Governor's Advisory Commission on Postsecondary Education:

REPORT AND RECOMMENDATIONS

November 14, 2012

Letter from the Commission

Pennsylvania has long been recognized for offering abundant and diverse opportunities for postsecondary education. Our tremendous asset includes the universities of the Pennsylvania State System of Higher Education, the state-related universities, the community colleges, private colleges and universities, research and graduate institutions, adult education and family literacy providers, private licensed schools, proprietary institutions, specialized associate degree-granting institutions and business, trade, and technical schools that offer vocational programs.

The Governor's charge was to create a multi-year framework that would sustain and enhance the commonwealth's postsecondary education system, while serving the needs of students and employers for the 21st century.

During the course of our discussions, we pondered questions such as: What types of collaborations will be needed within the next 5-10 years to meet Pennsylvania's labor demands, to achieve sector efficiencies and to increase accessibility and affordability for all users? What role should government and state policymakers play in helping achieve these goals? What best practices exist regionally, nationally and globally that could be held as standards for replication? What strategies would be needed to overcome potential barriers that could stand in the way of making these changes?

We deliberated as a commission and listened to members of the public and expert speakers from all regions of the commonwealth. We clearly heard the call for businesses, government and education providers to collectively meet the needs of lifelong learners, increase student readiness, improve business/education partnerships, provide greater accountability to commonwealth taxpayers and users of the system, increase flexibility in delivery and provide strategic financial investments based on performance.

With this in mind, we developed our work through the lens of the learner, putting the student in the driver's seat and evaluating how providers would adapt and change to offer the greatest educational options with the most significant impact on personal development, as well as economic growth and stability.

We are pleased to present these recommendations to the Governor and citizens of Pennsylvania as a culmination of our joint efforts. As business and education leaders, we look forward to working together to ensure Pennsylvania's postsecondary education system remains a premier asset for decades to come.

Donald Block
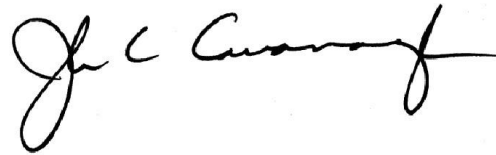Greater Pittsburgh Literacy Council

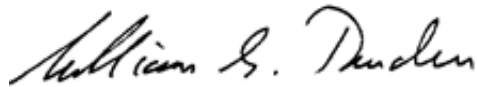Frank F. Britt
Penn Foster Division

Lucien Calhoun
Calhoun Baker Inc.

John C. Cavanaugh
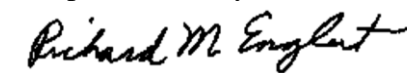Pennsylvania State System of Higher
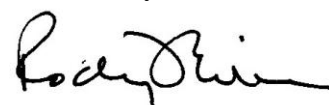Education

William G. Durden
Dickinson College

Gerald C. Eckert
Millersville University

Richard M. Englert
Temple University
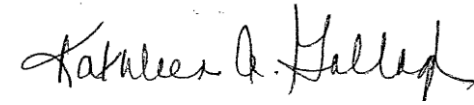
Rodney A. Erickson
The Pennsylvania State University

Don L. Francis
Association of Independent Colleges and
Universities of Pennsylvania

Kathleen A. Gallagher
Eckert Seamans

Michael George
QVC, Inc.

Davie Jane Gilmour
Pennsylvania College of Technology

William E. Griscom
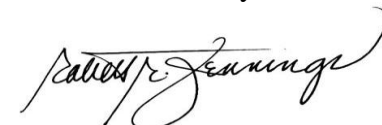Thaddeus Stevens College of Technology

Amy Gutmann
University of Pennsylvania

L. Jill Hans
Pennsylvania Department of Education

Robert R. Jennings
Lincoln University

Alex Johnson
Community College of Allegheny County

Karen Winner Sed
Winner International
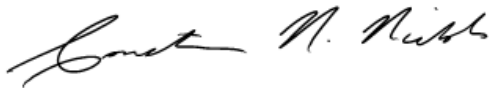
Michael MacDowell
Misericordia University

Ronald W. Simms
Petroleum Service Company
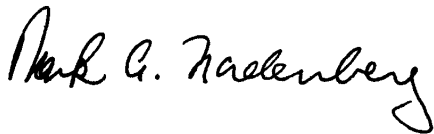
Suzanne S. Mayes
Cozen O'Connor

Rex Spaulding
North American Trade Schools Inc.

Constance Nichols
Grove City College

Sara St. Peter
Allegheny College
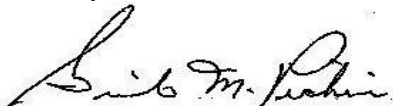
Mark A. Nordenberg
University of Pittsburgh

Alan Todd
Corporate University eXchange (CorpU)

Rita D. Perez
Pennsylvania Department of Education

Larry A. Wittig
Pennsylvania State Board of Education

Guido M. Pichini
Security Guards Inc.

James L. Preston
Pennsylvania Higher Education Assistance
Agency

Rob Wonderling
Greater Philadelphia Chamber of Commerce

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Introduction

The Governor's Advisory Commission on Postsecondary Education (commission), created by Executive Order 2012-01, has been charged with making recommendations in relation to the establishment and maintenance of a robust and responsive postsecondary education system in Pennsylvania for the 21st century to serve students and citizens of this commonwealth. Thirty-one commission members were appointed for their expertise and leadership in the education and business communities. Over the past year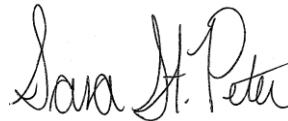, the commission has met and deliberated over critical issues and challenges affecting the delivery of postsecondary education and considered ways to maintain the quality of education, assure its longevity and adapt to the changing workforce needs and evolving demographics of the users. As a result of this work, the commission has identified four key goals under which recommendations are categorized. What follows is the work of the commission including an overview of Pennsylvania's postsecondary education system, the legislative framework within which the system operates, including major regulations as well as critical issues and the recommendations the commission believes will address these challenges and support an environment of sustainability for the future.

The Commission's Goals

Affirm opportunities for lifelong learning;

Ensure greater public access, affordability and usability of postsecondary education;

Recognize and support the diversity and richness of the postsecondary education system; and

Enhance Pennsylvania's economic vitality and the ability for the commonwealth to compete globally.

By The Numbers:
The System

- -

402

The number of public and private institutions. This includes for-profit and not-for-profit credential granting institutions.

IPEDS 2011-12

- -

279

The number of private-licensed schools.

Pennsylvania Department of Education, Bureau of Postsecondary and Adult Education, 2011-12

- -

143,766

Number of Bachelor's Degrees, Associate's Degrees, and Certificates earned in Pennsylvania in 2010-11.

About The Commission

The Commission has met numerous times with the purpose of analyzing the current state of Pennsylvania's postsecondary system, identifying challenges and possible areas for improvement, and formulating recommendations to strengthen the system in both the short and long terms.

Four working groups (Workforce Needs, Accessibility and Affordability, Administration and Financial Structures and Collaboration) were established to focus the Commission's efforts and drive discussion in the areas outlined by the Executive Order. These discussions later evolved into the four key goals which organized the Commission's recommendations.

As a result of these discussions, Commissioners met with colleagues, advisors and the general public to solicit input and articulate potential solutions and improvements to the current postsecondary framework. Over a hundred ideas were generated as a result of this exercise and later synthesized and consolidated to create more than thirty ideas. Over the span of several meetings, the Commission met to discuss, evaluate and prioritize the ideas.

Subset groups of commissioners further explored each of the ideas and crafted language for formal recommendations for the purpose of discussion, revision and eventually, final consideration. To ensure transparency and public participation, the Commission adopted a three-tiered strategy for soliciting input from the public. The input received from the public meetings in Harrisburg, regional field meetings and the Commission's e-mail account were incorporated into discussions and represented in the final recommendations.

College leaders from all sectors, as well as business leaders from major industries, have come together over the past year to determine how best to maintain and provide for a system that will not only meet current challenges, financial and otherwise, but adapt to the evolving college going population and prosper into the 21st century. The commonwealth recognizes that the postsecondary system is a key component to the wellbeing of the state, not only as an economic engine but also to provide for an educated citizenry. Institutions and their leaders have provided true stewardship for the asset of the commonwealth postsecondary system and now offer recommendations to plan for its future.

