



## BOARD OF REGENTS

### SUMMARY OF ITEM FOR ACTION, INFORMATION OR DISCUSSION

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**TOPIC:** P-20 Update

**COMMITTEE:** Education Policy

**DATE OF COMMITTEE MEETING:** June 2, 2010

**SUMMARY:** This update is an overview of the P-20 work that has taken place over the past academic year. The Committee receives annual updates on the work of the Governor's P-20 Leadership Council and of the USM grant-funded P-20 partnerships. Dr. Nancy Shapiro, Associate Vice Chancellor for Academic Affairs, will make a brief presentation, will introduce the USM P-20 staff, and will respond to questions from the Committee. A summary report is attached.

**ALTERNATIVE(S):** This is an information item only.

**FISCAL IMPACT:** This is an information item only.

**CHANCELLOR'S RECOMMENDATION:** This is an information item only.

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COMMITTEE RECOMMENDATION: Received as information. DATE: June 2, 2010

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BOARD ACTION:

DATE:

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## **P-20 Summary Report for BOR**

### **P-20 Council**

This has been a particularly active year for P-20 in Maryland and at the USM. Three major topics have come before the BOR EPC and the full BOR directly from the Governor's P-20 Council. These include:

College Success Task Force Report  
Governor's STEM Task Force Report

USM leadership and faculty and staff played critical roles in each of these initiatives, and it is clear that USM will carry considerable responsibility for the implementation of the recommendations from the reports.

### **Race to the Top**

In addition to the P-20 Council work, the Board of Regents has been kept informed on issues related to the State's application for Race to the Top funding. Although this effort is being led by MSDE, USM is convinced that participation by higher education is essential to a successful, effective proposal. P-20 staff and the USM education deans have worked together to offer constructive contributions to the proposal which was due on June 1. Over the past several months, Chancellor Kirwan participated in a RTTT Steering Committee.

### **USM P-20 Alignment and Teacher Education**

USM supports four major state-wide committees by providing staff leadership, minutes and meeting logistics and other necessary support to sustain these state-wide stakeholder groups:  
USM/MICUA Education Deans  
USM/MICUA/MACC Associate of Arts of Teaching Oversight Council  
State-wide Mathematics Group  
English Standards Alignment Committee

### **USM Teacher Education and STEM Planning Grant awards**

This past year, USM made three different grants in the service of increasing the teacher pipeline with attention to STEM teachers. Funding came from a combination of USM teacher ed funding and NSF funding:

- USM Professional Development School (PDS) grants: \$260,000 (up to \$35,000 to 8 institutions with teacher ed programs)
- USM STEM Planning grants: \$128,000 (up to \$15,000 to 11 institutions)
- USM STEM Teach grants: \$160,000 (\$20,000 to 8 institutions with teacher ed programs)

### **Lumina's Making Opportunity Affordable: Maryland's "Growing by Degrees"**

Dr. Nancy Shapiro and Jennifer Frank

USM also provided leadership and submitted the state's application to the Lumina Foundation for "Making Opportunity Affordable." Maryland was one of seven states that were awarded a one million dollar four-year grant from Lumina. The Maryland project, "Growing by Degrees." Lumina's big goal is to increase the percentage of Americans who hold high quality degrees and credentials to 60% by 2025. USM was awarded the Lumina grant in November 2009 and our proposal was recognized by Lumina for the following attributes:

