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Before the Subcommittee on Labor, Health and Human Services,
Education, and Related Agencies, Committee on Appropriations
U.S. House of Representatives
Hearing on
"Closing the Achievement Gap in Higher Education"

March 18, 2015

Good morning Chairman Cole, Ranking Member DeLauro and Members of the Subcommittee. Thank you for inviting me to speak with you this morning about the need to close the achievement gap in higher education and the barriers students face to successful degree completion.

Overview of BHEF

Now in its 38th year, the Business-Higher Education Forum (BHEF) is the nation's oldest membership organization of Fortune 500 CEOs, prominent college and university presidents, and other leaders dedicated to advancing innovative education and workforce solutions and improving U.S. competitiveness. BHEF's business and academic members collaborate in regions across the country to design and deploy higher education-workforce solutions in the high-demand and emerging fields, such as cybersecurity and big data, that are so critical to innovation and national security. BHEF and its members generate insights from research, modeling, and regional projects, work to influence public policy at the national and state levels, and inspire other leaders to act.

The Completion Challenge

Far too few students who enroll in postsecondary education persist to complete an industry-valued credential including: certificate, associates or baccalaureate degree within a reasonable period after matriculation. The causes as manifold and well-documented, including lack of adequate academic preparation in P-12, inadequate financial resources and academic support, and excessive work while enrolled. In addition, students' awareness of and connection to high-demand jobs is far too weak, leaving them unable to develop skills required for the 21st century economy. As a result, far too many students leave postsecondary education with neither the credentials nor skills required to excel in an increasingly technology-driven and competitive 21st century American economy.

Higher Education and Workforce Initiative

BHEF's signature initiative is designed to address this challenge. Through the collaboration of its business and academic members—Fortune 500 CEOs, presidents of prominent colleges and universities, and other leaders—BHEF has launched the *National Higher Education and Workforce Initiative (HEWI)*, a six-year effort that includes regional projects focused on business-higher education partnerships in selected regions and states, as well as a national effort to disseminate the learnings from the projects and scale effective practices in partnership with national partners such as the Business Roundtable and Aerospace Industries Association. The initiative deploys a unique model of strategic business engagement in higher education, one where relationships move from transactional to strategic and sustained, to address our members' high-skill, high-priority workforce needs and to attract and improve degree completion among women, minorities, and veterans.

BHEF has launched innovative regional partnerships in data science and analytics, financial services, cybersecurity, water and materials sciences, energy, and engineering. Backed by some of the nation's most committed business and academic leaders, these partnerships demonstrate how BHEF meets America's higher education and workforce challenges. Through the initiative, the model enables business and higher education to build sustainable, high- impact regional projects in emerging fields that meet regions' high-demand workforce needs, increase undergraduate interest and persistence in these disciplines, and help students graduate community college and universities college workforce ready.

BHEF's System Dynamics Modeling of Degree Completion

BHEF has a history of developing groundbreaking tools to demonstrate the impact of scaling evidence-based practices to boost college completion. In 2009, after three years of intensive modeling work under the leadership of then-BHEF Chair William H. Swanson, Raytheon's Chairman debuted and donated to BHEF the original P-16 U.S. STEM Education Model®. Originally designed to assess what it would take for BHEF to reach its goal of doubling the number of STEM grads in the U.S., it has provided not only key insights into how higher education represents the greatest leverage point in the STEM education pipeline—about half of students who begin STEM majors as freshman drop out of these majors before junior year—but also how degree completion represents a key leverage point in a national workforce and competiveness strategy.

Beginning in 2011, BHEF and the United States Navy's Office of Naval Research (ONR) collaborated to deepen the understanding of the impact of the adoption of evidence-based practices on degree completion. ONR asked BHEF to develop the U.S. STEM Undergraduate Education Model® to show how its investments in cutting-edge STEM student retention strategies can have the strongest impact on the Navy's future workforce needs. Insights from the model inform the Navy's strategy to grow a robust civilian workforce that is strongly invested with Navy-relevant STEM knowledge and skills, and ready to contribute to the next generation of Naval innovation.

Although the modeling focused on students enrolled in STEM majors, the modeling provides a window on the larger completion challenge and the retention strategies included in the model are generally applicable to all students, regardless of major. *BHEF's Highly Effective Undergraduate Intervention Strategies: Literature Review Summaries* provides evidence of effective retention strategies used in the modeling. The literature and modeling demonstrate that strategies like providing summer bridge programs before matriculation and offering early undergraduate research internships boost persistence and degree completion. However, the modeling showed that 'multidimensional programs' that combine strategies and continue over time have far greater impact on degree completion than unidimensional, one-time interventions. Three examples of these multidimensional programs include:

- **The Meyerhoff Scholars Program**. Based at the University of Maryland, Baltimore County, the program is designated for undergraduate students, with a focus on women and minority students pursuing STEM degrees. It combines financial aid, student learning communities, summer bridge programs, mentoring, personal advising, and counseling into one comprehensive program. Matched interventions include: student learning communities, course redesign to induce active engagement, summer bridge programs, and scholarships.
- **The Louis Stokes Alliances for Minority Participation**. This national program was established in 1991 by the National Science Foundation to develop strategies to increase the

number of minority students who successfully complete baccalaureate degrees in STEM fields and who continue on to graduate studies in these fields. Matched interventions include: early undergraduate research internships, student learning communities, summer bridge programs, and scholarships.

- **The Freshman Research Initiative.** Based at the University of Texas, Austin, this program provides on-campus research experiences to first-year students in STEM majors. Participants are paired with faculty and peer mentors, participate in a learning community with other participants, and engage in outreach activities intended to expose K-12 students to research in STEM fields. The program is funded by the National Science Foundation and the Howard Hughes Medical Institute. Matched interventions include: early undergraduate research internships, course redesign to induce active engagement, and student learning communities.