The Commission

Don Block • Frank Britt • Lucien Calhoun • John Cavanaugh • Bill Durden •
Gerald Eckert • Richard Englert • Rodney Erickson • Don Francis •
Kathy Gallagher • Michael George • Davie Jane Gilmour • William Griscom •
Amy Gutmann • Jill Hans • Robert Jennings • Alex Johnson •
Michael MacDowell • Suzanne Mayes • Constance Nichols •
Mark Nordenberg • Rita Perez • Guido Pichini • James Preston •
Karen Winner Sed • Ron Simms • Rex Spaulding • Sara St. Peter •
Alan Todd • Larry Wittig • Robert Wonderling, Chair

By The Numbers:
The Process

16

The Number of public/field meetings held across the commonwealth and in Harrisburg to solicit information.

31

The number of Commissioners appointed by the Governor to the Advisory Commission on Postsecondary Education.

58

The number of invited expert speakers who participated in the public meetings.

Recommendations

Goal 1: Affirming opportunities for lifelong learning

In a knowledge-based economy, Pennsylvania's citizens rely on their ability to acquire skills and education, not only prior to the start of their first job but throughout their career. Currently, an employee will average seven to ten jobs within several careers and employers within their lifetime. Citizens will need and demand access to learning opportunities over time to build upon the skills and knowledge they have acquired to meet new industry demands and areas of personal development[i]. These life-long learners must have the tools, abilities and support to chart their own educational paths with a focus on preparing for careers, expanding job skills and personal enrichment. Education pathways and learning must now be personalized and customized as citizens prepare and compete for employment. Learners may also demand alternatives to the traditional delivery approach which better meet their needs such as a more hybrid, blended approach of online and classroom tools and experiences.

Addressing postsecondary learner needs means accounting for competencies including current knowledge and skills. Students would save time and money by receiving credit through systematic and consistent acceptance of competency-based learning within an established framework.

The following recommendations will aid users as they navigate through the education landscape, starting with focused and specialized counseling to assist learners in determining their personal pathway, attention to student preparedness and remediation needs, facilitating portability of education credentials and most importantly, provision of a tool in the Passport to help track and connect the education experiences throughout a student's lifetime.

1.1 Passport for Learning

Develop a "Passport for Learning" (Passport) that will transform postsecondary education into a learner-based, consumer-driven system through a dynamic online platform. The Passport will support a model to deliver a personalized education experience and a developer toolkit. It will be an education "app store" with various types of education providers and services that create and offer unique experiences for users to manage their lifelong education and/or training. This centralized gateway will:

- Create a personal dashboard for users to access and manage their education and workforce portfolios while helping them to coordinate their current and potential learning experiences, both credentialed and competency based, with career development and planning;
- Establish a vehicle for postsecondary providers to connect directly to user needs and demands; and
- Enable potential and current employees and employers to establish a practical relationship based on career skills, knowledge and interests.

The Passport, a personal, dynamic online portal, will enable learners to have the tools and resources needed to access and manage lifelong education and training experiences. As a shared

space for services and resources, the Passport will help facilitate connections and partnerships between learners, businesses, education providers and government that focus upon individual needs and help blend specific core academic skills, technical knowledge, employability skills and expertise.

1.2 Enhanced College/Career Counseling

Ensure all K-12 students and the future adult workforce have access to information regarding all avenues of educational and career opportunities to include practical, contemporary and age-appropriate educational and career planning resources, including financial literacy education, to build students' foundation for making informed educational, career and financial decisions. The Commonwealth, education sector and industry representatives should promote access to and use of quality resources through traditional and innovative delivery models, including online and blended learning. While many schools and institutions are providing exceptional counseling, many others need more support. These programs and tools will aim to further the implementation of Pennsylvania's Career Education and Work standards across the Commonwealth and focus on student outcomes and improved family engagement.

1.3 K-12 Personal Finance

Expand high-quality personal financial literacy education in Pennsylvania's schools. The Pennsylvania Department of Education and the Pennsylvania Department of Banking, in partnership with other stakeholders, including the business sector, should support this effort by making available high-quality financial literacy education resources or curriculum to educators, students and families. These materials should be focused on integrating personal finance concepts early in a student's education and continue throughout secondary years.

1.4 Workforce Ready and Targeted Dual Enrollment

Encourage the growth of dual enrollment programs with priority given to those in fields including, but not limited to, technical and STEM education, health care, manufacturing, and other high-priority occupations and to those that meet the Transfer Credit Framework requirements established by PA TRAC. Multiple sources of funding should be used to facilitate student learning experiences in both postsecondary and business settings in exchange for high school, and college credentials. In recognition that students, postsecondary providers and businesses benefit from well prepared students and future employees that have both content and field experience, partnerships between secondary education, postsecondary institutions and businesses should be strengthened, and when necessary, created to both enable and assist in funding these opportunities. In return, the state should offer tax incentives which benefits postsecondary institutions and businesses that support technical and STEM-focused dual enrollment opportunities.

1.5 Remediation Programs

Support academically underprepared students by ensuring greater partnerships between secondary and postsecondary education, improving access to targeted remediation programs, including GED preparation programs, by early identification and instituting data driven best practices. The Commonwealth and K-16 institutions, including Career and Technical Education programs, should utilize multiple funding sources to strengthen existing models and pilot new models for remediation. The PA Common Core, Keystone Exams and future K-12 initiatives will continue to increase rigor and target support for students in order to decrease the need for remedial services in postsecondary education. Additionally, adult learners and non-traditional students often require unique services; therefore, an emphasis should be placed on increasing access to postsecondary education and facilitate smooth and efficient pathways to certificate and degree attainment and family-sustaining employment.

1.6 Competency-Based Programs

Support a student's ability to earn and apply postsecondary credit based on competencies by:

- Reconvening members of the Pennsylvania Consortium on Prior Learning Assessment, a joint effort of the Departments of Education and Labor & Industry, to promote best practices statewide, such as portfolio assessments; and
- Expanding the scope of the Transfer and Articulation Oversight Committee (TAOC) to include the articulation of credit earned through competency-based examinations. TAOC member institutions will mutually agree upon eligible examinations, passing scores, and application within the curriculum. Such examinations will allow students to receive credit for skills mastered outside of the traditional postsecondary delivery methods. This includes Advanced Placement (AP) examinations, Defense Activity for Nontraditional Educational Support (DANTES), and other assessments approved by TAOC.

Goal 2: Ensuring greater accessibility, affordability and usability of postsecondary education

Providers of postsecondary education are historically challenged by the dilemma of investing in the people, plant and equipment necessary to provide valuable educational opportunities for students in an environment of limited public and private resources in the most efficient and effective means possible. Providers are faced with balancing the challenges of investing in their organizations for the 21st century and continuing to provide value-based educational opportunities for learners.

Furthermore, the Pennsylvania Higher Education Assistance Agency (PHEAA) must continue administering and managing the state grant scholarship program in a way that addresses the increasing population of needs-based students in the postsecondary system. PHEAA's challenges also include addressing the growing demand on scholarship resources to support online delivery of education.

In addition to apparent financial challenges, providers must adapt to evolving demographics of the postsecondary user. While the traditional college-going population is declining, there are projected increases in adult learners and some minority populations as well, bringing with them unique needs that must be addressed by education providers. The nontraditional postsecondary user has family and employment obligations in addition to their pursuit of education and education providers are adapting to these additional needs by offering personalized and flexible services.

Providers of education are meeting financial and delivery challenges by considering options that include co-locating and collaborating with other service providers. This can be seen in all sectors of education and notably between community colleges and career and technical centers as they focus on increasing the number of associate degrees and certifications awarded to meet the demands of the workforce now and in the future.

The following recommendations will provide greater opportunities for underserved populations and all postsecondary users with regard to cost, accessibility, availability and efficient program delivery resulting from providers adapting and evolving to meet the needs of the 21st century user.

2.1 Cost/Tuition Containment

Support the ongoing efforts of our postsecondary institutions to deliver education in a cost effective and efficient manner. Effective cost containment practices, in combination with the Commission's recommendations on performance based funding, are essential to controlling increases in published and / or net tuition rates, fees, and other costs to students, while also ensuring quality outcomes.

