it. The Committee
commends the Director for his leadership and for his vision of what the
School can become. It was at his urging that the Vision Committee was
established. However, the incumbent Director is nearing retirement age and
the Committee believes that it is time to begin to recruit new leadership for
the School.
In summary, the Committee recommends:

(1) Establish the Jackson School as a School separate from the College of Natural Sciences under the leadership of a Dean who reports directly to the Provost, and

(2) Recruit a new Dean and charge that individual with reorganizing the School to integrate effectively the academic and research functions of the School to realize Mr. Jackson's vision of building a premier program in the geosciences and raising its national stature. The Committee believes that the need for integration of the strengths in the Department, Bureau, and Institute through joint appointments and other formal integrative methods is critical.
ACADEMIC AND RESEARCH PROGRAMS

General Statement -- The Committee had wide-ranging discussions about the state of the geosciences and in what areas of the science the most important fundamental questions are being addressed. Because national rankings and peer assessments of the quality of academic and research programs are derived from evaluation of academic departments, the Committee focused on the most effective strategies for strengthening and improving the quality of the Department's existing programs and on areas of the geosciences where new investments in faculty and supporting personnel would be appropriate for the Jackson School. Early in its deliberations, the Committee came to the unanimous conclusion that for the School to make significant progress in the next five years, it will be necessary to make five to 10 faculty hires in the Department. These should be members of the national academies or younger individuals with a clearly recognized potential to be elected to the academies. Recruiting faculty members of this caliber will require the creation of very attractive positions with competitive salaries and benefits, laboratory facilities, research support, and student support. It will be necessary to provide relief from heavy teaching loads. Very likely, in hiring "stars" it will be necessary to provide positions for colleagues working in the same field, and, in some cases, a position for a spouse.

As previously noted, the Committee believes that the strong professional Master's degree is an important element in the graduate curriculum. However, this degree program carries with it a heavy teaching load. The involvement of more scientists from the Bureau and Institute in the teaching program is a mechanism for sharing the instructional burden across the School.

Top-quality graduate students are an essential element in building a great academic department. The Committee advises the leadership of the Jackson School to review its strategies for competing with the top five geoscience programs in recruiting superior graduate students and to take actions to improve success in recruiting and retaining superior students.

Other initiatives that would raise the national visibility of the school include (1) establishment of a Visiting Jackson Fellows program, (2) the awarding of a Jackson Prize for Outstanding Achievement in the Geosciences, and/or (3) the creation of a Jackson Postdoctoral Fellows program. Faculty positions funded through the Jackson Endowment should, of course, be designated as Jackson Chairs or Jackson Professorships. Every effort should be made to establish the Jackson "brand name" in the School's activities, including the use of the name on all publications, web sites, and other electronic products.

Based on the collective experience of the Committee members, the ambitious goal of propelling the geosciences at Texas into the top rank of
University programs will require great care in the investment of resources to build the faculty and will require strong leadership. To this end, the Committee recommends that authority to recruit and hire new faculty members for the initial five years of the reorganized school should be vested in a high-level committee advisory to the Dean. If the Committee's recommendations are accepted, the recruiting effort is more likely to be successful if the new Dean of the School or the Director constitutes a high-level "appointments committee" to review nominations originating within the School, and to identify promising opportunities for consideration. This Committee would have the authority to recommend candidates to the Dean and Provost or, conversely, to reject candidates. Membership on the "appointments committee", in addition to selected members of the Department of Geological Sciences faculty and selected scientists from the Bureau of Economic Geology and the Institute for Geophysics, should include distinguished scientists from other departments in The University and from other universities. If after five years the School has established itself as a premier academic unit, the more standard model for recruiting new faculty research and staff should suffice to maintain excellence.

Significant advances in the geosciences are most likely to be made by very bright and talented faculty and research scientists working between and beyond the classical areas of the geosciences, adapting technologies and instrumentation developed in the life sciences, physical sciences, computational sciences, and materials sciences to devise new research platforms and new concepts. Examination of earth systems on a global scale to investigate complex interactions of earth processes is producing important new discoveries. In the sections that follow the Committee considers those areas of the geosciences in which it would be appropriate for the Jackson School to make new investments. The Committee does not recommend major investments in areas of the science such as planetary geology or climate modeling where other universities over the past decades have made major investments and built very powerful capabilities. The Jackson School is not likely to become a major player in such areas. The Committee has selected areas of the science where strategic investments combined with integration of existing expertise in the Department, Bureau and Institute, and linkages with other University research programs can relatively quickly raise the profile of the Jackson School. For example, the Institute for Computational and Engineering Sciences in the College of Engineering is located in close proximity to the Jackson School. It supports four research centers -- the Center for Computational Visualization, the Center for Subsurface Modeling, the Computational Fluid Dynamics Laboratory, and the Center for Numerical Analysis. Scientists from the Bureau of Economic Geology and the Institute for Geophysics are involved in collaborations with the first two Centers. Other collaborations with the Center for Space Research, the Center for Petroleum and Geosystems Engineering, the Department of Civil Engineering, and the Environmental Sciences Institute are in progress. Such interactions have the potential to expand and enrich the Jackson School programs. With strategic new hires, the Department of Geological Sciences can take a more active role
in interdisciplinary and cross-disciplinary projects with other university research groups.

