

MEMORANDUM

TO: Planning, Housing and Economic Development Committee

FROM: Robert H. Drummer, Legislative Attorney 

SUBJECT: **Worksession:** Bill 7-09, Schools and Camps – Workforce Investment Scholarship

Bill 7-09, Schools and Camps – Workforce Investment Scholarship, sponsored by Councilmembers Knapp, Leventhal, and Ervin was introduced on February 24, 2009. A public hearing was held on March 24.

Bill 7-09 would establish a workforce investment scholarship program administered by the Department of Economic Development. The Bill would create a workforce investment scholarship board to develop guidelines for the award of scholarships to undergraduate students at Montgomery College or the Universities at Shady Grove who are in degree programs that prepare the student for:

1. one of the County's 10 most needed occupations;
2. certification to teach mathematics or science in the County public schools; or
3. a degree in engineering, mathematics, or a natural science.

Students who receive a scholarship would be required to agree to work in the County in one of the County's 10 most needed occupations for the number of years the student receives the scholarship. Students who do not obtain a degree or who do not meet the other conditions of the scholarship must repay the scholarship.

Public Hearing

There were 7 speakers at the Council's March 24 public hearing on Bill 7-09. Dr. Mary Kay Shartle-Galotto, Executive Vice-President for Academic and Student Services at Montgomery College and Melissa Gregory, Director of Student Financial Aid for Montgomery College spoke in support for the Bill. See ©7-11. Both speakers for the College stressed the critical need for scholarship money to support the growing population of students at the College and applauded the Bill's goal of encouraging students receiving degrees in areas of need to work in the County after graduation. Jane Hobdy testified in support for the Bill on behalf of the County Commission for Women. See ©12-14. Ms. Hobdy urged the Council to ensure that women are equally represented in college mathematics, science, and engineering courses. Janine G. Bacquie, co-chairperson of the Universal Preschool Implementation Workgroup, and Director of the Division of Early Childhood Programs and Services for the Montgomery County Public Schools, testified in support of the Bill. See ©15-16. Ms. Bacquie urged the Council to consider

adding careers in early childhood education to the list of careers covered by the workforce investment scholarship. The Council also heard from 2 current college students at the Universities at Shady Grove, Kimberly Fordham (©17-18) and Muhammad Ahmad. (©19-20) Both Ms. Fordham and Mr. Ahmad told compelling stories about scholarships that permitted them to attend college and train for careers in much needed occupations. Michelle Pearre, Human Resources Director for Hughes Network Systems, also testified in support of the Bill representing the County Chamber of Commerce. Ms. Pearre testified that 70% of the engineers recruited by her employer came from outside of Montgomery County.

Issues

1. Does the Bill target the County's scarce financial resources in a productive manner?

The logic behind the Bill is that the County's economic vitality is based, in part, upon the success of the businesses located in the County. A well-trained County workforce is an important factor in new businesses locating in the County and current County businesses succeeding. The Bill is designed to encourage students to enter college degree programs leading to occupations that are needed by County businesses. The Bill completes the circle by requiring scholarship recipients to work in these important occupations in the County for the same number of years the student receives the scholarship.

The Bill targets the County's ten most needed occupations along with degrees in engineering, mathematics, or a natural science and degrees leading to certification to teach mathematics and science in the County public schools. Nationally, the need to increase the numbers of students receiving college degrees in mathematics, science, and engineering is beyond dispute. The National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine released a comprehensive report called "*Rising Above the Gathering Storm – Energizing and Employing America for a Brighter Economic Future*" in 2007. The Executive Summary is at ©21-34. The report found that the United States must optimize its knowledge-based resources, particularly in science and technology, in order to continue as a world leader in science and technology. The report recommends devoting greater financial resources to educating both students and teachers of mathematics, science, and technology.

The Bill represents a step in the right direction in following the recommendations of the National Academies. The inclusion of the 10 most needed occupations in the County is both logical and consistent as well.¹ **Council staff recommendation:** approve the workforce investment scholarship created by the Bill.

2. What is the fiscal impact of the Bill?

Council staff has not yet received a fiscal impact statement from the Executive for this Bill. However, the Bill would create a new Workforce Investment Scholarship Board consisting of volunteer members staffed by the Department of Economic Development. Therefore, the

¹ The Department of Economic Development told Council staff that there is no current list of the County's 10 most needed occupations. The Bill would authorize the new Workforce Investment Scholarship Board to adopt regulations defining this list and thereafter compile and update the list.

largest fiscal impact of the Bill would depend upon the amount appropriated by the Council to create the scholarship fund each year.

3. Should the scholarship program be expanded to include careers in early childhood education?

Both the Maryland State Teachers Association (©35) and the County Commission on Child Care (©36) sent letters requesting similar amendments to the Bill that would expand the scholarship program to include both an associates of arts in teaching degree and a bachelor's degree in Early Childhood Education or Early Childhood Special Education. The Commission on Child Care also requested an amendment that would add expertise in early childhood education to the list of qualifications for public members of the scholarship board. Both organizations stress the current need for professionals working in early childhood education in the County.

Careers in early childhood education may be among the County's 10 most needed occupations. If they are, then the Bill would already include degree programs leading to these careers. If not, it would be inconsistent with the purpose of the Bill to include these careers in the Bill. With regard to adding expertise in early childhood education to the list of qualifications for public members of the board, the Bill already includes expertise in education. **Council staff recommendation:** retain the current scope of the careers in the Bill.

4. Should the Bill be amended to require that women make up 50% of the board membership and 50% of the scholarship recipients?

The County Commission for Women sent a letter (©37) requesting amendments requiring that women make up 50% of the scholarship board membership and 50% of the scholarship recipients. The Commission referred to a 2007 report of the Girls in Information Technology Task Force finding that girls make up only 13% of the students enrolled in advanced placement computer science courses. The Commission also referred to their own recent report finding that "of the 64 students placed in high school technology-related internships, all were boys."

While these statistics are discouraging, a 50% quota for women receiving scholarships would be a voluntary gender based affirmative action program. In *United States v. Virginia*, 116 S. Ct. 2264 (1996), the Supreme Court struck down the state's proposed plan to create separate state run military colleges for men and women as a violation of the Fourteenth Amendment Equal Protection Clause of the US Constitution. The Court held that a gender based classification by a government is unconstitutional unless the government can show that (1) the challenged classification serves an important governmental objective, and (2) the discriminatory means employed are substantially related to the achievement of that objective. This heightened standard of review is similar to the review required for race based affirmative action plans. In *Podberesky v. Kirwin*, 38 F.3d 147 (4th Cir. 1994), the Court struck down a University of Maryland scholarship program for African-American students as a violation of the Equal Protection Clause because the State could not show that its goals were narrowly tailored to remedy a compelling government interest. A race based classification governing the assignment

of Montgomery County public school students to magnet schools was similarly struck down by the Court in *Eisenberg v. MCPS*, 197 F.3d 123 (4th Cir. 1999).

The Council does not have sufficient statistical support to show that women are statistically underrepresented in the pool of available and qualified candidates for a scholarship in any of these degree programs. In addition, a blanket 50% quota is unlikely to be considered narrowly tailored. Therefore, in Council staff's opinion, a gender or race based quota on scholarships without a comprehensive disparity study supporting it would be impossible to defend in a court challenge under the Equal Protection Clause. The Commission's request to set aside 50% of the board seats for women may not raise the same legal problems, but it is illogical to assume that women will receive a greater number of scholarships from female board members than they would from male board members. **Council staff recommendation:** do not include quotas for women board members or scholarship recipients.