Pennsylvania ranks below many states in affordability, driven by lower than average levels of state funding per student and also by higher than average costs to deliver education in the commonwealth. Our higher cost position stems in large part from the quality and range of

choices our students are afforded and the mix of sectors in the commonwealth, and should not be viewed as a reflection on the cost management efforts of our institutions. On the contrary, we believe there are many examples of cost management best practices across Pennsylvania that can be leveraged for further gains.

The significant cost pressures impacting postsecondary education will only grow over time as institutions grapple with a decline in the projected growth of the 18-25 age population, rising student and parent expectations for the quality of the total educational experience, a growing mix of nontraditional students who often require special services, increasing needs for remediation, growth in higher cost disciplines like STEM, the challenges of addressing more complex societal and governmental realities, aging physical plants, rising benefit costs, and unfunded pension and OPEB liabilities.

To address these challenges, the commonwealth should aspire to serve as a national role model for developing innovative solutions to the pressing challenge of controlling educational costs while maintaining quality consistent with institutional missions. Cost management initiatives should include:

- Increase transparency by encouraging institutions to periodically publish per student costs and by providing benchmarking on educational cost drivers.
- Provide funding incentives by including effectiveness in constraining the growth of educational costs as one component of the balanced scorecard used for performance funding.
- Support learning innovations that improve outcomes with the same or fewer human resources, leveraging the extensive research on the efficacy of various curricular reforms for different types of students and situations.
- Support student readiness initiatives and seamless student transfers to avoid duplication of costs across the system. Articulation agreements should be reviewed periodically to ensure that emerging learning models (such as distance learning) are supported appropriately.
- Reduce regulatory burdens by supporting the work of the proposed regulatory review taskforce.
- Support alternative pension approaches and seek input from public institutions regarding any potential changes in the state pension plan.
- Encourage institutions to conduct comprehensive efficiency reviews, support the privatization of services that can be performed more efficiently by a third party, help institutions address the rising costs associated with 'quality of life' offerings over academic offerings, and create a clearinghouse for information on best practices in cost management.
- Support the efforts of institutions to work together to maximize operating synergies. Many examples of such collaboration exist today, including the work of the Association of Independent Colleges and Universities of Pennsylvania and regional consortia to provide group purchasing for insurance, energy, software, student health insurance and other commodities, and the efforts of the Pittsburgh Council on Higher Education to permit students at any Pittsburgh college or university to take courses at any other area institution without additional charges.

- Support ongoing PASSHE / Community College initiatives to improve efficiencies. The Commission recognizes the significant number of efficiency initiatives within the PASSHE and Community College systems and the collaborations across the systems, and believes these serve as a strong foundation for further alignment and rationalization across the two sectors.

2.2 Collaboration among Providers of Career Education with Focus on Community Colleges and Career and Technical Centers

Establish a comprehensive statewide design to review and implement opportunities for collaborations among all sectors of postsecondary within the Commonwealth. Relationships will be formed between institutions and centers to result in co-locating, collaborating and integration of services for the purpose of increasing the number of certifications and degrees to fill the current and projected needs of the workforce. Efforts will be focused on minimizing duplication of services, reaching out to geographically underserved areas and implementation of best practices already in use in parts of the Commonwealth.

2.3 Addressing Student Access

2.3.1 PA Targeted Industry Program
Promote postsecondary opportunities to rural and/or educationally underserved communities in Pennsylvania via nonprofit Community Education Councils (CECs). The Pennsylvania Higher Education Assistance Agency (PHEAA) will work with CECs to identify specific training and education programs or coursework available which are less than two years in length and meet the workforce needs of the Commonwealth to assist them in efforts to be eligible programs of study under the new Pennsylvania Targeted Industry Program (PA-TIP). Program eligibility includes, at a minimum, a Title IV eligible institution and a curriculum that leads to a recognized certificate or diploma. PHEAA recognizes that there may be geographic differences with regard to workforce needs, which should be uniquely addressed.

2.3.2 Veterans Support
Launch a partnership between PHEAA and the Pennsylvania Department of Education (PDE) to:
- Assess gaps in student support and policy that may exist at the federal level including the Government Issued (GI) Bill and the Pell Grant program.
- Develop solutions to result in unfettered access to postsecondary education opportunities.
- Assess, refine and improve outreach services to provide veterans with necessary information regarding postsecondary opportunities upon return from service.

2.3.3 Distance Education (DE)
Implement a distance education (online) pilot program (DE Pilot) accessible through the Pennsylvania State Grant Program. PHEAA will partner with relevant state and local agencies to consider workforce needs of the Commonwealth. Student eligibility will be based on:
- Commonwealth workforce needs;
- Pennsylvania residency; and
- Student academic performance.

The General Assembly is encouraged to provide legislative authority to PHEAA to administer the DE Pilot. Authority is necessary to change the current State Grant Program regulation that

requires at least 50 percent of instruction to be delivered through in-classroom study for State Grant eligibility. The Commission respectfully requests that the General Assembly keeps the DE Pilot, a program expansion, in mind when making Commonwealth appropriations to the Pennsylvania State Grant Program.

2.3.4 State Grant Program Funding Principle
The Commission acknowledges the tremendous benefits Pennsylvania receives from the entrepreneurial work of PHEAA. In recent years, PHEAA has provided agency earnings to support the Pennsylvania State Grant Program. Unfortunately, this agency supplement has on occasion resulted in cuts to the state appropriation to the Pennsylvania State Grant Program. We encourage state government to use PHEAA earnings to supplement and not to supplant state dollars.

2.4 Under-Represented Groups

Increase the percent of Pennsylvanians served by postsecondary education with a focus on those populations who have had significantly lower rates of credential and degree attainment. Recognizing that 60 percent of new jobs in Pennsylvania will require some type of postsecondary education by 2018 and that only 43 percent currently hold a postsecondary degree[ii], Pennsylvania should target specific strategies on under-represented populations including, but not limited to, low-income, black and Latino adults, veterans, and older adults over the age of 45, by:

- Postsecondary education providers closely monitoring and tracking student achievement and persistence, identifying potential barriers and possible efforts to overcome them for traditional and non-traditional, part-time and/or adult populations;
- The Commonwealth should clearly articulate educational and career pathways, and assist in the coordination of multiple, current and diverse efforts, to better enable workers to enter postsecondary education as well as ease academic and employment transitions;
- The Commonwealth, in partnership with industry and education providers, promoting access to and use of quality career and education planning resources;
- The Commonwealth and postsecondary education sectors making every effort to increase affordability through such efforts as tuition containment; and
- The Commonwealth seeking to sustain the purchasing power of the Pennsylvania State Grant Program.

Goal 3: Recognizing and supporting the diversity and richness of the postsecondary education system.

It has long been recognized that Pennsylvania maintains an extremely diverse, rich, as well as nationally and internationally competitive system of postsecondary education. The system is diverse in terms of the various providers of education operating within the individual sectors. These institutions are driven by varying missions and the diverse needs of the students they serve. The system is rich in terms of choice for the student seeking postsecondary educational opportunities. Opportunities are innumerable regardless of educational pursuit. Lastly, Pennsylvania is recognized for its research institutions, which have been repeatedly acclaimed in major rankings in advancing human knowledge.

Pennsylvania's institutions of postsecondary education, as well as those throughout the nation, have been challenged in recent years to continue to operate at their best due to the financial stress brought about with the recent recession. In spite of these challenges, institutions are working diligently to continue to deliver the superior quality education and education choices which citizens have come to expect. The dedication and concern for the success of the postsecondary system is apparent in the work of this Commission.

Many states have begun to engage in innovative efforts within this new paradigm. To answer the call for greater accountability to Commonwealth taxpayers and users of the system, various sectors and institutions within the sectors, have adopted goals for outcome improvement. The Pennsylvania State System of Higher Education has gained national attention for its Performance Funding Model. The intra-system model is one of the first in the United States and, as such, has experienced several iterations and evolutions to recognize the unique nature of the 14 universities and their missions.

The commission is recommending a higher level of transparency and accountability coupled with a component of performance funding through appropriations to postsecondary institutions in the future. Sector specific missions will be recognized through development of sector specific benchmarking with the goal of improved and transparent outcomes. Scorecards will be created representing measurable outcomes to equip users of the postsecondary system in their decision making.