Core Strengths in the Department of Geological Sciences -- As previously noted, the Department’s reputation was built largely in the field of sedimentary geology, including stratigraphy and sedimentology, as well as structural geology and tectonics, geochemistry and hydrology. These fields have traditional applications in petroleum and water resource geology. More recently, the Department has added a respectable program in exploration geophysics that should be supported. The Committee believes it is important to maintain strength in these fields. The Bureau of Economic Geology is recognized internationally for its work in basin analysis and reservoir characterization, as well as in ground water geology. Bringing Bureau scientists into this core program through joint appointments would add great strength and assure national visibility. There is exciting new work being done in the broad area of surficial processes -- in aqueous and organic geochemistry, in quantitative geomorphology and in systems that define the processes operating in the upper part of the Earth’s crust. Important questions are being addressed in chemical oceanography and isotope geochemistry. Two or three strategic hires in these areas could renew and reinvigorate the Department’s traditional programs in sedimentary geology.

Geobiology (geobiochemistry, organic geochemistry) -- Geobiology is a comparatively new field of investigation and scholarship. To the extent that it examines interactions between the lithosphere and the biosphere, it falls within geosystems science. It includes study of the biogenesis of earth materials and of the origin of life. It is an interdisciplinary science with great potential for new discoveries. Considering the strong life sciences programs at The University, the Committee believes that geobiology offers opportunity to the Jackson School and recommends investing in two new hires.

Global marine geophysics and geodynamics -- Considering the international reputation of the Institute for Geophysics in global marine geophysics and seismology, this is a natural area for the Jackson School to develop. If the Institute’s scientists can be successfully integrated into the Department, a “critical mass” of expertise is already present in the Jackson School. Greater use of joint appointments is a way to facilitate integration. Areas that might be considered for new hires include geodynamics and geodesy, 4-d seismic imaging, and the geophysics of the upper lithosphere. With one or two new hires and jointly appointed faculty from the Institute, the Jackson School can become a national player in a relatively short time.

Computational geology and geophysics, digital imaging, and geoinformatics -- The research in progress in the Institute for Computational Engineering and Sciences immediately north of the Jackson Geological Sciences Building, in which the Institute for Geophysics and Bureau of Economic Geology are already involved, provides opportunity for the Department to make an entry into computational geology, computational
geophysics, digital imaging, or geoinformatics with one or two new hires. The University has invested heavily in high performance computing and in grid computing. The Director of the Institute for Computational Engineering and Sciences has stated he would be interested in discussing the allocation of a non-assigned Chair to computational geology.

Earth systems science and global change -- Within the broad field of Earth systems science hiring a new faculty member interested in research in the carbon cycle would be particularly appropriate for the Department. The Bureau of Economic Geology is making a major effort in carbon sequestration, so again, there is opportunity to integrate the Bureau's work in this area with a new Department initiative. There is also a tie with the programs in the Environmental Science Institute. The Department has expertise in igneous and metamorphic petrology and has one faculty member working in atmospheric science. The Department's existing expertise in igneous and metamorphic petrology would be strengthened by a new hire in volcanology.

In summary, the Committee recommends:

(1) Five to 10 new hires in the Department of Geological Sciences of "star" caliber faculty who are either members of the national academies or who have the potential for election in the near future.

(2) The creation of an Appointments Committee with membership from inside and outside the School, and from outside The University, to review candidates for faculty and research scientist positions and with the authority to initiate or reject nominations.

(3) Selected new hires to renew and energize the Department's core expertise in sedimentary geology, as described above, including consideration of new areas of investigation in surficial processes, aqueous and organic geochemistry, isotope geochemistry, volcanology, chemical oceanography and quantitative geomorphology.

(4) Selected new hires in the areas of (a) geobiology, (b) global marine geophysics and seismology, (c) computational geology and geophysics, and (d) Earth systems geology with a focus on the carbon cycle.
CONCLUDING COMMENTS

The Committee would be pleased to talk with the President and Provost of The University to amplify the observations and recommendations made in this report. A number of individuals who present recruiting opportunities were identified in the course of the Committee’s deliberations. After the Committee’s work was well advanced, comments were received from several members of the Department of Geological Sciences faculty. The Committee reviewed these comments and will make them available for consideration by the new leadership of the Jackson School.

The Committee encourages the Jackson School to build on the Jackson gift and continue an active fund-raising effort. If the Jackson School is to advance beyond the stated goal of achieving a top five ranking in five years, additional resources will be needed.

Finally, the Committee expresses its appreciation for the efforts of James W. Kunetka, who acted as Facilitator, developed the agenda, and kept the Committee on point and on schedule. Doug Ratcliff functioned as staff to the Committee and was at all times helpful. Thanks are due to Lee Bash and Barbara Allen for flawless arrangements. Glynis Morse served as Recorder and the Committee is grateful for her fast-response performance.