- Demonstrating IMPROVED ACADEMIC EFFICIENCIES and improved outcomes for students through redesign of remedial college courses expanding beyond recent effort with introductory chemistry as UM Eastern Shore where course redesign efforts resulted in improved student success while lowering costs of the instruction to both students and the institution.
- Demonstrating leadership in expanding and sustaining a statewide effort to achieve ADMINISTRATIVE EFFICIENCIES AND REINVESTMENTS IN STUDENT DEGREE/CREDENTIAL ATTAINMENT in all sectors of higher education. Best practices shared and utilized where appropriate across the public universities, community colleges, and independent colleges and universities can identify ways to make administrative savings, and use strategic reinvestments in your key state goals for student achievement.
- Demonstrating leadership in collaboration between state government, higher education leaders, community and business leadership, faculty and staff, in building public support for productivity efforts, particularly with the involvement of the P-20 Council in assisting with that public will-building work. Having this Council is a positive for the state, having it now a statutory body with diverse membership able to help sustain a productivity agenda through working with the state team at building broader understanding and support both on the campuses and across the state is even better. My experience working with a state P-20 group tells me Maryland is among the best-positioned states in the nation to carry forward this work as you are a forum that can bring together the diverse parties needed to support the work of your state team.

### **USM P-20 Grant Funded Projects**

#### **E=mc<sup>2</sup> Grant Highlights**

U.S. Department of Education Teacher Quality Enhancement Grant: *E=mc<sup>2</sup>: Education Equals Mentoring, Coaching and Cohorts* (2003-2010). \$6,000,000 (with Baltimore City Public Schools)

Dr. Nancy Shapiro and Lynn Harbinson

#### Future Educator Association (FEA) Clubs

- The E=mc<sup>2</sup> grant developed Future Educator clubs in Baltimore City public schools - 14 clubs (4 in the Baltimore City Teacher Academy High Schools and 10 in middle schools/middle grades). By the spring of 2009, some of these clubs grew to 50 or more members, for a total membership of 525 students. This made the Baltimore city FEA club program one of the largest in the U.S. and Canada.
- During the 2008-2009 school year, the FEA clubs made 140 trips to almost 50 different colleges and universities, including all University System of Maryland institutions. The majority of these students are from disadvantaged backgrounds, so many of them has not been outside of Baltimore, until they took these trips. Parents and grandparents were extremely enthusiastic about the campus visits, and in many cases, they also went on the trips.
- In May 2009 E=mc<sup>2</sup> grant sponsored a Citywide FEA Conference, attended by over 500 students, parents and club sponsors. There were also over 20 colleges and universities participating in a College Fair.

#### Teacher Academy of MD (TAM) and the TAM Summer Leadership Institute (SLI)

- Thirty-five teachers from across the state of Maryland took part in the most recent institute, which provided professional development for the teachers who are teaching the college-level

TAM course work. As of August 2009, a total of 208 Maryland high school teachers have been through the Summer Leadership Institute, and are now qualified to teach this college-level course sequence.

- In 2009, the Teacher Academy of Maryland graduated 379 students, each of whom received 3 college credit hours for successfully completing the TAM program of study.
- Currently, 2022 Maryland high school students, who have express an interest in becoming teachers, are enrolled in the three-year TAM program.

### VIP Grant Highlights

National Science Foundation Math Science Partnership Grant: *Vertically Integrated Partnerships (VIP)*, \$7,500,000 (2002-2009). (with Montgomery County Public Schools)

Dr. Nancy Shapiro and Dr. David May

Findings:

<b>Curriculum guides in core science courses</b>	<b>52</b>
<b>New high-school or middle-school science courses</b>	<b>7</b>
<b>Cohort Conferences (one-day PD)</b>	<b>24</b>
<b>Week-long Summer Institutes</b>	<b>5</b>
<b>Master Science Teachers</b>	<b>37</b>
<b>ExPERT Teachers</b>	<b>45</b>
<b>IHE faculty</b>	<b>111</b>
<b>New or reformed undergraduate science courses</b>	<b>35</b>
<b>Undergraduate teaching or research fellows</b>	<b>115</b>

- The development of new curriculum and associated teacher professional development can benefit from the direct involvement of teachers themselves in its planning and implementation. Using this model, the VIP K-16 project supported PD for 350 science teachers, and the development of 52 curriculum unit guides in all of the core science courses in middle and high schools.
- It is possible not only to engage IHE faculty in the professional development of K-12 teachers, but also in faculty's own professional development and undergraduate course reform. This faculty leadership was successfully fostered (in different ways) at very different IHEs, from 2-year institutions to intensive research institutions.
- A diverse set of deliberate approaches to teacher and faculty development, and the cross-institutional partnership required to achieve it, can create a sustainable professional network of teachers, who regularly connect with their colleagues to advance common educational goals. Through the course of the VIP K-16 project, the number of collaborative relationships among K-12 and IHE participants focused on changes in their teaching of science increased sevenfold.