As has been noted previously in this report, the size and diversity of Pennsylvania's postsecondary system result in a tremendous asset for citizens. Residents and out-of-state individuals seeking higher education have access to many educational opportunities in Pennsylvania. This in-migration of users has a positive economic and intellectual impact on the state and its wellbeing. While we recognize this benefit, we also need to address the real pressures brought about by duplication of services at various levels within the system which may have developed over time and will not serve the Commonwealth and users of the system positively in the future. Additionally, the Commonwealth has geographic areas that are underserved and lacking in access to the same opportunities afforded other citizens. This commission recognizes that many institutions have already begun to address the pressures as noted above but also that it would prove beneficial to undertake a more comprehensive effort of review and consolidation of services.   In concert with this review of program delivery, a review

of regulations to determine whether they are acting more as barriers than as safeguards will be undertaken. These reviews are necessary to address the evolving nature of users of the system as well as the decline in the total college-going population. Through these reviews, providers of postsecondary services within the Commonwealth will be encouraged to participate in collaborative opportunities whenever possible, and to work together to deliver services in the most effective and efficient means possible, taking special care to preserve the delivery of quality education in the 21st century.

3.1 Accountability and Performance Funding Model

Due to the economic downturn and General Fund pressures, Pennsylvania's higher education funding has declined over 20 percent in nominal dollars from its FY08/09 peak. This level of funding impacts both the affordability of postsecondary education for families in the Commonwealth and the ability of institutions to maintain high levels of quality while advancing their missions. And the lack of predictability in funding from year to year makes it difficult for institutions to plan effectively and optimize performance.

To address these challenges, the Commonwealth should establish a long term finance and accountability funding model based on the performance of all institutions in the postsecondary system that receive annual public funds by appropriations through the Pennsylvania Department of Education (PDE) or the Pennsylvania Higher Education Assistance Agency (PHEAA). Specialized programmatic funding and other postsecondary education related activities not funded through PDE or PHEAA are excluded from this recommendation. This model should provide for a minimum base level of funding coupled with incremental performance funds that the postsecondary system can earn by achieving certain predefined performance outcomes.

Target Funding Toward Four Broad Goals
Given the rich variety of educational options in the Commonwealth, the Commission believes that both base and performance funds should be targeted toward four broad goals of our postsecondary system:

- Ensuring the health and vitality of our public institutions, including our community colleges, the state system, and our state related universities. We believe these institutions play a critical role in sustaining the overall infrastructure that a leading educational system demands and providing lower price alternatives for all citizens in the Commonwealth.
- Providing low and middle income students and their families' greater access to the broad range of public, private nonprofit, and proprietary educational options in the Commonwealth through means tested student grants.
- Improving accessibility to one of the nation's largest and most diverse private nonprofit educational systems, by providing means-tested institutional grants that enable these institutions to improve affordability for low and middle income students.
- Supporting readiness and training alternatives for the growing numbers of nontraditional students, such as adult family literacy programs.

<u>Linking Future Funding Increases to Performance</u>
The Commission believes that in exchange for higher and more predictable funding levels, a meaningful percentage of funds should be tied to the success of each postsecondary institution receiving funds in either sustaining or moving closer to target performance levels. Accordingly, balanced performance scorecards should be developed as a tool to measure postsecondary institutions' efforts in ensuring access and affordability and to show citizens how their tax dollars are being used.   These scorecards will reflect the unique mission of each sector and include, but are not limited to, reflecting outcomes of: constraining the growth of published and / or net tuition rates, fees, and costs to students while ensuring quality outcomes; increasing access to underserved groups; measuring responsiveness to workforce needs; closing achievement gaps; decreasing time to completion; attracting research funds or otherwise contributing to the economic development and competitiveness of the Commonwealth; enhancing the publication of readily accessible information that could be of value to potential students and their families; and participating in statewide analysis and other efforts relating to the consolidation or elimination of duplicative or underperforming programs and/or institutions.

Institutions will be rewarded for either sustaining performance on a metric if results are within the target range, or improving performance if results are below the target range. Scorecards will be developed consistent with direction from the Pennsylvania Department of Education, in consultation with each sector. Scorecards will be recalibrated intermittently, so as to reflect current and reasonable goals, in approximately four to five year cycles. Recalibration will address an evolving postsecondary landscape and affirmation of evolving Commonwealth needs.

Year 1:
Establish a minimum level of $1.67B of base funding in year 1 (fiscal year 2013-14), which is equivalent to the postsecondary funding appropriated through the Pennsylvania Department of Education and the Pennsylvania Higher Education Assistance Agency during fiscal year 2012-13, to be allocated to the four goals outlined above consistent with historic funding ratios. The Commission believes it is imperative to the health and vitality of our postsecondary system that funding not fall below this level. In addition, by making a long term commitment to this base funding, institutions will be able to more effectively plan and manage their operations.

Years 2 and 3:
Establish an interim period (fiscal years 2014-15 and 2015-16) representing a transition time for the institutions to begin adapting their programs and operations to meet prescribed performance benchmarks. The Commission recommends establishing an initial performance fund of $256M to be earned over these two years to the extent funds are available given economic circumstances. If fully achieved, this would return FY 2015-16 funding to the average funding level (in nominal dollars) achieved over the prior ten years (fiscal years 2002 – 2011).

This performance fund would be allocated to the four goals outlined above consistent with historic funding ratios. (In calculating historic ratios, PHEAA funds should be normalized for changes in the supplemental grant program.) For this interim period, institutions may be given the option of either submitting a performance scorecard or being measured based on the level of and growth in net tuition rates. Economic circumstances permitting, this performance fund will

be added to the minimum level of base funding as described in year 1 to create a new base funding level of $1.93B.

Year 4 and Future Years:
Beginning in year 4 (fiscal year 2016-2017), the Commonwealth should strive to provide additional performance funds annually above the new base of $1.93B to the extent economic circumstances permit, to improve postsecondary affordability for Pennsylvania families and to ensure that the Commonwealth benefits from a vibrant, competitive postsecondary system that consistently delivers quality outcomes.

The performance management process will be finalized and in place for all institutions by this point and will be used as the basis for allocating new performance funds. Since educational priorities in the Commonwealth will continue to evolve in ways that cannot be fully predicted, incremental performance funds above the new base of $1.93B should be targeted toward areas of greatest need and awarded to institutions making the greatest progress meeting performance benchmarks, rather than relying on historic funding ratios.

While the Pennsylvania State Grant Program administered through PHEAA cannot be subject to an institutional performance scorecard, the Commission believes it will be important to continue reassessing funding levels for this program to ensure that sufficient funds are available to improve affordability and access and meet evolving educational priorities, such as funding distance learning models and meeting the needs of lifelong learners.

3.2 Capital Projects Bond Financing

Consider a Commonwealth-supported bond issue to raise necessary funding for all types of postsecondary institutions to use for infrastructure projects that enhance those institutions as well as surrounding communities. The funding will be used specifically to renovate and modernize existing facilities in connection with improving instructional facilities, advancing capabilities of research institutions, defined as those institutions that maintain an annual average of $100 million in research expenditures, enhancing enrollment growth and degree completion for students in science, technology, engineering and mathematics (STEM) programs and supporting workforce development initiatives (as related to academic facilities). Funding may only be used to support academic facilities and may not be used to support auxiliary expenses such as residence hall or athletic facility upgrades and deferred maintenance. Institutions will be required to provide matching funds and will compete within designated sectors in a manner determined by an independent oversight committee.

3.3 Consolidation of Institutions

To sustain and enhance our rich postsecondary education system, the Commission recommends convening a working group, representative of all sectors, to perform an assessment of postsecondary delivery at the program, institutional and sector levels within the Commonwealth and deliver a report of findings outlining opportunities and recommendations for program delivery reform, to include, but not limited to consolidation and elimination of programs and/or institutions and their locations in the Commonwealth. In recognition of an overall decline in the

rate of growth in postsecondary enrollment (as well as a change in the demographic composition of that declining enrollment), competition for funding, potential duplication of services and geographically underserved areas within the Commonwealth, efforts must be focused on efficient and effective delivery of services and the sustainability of our postsecondary system into the future. Guiding principles for the assessment should be determined at the outset of the work to be in concert with increasing geographic access, securing economies of scale, reducing duplication of program delivery and securing the most efficient use of Commonwealth resources. The assessment should include all sectors of postsecondary education in the Commonwealth including delivery at the Career and Technical Centers, Community Colleges, Pennsylvania State System of Higher Education (PASSHE), private and state-related institutions. The working group members should deliver their report within 12 months of appointment.