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Bill No. 7-09
Concerning; Schools and Camps –
Workforce Investment Scholarship
Revised: March 12, 2009
Draft No. 5
Introduced: February 24, 2009
Expires: August 24, 2010
Enacted: _____
Executive: _____
Effective: _____
Sunset Date: _____
Ch. _____, Laws of Mont. Co. _____

**COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND**

By: Councilmembers Knapp, Leventhal, and Ervin

An Act to:

- (1) establish a workforce investment scholarship program;
- (2) establish a workforce investment scholarship board to adopt guidelines;
- (3) direct the Department of Economic Development to administer the program; and
- (3) generally enhance workforce development in the County.

By adding

Montgomery County Code
Chapter 44, Schools and Camps
Article IV, Workforce Investment Scholarship Program

Boldface	Heading or a defined term.
<u>Underlining</u>	Added to existing law by original bill.
[Single boldface brackets]	Deleted from existing law by original bill.
<u>Double underlining</u>	Added by amendment.
[[Double boldface brackets]]	Deleted from existing law or the bill by amendment.
* * *	Existing law unaffected by bill.

The County Council for Montgomery County, Maryland approves the following Act:

1 **Sec. 1. Chapter 44 is amended by adding Article IV as follows:**

2 **Article IV. Workforce Investment Scholarship Program.**

3 **44-46. Legislative findings.**

- 4 (a) The economic development of the County requires a well-prepared,
 5 educated, trained, and adaptable workforce to meet the current and future
 6 needs of County businesses.
- 7 (b) The County workforce needs the tools and resources to successfully compete
 8 in a complex global economy.
- 9 (c) County workforce training should encourage students to prepare for those
 10 occupations that are most needed in the County.
- 11 (d) Montgomery College and the Universities at Shady Grove provide high
 12 quality higher education training in the County.
- 13 (e) A workforce investment scholarship program would promote economic
 14 development in the County.

15 **44-47. Workforce Investment Scholarship Program.**

16 (a) Definitions.

17 Board means the Workforce Investment Scholarship Board created in
 18 Section 44-48.

19 Director means the Director of the Department of Economic Development
 20 or the Director's designee.

21 (b) The Director must administer a workforce investment scholarship program
 22 that:

23 (1) awards workforce investment scholarships to students in an
 24 undergraduate degree program which prepares students for:

25 (A) one of the County's 10 most needed occupations;

26 (B) certification by the State Department of Education to teach
 27 mathematics or science in a Maryland public school; or

- 28 (C) a degree in engineering, mathematics, or a natural science.
 29 (2) requires a student who receives a workforce investment scholarship to
 30 agree to work in the County as a mathematics or science teacher, as an
 31 engineer, or in one of the County's 10 most needed occupations for at
 32 least the number of years the student receives the scholarship; and
 33 (3) requires the repayment of the scholarship by a student who does not
 34 complete a degree or who does not satisfy other conditions of the
 35 scholarship.

- 36 (c) The Director must award scholarships under the regulations adopted by the
 37 Board.

38 **44-48. Workforce Investment Scholarship Board**

- 39 (a) Creation. The County Executive must appoint, subject to confirmation by
 40 the County Council, a Workforce Investment Scholarship Board, consisting
 41 of 9 members.

- 42 (b) Composition; appointment of members.

- 43 (1) Six members must be selected from the public and must each be a
 44 County resident who is or has been active in government, business,
 45 industry, labor, community service, or education.

- 46 (2) One member must be nominated by the Director.

- 47 (3) One member must be nominated by the President of Montgomery
 48 College.

- 49 (4) One member must be nominated by the Executive Director of the
 50 Universities at Shady Grove.

- 51 (c) Chair; vice chair. The Board must annually select one member as chair and
 52 another as vice chair, and any other officers it finds necessary.

- 53 (d) Terms; reappointments. The term of office of each member is 3 years. A
 54 public member must not serve more than 2 consecutive terms. A member
 55 continues in office until a successor is confirmed.
- 56 (e) Compensation. A member receives no compensation for serving on the
 57 Board.
- 58 (f) Quorum. A quorum is a majority of the members of the Board.
- 59 (g) Meetings; reports. The Board may meet at the call of the chair as frequently
 60 as required to perform its duties, but no less than 4 times each year. The
 61 Board must submit an annual report on December 31 to the Executive and
 62 Council summarizing its activities, needs, and recommendations, and the
 63 degree to which the goals of the Board are being met.

64 **44-49. Duties of Board.**

65 The Board must:

- 66 (a) adopt regulations under Method 2 governing the award of workforce
 67 investment scholarships covering tuition, books, fees, and related expenses
 68 to attend Montgomery College or the Universities at Shady Grove;
- 69 (b) annually specify the County's 10 most needed occupations;
- 70 (c) submit an annual Workforce Investment Scholarship budget request to the
 71 Executive for inclusion in the County's annual operating budget;
- 72 (d) adopt procedures as necessary to achieve the purposes of this Article, and
 73 keep a record of its activities and minutes of all meetings; and
- 74 (e) make recommendations to the Executive and the Council on the workforce
 75 investment scholarship program.

76 **44-49. Staff Support.**

77 The Director must provide staff services and administrative support to the Board.

78 **Sec. 2 Transition.** The Executive must stagger the initial terms of the members of
 79 the Workforce Investment Scholarship Board appointed under Section 44-47 so

80 that one-third of the terms of these members expires each year.

81

82 *Approved:*

83

84

Philip M. Andrews, President, County Council Date

85 *Approved:*

86

87

Isiah Leggett, County Executive Date

88 *This is a correct copy of Council action.*

89

90

Linda M. Lauer, Clerk of the Council Date

LEGISLATIVE REQUEST REPORT

Bill 7-09

Schools and Camps -- Workforce Investment Scholarship

DESCRIPTION:	<p>This Bill would establish a workforce investment scholarship program administered by the Department of Economic Development. The Bill would create a workforce investment scholarship board to develop guidelines for the award of scholarships to undergraduate students at Montgomery College or the Universities at Shady Grove who are in a degree program that prepares the student for:</p> <ol style="list-style-type: none">1. one of the County's 10 most needed occupations;2. to teach math or science in the County public schools; or3. a degree in engineering, mathematics, or a natural science.
PROBLEM:	<p>The County workforce needs the tools and resources to successfully compete in our complex global economy in order to enhance the County's economic development.</p>
GOALS AND OBJECTIVES:	<p>To encourage students to prepare for occupations that are most needed in the County.</p>
COORDINATION:	<p>Department of Economic Development</p>
FISCAL IMPACT:	<p>To be requested.</p>
ECONOMIC IMPACT:	<p>To be requested.</p>
EVALUATION:	<p>To be requested.</p>
EXPERIENCE ELSEWHERE:	<p>To be researched.</p>
SOURCE OF INFORMATION:	<p>Robert H. Drummer, Legislative Attorney</p>
APPLICATION WITHIN MUNICIPALITIES:	<p>To be researched.</p>
PENALTIES:	<p>Students who do not complete a degree or satisfy other conditions of the scholarship must repay the scholarship.</p>

County Council Testimony, Scholarship Bill
Tuesday, March 24, 2009
3rd floor hearing room, County Council Building

County Council Meeting
Testimony – Tuesday, March 24, 2009
Mary Kay Shartle-Galotto

Good afternoon. I am Dr. Mary Kay Shartle-Galotto, Executive Vice President for Academic and Student Services at Montgomery College. Thank you for your time and attention today.

You just heard from the previous testifier about the dire needs Montgomery College faces as we look to ensure educational access for the students of this county. I have spent nearly 30 years working for the College, and one simple trend has always rung true: the nation turns to its community colleges as prime feeder grounds in meeting the workforce needs of our ever-globalized, competitive workforce.