BHEF's National Science Foundation-Funded Work: Community College as a Gateway to STEM Bachelor's Degrees

BHEF research indicates that 14 percent of all high school seniors are STEM-interested but not college-ready in math. For many of these students, their first postsecondary institution will be a community college. As reports from the President's Council of Advisors on Science and Technology and others indicate, less than 40 percent of the students who declare a STEM major go on to earn STEM degrees. This attrition rate peaks in the first two years of the undergraduate experience, particularly for women and minority students.

Many students begin their postsecondary education at community colleges, especially first generation, low-income and underrepresented minorities. Community college students have the capability to increase and diversify the nation's STEM-skilled talent pool. With more than 1,100 community colleges in the United States, these institutions enroll more than 7.4 million degree-seeking students, and represent 46 percent of all U.S. undergraduates and 41 percent of first-time freshmen[1]. Of those, 50 to 80 percent plan to transfer and earn a bachelor's degree, making community colleges a principal gateway into four-year baccalaureate programs[2]. Nationally, 45 percent of community college students are minorities, and 36 percent are first-generation college students.[3] Since 1985, women account for more than half of all community college students. However, less than ten percent of students who start community college in a STEM major earn a bachelor's degree within six years. For these reasons, BHEF focuses its National Science Foundation (NSF) resources at the juncture between two year- and four-year institutions.

NSF has provided BHEF with a five-year grant to launch the Undergraduate STEM Interventions with Industry or USI[2] Consortium, a group of BHEF member-led sites that will engage business and apply combinations of evidence-based interventions designed to increase STEM student persistence and completion. The campus projects will develop models for assisting students to transfer from two- to four-year institutions. By creating pathways for a large segment of this population to attain

[1] American Association of Community Colleges (AACC). *2015 Fact Sheet.* Available at: http://www.aacc.nche.edu/AboutCC/Pages/fastfactsfactsheet.aspx.

[2] Horn, L. (2009). *On Track to Complete? A Taxonomy of Beginning Community College Students and Their Outcomes 3 Years After Enrolling: 2003–04 Through 2006 (NCES 2009-152).* National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, D.C.

[3] AACC, 2015.

degree completion, USI^2 could significantly increase diversity in undergraduate STEM baccalaureate achievement.

Each USI^2 site implements an industry-driven multidimensional program designed with evidence-based intervention strategies to increase student persistence and degree completion. These partnerships focus on high-skill, high-demand fields, such as cybersecurity and data science, which can be applied to an array of industry sectors. The partnerships and their foci are:

- The City University of New York (CUNY) and IBM: CUNY, the nation's largest urban university, and IBM will support students transferring from two-year to four-year programs in data science or urban sustainability. Students will partake in a summer bridge program, complete a capstone/senior thesis project, and participate in internships at IBM.
- Miami Dade College and NextEra Energy: Miami Dade, which offers both two- and four-year degrees, will partner with NextEra Energy and Siemens to build a four-year program in data science for two-year students who continue to pursue their baccalaureate degrees at Miami Dade. Each student will participate in a research experience and internship.
- The Massachusetts Competitive Partnership (MACP) companies: MACP members will partner with local community colleges and universities to support transfer students pursuing cybersecurity degrees.
- The University of Wisconsin System (UW) and The Water Council: UW and The Water Council will assist transfer students from Milwaukee Area Technical College and Waukesha County Technical College to UW-Milwaukee's School of Freshwater Science. The program will offer students mentored research experiences at each stage of their postsecondary experience.
- Washington University in St. Louis (Wash U) and The Boeing Company: Wash U and Boeing will support transfer students from Florissant Valley Community College (in Fergusson, MO), to Wash U and the University of Missouri St. Louis's Joint Engineering Program. Graduates will receive a nationally-recognized accredited engineering degree.

Business engagement with community college students before and after they transfer to four-year universities is essential to completion. When business plays an active role, it helps ensure that students complete their postsecondary education and are provided with opportunities to pursue high-skill, high-wage jobs in the regional economy.

Federal Support for Higher Education and Student Financial Assistance

The effectiveness of BHEF's work in the National Higher Education and Workforce Initiative is dependent on a healthy higher education system and adequate federal financial aid for its students. For BHEF's research universities, federal R&D investments are critical to promoting innovation, entrepreneurship and economic growth in the regions in which BHEF works and BHEF has consistently supported federal R&D investments.

Adequate student aid is essential to access and completion for low-and moderate-income students at all institutions of higher education. Maintaining the health of the Federal Pell Grant program, as well as other Title IV programs, and the purchasing power of the Pell Grant maximum award is a critical component of a completion strategy.

BHEF has consistently supported robust federal investments in R&D and maintain a healthy Pell Grant program with a maximum award that will promote full-time enrollment, which improved completion rates. In addition, programs like summer bridge programs improve college readiness and completion. However, the elimination of year-round Pell has eliminated a source of funding for students enrolled in the programs. Permitting use of additional Pell Grant dollars beyond the maximum for programs that better prepare low-income, first generation students to success and complete will yield a high return on investment.

Summary and recommendations

BHEF's research, modeling and project work on completion has provided insights on highly effective college completion strategies for low-income and first generation students. BHEF's projects serve as proof points for improving completion for all students.

BHEF recommends maintaining funding for the Pell Grant program at least at FY2015 levels and that Congress consider reinstating 2 Pell Grants or a portion thereof for use in summer bridge programs.