3.4 Regulatory Barriers

Establish a working group consisting of voluntary representation and support from each postsecondary education sector, to promote efficiency by focusing on the reduction and/or elimination of state and federal regulations and lifting the unnecessary institutional burden that contributes to costs for users. The working group will review all proposed regulations, as well as existing regulations, such as construction or reporting requirements, and will periodically issue a report of findings to the Governor, Pennsylvania Secretary of Education and the General Assembly.

Goal 4: Enhancing Pennsylvania's economic vitality and the ability for the Commonwealth to compete globally

In today's global economy, states, businesses and education institutions compete on a daily basis for consumers, resources and intellectual property. The Commonwealth must successfully vie in this competitive environment on both a national and global scale to generate economic activity and job growth. In this effort, it is essential that the Commonwealth, business sectors and education communities collaborate to develop regional and statewide partnerships that strengthen the workforce through quality and relevant education programs, attract industry through a business friendly environment and support innovation through advanced research, specifically in the areas of science, technology, engineering and medicine.

The Commonwealth's ability to compete is, in part, also determined by the state, business sector, education community and taxpayer's ability to make informed decisions based on reliable and easily accessible data. Data must support informed decision making regarding program and funding options that will ensure resources are maximized and we succeed in training today's students to meet Pennsylvania's current and future workforce needs.

The following recommendations provide a pathway to economic growth in the Commonwealth and stability through focused support of Pennsylvania's highest performing research institutions, collaborative partnerships between industry, government, and postsecondary education engaging in intensive innovative activity and a recognition that advancement of studies in the fields of science, technology, engineering and mathematics is a key factor in meeting the identified workforce needs of the 21st century. The Commission encourages continued support of programmatic funding that advances specific Commonwealth priorities.

4.1 Research Institutions

Advance and support innovative investigation that promotes knowledge in all fields of inquiry, especially in science, engineering, energy and medicine. The Commission encourages the Governor to propose innovative ways through tax incentives and other programs to advance the research enterprises and the commercialization of their results, and, when feasible, through bond financing for the development of world class laboratory facilities and other needed infrastructure. To assist in the formation of effective initiatives, the Commonwealth should create a consortium of institutions that maintain an annual average of $100 million in research expenditures with the intent to deliver an Innovation Agenda to the Governor within 180 days of its inception. Research institutions operating at this level of funding have demonstrated their success by advancing knowledge in medicine, basic science, the arts and the humanities as well as a significant economic impact on their respective cities and regions. This agenda will guide these institutions, public policy-makers, business leadership and venture capitalists on a shared and cohesive plan for contribution to economic growth in order for Pennsylvania to maintain and compete on a national and international stage. The consortium of institutions will advise the Governor on the types of financial support appropriate to maintain and promote research at a level to sustain Pennsylvania's place in the global market.

4.2 Develop Innovation Centers

Focus and encourage intensive and deliberate collaboration on strategies to foster innovative and sustainable economic growth that will fuel Pennsylvania's progress and improve its ability to compete globally. As a result, regional innovation partnerships between government, postsecondary education and industry should be established and/or strengthened to: 1) generate local, regional and state economic activity and job growth; 2) engage the talents of students, local graduates and citizens; and 3) advance Pennsylvania as a global leader in industry and job growth. Such partnership opportunities could include, but are not be limited to, the following:

- Collaborative opportunities to jointly meet the training needs of employees and/or general public to improve the pipeline;
- Provide specific degrees, certifications and/or credits towards degree for partnership programs and/or training; and
- Expand Keystone Opportunity Zones (KOZ) and Keystone Innovation Zones (KIZ) to encourage corporations to locate on or near higher education campuses.

4.3 STEM

Advocate for an increased level of commitment from the state, business community and K-20 education sector. In this effort, 1) the Commonwealth should offer tax incentives to businesses that provide STEM-related equipment, in-kind contributions and other forms of support to education institutions; 2) professional development for STEM educators at all levels should include options for competency-based field experience in STEM-related industries; and 3) businesses and education institutions should collaborate to increase STEM exposure, age-appropriate internships and other hands-on experiential learning and relevant instruction throughout all facets of K-20 education.

4.4 Data Sources

Ensure students, job seekers, institutions and employers have access to user-friendly, real-time labor market and postsecondary data. This will require analysis of student-level data and workforce data that can be aggregated and used for such purposes of tracking success of postsecondary graduates and programs, as well as career counseling, job forecasting, job placement and more informed decision making. The Commission recognizes the recently state-sponsored Career Coach and other valuable tools that support job seekers, students, and lifelong learners, and promotes further development of additional resources to inform users.

4.5 Integration of Workforce Development and Postsecondary Education System

Create or utilize the established committee structure within the Pennsylvania Workforce Investment Board to foster connections between the business sector and the K-20 education continuum. This structure will serve as a forum to implement mission-related recommendations proposed by the Governor's Advisory Commission on Postsecondary Education and to ensure that there is an avenue to continue enhancing the communications of the business sector and all levels of education for the benefit of the Commonwealth, the users of the education system and the workforce.

<u>Appendix</u>

Commission Member Biographies

Donald Block

Donald Block has served as executive director of Greater Pittsburgh Literacy Council (GPLC) since 1984. He is a state and national leader in the field of adult education and family literacy. His organization provides programs such as adult basic education, GED preparation, English as a second language, and family literacy to approximately 14,000 adults and families each year. Mr. Block has been recognized as Pennsylvania's Outstanding Adult Educator, as Pittsburgh's Man of the Year in Education, and as the nation's Outstanding Administrator of the Year in adult education. He is a frequent trainer and speaker on topics related to adult education and nonprofit management. Mr. Block holds a master's degree from Indiana University, Bloomington, and a B.A. from Yale University.

Frank F. Britt

Frank Britt is the chief executive officer of Penn Foster Division, one of the oldest and largest accredited distance education providers in the world. Mr. Britt also serves as an executive-in-residence at Bain Capital Ventures. Mr. Britt has 20 years of experience focused on helping lead tier-one solutions-based business services firms in the education, media, technology, industrial and consumer goods industries. He has held a variety of senior executive level sales, marketing and operations positions, including at IBM Global Services, where he led a $400 million division, as well as directed the firm's U.S. consumer products business-consulting group. Mr. Britt received his B.S. from Syracuse University in marketing and operations.

Lucien Calhoun

Lucien Calhoun is the president of Calhoun Baker Inc., a financial and management consulting firm that provides services to state and local governments. Prior to founding the company in 1989, Mr. Calhoun was an investment banker and manager of the Philadelphia office of Printon Kane & Co., vice president and manager of the Public Finance Department for Corestates Capital Markets, a partner in Public Financial Management, Inc., and an analyst and administrator for the City of Philadelphia. Mr. Calhoun serves as a member of the Pennsylvania Leadership Council of the National Federation of Independent Businesses. He has a B.S. (1975) and M.S. (1976) in Economics from Wright State University, and he was a Samuel Fels Fellow at the University of Pennsylvania (1976-78).

John C. Cavanaugh
Dr. John C. Cavanaugh became chancellor of the Pennsylvania State System of Higher Education, effective July 1, 2008. He serves as the chief executive officer of PASSHE, which operates 14 comprehensive universities with a combined enrollment of nearly 120,000 students. Previously, Dr. Cavanaugh served as president of the University of West Florida in Pensacola, as provost and vice chancellor for academic affairs at the University of North Carolina at Wilmington, and also held various positions at the University of Delaware, including vice provost for academic programs and planning and associate provost for graduate studies. Dr. Cavanaugh attended St. Joseph's College in Philadelphia before earning a bachelor's degree in psychology with high honors from the University of Delaware in 1975. He also holds both a master's degree and a Ph.D. in psychology from the University of Notre Dame, and served as a postdoctoral fellow at the University of Minnesota's Center for Research in Human Learning and the Institute of Child Development.