The fact that we are all here today illustrates the value that the Montgomery County community places on higher education. We are here to find solutions, and I believe Mr. Knapp's legislation before us is the first step to ensuring a thriving workforce. Simply put, it keeps our students right here in the community.

So often at Montgomery College our students – if they do receive scholarships to continue their bachelor’s degree studies – receive transfer funding for schools far away from the County. That means their skills go elsewhere, too, and quite possibly the students may never return to careers in this area.

Thanks to the partnership that has evolved between Montgomery College and the Universities at Shady Grove, Montgomery County residents have a quality four-year college education available right in their backyard.

The synergy between our institutions benefits our students—and now thanks to the proposed legislation—our partnership will grow even stronger.

As I conclude my testimony today, let me share with you the story of Chuck Stouffer. Chuck is an engineering major at Montgomery College and through an internship with a NASA contractor, Chuck designed a tool to test space shuttle components prior to takeoff, which is a notable accomplishment for a college sophomore.

Chuck is a scholarship recipient in Montgomery College’s Scholarships in Science, Technology,

Engineering and Mathematics (S-STEM) program. He credits the College with giving him the foundation and training that gave him an advantage over his peers from four-year universities.

And, he points out, he could not have done it without the College's scholarship help.

Councilmember Knapp's proposed legislation will give other students like Chuck the opportunity to strengthen our county, our state, and our nation.

I applaud Councilmember Knapp for his creative approach to a real problem.

May this legislation stand as a model for how communities can partner together.

County Council Testimony, Scholarship Bill
Tuesday, March 24, 2009
3rd floor hearing room, County Council Building

County Council Meeting

Testimony – Tuesday, March 24, 2009

Melissa Gregory

Good afternoon, members of the council and thank you for this opportunity to speak in support of Councilmember Mike Knapp's proposed legislation to help Montgomery County students.

I am Melissa Gregory, College Director of Student Financial Aid.

At Montgomery College, we have seen a substantial increase in the number of students who want to pursue an education in the science, math, and engineering fields (what we commonly call STEM industries). In just the last three years, the number of engineering majors has jumped nearly 14 percent. We now have one of the largest community college engineering programs in the country, and last fall our enrollment surged to almost 850 students.

Across the board we have also seen a steady increase in enrollment growth of our STEM majors. Last fall our enrollment numbers totaled over 3,400 collegewide.

As you can tell, we have the talent. But the lack of money to pay for classes can deter even the brightest, most enthusiastic students from their dreams of a science, math, or engineering degree. Many MCPS students want to major in these important fields, but what stops them is a simple question. Will they be able to afford college?

For this coming fall we have 7,000 students who have already applied for fall 2009 financial aid at MC. That is a 20% increase

over this date last year. At Montgomery College, we work hard to keep our students away from loans. Our students are particularly “loan-averse” because they are worried about debt. Awarding grants and scholarships increases their ability to attend college.

Just in the last fiscal year, Montgomery College did not have the grant and scholarship resources to fund more than half of the applications we received for financial aid. As a result, over 2,500 students ultimately did not enroll

Scholarships help students pay the direct cost of tuition, fees, and books and ensure we continue to provide access to higher education for all of our county students. Providing access to these particularly essential fields, where there will certainly be future jobs, is a critical part of our mission.

Councilmember Knapp’s proposed legislation will offer students an incentive to pursue an education in the fields of science, math, engineering, and other in-demand careers. This financial push will encourage students to seek jobs that are necessary for Montgomery County to compete both locally and globally.

I want to encourage the County Council to support Councilmember Knapp’s legislation. It focuses on the future—the future for our students, the future of our colleges, and most importantly, the future of our community.

Thank you.

**Testimony of the
Montgomery County Commission for Women
Tuesday, March 23, 2009
Re: Council Bill 7-09, Workforce Investment Scholarship
Jane Hobdy and Sanjay Rai, Commissioners**

The Montgomery County Commission for Women very much appreciates the opportunity to submit comments on the legislation proposed by Councilman Knapp that will create opportunities for teacher training in “the County’s 10 most needed occupations,” and which would also provide scholarships for students preparing for careers in “areas of need.”

We are here today to urge you to ensure that women and girls are equally represented. If they are not, it will be nearly impossible to develop the workforce needed for the knowledge economy. The pool of potential scientists and engineers will be just too small if we continue to not involve over half the population.

Girls are vastly underrepresented in MCPS and Montgomery College advanced math, science and engineering courses. As a result, women are vastly underrepresented in the careers to which these courses lead.

The 2007 final report of the Girls in Information Technology Task Force, lead by Councilwoman Nancy Floreen, found that girls are only 13% of the students enrolled in Advanced Placement Computer Science Courses.

The Commission for Women’s 2007 Report on the Status of Women in Montgomery County found that “of the 64 students placed in high school technology-related internships, all were boys.” (p. 20)

The numbers are similar in math, science and engineering for Montgomery College and for school systems, colleges and universities nationwide.

Just to take a quick glance at Montgomery College:

- Of the 926 students declaring Engineering Science as their major, less than 12.5% are women.
- In the Computer Sciences, less than 20% of the 319 students declaring this major, are women.
- Women represent only 27.5% of all Science, Engineering and Math majors.

These numbers are even more striking in light of the gender ratio for the entire college, where women make up 55% of the student body. And, these numbers stand despite years of effort – both inside and outside academia, both nationally and right here in Montgomery County – to increase the number of females preparing for careers in the sciences, math, technology and engineering.

In this effort, we are battling significant and hard fast cultural barriers that not only steer girls and women into more “traditional” careers, but that also prevent them from entering the fields of science, engineering and math. If they walk into a classroom – or a workplace - and find themselves the only girl in the class, the only woman in the laboratory, and all around them only men’s voices are speaking and only men’s minds are working – how can they be expected to believe that they belong there, that women’s contributions will be welcome in this environment?

As a result, not only do women miss the opportunities presented by these “most needed” occupations, but our society is losing, every day, the potential contributions women and girls would make, if they were included.

Without a visible and specific commitment to gender equality in science, technology, engineering and math, we will never achieve the goal – or even come close.

The press release announcing the introduction of this legislation reported that, when the program is at full capacity, there would be 50 scholarships for each college grade level – so there could be as many as 200 students each year receiving a scholarship to major in science, engineering or math. That can mean either that there are 100 young women preparing for these careers each year – or only a handful – depending on whether you take action.

This legislation is important for many reasons. But among them is that it provides an opportunity to bring more women and girls into science, engineering and math, to demonstrate with these scholarships, that we not only want them, but expect them to study these fields. It is for this reason that the Commission for Women urges you to:

- Require that at least 4 of the 9 proposed members of the Workforce Investment Scholarship Board are women;
- Require that 50% of the workforce investment scholarships go to female students.

In so doing, you will set Montgomery County as a model for the rest of the nation in recognizing and addressing the enormous disparity in women’s participation in Science, Engineering and Math careers and course preparation. We would be happy to cooperate in this effort and offer our assistance in any way that might be appropriate.

Testimony to the Montgomery County Council in Support of Workforce Investment Scholarship Program (Bill 7- 09)

Ms. Janine G. Bacquie, co-chairperson: Universal Preschool Implementation Workgroup, and director of Division of Early Childhood Programs and Services, Montgomery County Public Schools

March 24, 2009

Background on Work Group

- In July 2008, the County Council established the Universal Preschool Implementation Work Group, consisting of broad based community representation, including both Universities at Shady Grove and Montgomery College. Our charge is to develop recommendations for implementing countywide high-quality preschool programs that will provide all County four-year olds the opportunity grow, develop, and be fully prepared for their early school careers.
- The Work Group is finalizing its recommendations, and has identified the critical need to increase accessible and affordable training opportunities in order to grow the number of child care providers qualified to deliver the Preschool for All Services to meet the demand for services by the County's four-year-old population.

