Testimony to the Maryland General Assembly
Presented by
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Physical Sciences Complex Phase I ($5.8M for Planning)

The University of Maryland has moved rapidly to a new level of distinction. To accommodate the research generated by our outstanding faculty and to guarantee the highest quality education for our undergraduate and graduate students, we must provide the physical facilities needed by a modern university.

This request is for the final phase of planning funds for Phase I of a three-phased plan to provide urgently needed replacement space for our Physical Sciences programs. These programs have been operating in substandard and inadequate space for many years. Wiring in the Toll Physics Building crumbles in the hands of maintenance staff replacing light fixtures, circuits are overloaded and piping frequently fails resulting in flooding. The Physics Department lost a member of the National Academy of Sciences, in part, because of the inability of the infrastructure in the Toll Physics Building to support his research. In October 2002, an electrical panel in the Toll Physics Building exploded, resulting in the tragic death of an electrical maintenance employee.

We appreciate the General Assembly's support for Phase I and the previous allocation of $5M for a portion of the planning costs. We urge the General Assembly to continue to support Phase I and provide the $5.8M required this year to complete planning. Phase I is on schedule to begin construction by June 2010, and this final phase of planning funds is required this year to keep the project on schedule and help meet the urgent space needs of our Physical Sciences programs.

Project Description

This project is the first phase of a three-phased plan to provide a new home for the Department of Physics, the Department of Astronomy, and the Institute for Physical Sciences and Technology (IPST). The Phase I building, sized at 142,400 GSF/75,100 NASF, is proposed to be attached to

the east side of the existing Computer and Space Sciences Building (CSS) in the northeast sector of the campus. More than half of the NASF in Phase I will be dedicated to solving the pressing need for modern research laboratory facilities. In addition, there will be offices and meeting spaces for the faculty, students, and staff.

Phase I is intended to replace some of the existing facilities, which are dilapidated and obsolete; to provide additional research space so that the volume of sponsored research can be increased; and to ameliorate campus wide shortages in research space. Phases II and III will ultimately increase the size of the complex to 369,500 GSF/193,100 NASF and replace the remaining substandard facilities, as well as bring the units together in one location to overcome operational inefficiencies resulting from physical separation of the units.

Phase I will begin to solve the following two major problems for the University:
1) Quality of the space: The units to be housed in the new building primarily occupy three aged, dilapidated, and obsolete buildings. They are the Physics Building, built in 1950; the IPST Building, opened in 1955; and the Computer and Space Sciences Building, built in 1963.
2) Lack of research space: The University has maximized the use of available space to accommodate sponsored research in the Physical Sciences, and soon will be in a position where it cannot accept new sponsored research opportunities in this field.

Quality of Space: The Physics Building and the IPST Building are in failing condition and part of the Computer and Space Sciences Building is also in poor condition. The conditions of those buildings can be summarized as follows:

HVAC: In the Physics Building, classrooms are overheated and noisy; window A/C units inhibit learning; offices have hot and stagnant air; and environmental control in research labs is lacking, which compromises research results. In the Physics and CSS Buildings, poor ventilation and inadequate dehumidification lead to elevated mold levels. The HVAC systems in all three buildings (Physics, CSS, IPST) are obsolete and replacement parts are difficult to obtain.

Electrical: Most switchgear branch wiring and related devices are original to the three buildings' construction. Wiring in the Physics Building is crumbling. An electrical panel in the Physics Building exploded in 2002. Tragically, a worker died in this accident and building damages were $2.6M. There is inadequate capacity to support the growing number of computers. Systems are difficult to maintain due to the obsolescence of parts, making it difficult to obtain replacement parts. The existing electrical systems of the three buildings have insufficient expansion capability to support the types of laboratory equipment necessary to conduct research. Other problems experienced by building residents are: power surges damaging equipment and interrupting on-going research; inadequate emergency backup power for research equipment; and overloading of inadequately sized circuits.

Plumbing: Existing galvanized piping frequently fails in all three buildings, resulting in leaks and occasional flooding. Repair efforts are compounded by the presence of asbestos. The leaks often damage expensive items of research equipment, interrupting and/or destroying the research they support.

Structural: Multiple separations and cracks have emerged in the walls, columns, floor slabs and roof of the Physics Building.

Lack of research space to accommodate new research programs: The Fall 2007 campus-wide shortfall of research space is 730,443 NASF. Physics, Astronomy, and IPST currently have 89,351 NASF of research space. The current State guidelines allowance for these units is 162,500 NASF. Phase I will add approximately 39,000 NASF in research space for these units. All research space is currently in use, virtually eliminating the possibility of further growth in sponsored research. As some projects are closed out, extensive renovations are needed to accommodate new projects, compromising the budgets for these projects and disrupting activities in nearby spaces. The availability of modular, easily convertible labs would ameliorate these problems. Annual sponsored research awards for the three units have increased significantly from $23.6M in FY 2000 and $34.4M in FY 2007 to $52.6M in FY 2008. Based on this historical growth and the positive effect of the new research building, UM expects that the positive trends in sponsored research will continue.

Space shortfalls are a critical problem for the University. Although UM has seen rapid growth in its national reputation and the scale of its externally funded research support, this growth is threatened by the chronic shortage of research space and by the poor condition of much of the space that is available. There are simply not enough research laboratories. Existing laboratory space is often inadequate in terms of security, power, air quality, permanent equipment, and vibration isolation.