William G. Durden
William G. Durden has been president of Dickinson College since 1999. Before accepting his current responsibilities, Dr. Durden was a member of the German department at the Johns Hopkins University and executive director of the Center for Talented Youth for 16 years. During his Hopkins' engagement, he also served for 11 years as a senior education consultant to the U.S. Department of State and chaired the Advisory Committee on Exceptional Children and Youth. He also served at the service of various U.S. ambassadors about the world on educational issues. Directly prior to coming to Dickinson, Dr. Durden was simultaneously president of a division of the Sylvan Learning Systems Inc. (today Laureate Education Inc.) and vice president of Academic Affairs for the Caliber Learning Network — originally a joint venture of MCI and Sylvan. Dr. Durden received his undergraduate degree from Dickinson in German and philosophy and M.A. and Ph.D. degrees in German language and literature from Johns Hopkins. Directly following his graduation from Dickinson, he was a Fulbright Scholar at the University of Basle, Switzerland. He has also studied at the University of Freiburg and the University of Muenster, Germany.

Gerald C. Eckert
Gerald C. Eckert has been active in education for 35 years; the last thirty years in both public and private higher education. Presently, he is vice president for University Advancement at Millersville University of Pennsylvania, where he directs the offices of Development, Communications & Marketing, and Alumni Services. He previously held various advancement positions at Franklin & Marshall College as Associate Director of Admissions, Director of Alumni Programs, and Director of College and Alumni Relations. In 1992, Mr. Eckert received the Council for Advancement and Support of Education (CASE) District II "Professional of the Year" award. Mr. Eckert holds a bachelor's degree from St. John Fisher College, Rochester, N.Y., and a master's degree from State University of New York at Albany. In 1971, he attended Harvard University's summer Admissions Program and in 1988, its Management Development Program.

Richard M. Englert
Richard M. Englert, a Professor of Educational Administration, currently serves as the Acting President of Temple University. He previously was Provost and Senior Vice President for Academic Affairs. Dr. Englert has extensive experience both in basic education as a classroom teacher and in higher education as a university administrator and professor. His scholarship, writing and teaching have focused on the areas of the administration of higher education, the politics of education and urban education. Dr. Englert has also served on a number of professional, community and University boards, committees and task forces. A graduate of the University of California at Los Angeles, where he was awarded a doctoral degree in Educational Administration in 1976, he also has a master's degree in Elementary Education from Pepperdine University (1971) and a bachelor's degree in Philosophy from St. John's College in California (1967).

Rodney A. Erickson
Rodney A. Erickson assumed responsibilities as president of The Pennsylvania State University on Nov. 9, 2011. Previously, Dr. Erickson served as Penn State's executive vice president and provost since July 1, 1999. As provost, he was chief academic officer of the University, responsible for administration of the University's resident instruction, research and continuing education, and for the general welfare of the faculty and students. As executive vice president, Dr. Erickson served as the chief executive officer in the president's absence, and was centrally involved in most operations of the University. Dr. Erickson began his academic career at the University of Wisconsin-Madison before joining the faculty at Penn State in 1977. He was promoted to professor in both geography and business administration in 1984. In July 1995, he was named dean of the Graduate School, and in March 1997 he assumed the additional responsibilities of vice president for Research. Dr. Erickson holds B.A. and M.A. degrees from the University of Minnesota, and was awarded a Ph.D. in geography from the University of Washington in 1973.

Don L. Francis
Dr. Don L. Francis has served as president of the Association of Independent Colleges and Universities of Pennsylvania since October 1998. Dr. Francis has worked for the Pennsylvania independent sector of higher education since November of 1991, when he was named the director of government relations. Prior to joining the Association, he worked in various capacities for the Pennsylvania Senate Republican Caucus for five years, and he taught English composition and literature at Ferrum College and the University of Missouri. As the spokesman for the private higher education sector in Pennsylvania, Dr. Francis has written many opinion pieces, given many speeches, and appeared on several news shows to inform the public about the value of Pennsylvania's private colleges and universities and promote good public policy for higher education. Dr. Francis received his B.A. from Wofford College and his M.A. and Ph.D. from the University of Missouri.

Kathleen A. Gallagher
Kathleen A. Gallagher is a member at Eckert Seamans, based in the Pittsburgh office. Ms. Gallagher has a wide range of experience in complex commercial and business matters in areas such as contract, trademark, securities fraud, environmental disputes and AAA arbitration matters. Additionally, she devotes a significant amount of time to an active practice in the areas of real estate and land use. Ms. Gallagher is a frequent speaker on the unique issues raised in the financial and private business sectors in light of both the Sarbanes-Oxley legislation and the U.S. Patriot Act. She is a member of the Local Rules Advisory Committee of the U.S. District Court for the Western District of Pennsylvania and a former adjunct member of the La Roche College Faculty. Ms. Gallagher received her J.D. from Duquesne University School of Law and her B.A. from Grove City College, summa cum laude.

Michael George
Michael (Mike) George was named president of QVC, Inc., now one of the world's largest multimedia retailers, in November 2005 and CEO in April 2006. In this position, he is responsible for overseeing QVC's operations in the United States, United Kingdom, Germany, Japan and Italy. Under Mr. George's leadership, QVC has become a premier lifestyle brand and shopping destination. Mr. George came to QVC from Dell, Inc., where he was the chief marketing officer and general manager of its U.S. consumer business. Prior to his time with Dell, Mr. George was a senior partner at McKinsey & Co., Inc., and led the firm's North American Retail Industry Group. Mr. George serves on the board of directors for Liberty Interactive Corporation, the Kimmel Center, Alex's Lemonade Stand Foundation, and the Pennsylvania Business Council. He is also a member of the Corporate Council for the National Constitution Center. He served on the Payless Shoe Source Board of Directors from 2003 to 2006. Mr. George earned his bachelor's degree from Northwestern University in Evanston, Ill., and his master's degree in finance from Northwestern University's Kellogg Graduate School of Management.

Davie Jane Gilmour
Dr. Davie Jane Gilmour became the president of the Pennsylvania College of Technology in 1998. Penn College, a special mission campus of the Pennsylvania State University, is Pennsylvania's premier technical college. Dr. Gilmour joined the College in 1977 as an instructor and curriculum developer in the dental hygiene program. In 1993, she became the College's highest-ranking academic officer - vice president for Academic Affairs, and in 1996, she assumed the position of vice president for academic affairs and provost. Dr. Gilmour continues to serve the community as an active leader in community and professional activities, and member of several Board of Directors, including the Community Arts Center, Central Pennsylvania Workforce Development Corporation, Susquehanna Health and Little League International. She has earned her Ph.D. and M.S. degrees in health education from The Pennsylvania State University as well as a B.S. in dental hygiene education and an A.S. in dental hygiene from West Liberty State College.

William E. Griscom

Since 1996, Dr. William Griscom has served as president of Thaddeus Stevens College of Technology in Lancaster, Pennsylvania. Previously, he served as director of Economic Development and chairperson of the Division of Technology and Home Economics at Fairmont State University in West Virginia. Dr. Griscom serves on numerous boards and committees, including the Heart of Lancaster Regional Medical Center Board, Chair of East King Street Improvement District, Lancaster Science Board, and Chair of Base, Inc. Dr. Griscom received a Certificate in Drafting and Design from Salem Technical Institute in New Jersey and B.A. in Industrial Arts from Rowan University. He earned his Doctor of Education in Technology Education from West Virginia University and his M.S. degrees in Industrial Education from Rowan University and Library Science/Education from West Virginia University.

Amy Gutmann

Dr. Amy Gutmann is the eighth president of the University of Pennsylvania, one of the world's preeminent teaching and research institutions. An eminent political scientist and philosopher, Dr. Gutmann is the Christopher H. Browne Distinguished Professor of Political Science in the School of Arts and Sciences at Penn with secondary faculty appointments in Philosophy, the Annenberg School for Communication, and the Graduate School of Education. Dr. Gutmann has authored and edited 15 books and has published more than 100 articles, essays, and book chapters and continues to teach and write on ethics and public policy, democracy, and education. In November 2009, Dr. Gutmann was named by President Barack Obama as chair of the Presidential Commission for the Study of Bioethical Issues. She serves on the Boards of Directors of the Carnegie Corporation, the Vanguard Corporation, and the Schuylkill River Development Corporation. In March 2011, she was named one of Newsweek magazine's "150 Women Who Shake the World." Prior to her appointment as Penn's President, Dr. Gutmann served as provost at Princeton University, Princeton's dean of the faculty and as academic advisor to the President. Dr. Gutmann graduated magna cum laude from Harvard-Radcliffe College. She earned her master's degree in Political Science from the London School of Economics and her doctorate in Political Science from Harvard University.