Economic Development

- The early care and education industry is economically important and is often much larger in terms of employees and revenues than other industries that receive considerable government attention and investment. Nationally, licensed early education and child care businesses employ millions of providers and teachers, pay billions of dollars in wages, purchase billions more in goods and services, and generate even more in gross receipts.
- Investing in early education training for providers generates economic development for Montgomery County communities by building an employable, educated workforce and help shapes the future workforce, better preparing children for school and other positive life-long outcomes.
- The key to a high quality education for all preschoolers, regardless of setting, rests in the ability to have a highly trained, well educated teacher in every preschool program.

Need and Demand

- Recent trends in early childhood licensing and accreditation requirements for child care providers require more advanced higher education degrees, especially for the lead preschool teacher.
- In the Department of Health and Human Services budget, \$56,000 in County general funds were allocated to provide 112 scholarships for 70 community child care providers (most used scholarships for Montgomery College classes leading toward AA degree, 1 received scholarship towards BA degree at Hood). 30 providers who applied for scholarships could not be served.
- In addition, some local school systems across the state of Maryland have had to outreach to other states, in search of qualified early childhood teaching staff to fill positions in MD classrooms. The work group cited concerns about supplanting the existing child care work force by seeking out qualified applicants from afar, instead of growing the pool of qualified local providers.
- Providing greater scholarship opportunities to those who pursue early childhood education and or early childhood special education provides a strong catalyst for workforce development that will benefit our local economy.
- Proliferation of Preschool for All locally and all across the State will create a higher demand for qualified preschool education. Current workforce cannot meet this demand without your support.

UPI Work Group Position

- The work group enthusiastically supports Councilmember Knapp's bill to establish a workforce investment scholarship program.
- Recommends changes to the bill to specifically reference (after line 28 and before line 29) individuals seeking local opportunities to obtain Associate of Arts in Teaching degrees or undergraduate degrees in early childhood education or early childhood special education leading to certification in early childhood education from Maryland State Department of Education.
- Also recommends adding to lines 29 to 32 a condition that requires students receiving a workforce investment scholarship to work in an early childhood education setting in addition to the other occupations specifically listed.

Thank you for your consideration and support!

Testimony of Kimberly Fordham
Graduating Student, Elementary & Special Education
Towson University at the Universities at Shady Grove
March 24, 2009

My name is Kim Fordham, and I am here to tell you about how being the recipient of scholarships has helped me. I was born and raised in Montgomery County and went to Montgomery County Public Schools, graduating from Sherwood High School in 2004. For as long as I can remember I have always wanted to be a teacher and am finally realizing my dream, as I will graduate this May at the top of my class from Towson University at the Universities at Shady Grove, with a Bachelor of Science in Elementary and Special Education. *This fall, I hope I am able to work at a school in Montgomery County like Oakland Terrace Elementary School, where I am currently student teaching. Though they have students from all walks of life, they have managed to virtually close the achievement gap! But though I have a clear goal in mind now* and have maintained a 4.0 GPA since my last semester of high school, I cannot say that I ever saw myself being a just few months away from graduating college at such a young age.

I come from a big family; I am the oldest of four. My family would be considered middle class, but paying for college was a huge difficulty for us. The expectation was that I would go, but I would finance it myself. This became a huge obstacle for me, especially since there was a time when I did not even see the value of higher education. When I was in high school, I felt there was no real hope of being able to afford college, and that I would have to find another way to accomplish my goal of working with children.

When I graduated from high school, my parents insisted that I begin taking classes part time at Montgomery College because my family felt strongly about me going to college. And so, I began to pursue an Associate of Arts in Teaching at MC, thinking I would take a few classes at a time, graduate eventually, and at best - become an MCPS para-educator. Still, I had a difficult time sticking it out at Montgomery College. I was living on my own and struggling to support myself financially while taking classes. Though many people do it, I still feel one of the hardest things I have ever done was try to balance school, family, friends, and a job. I would not even let a sickness like mono stand in my way of excelling in school.

Thankfully, my drive to maintain my grades at school had its rewards. Because of my hard work, I received a few very generous scholarship awards: the Maryland Distinguished Scholar Transfer Award, the INOVA Health Systems Family Scholarship, and the Loughran Regent's Scholarship Award, which alone provided full funding to attend any school in the University System of Maryland. Receiving these scholarships not only alleviated the financial burden of going to school, they also made me realize that I could do more than take classes part time, rather, I would actually be able to complete my degree have a successful, professional career as a teacher! *Not only that, I have set an example for my sisters by being the first in my generation to graduate, and two of them are already following in my footsteps by beginning their college career at Montgomery College and then transferring to a 4-year university.*

Even after I changed my attitude about school, I had another difficult decision to make; the full time program I am in requires that students do *not* have outside employment. If it were not for my

scholarships, I am almost sure that I would have put my degree on hold until I'd either saved the money to support myself during my final years of college or until I found a program in which I could have a job while going to school part time. *Now, instead of struggling to finance my Bachelor's degree, I am planning to begin working on my Master's almost immediately; after all, I will be graduating virtually debt-free.*

Having my financial burden alleviated also allowed me to be a more well-rounded student. I have the time to be the co-president of Kappa Delta Pi, an educational honor society. I have helped organize events like volunteering for the Special Olympics and fundraising to buy supplies for a classroom in a poverty stricken area of Maryland. I also received Academic Achievement Awards from Montgomery College and Towson University.

Thanks to the scholarships I received, I now see the true value of a college education, and recognize how it has been life changing for me. Without it, I would not have had the motivation, confidence, perseverance, or ability to complete the degree required to enter my profession. *Thanks to the financial and motivational support from my scholarships, I will soon accomplish my goal of becoming a special education teacher in the Montgomery County Public School system. I am passionate about teaching, and if it were not for the financial aid I received, I would not be beginning a career this fall in the exceptional school system where I went to school.* As I prepare to enter the workforce, I look forward to applying what I've learned and to giving back - for the benefit of my students, and to changing lives of others, just as was done for me. Thank you.

Dear Council Members,

My name is Muhammad Ahmad and I'm an undergrad student majoring in construction management. I am currently attending classes at the Universities at Shady Grove in the University of Maryland Eastern Shore Construction Management program. The only reason I am able to stand before you today is because I am one of the very fortunate few students to receive a full scholarship. Last year I was awarded the Clifford and Camille Kendall Scholarship that is only offered at The Universities at Shady Grove. To truly understand how fortunate I am, you would have to know a little about me. I come from a fairly large family of 10. My mom worked extremely hard to support us and put us through school while trying to complete nursing school herself. As you may imagine, an entire family being supported by one income in this area would make higher education an unrealistic goal. Now that I am a bit older, our circumstances have changed but not necessarily improved. I currently live with my mom and two younger brothers. My younger brother is also in college in search of financial support to achieve his own dreams in biology. My youngest brother however, is a post heart transplant patient who has been developmentally delayed since birth. He is need of constant supervision and has special educational needs. Every semester we have to coordinate our schedule so that one of us is home at all times while maintaining full time status.

With all of these factors to deal with, you can imagine how the pursuit of a degree might be overwhelming. Without the generosity of the Kendalls and the guidance of the people at The Universities at Shady Grove, I wouldn't be here. Instead of studying hard, participating in internships programs, and helping to care for my brother, I would be struggling to find a full time job to pay for school. Finding a job that could work with the family schedule and sufficient pay would be extremely difficult in this economy. The construction industry has been hit pretty hard along with several other industries. Thankfully, the Montgomery County area has been able to strive through these times. This is one of the many advantages of working in this area.