### **CASHE Highlights**

National Science Foundation, Supplemental Grant: Change and Sustainability in Higher Education, \$500,000 (2005-2010)

Dr. Nancy Shapiro and Jennifer Frank conducted a research study for the National Science Foundation to determine best practices for faculty engagement in P-20 education reform efforts, including, but not limited to teacher preparation, teacher professional development, and undergraduate science inquiry-based education.

Key questions for study: What are the indicators of successful school/university partnerships? How can institutions of higher education reward faculty for participation on P-20 work? What change levers are most effective for promoting P-20 faculty work?

Best practices included:

- Supporting STEM Faculty in their roles as educational researchers, which leads to improved STEM education in colleges as well as p-12 schools,
- Integrating research and scholarship on “how students learn” into STEM classroom STEM teaching P-20,
- Implementing new institutional reward systems and policies to support MSP faculty.
- Creating sustainable structures for the institutionalization of MSPs,
- Expanding the roles for the disciplinary and professional societies in promoting STEM faculty involvement in teaching and learning in the disciplines, K-12 education, and teacher preparation programs.

The report included 15 action recommendations to NSF.

### **(MSP)<sup>2</sup> Highlights**

National Science Foundation Grant: *Minority Student Pipeline Math Science Partnership (MSP)<sup>2</sup>* \$12,396,945 (2008-2013)

Dr. Anisha Campbell (BSU), Dr. David May and Dr. Nancy Shapiro

USM partnered with Bowie State University, Prince George’s County Public Schools (PGCPS); University System of Maryland (USM), University of Maryland College Park (UMCP); University of Maryland Biotechnology Institute (UMBI); Prince George’s Community College (PGCC).

This project, (MSP)<sup>2</sup> establishes a strong, multifaceted partnership among the essential P-16 players in one of the largest minority-majority counties in the country: Prince George’s County, Maryland to expand the minority student pipeline in to STEM fields in higher education using four separate strategies involving STEM faculty targeted at multiple populations (teachers and students):

1. Working with approximately 750 teachers over the five years in 4-8<sup>th</sup> grades, science faculty at UMCP and PGCC will develop two different types of professional development programs designed around principles of teaching and learning through inquiry science.
2. A total of 110 high school science teachers will engage in summer research experiences over five years with UMCP, UMBI and BSU faculty. UMBI will guide partners in establishing learning communities for participating teachers built on the lessons learned from their previously funded ExPERT program.
3. At least 375 high school students over five years are being offered opportunities to take challenging science courses through an innovative early college/dual enrollment program to be developed collaboratively by PGCPS with BSU and PGCC.
4. 100 undergraduate underrepresented minority students are being offered opportunities for undergraduate teaching experiences (with 100 PGCPS science teachers to mentor them) and 50 undergraduate research experiences through BSU over 5 years.

PGCPS requested that we target this proposal to science only, since the State and county have provided funding to improve mathematics instruction in the schools.

**Intellectual merit:**

Inquiry instruction, when done properly, is not only a proven method of improving student learning, it is also inherently suited for reducing the achievement gap by requiring the active participation and interactive engagement of all students. This project will build on most current research in teaching and learning and upon recommendations from the National Academies of Science and the National Science Board that demand a rethinking of approaches to K-8 science curriculum, instruction, and assessment. Their overarching recommendation is that K-8 education should be coordinated around “doing science.” *(MSP)<sup>2</sup>* is designed around a research plan that will compare different models of inquiry-driven professional development. In addition, the project will evaluate the impact of science teacher summer research experiences, and the impact of challenging courses and curricula on the STEM minority pipeline from PGCPS into higher education in Maryland.