L. Jill Hans

L. Jill Hans is the deputy secretary for the Office of Postsecondary/Higher Education in the Pennsylvania Department of Education. As the deputy secretary, Ms. Hans is responsible for all postsecondary and higher education operations within the commonwealth. Most recently, Ms. Hans worked at Dickinson College as director of Budget, Analysis and Financial Planning where she was responsible for the leadership, development and coordination of long-range planning. She also worked as the controller at Dickinson College, director of Corporate Accounting at the Carlisle Hospital and as an accountant at KPMG Peat Marwick. Ms. Hans acquired a Master in Business Administration from Mount St. Mary's; a Master of Science in Library Science from Clarion State University; a Bachelor of Science in Professional Accountancy from the Pennsylvania State University; and an Associate Degree in Business Administration from Elizabethtown College.

Robert R. Jennings
Robert R. Jennings became the thirteenth president of Lincoln University on January 2, 2012. Dr. Jennings brings with him many years of experience in strategic planning, operational and financial management, program and policy development, fundraising, research (grants/contracts) development/management, and student affairs. In addition to his extensive record of service and accomplishment in higher education, Dr. Jennings has served as a Loaned Executive to the Reagan administration and was assigned to the U.S. Environmental Protection Agency, and he has served as an evaluator for the U.S. Department of Education. Dr. Jennings is a graduate of Morehouse College where he received the Bachelor of Arts degree in Sociology and Atlanta University where he received the Master's degree in Educational Psychology/Elementary Education, a Specialist degree in Interrelated Learning and a Doctor of Education degree in Administration and Policy Studies. He also holds Masters Certification in Adult Basic Education from the University of Georgia and Masters Certification in Curriculum and Instruction and Gifted Education from Georgia State University. He has studied as a Charles Merrill Fellow at the University of Ghana in West Africa, as a Fulbright Fellow in Recife, Brazil and as an Oxford Roundtable Scholar in Oxford, England.

Alex Johnson
Alex Johnson is the president of the Community College of Allegheny County (CCAC), which serves more than 62,000 students annually in greater Pittsburgh. He served previously as chancellor of Delgado Community College and president, Metropolitan Campus, Cuyahoga Community college. Nationally, Dr. Johnson serves on the boards of the National Labor College, Campus Compact, the Community College Survey of Student Engagement (CCSSE), the American Association of Colleges and Universities (AAC&U) and the American Association for Community Colleges (AACC), where he chairs the AACC Commission on Research. Dr. Johnson is serving a two-year term as president of the Pennsylvania Commission for Community Colleges. Dr. Johnson earned a doctorate from the Pennsylvania State University, a master's degree from Lehman College and a bachelor's degree from Winston-Salem State University. He completed the Executive Leadership Institute of the League for Innovation and the Management Development Program at Harvard University and was an ACE Fellow. He is the recipient of two honorary degrees.

Michael MacDowell

Michael A. MacDowell became Misericordia University's twelfth president in July of 1998. A native of Santa Monica, California, Dr. MacDowell previously served for nine years as a vice president at Hartwick College in Oneonta, New York. Before joining Hartwick, he was president of the National Council on Economic Education in New York City for twelve years. In addition to his presidency at Misericordia, Dr. MacDowell is a professor of economics. Dr. MacDowell is the past vice chairman of the Greater Wilkes-Barre Chamber of Business and Industry, where he remains on the Board. He served as chair of the Great Valley Technology Alliance. He is the past chair of the Northeastern Pennsylvania Consortium of Colleges and Universities (NEPACU), a network of 13 public and private institutions. He also chaired the Council of Presidents (COPs), a collaborative effort of Luzerne County's five public and private colleges and universities, and is a past vice president of the Northeast Pennsylvania Boy Scout Council. Dr. MacDowell received a Bachelor's degree in economics from Trinity University and earned his Master's degree in economics from the University of North Texas followed by an Ed.D. from Ball State University.

Suzanne S. Mayes

Suzanne S. Mayes joined Cozen O'Connor's Philadelphia office in June 2007 as a member in the Business Law Department. Prior to joining the firm, she was a partner with Saul Ewing LLP in Philadelphia. She is co-chair of the Public and Project Finance Practice Group and a member of the firm's Board of Directors. Ms. Mayes focuses her practice on municipal and project finance law, including economic development, transportation, government, education and single, multi-family and senior housing. Ms. Mayes earned her law degree, magna cum laude, from the University of Pennsylvania Law School, where she was an editor of the University of Pennsylvania Law Review and a member of the Order of the Coif, and her undergraduate degree, summa cum laude, from Fairfield University. She has been named a Pennsylvania "Super Lawyer" by Law & Politics in the area of Bonds/Government Finance for a number of years.

Constance Nichols

Dr. Constance Nichols, is a professor and Chair of the Education Department at Grove City College. She began her education career teaching kindergarten at Eden Christian Academy in Sewickley, PA. Dr. Nichols then pursued a Reading Specialist certification at Duquesne University, graduating with a Master's degree in Reading and the Language Arts. She completed a doctoral degree from the University of Pittsburgh in Cognition and Learning with a specialization in literacy, and studies in school administration and policy. In 2006, she was named Chair of the Department of Education at Grove City College overseeing 17 distinct majors in education. Dr. Nichols has engaged in a wide variety of regional and state outreach efforts aimed at improving instruction and learning in both the higher education and PreK-12 arenas.

Mark A. Nordenberg
Mark A. Nordenberg is chancellor and chief executive officer of the University of Pittsburgh, a position he has held since 1995. In this role, he leads one of the nation's leading public research universities. Chancellor Nordenberg first came to Pitt in 1977, when he joined the faculty of the School of Law. His area of scholarly specialty is civil litigation, and he has served as a member of both the U.S. Supreme Court's Advisory Committee on Civil Rules and the Pennsylvania Supreme Court's Civil Procedural Rules Committee. He has long been an active contributor to the broader community, leading efforts focused on such issues as the consolidation of city and county governments, the challenges faced by the state's urban schools, the workforce development needs of the region, and issues of leadership and governance in the Pittsburgh public schools. Chancellor Nordenberg is a past chair of both the Pennsylvania Association of Colleges and Universities and the Pittsburgh Council on Higher Education. He also is a member of the boards and executive committees of the Allegheny Conference on Community Development and Association of American Universities.

Rita D. Perez
Rita Perez currently serves as Director, Bureau of Teaching and Learning, at the Pennsylvania Department of Education (PDE). Prior to her role at PDE, Ms. Perez served in the Allentown School District for 18 years, holding various positions including elementary teacher, alternative education teacher, instructional support teacher, acting middle school assistant principal and principal, acting elementary school principal and Director of Human Capital Management and Talent Development. Ms. Perez oversaw the Human Resources Department and worked in the area of teacher evaluation, including Phase I and II of the teacher evaluation pilot. Ms. Perez received her undergraduate degree in Psychology with Elementary Education certification from Cedar Crest College and earned her graduate degree and post-graduate studies in Educational Leadership with Principal Certification and Letter of Eligibility (Assistant Superintendent) from Lehigh University.

Guido M. Pichini
Guido Pichini is the president and chief executive officer of Security Guards Inc., WSK and Associates Consulting Group, and Vigilant Security Services, Inc. of Maryland. He served two terms as a councilman in the Borough of Wyomissing Hills, and four terms as Mayor. Mr. Pichini served on the Board of Directors of the Berks/Lebanon Visiting Nurses Association, and as a member of the President's Council at Alvernia University. He also served on the Executive Board of the Berks Career & Technology Center, the Security and Law Enforcement Advisory Board for Reading Area Community College, and on the Criminal Justice Advisory Board for the Berks Technical Institute. In 2005 & 2010, Mr. Pichini was appointed by Governor Rendell and confirmed by the senate as a Governor of the PA State System of Higher Education, which governs the fourteen PA State Universities. In 2011, Mr. Pichini was elected to serve as the chairman of the Board of Governors of PASSHE. In January 2012, Governor Corbett appointed Mr. Pichini as a member of the PA Workforce Investment Board. Mr. Pichini graduated from Kutztown University with a B.S. in Education/Political Science, and completed graduate studies at Kutztown University in Public Administration.