Scholarships would be the perfect package for students like me having the opportunity to essentially continue to learn and improve their skill sets, have the opportunity to work in a paid job while going to school, and having the ability to stay in the place they have called home. This relieves the stress of having to worry about leaving your family while giving one the ability to help support them, and knowing that upon graduation you are completely employable right here at home. The Universities at Shady Grove is the only way I am able obtain my bachelors degree, stay in the same area that I work and help to support my family. It is a wonderful package. I wish this for others.

I'm not here today for you to feel sorry for me, but for you to understand that there are many more like me who don't have the same opportunities as some others that live in Montgomery County. I, have many friends who are in medical, business, engineering, and construction fields who are all working and living in this area and are in need of funds to reach their goals. Montgomery County is one the best places for students to start a successful career. I know for a fact that you will see more students doing so, if only given the chance. I think that this council would be astonished by the number of young adults that wish to better themselves and the environment around them. I ask that you listen to the needs of the next generation and extend a helping hand. *I hope that this council will take this opportunity to help plant the seed of*

greatness here in Montgomery County and be the leader for other counties in Maryland to follow. Thank you for taking the time to hear my voice and the needs of future generations.

RISING ABOVE
THE GATHERING
Energizing and STORM
Employing America
for a Brighter
Economic Future

Committee on Prospering in the
Global Economy of the 21st Century:
An Agenda for American Science and Technology
Committee on Science, Engineering, and Public Policy

NATIONAL ACADEMY OF SCIENCES,
NATIONAL ACADEMY OF ENGINEERING, AND
INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

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Executive Summary

The United States takes deserved pride in the vitality of its economy, which forms the foundation of our high quality of life, our national security, and our hope that our children and grandchildren will inherit ever-greater opportunities. That vitality is derived in large part from the productivity of well-trained people and the steady stream of scientific and technical innovations they produce. Without high-quality, knowledge-intensive jobs and the innovative enterprises that lead to discovery and new technology, our economy will suffer and our people will face a lower standard of living. Economic studies conducted even before the information-technology revolution have shown that as much as 85% of measured growth in US income per capita was due to technological change.¹

Today, Americans are feeling the gradual and subtle effects of globalization that challenge the economic and strategic leadership that the United States has enjoyed since World War II. A substantial portion of our workforce finds itself in direct competition for jobs with lower-wage workers around the globe, and leading-edge scientific and engineering work is being accomplished in many parts of the world. Thanks to globalization, driven by modern communications and other advances, workers in virtually every sector must now face competitors who live just a mouse-click away in Ireland, Finland, China,

¹For example, work by Robert Solow and Moses Abramovitz published in the middle 1950s demonstrated that as much as 85% of measured growth in US income per capita during the 1890-1950 period could not be explained by increases in the capital stock or other measurable inputs. The unexplained portion, referred to alternatively as the “residual” or “the measure of ignorance,” has been widely attributed to the effects of technological change.

India, or dozens of other nations whose economies are growing. This has been aptly referred to as “the Death of Distance.”

CHARGE TO THE COMMITTEE

The National Academies was asked by Senator Lamar Alexander and Senator Jeff Bingaman of the Committee on Energy and Natural Resources, with endorsement by Representative Sherwood Boehlert and Representative Bart Gordon of the House Committee on Science, to respond to the following questions:

What are the top 10 actions, in priority order, that federal policymakers could take to enhance the science and technology enterprise so that the United States can successfully compete, prosper, and be secure in the global community of the 21st century? What strategy, with several concrete steps, could be used to implement each of those actions?

The National Academies created the Committee on Prospering in the Global Economy of the 21st Century to respond to this request. The charge constitutes a challenge both daunting and exhilarating: to recommend to the nation specific steps that can best strengthen the quality of life in America—our prosperity, our health, and our security. The committee has been cautious in its analysis of information. The available information is only partly adequate for the committee’s needs. In addition, the time allotted to develop the report (10 weeks from the time of the committee’s first gathering to report release) limited the ability of the committee to conduct an exhaustive analysis. Even if unlimited time were available, definitive analyses on many issues are not possible given the uncertainties involved.²

This report reflects the consensus views and judgment of the committee members. Although the committee consists of leaders in academe, industry, and government—including several current and former industry chief executive officers, university presidents, researchers (including three Nobel prize winners), and former presidential appointees—the array of topics and policies covered is so broad that it was not possible to assemble a committee of 20 members with direct expertise in each relevant area. Because of those limitations, the committee has relied heavily on the judgment of many experts in the study’s focus groups, additional consultations via e-mail and telephone with other experts, and an unusually large panel of reviewers.

²Since the prepublication version of the report was released in October, certain changes have been made to correct editorial and factual errors, add relevant examples and indicators, and ensure consistency among sections of the report. Although modifications have been made to the text, the recommendations remain unchanged, except for a few corrections, which have been footnoted.

Although other solutions are undoubtedly possible, the committee believes that its recommendations, if implemented, will help the United States achieve prosperity in the 21st century.

FINDINGS

Having reviewed trends in the United States and abroad, the committee is deeply concerned that the scientific and technological building blocks critical to our economic leadership are eroding at a time when many other nations are gathering strength. We strongly believe that a worldwide strengthening will benefit the world's economy—particularly in the creation of jobs in countries that are far less well-off than the United States. But we are worried about the future prosperity of the United States. Although many people assume that the United States will always be a world leader in science and technology, this may not continue to be the case inasmuch as great minds and ideas exist throughout the world. We fear the abruptness with which a lead in science and technology can be lost—and the difficulty of recovering a lead once lost, if indeed it can be regained at all.

The committee found that multinational companies use such criteria³ as the following in determining where to locate their facilities and the jobs that result:

- Cost of labor (professional and general workforce).
- Availability and cost of capital.
- Availability and quality of research and innovation talent.
- Availability of qualified workforce.
- Taxation environment.
- Indirect costs (litigation, employee benefits such as healthcare, pensions, vacations).
 - Quality of research universities.
 - Convenience of transportation and communication (including language).
 - Fraction of national research and development supported by government.

³D. H. Dalton, M. G. Serapio, Jr., and P. G. Yoshida. *Globalizing Industrial Research and Development*. Washington, DC: US Department of Commerce, Technology Administration, Office of Technology Policy, 1999; Grant Gross. "CEOs Defend Moving Jobs Offshore at Tech Summit." *InfoWorld*, October 9, 2003; Bruce Mehlman. 2003. *Offshore Outsourcing and the Future of American Competitiveness*"; Bruce Einhorn et al. "High Tech in China: Is It a Threat to Silicon Valley?" *Business Week* online, October 28, 2002; B. Callan, S. Costigan, and K. Keller. *Exporting U.S. High Tech: Facts and Fiction About the Globalization of Industrial R&D*. New York: Council on Foreign Relations, 1997.

- Legal-judicial system (business integrity, property rights, contract sanctity, patent protection).
- Current and potential growth of domestic market.
- Attractiveness as place to live for employees.
- Effectiveness of national economic system.

Although the US economy is doing well today, current trends in each of those criteria indicate that the United States may not fare as well in the future without government intervention. This nation must prepare with great urgency to preserve its strategic and economic security. Because other nations have, and probably will continue to have, the competitive advantage of a low wage structure, the United States must compete by optimizing its knowledge-based resources, particularly in science and technology, and by sustaining the most fertile environment for new and revitalized industries and the well-paying jobs they bring. We have already seen that capital, factories, and laboratories readily move wherever they are thought to have the greatest promise of return to investors.