The Committee also extends its thanks to The University officials who gave generously of their time and knowledge. Dean Mary Ann Rankin attended all of the Committee’s open sessions and escorted the group that visited the Marine Science Institute. She made extraordinary efforts to conduct personal interviews with Department of Geological Sciences faculty members and to provide the Committee with their views.
APPENDIX 1

OFFICE OF THE PRESIDENT
THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7919 - Austin, TX 78713-3020
(512) 471-1232 - FAX (512) 471-8102

May 28, 2003

Dear __________________:

The John A. and Katherine G. Jackson School of Geosciences at The University of Texas at Austin is the beneficiary of a very large gift to endow the school. Income from this endowment will provide a means to build a premier program in the geosciences. In order to assist the University to develop a plan for the most effective use of the endowment income, we are establishing a Jackson School Vision Committee. It is my pleasure to invite you formally to serve as a member of this committee. President Emeritus Peter T. Flawn will chair the effort, and Dr. Frank Press will act as an advisor to the committee.

Dr. William L. Fisher, Director of the Jackson School, will consult with you on the meeting schedules and arrangements. He also will send you a packet to provide background information on the academic and research units that make up the school, their programs, faculty, staff and facilities. We are planning to schedule an initial two-day meeting this fall at which the committee will decide upon a work plan. You will be consulted on the meeting schedule. Depending on the decisions reached at the first meeting, there will be one or two additional meetings. The committee’s final report is expected to be completed early next year.

We are offering an honorarium of $5,000 plus expenses for your contribution to the Vision Committee.

I appreciate your willingness to assist in this enterprise, and I look forward to receiving the report of the Vision Committee in due course.

Sincerely,

[Signature]
Larry R. Faulkner
President

cc: Executive Vice President and Provost Sheldon Ekland-Olson
Vice President Juan M. Sanchez
Dean Mary Ann Rankin
Director William L. Fisher
APPENDIX 2
Committee Member Biographies

Peter T. Flawn (Chair) holds the Leonidas T. Barrow Chair Emeritus in Mineral Resources and is President Emeritus of The University of Texas at Austin. Dr. Flawn earned an undergraduate degree from Oberlin College and a Master of Science degree and a Ph.D. in geology from Yale. He has been associated with the UT System since 1949, when he joined UT Austin’s Bureau of Economic Geology as a research scientist and geologist. He was a professor of geological sciences from 1960 to 1970 and a professor of geological sciences and public affairs from 1970 to 1985. From 1973 to 1977, Flawn was president of The University of Texas at San Antonio. Subsequently, he served as president of The University of Texas at Austin from 1979 to 1985. He is a member of the National Academy of Engineering and has been active in numerous other professional and scientific associations.

Jesse H. Ausubel is Director of the Program for the Human Environment and Senior Research Associate at The Rockefeller University in New York City. He also serves as Program Director for the Alfred P. Sloan Foundation. Educated at Harvard and Columbia, Mr. Ausubel serves on several editorial boards, including The Journal of Industrial Ecology, and is a University Fellow of Resources for the Future and an adjunct faculty member of the Woods Hole Oceanographic Institution where he has conducted ongoing studies since 1991. A member of the Council on Foreign Relations (CFR), Mr. Ausubel has led CFR activities on energy and on forests.

Thomas D. Barrow is a member of the Board of Directors of Tobin International (Chairman) and GX Technology Corporation (Chairman). He is a current or former member of many boards and a member of the National Academy of Engineering and has served on the Commission of Natural Resources and the Commission of Physical Sciences, Mathematics and Resources of the National Academy of Sciences. Dr. Barrow earned his Bachelor’s degree in Petroleum Engineering in 1945 and Master’s degree in Geology in 1948 from The University of Texas, and he received his Ph.D. in Geology from Stanford University. He is the former President of Humble Oil and Refining, a former member of the Board of Directors of Exxon Corporation, and former Chairman of Kennecott Copper Corporation.

J. Freeman Gilbert is Professor Emeritus at the Cecil H. and Ida P. Green Institute of Geophysics and Planetary Geophysics and the Scripps Institution of Oceanography, University of California, San Diego. Dr. Gilbert received both his Bachelor of Science degree and Ph.D. from the Massachusetts Institute of Technology. His research interests include theoretical, inferential, and computational geophysics. He is a member of the National Academy of Sciences and a Fellow of the American Geophysical Union and the Geological Society of America. For the past two years he served as chairman of the Earth
Systems Science thrust of the National Partnership for Advanced Computational Infrastructure, sponsored by the National Science Foundation.

**Charles G. Groat** is the 13th Director of the U.S. Geological Survey, U.S. Department of the Interior. He has also served as the Vice President for Research at The University of Texas at El Paso and Director of the Louisiana Geological Survey. Dr. Groat received a Bachelor of Arts degree in Geology from the University of Rochester, and a Master of Science and Ph.D. in Geology from The University of Texas at Austin. Groat is a distinguished professional in the earth science community with over 25 years of direct involvement in geological studies, energy and minerals resource assessment, ground-water occurrence and protection, geomorphic processes and landform evolution in desert areas, and coastal studies.

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