

# Morgan State University

## External Research Advisory Panel

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### **Presentation by Vice President for Research and Economic Development**

The fifth meeting of the External Research Advisory Panel (ERAP) began with a wide-ranging summary of proposal activity, funding success, research achievements, faculty career development, economic development, community relations, technology transfer and intellectual property at Morgan State University (MSU) by the Vice President for Research and Economic Development, Dr. Victory McCrary. The Maryland legislature's recent modification of MSU's missions provides additional justification for the work of the Division of Research and Economic Development (DRED) and the aims discussed in Dr. McCrary's presentation. ERAP expresses continued confidence in the strategic goals discussed by Dr. McCrary and the measures that help to realize them.

1. A cadre of eminent faculty mentors is an essential component of the advantage a research university offers its students. MSU should distinguish itself as an HBCU that provides these educational benefits for students who will work in an increasingly international and technological economy. DRED's efforts to increase support for research by students also have benefits for the professional development of the faculty.
2. The indispensable means to sustained success in funding research include: a) assistance for faculty in the preparation of competitive proposals and b) providing institutional advancement, recognition and support for those who succeed. Return of indirect costs to principal investigators rewards demonstrated competence with flexibility and thereby stimulates an upward spiral of enhanced creativity and professional achievement.
3. Stable procedures for DRED are needed to enable efforts by MSU faculty and staff to efficiently compete for external resources. Proposers need internal predictability to focus their attention on scholarly and technical creativity.
4. To improve competitiveness, DRED and the faculty should concentrate attention on projects where MSU has the greatest opportunities or advantages. Building sustained relationships with funding agencies multiplies opportunities for junior faculty participation, interdisciplinary projects and broader participation in MSU's research missions.

5. The Morgan Community Mile (MCM) continues to be an indispensable vehicle for community development and enhanced relations between MSU and its external stakeholders. The foundation of an informed citizenry is education and the foundation of education is service to the citizenry. Support for MCM enhances both foundations.

This presentation elicited several comments and statements of support from ERAP members.

- A focus on cyber-security may find support from NSF or DoE.
- Improvement of MSU's image through engagement with prominent members of the local community, e.g. the Chamber of Commerce or the Baltimore Archdiocese, is likely to have positive consequences in recruitment.
- To elevate MSU's classification from R3 to R2, thorough gathering and reporting of data is essential.
- Establishing relationships with funding agencies is an important precursor to the submission of grant proposals.
- Increasing the number (in addition to the individual productivity) of proposers is indispensable to enlarging MSU's scale of funding activity.
- Grant writers are needed to properly construct competitive proposals.
- Addressing the needs of the Baltimore community could lead to proposals that are likely to be funded. Examples include renewable energy initiatives that may create employment opportunities.

### **Presentations by Deans N'gom, Yu and Spencer**

Dean N'gom of the College of Liberal Arts reviewed the many academic programs he manages, the value of liberal education for career and personal development, the new center for behavioral and social sciences and several programmatic initiatives. Programs with international or linguistic dimensions were emphasized and illustrated the importance of the liberal arts in preparing students for an increasingly internationalized economy in which multilingual communication and understanding of other cultures are marketable qualifications.

Dean Yu of the School of Computer, Mathematical and Natural Sciences presented targets for graduate and undergraduate enrollment and degrees, external funding, graduation rates, publications and visibility in professional societies. He emphasized increased proposal activity, improvement of facilities and an environment of accountability and rewards in pursuit of these goals. A review of funded grants, proposals in preparation and collaborations indicated that considerable progress has been made already.

Dean Spencer of the School of Engineering discussed trends in engineering enrollment, graduation rates, student-faculty ratios and demand for engineering and computer-science graduates, with a special emphasis on areas of employment opportunity such as nano-informatics. Strategies for overcoming MSU's challenges included: hiring faculty with related interests and expertise, internal collaborations, collaborations with other institutions, strategic employment of MSU's specialized infrastructure and faculty development through sabbatical leaves. Several technological trends which may affect MSU faculty and students also were discussed.

These effective presentations indicate an encouraging degree of cooperation between the Deans and DRED. The Deans should be supported in their efforts to uphold high standards of promotion and tenure, for such policies communicate important values to the MSU community, especially the faculty. Development of an entrepreneurial culture and a focus on interdisciplinary cooperation are worthy aims for the Deans. Cluster hires can be means of advancing these aims.

### **Presentation by Fernandez Boyd**

Mr. Boyd's presentation, made without notes for about 20 minutes, gave a favorable impression to members of ERAP. His goals were clearly stated and his accomplishments should be brought to the attention of MSU students. The positive effects of programs in which he participated indicate the desirability of continued support.

### **Presentation by Office of Technology Transfer**

Wayne Swann, Director of Technology Transfer, reviewed recent funding from the state of Maryland for MSU's Office of Technology Transfer (OTT). The strategic plan of OTT encompasses a vision for its future, missions and four general goals. Stimulating and supporting innovation by faculty, students and staff is the first of these goals. Connecting the supply of MSU innovation to the demands of the market is a second concern. Facilitation of economic development and diffusing information about these local benefits constitute a third target. The fourth goal pertains to the management of MSU's intellectual property. Several measures that respond to these goals were discussed and recent progress was reviewed. Special emphasis was given to the Innovation Grant Assistance Program, which provides support to MSU faculty during the early stages of technological development. Metrics of intellectual property generation and corresponding targets for MSU also were presented.

Impressive progress has been made recently. Full staffing of OTT is essential for continued success. New positions in life sciences, technology management and physical sciences are well conceived and likely to render effective service to MSU. Wisely constructed funding mechanisms will facilitate strategic use of resources and enable MSU to show a good return on state investment. It is important to gather data that will help to make this case. The Director is encouraged to return for additional updates.

### **Blue-Collar STEM Education and NSF**

Dr. McCrary, a member of the National Science Board (which provides policy recommendations to the National Science Foundation), reviewed a recent NSB account of employment trends, educational needs and opportunities, public perceptions and policy questions that pertain to STEM workers who do not have baccalaureate degrees. The obsolescence of the blue-collar versus white-collar dichotomy and the anticipated shortage of STEM workers who require training only in community colleges or technical schools were discussed. NSF's current programs that involve the latter institutions and the coming report of NSF to NSB on this topic were reviewed.

Several comments from ERAP members were made in response to this presentation.

- MSU should decide if its missions encompass this kind of STEM education.
- It may be desirable to establish two-year programs which could lead to some form of certification. The latter credential may be coupled to internships and to addressing the needs of industry.

- Providing expertise in cyber security is a promising opportunity for MSU students.
- Blue-collar is a term which may easily be misinterpreted by students, faculty and external stakeholders.

## **General Comments**

Several comments were made by ERAP members on MSU's research strategy.

- Major strides have been made in infrastructure and in technology transfer.
- The new Deans are properly focused on interdisciplinary study and entrepreneurial activity.
- The academic culture of MSU continues to evolve and to reflect an increasing emphasis on research missions.
- General awareness of MSU's past resources can facilitate institutional focus on graduation rates, commitment of faculty time to research, improved business practices, increased staffing, international activities and more effective recruiting.
- Improving communication between groups of people engaged in parallel efforts is a key to encouraging collaboration. Joint faculty appointments can help to overcome the silo effect.
- Sabbatical leave for faculty can facilitate enhanced awareness of funding opportunities, productive and unique collaborations and general professional growth and achievement.