RECOMMENDATIONS

The committee reviewed hundreds of detailed suggestions—including various calls for novel and untested mechanisms—from other committees, from its focus groups, and from its own members. The challenge is immense, and the actions needed to respond are immense as well.

The committee identified two key challenges that are tightly coupled to scientific and engineering prowess: creating high-quality jobs for Americans, and responding to the nation's need for clean, affordable, and reliable energy. To address those challenges, the committee structured its ideas according to four basic recommendations that focus on the human, financial, and knowledge capital necessary for US prosperity.

The four recommendations focus on actions in K–12 education (*10,000 Teachers, 10 Million Minds*), research (*Sowing the Seeds*), higher education (*Best and Brightest*), and economic policy (*Incentives for Innovation*) that are set forth in the following sections. Also provided are a total of 20 implementation steps for reaching the goals set forth in the recommendations.

Some actions involve changes in the law. Others require financial support that would come from reallocation of existing funds or, if necessary, from new funds. Overall, the committee believes that the investments are modest relative to the magnitude of the return the nation can expect in the creation of new high-quality jobs and in responding to its energy needs.

The committee notes that the nation is unlikely to receive some sudden “wakeup” call; rather, the problem is one that is likely to evidence itself gradually over a surprisingly short period.

10,000 TEACHERS, 10 MILLION MINDS,
AND K–12 SCIENCE AND MATHEMATICS EDUCATION

Recommendation A: *Increase America's talent pool by vastly improving K–12 science and mathematics education.*

Implementation Actions

The highest priority should be assigned to the following actions and programs. All should be subjected to continuing evaluation and refinement as they are implemented.

Action A-1: **Annually recruit 10,000 science and mathematics teachers by awarding 4-year scholarships and thereby educating 10 million minds.** Attract 10,000 of America's brightest students to the teaching profession every year, each of whom can have an impact on 1,000 students over the course of their careers. The program would award competitive 4-year scholarships for students to obtain bachelor's degrees in the physical or life sciences, engineering, or mathematics with concurrent certification as K–12 science and mathematics teachers. The merit-based scholarships would provide up to \$20,000 a year for 4 years for qualified educational expenses, including tuition and fees, and require a commitment to 5 years of service in public K–12 schools. A \$10,000 annual bonus would go to participating teachers in underserved schools in inner cities and rural areas. To provide the highest-quality education for undergraduates who want to become teachers, it would be important to award matching grants, on a one-to-one basis, of \$1 million a year for up to 5 years, to as many as 100 universities and colleges to encourage them to establish integrated 4-year undergraduate programs leading to bachelor's degrees in the physical and life sciences, mathematics, computer sciences, or engineering *with teacher certification*. The models for this action are the UTeach and California Teach program.

Action A-2: **Strengthen the skills of 250,000 teachers through training and education programs at summer institutes, in master's programs, and in Advanced Placement (AP) and International Baccalaureate (IB) training programs.** Use proven models to strengthen the skills (and compensation, which is based on education and skill level) of 250,000 *current* K–12 teachers.

- *Summer institutes:* Provide matching grants to state and regional 1- to 2-week summer institutes to upgrade the skills and state-of-the-art knowledge of as many as 50,000 practicing teachers each summer. The material covered would allow teachers to keep current with recent developments in science, mathematics, and technology and allow for the exchange of best teaching practices. The Merck Institute for Science Education is one model for this action.

- *Science and mathematics master's programs:* Provide grants to research universities to offer, over 5 years, 50,000 current middle school and high school science, mathematics, and technology teachers (with or without undergraduate science, mathematics, or engineering degrees) 2-year, part-time master's degree programs that focus on rigorous science and mathematics content and pedagogy. The model for this action is the University of Pennsylvania Science Teacher Institute.

- *AP, IB, and pre-AP or pre-IB training:* Train an additional 70,000 AP or IB and 80,000 pre-AP or pre-IB instructors to teach advanced courses in science and mathematics. Assuming satisfactory performance, teachers may receive incentive payments of \$1,800 per year, as well as \$100 for each student who passes an AP or IB exam in mathematics or science. There are two models for this program: the Advanced Placement Incentive Program and Laying the Foundation, a pre-AP program.

- *K–12 curriculum materials modeled on a world-class standard:* Foster high-quality teaching with world-class curricula, standards, and assessments of student learning. Convene a national panel to collect, evaluate, and develop rigorous K–12 materials that would be available free of charge as a *voluntary* national curriculum. The model for this action is the Project Lead the Way pre-engineering courseware.

Action A-3: Enlarge the pipeline of students who are prepared to enter college and graduate with a degree in science, engineering, or mathematics by increasing the number of students who pass AP and IB science and mathematics courses. Create opportunities and incentives for middle school and high school students to pursue advanced work in science and mathematics. By 2010, increase the number of students who take at least one AP or IB mathematics or science exam to 1.5 million, and set a goal of tripling the number who pass those tests to 700,000.⁴ Student incentives for success would include 50% examination fee rebates and \$100 mini-scholarships for each passing score on an AP or IB science or mathematics examination.

Although it is not included among the implementation actions, the committee also finds attractive the expansion of two approaches to improving K–12 science and mathematics education that are already in use:

- *Statewide specialty high schools:* Specialty secondary education can foster leaders in science, technology, and mathematics. Specialty schools immerse students in high-quality science, technology, and mathematics education; serve as a mechanism to test teaching materials; provide a training

⁴This sentence was incorrectly phrased in the original October 12, 2005, edition of the executive summary and has now been corrected.

ground for K–12 teachers; and provide the resources and staff for summer programs that introduce students to science and mathematics.

- *Inquiry-based learning*: Summer internships and research opportunities provide especially valuable laboratory experience for both middle-school and high-school students.

SOWING THE SEEDS THROUGH SCIENCE AND ENGINEERING RESEARCH

Recommendation B: *Sustain and strengthen the nation's traditional commitment to long-term basic research that has the potential to be transformational to maintain the flow of new ideas that fuel the economy, provide security, and enhance the quality of life.*

Implementation Actions

Action B-1: Increase the federal investment in long-term basic research by 10% each year over the next 7 years through reallocation of existing funds⁵ or, if necessary, through the investment of new funds. Special attention should go to the physical sciences, engineering, mathematics, and information sciences and to Department of Defense (DOD) basic-research funding. This special attention does not mean that there should be a disinvestment in such important fields as the life sciences or the social sciences. A balanced research portfolio in all fields of science and engineering research is critical to US prosperity. **Increasingly, the most significant new scientific and engineering advances are formed to cut across several disciplines.** This investment should be evaluated regularly to realign the research portfolio to satisfy emerging needs and promises—unsuccessful projects and venues of research should be replaced with research projects and venues that have greater potential.

Action B-2: Provide new research grants of \$500,000 each annually, payable over 5 years, to 200 of the nation's most outstanding *early-career* researchers. The grants would be made through existing federal research agencies—the National Institutes of Health (NIH), the National Science Foundation (NSF), the Department of Energy (DOE), DOD, and the National Aeronautics and Space Administration (NASA)—to underwrite new research opportunities at universities and government laboratories.

Action B-3: Institute a National Coordination Office for Advanced Research Instrumentation and Facilities to manage a fund of \$500 million in incremental funds per year over the next 5 years—through reallocation of existing funds or, if necessary, through the investment of new funds—to ensure that universities and government laboratories create and maintain

⁵The funds may come from anywhere in government, not just other research funds.

the facilities, instrumentation, and equipment needed for leading-edge scientific discovery and technological development. Universities and national laboratories would compete annually for these funds.

Action B-4: Allocate at least 8% of the budgets of federal research agencies to discretionary funding that would be managed by technical program managers in the agencies and be focused on catalyzing high-risk, high-payoff research of the type that often suffers in today's increasingly risk-averse environment.

Action B-5: Create in the Department of Energy an organization like the Defense Advanced Research Projects Agency (DARPA) called the Advanced Research Projects Agency-Energy (ARPA-E).⁶ The director of ARPA-E would report to the under secretary for science and would be charged with sponsoring specific research and development programs to meet the nation's long-term energy challenges. The new agency would support creative "out-of-the-box" transformational generic energy research that industry by itself cannot or will not support and in which risk may be high but success would provide dramatic benefits for the nation. This would accelerate the process by which knowledge obtained through research is transformed to create jobs and address environmental, energy, and security issues. ARPA-E would be based on the historically successful DARPA model and would be designed as a lean and agile organization with a great deal of independence that can start and stop targeted programs on the basis of performance and do so in a timely manner. The agency would itself perform no research or transitional effort but would fund such work conducted by universities, startups, established firms, and others. Its staff would turn over approximately every 4 years. Although the agency would be focused on specific energy issues, it is expected that its work (like that of DARPA or NIH) will have important spinoff benefits, including aiding in the education of the next generation of researchers. Funding for ARPA-E would start at \$300 million the first year and increase to \$1 billion per year over 5-6 years, at which point the program's effectiveness would be evaluated and any appropriate actions taken.

Action B-6: Institute a Presidential Innovation Award to stimulate scientific and engineering advances in the national interest. Existing presidential awards recognize lifetime achievements or promising young scholars, but the proposed new awards would identify and recognize persons who develop unique scientific and engineering innovations in the national interest at the time they occur.

⁶One committee member, Lee Raymond, does not support this action item. He does not believe that ARPA-E is necessary, because energy research is already well funded by the federal government, along with formidable funding by the private sector. Also, ARPA-E would, in his view, put the federal government into the business of picking "winning energy technologies"—a role best left to the private sector.

**BEST AND BRIGHTEST
IN SCIENCE AND ENGINEERING HIGHER EDUCATION**

Recommendation C: Make the United States the most attractive setting in which to study and perform research so that we can develop, recruit, and retain the best and brightest students, scientists, and engineers from within the United States and throughout the world.

Implementation Actions

Action C-1: Increase the number and proportion of US citizens who earn bachelor's degrees in the physical sciences, the life sciences, engineering, and mathematics by providing 25,000 new 4-year competitive undergraduate scholarships each year to US citizens attending US institutions. The Undergraduate Scholar Awards in Science, Technology, Engineering, and Mathematics (USA-STEM) would be distributed to states on the basis of the size of their congressional delegations and awarded on the basis of national examinations. An award would provide up to \$20,000 annually for tuition and fees.

Action C-2: Increase the number of US citizens pursuing graduate study in "areas of national need" by funding 5,000 new graduate fellowships each year. NSF should administer the program and draw on the advice of other federal research agencies to define national needs. The focus on national needs is important both to ensure an adequate supply of doctoral scientists and engineers and to ensure that there are appropriate employment opportunities for students once they receive their degrees. Portable fellowships would provide a stipend of \$30,000⁷ annually directly to students, who would choose where to pursue graduate studies instead of being required to follow faculty research grants, and up to \$20,000 annually for tuition and fees.

Action C-3: Provide a federal tax credit to encourage employers to make continuing education available (either internally or through colleges and universities) to practicing scientists and engineers. These incentives would promote career-long learning to keep the workforce productive in an environment of rapidly evolving scientific and engineering discoveries and technological advances and would allow for retraining to meet new demands of the job market.

Action C-4: Continue to improve visa processing for international students and scholars to provide less complex procedures and continue to make improvements on such issues as visa categories and duration, travel for

⁷An incorrect number was provided for the graduate student stipend in the original October 12, 2005, edition of the executive summary.

scientific meetings, the technology alert list, reciprocity agreements, and changes in status.

Action C-5: Provide a 1-year automatic visa extension to international students who receive doctorates or the equivalent in science, technology, engineering, mathematics, or other fields of national need at qualified US institutions to remain in the United States to seek employment. If these students are offered jobs by US-based employers and pass a security screening test, they should be provided automatic work permits and expedited residence status. If students are unable to obtain employment within 1 year, their visas would expire.

Action C-6: Institute a new skills-based, preferential immigration option. Doctoral-level education and science and engineering skills would substantially raise an applicant's chances and priority in obtaining US citizenship. In the interim, the number of H-1B visas should be increased by 10,000, and the additional visas should be available for industry to hire science and engineering applicants with doctorates from US universities.⁸

Action C-7: Reform the current system of "deemed exports." The new system should provide international students and researchers engaged in fundamental research in the United States with access to information and research equipment in US industrial, academic, and national laboratories comparable with the access provided to US citizens and permanent residents in a similar status. It would, of course, exclude information and facilities restricted under national-security regulations. In addition, the effect of deemed-exports⁹ regulations on the education and fundamental research work of international students and scholars should be limited by removing from the deemed-exports technology list all technology items (information and equipment) that are available for purchase on the overseas open market from foreign or US companies or that have manuals that are available in the public domain, in libraries, over the Internet, or from manufacturers.

⁸Since the report was released, the committee has learned that the Consolidated Appropriations Act of 2005, signed into law on December 8, 2004, exempts individuals that have received a master's or higher education degree from a US university from the statutory cap (up to 20,000). The bill also raised the H-1B fee and allocated funds to train American workers. The committee believes that this provision is sufficient to respond to its recommendation—even though the 10,000 additional visas recommended is specifically for science and engineering doctoral candidates from US universities, which is a narrower subgroup.

⁹The controls governed by the Export Administration Act and its implementing regulations extend to the transfer of technology. Technology includes "specific information necessary for the 'development,' 'production,' or 'use' of a product." Providing information that is subject to export controls—for example, about some kinds of computer hardware—to a foreign national within the United States may be "deemed" an export, and that transfer requires an export license. The primary responsibility for administering controls on deemed exports lies with the Department of Commerce, but other agencies have regulatory authority as well.

INCENTIVES FOR INNOVATION

Recommendation D: *Ensure that the United States is the premier place in the world to innovate; invest in downstream activities such as manufacturing and marketing; and create high-paying jobs based on innovation by such actions as modernizing the patent system, realigning tax policies to encourage innovation, and ensuring affordable broadband access.*

Implementation Actions

Action D-1: Enhance intellectual-property protection for the 21st-century global economy to ensure that systems for protecting patents and other forms of intellectual property underlie the emerging knowledge economy but allow research to enhance innovation. The patent system requires reform of four specific kinds:

- Provide the US Patent and Trademark Office with sufficient resources to make intellectual-property protection more timely, predictable, and effective.
- Reconfigure the US patent system by switching to a “first-inventor-to-file” system and by instituting administrative review *after* a patent is granted. Those reforms would bring the US system into alignment with patent systems in Europe and Japan.
- Shield research uses of patented inventions from infringement liability. One recent court decision could jeopardize the long-assumed ability of academic researchers to use patented inventions for research.
- Change intellectual-property laws that act as barriers to innovation in specific industries, such as those related to data exclusivity (in pharmaceuticals) and those that increase the volume and unpredictability of litigation (especially in information-technology industries).

Action D-2: Enact a stronger research and development tax credit to encourage private investment in innovation. The current Research and Experimentation Tax Credit goes to companies that *increase* their research and development spending above a base amount calculated from their spending in prior years. Congress and the Administration should make the credit permanent,¹⁰ and it should be increased from 20 to 40% of the qualifying increase so that the US tax credit is competitive with those of other countries. The credit should be extended to companies that have consistently spent large amounts on research and development so that they will

¹⁰The current R&D tax credit expires in December 2005.

not be subject to the current de facto penalties for having previously invested in research and development.

Action D-3: Provide tax incentives for US-based innovation. Many policies and programs affect innovation and the nation's ability to profit from it. It was not possible for the committee to conduct an exhaustive examination, but alternatives to current economic policies should be examined and, if deemed beneficial to the United States, pursued. These alternatives could include changes in overall corporate tax rates and special tax provisions providing incentives for the purchase of high-technology research and manufacturing equipment, treatment of capital gains, and incentives for long-term investments in innovation. The Council of Economic Advisers and the Congressional Budget Office should conduct a comprehensive analysis to examine how the United States compares with other nations as a location for innovation and related activities with a view to ensuring that the United States is one of the most attractive places in the world for long-term innovation-related investment and the jobs resulting from that investment. From a tax standpoint, that is not now the case.

Action D-4: Ensure ubiquitous broadband Internet access. Several nations are well ahead of the United States in providing broadband access for home, school, and business. That capability can be expected to do as much to drive innovation, the economy, and job creation in the 21st century as did access to the telephone, interstate highways, and air travel in the 20th century. Congress and the administration should take action—mainly in the regulatory arena and in spectrum management—to ensure widespread affordable broadband access in the very near future.

CONCLUSION

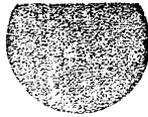
The committee believes that its recommendations and the actions proposed to implement them merit serious consideration if we are to ensure that our nation continues to enjoy the jobs, security, and high standard of living that this and previous generations worked so hard to create. Although the committee was asked only to recommend actions that can be taken by the federal government, it is clear that related actions at the state and local levels are equally important for US prosperity, as are actions taken by each American family. The United States faces an enormous challenge because of the disparity it faces in labor costs. Science and technology provide the opportunity to overcome that disparity by creating scientists and engineers with the ability to create entire new industries—much as has been done in the past.

It is easy to be complacent about US competitiveness and preeminence in science and technology. We have led the world for decades, and we continue to do so in many research fields today. But the world is changing

rapidly, and our advantages are no longer unique. Some will argue that this is a problem for market forces to resolve—but that is exactly the concern. Market forces are *already at work* moving jobs to countries with less costly, often better educated, highly motivated workforces and friendlier tax policies.

Without a renewed effort to bolster the foundations of our competitiveness, we can expect to lose our privileged position. For the first time in generations, the nation's children could face poorer prospects than their parents and grandparents did. We owe our current prosperity, security, and good health to the investments of past generations, and we are obliged to renew those commitments in education, research, and innovation policies to ensure that the American people continue to benefit from the remarkable opportunities provided by the rapid development of the global economy and its not inconsiderable underpinning in science and technology.

BILL



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Clara Floyd, President
Betty H. Weller, Vice President
David E. Helfman, Executive Director

March 23, 2009

Montgomery County Council
100 Maryland Avenue
Rockville, MD 20850

Dear Members of the Montgomery County Council:

This letter serves as written testimony urging your support of Bill 03-07 Workforce Investment-amendment for early childhood education. For the past six months, I have served as a member of the Montgomery County Universal Preschool Task Force. The Task Force members have agreed on support of the recommended amendments, delineated below.

1. After line 28, but before 29, insert the following:
 - d. Or an Associates of Arts in Teaching degree (AAT)
 - e. Or a Bachelors degree in Early Childhood Education or in Early Childhood Special Education leading to an early childhood certification from the Maryland State Department of Education.
2. Change line 29 to 32 to read:
 - (2) Requires a student who received a workforce investment scholarship to agree to work in the County as a mathematics or science teacher, as an engineer, *in an early childhood education setting*, or in one of the County's 10 most needed occupations...

I cannot stress enough the importance of access to high quality early childhood education for all children, but most especially, those children who live in poverty. This legislation clearly links to HB 184 Education - Maryland's Preschool for All Business Plan, which is supported by the Maryland State Teachers Association.

Thank you for your time and consideration of my testimony.

Sincerely,

Clara Floyd
President

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GREAT PUBLIC SCHOOLS
for **EVERY CHILD**

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COMMISSION ON CHILD CARE

March 27, 2009

Phil Andrews
President
Montgomery County Council
100 Maryland Avenue, 6th Floor
Rockville, Maryland 20850

2009 MAR 26 PM 2:11
COMMUNICATIONS SECTION

Dear President Andrews:

The members of the Montgomery County Commission on Child Care are writing to express our support for Bill 7-09 Schools and Camps—Workforce Investment Scholarship. This bill represents a strong commitment to developing our County's workforce in high-need fields such as early childhood care and education. The Commission on Child Care encourages members of the Council to consider the following modifications to the language in Bill 7-09.

Insert in after line 28, but before line 29 (page3):

- D) or Associates of Arts in Teaching degree (AAT)
- E) or a Bachelors degree in Early Childhood Education or in Early Childhood Special Education

Change lines 29 to 32 (page 3):

- (2) requires a student who receives a workforce investment scholarship to agree to work in the County as a mathematics or science teacher, as an engineer, as an early childhood provider in a public or private infant, toddler or pre-Kindergarten setting, or in one of the Country's 10 most needed occupations for at least the number of years the student receives the scholarship;

Insert at the end of line 45 (page 3):

- (1) Six members must be selected from the public and must each be a County resident who is or has been active in government, business, industry, labor, community service, education or the early childhood education and care profession.

We believe that these suggested changes to Bill 7-09 will ensure that early childhood professionals will be afforded the opportunity to advance in their careers at a time when the demand for high-quality early childhood specialists is expanding.



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Department of Health and Human Services

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COMMISSION FOR WOMEN

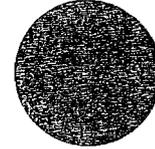
Isiah Leggett
County Executive

Judith Vaughan-Prather
Director

March 18, 2009

The Honorable Michael Knapp
Montgomery County Council
Council Office Building
100 Maryland Avenue – 6th floor
Rockville, Maryland 20850

041221



Dear Councilman Knapp:

The Montgomery County Commission for Women read with interest about the bills you are introducing to create opportunities for teacher training in "the County's 10 most needed occupations," and to provide scholarships for students preparing for careers in "areas of need."

We write to urge you to ensure that women and girls are equally represented among those benefiting from this important initiative. Girls are vastly underrepresented in MCPS and Montgomery College advanced math, science and technology courses. Women are vastly underrepresented in the careers to which these courses lead.

The 2007 final report of the Girls in Information Technology Task Force, lead by Councilwoman Nancy Floreen, indicated that girls are only 13% of the students enrolled in Advanced Placement Computer Science Courses.

The Commission for Women's 2007 *Report on the Status of Women in Montgomery County* found that "of the 64 students placed in high school technology-related internships, all were boys." (p. 20)

The numbers are similar for Montgomery College and for school systems, colleges and universities nationwide.

Without a visible and specific commitment to gender equality in science, technology, engineering and math (STEM), we will never achieve the goal – or even come close. Your important legislation provides an opportunity to move in that direction. It is for this reason that the Commission for Women urges you to:

- Require that 50% of the membership of the Workforce Investment Scholarship Board be female;
- Require that 50% of the Workforce Investment Scholarships go to female students.

In so doing, you will set Montgomery County as a model for the rest of the nation in recognizing and addressing the enormous disparity in women's participation in STEM careers and course preparation. We would be happy to cooperate in this effort and offer our assistance in any way that might be appropriate.

Sincerely,

Regina L. Oldak
Regina L. Oldak, President

cc: County Council Members

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