James L. Preston

James Preston was appointed president and chief executive officer of the Pennsylvania Higher Education Assistance Agency (PHEAA) in March 2008, after having been named interim president and chief executive officer in October 2007. Mr. Preston joined PHEAA in April 2003 as executive vice president of Client Relations and Loan Operations. Prior to joining PHEAA, Mr. Preston held various investment banking positions with L.F. Rothschild, Unterberg, Towbin, Bear Stearns and Co., and UBS PaineWebber, and has 25 years of investment banking experience. Mr. Preston was a member of the ELM Resources Board of Directors from 2005 to 2010. ELM Resources is a not-for-profit mutual benefit organization consisting of FFELP and alternative loan providers which manages access and exchange of data among schools, borrowers and lenders. Mr. Preston served as chairman of the ELM Resources Audit Committee. Mr. Preston received his Master of Business Administration in Finance from the State University of New York at Albany.

Karen Winner Sed

Karen Winner Sed is the chief executive officer of Winner International, and serves as vice chair and president over the Winner Companies, where she oversees a collection of companies that range from marketing, hospitality, security, consumer products, surveillance equipment, and even a storefront for vintage guitars. Instrumental in the startup of Winner International, Ms. Sed worked alongside her father, Jim Winner who founded the companies, for nearly 25 years. She oversees the charitable efforts through the Winner Foundation, such as Shoe Our Children, which has, with community support, donated over 43,000 pairs of shoes to children in local school districts. Ms. Sed currently serves as co-chair of the Team Pennsylvania Foundation, along with the Governor. She serves on a variety of local boards and has received numerous awards for her involvement in supporting the community, its children, education and various achievements. She is a graduate of Thiel College with a B.S. in Science, and Youngstown State with an M.B.A.

Ronald W. Simms

Ronald Simms is the chief executive officer of the Petroleum Service Company in Wilkes-Barre. He holds numerous corporate positions, including Founding Chairman of the Board of the First Heritage Bank, chairman and CEO of Mountain Productions Services, Chairman of the Board of PG Energy and Managing Member of the Pennsylvania National Investors Group. In his previous associations, Mr. Simms served as director of the Economic Development Council of Northeastern Pennsylvania and Trustee of Wilkes University. As a Lieutenant Colonel for the U.S. Army, Mr. Simms was headquartered at the Pentagon in the Office of the Deputy Chief of Staff for Logistics. He served as the chairman of the United States Army War College from 2003-2005. Mr. Simms received a Bachelor of Science in Commerce and Finance from Wilkes University and received security training at the United States Army War College and the National Defense University.

Rex Spaulding

Rex Spaulding is president of North American Trade Schools Inc. a private for profit group of trade/technical and health care schools, serving over 3000 students in nine locations in the U.S. and Canada. The cornerstone location, New Castle School of Trades in New Castle Pa., offers skilled trade training in six specialized associate degree programs and four diploma programs. Mr. Spaulding attended Kent State University and started at NCST as an admissions representative in 1986. Holding various positions in the company, Mr. Spaulding assumed ownership and the role of president in 2005. He has served as president of the Pennsylvania Association of Private School Administrators and chairman of the Pennsylvania Department of Education's Private Licensed School Board.

Sara St. Peter

Sara St. Peter is a junior at Allegheny College, studying Psychology and Music. She has been named as a Distinguished Alden Scholar and received Patriot News's Best and Brightest Award. Ms. St. Peter graduated from Cumberland Valley High School, where she was president of the Student Council and a member of the National Honor Society. She has always been a very involved student, holding many leadership positions, while achieving great academic success. She was a student representative on Allegheny College's Academic Standards and Awards College Committee. She attended the Leadership University conference in Washington D.C. In the summers, Sara works as a mentor at Cumberland Valley's Buddy Program for at risk middle school students. She plans to attend graduate school in the field of School Psychology after graduation from Allegheny College.

Alan Todd

Alan Todd is chief executive officer for Corporate University eXchange (CorpU), the world's leading corporate university research and executive education company. He also serves at the University of Pennsylvania as a Wharton Entrepreneur-In-Residence and Education Entrepreneurship lecturer and adviser at the Penn Graduate School of Education. Mr. Todd is on the Education Innovation Board at Arizona State University. Prior to joining CorpU, Mr. Todd was chairman and CEO of KnowledgePlanet, a company he founded that helped launch the Online Learning revolution and grew to serving millions of people in over 150 countries, growing to over $150 million in value before being acquired by a private equity group led by GE, AIG, and Merrill Lynch. He was named Inc. Magazine / Ernst & Young Entrepreneur of the Year for High Technology. Mr. Todd served on the Board of Trustees and is a Rabinowitz Fellow at Dickinson College in Carlisle, PA. He is also a trustee and founding member of The Harrisburg University of Science and Technology. He completed his doctoral coursework and holds a master's degree from The Wharton School and The Graduate School of Education from the University Of Pennsylvania, and has a bachelor's degree from Lock Haven University.

Larry A. Wittig

Larry Wittig has been a public accountant in private practice for 34 years. He is the senior partner in Wittig CPA's, president of the Environment Awareness Corp, Inc., and president of Tamaqua Transfer, Inc. Mr. Wittig has been a member of the Pennsylvania State Board of Education since 2001, and currently serves as the board chairman. He is president of the Tamaqua Area School Board, a member of the Philadelphia University Board of Trustees and an ambassador for Lehigh Carbon Community College. He is a former member of the Governor's Commission on Academic Standards. He previously served on the Blue Mountain Health Systems Board of Directors and is a former coach of the U.S. National Rowing Team. Mr. Wittig earned his B.S. and M.B.A from Drexel University.

Rob Wonderling

As president and CEO of the Greater Philadelphia Chamber of Commerce, Rob Wonderling leads a business advocacy organization of member companies that promotes growth and economic development in the 11-county Greater Philadelphia region. He also serves as chairman of the CEO Council for Growth, the governing board of Select Greater Philadelphia. He has an impressive record of private-sector executive experience as well as distinguished public service. Previously, Mr. Wonderling worked for Bentley Systems, Inc., and Allentown-based Air Products and Chemicals, Inc. From 2002 to 2009, Mr. Wonderling served in the Pennsylvania State Senate, where he first served as chairman of the Communications and Technology Committee and then as chairman of the Transportation Committee. He also served in the executive branch of state government in the Ridge-Schweiker administration as Deputy Secretary of Transportation. In recognition of his community involvement, he was awarded the 2011 Service to Humanity Award and was also named "State Public Official of the Year" by Pennsylvania Bio in 2009. Mr. Wonderling received a Bachelor of Arts degree from Alleghany College in 1984 and a Master's degree in Government Administration from the University of Pennsylvania in 1991. He attended the program for Senior Executives in State Government at Harvard University in 1997.

Expert Speakers

The Commission would like to thank the following individuals for their contributions and support throughout the process of compiling the report and recommendations.

Aubrey Seal, Student, Slippery Rock University

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Brian Richard, Student, Shippensburg University

Bryce Aaronson, Student, Shippensburg University

Carlos Cardoso, Chairman, President, & Chief Executive Officer, Kennametal Inc.

Chad Bandy, Regional Vice President, University of Phoenix

Chris Allison, former CEO, Tollgrade Communications, Inc.

Chris Boehm, PA Association for College Admission Counseling

Christine Zuzack, Pennsylvania Higher Education Assistance Agency

Clyde Hornberger, former Executive Director, Lehigh Career & Technical Institute

Craig Hartburg, President/Treasurer, Servco Services, Inc.

Dale Deist, President, Bucks Fabricating

David Bailey, President-Elect, Clarion University Alumni Association Board of Directors

David Frengel, Director of Government Affairs, Penn United Technologies, Inc.

David Patti, CEO, Pennsylvania Business Council

Diane Bosak, Pennsylvania Commission for Community Colleges

Donald Stewart, Student, Community College of Philadelphia

Edward Turzanski, Senior Fellow, Foreign Policy Research Institute

Elise Manning, Student, Messiah College

Gene Barr, Pennsylvania Chamber of Business & Industry

Giovanni Acosta, Student, Harrisburg University of Science & Technology

Gregory Dell'Omo, President, Robert Morris College

James Dillon, Pennsylvania State System of Higher Education

Jane Zegestowsky, Assistant Dean of Academic Affairs, Manor College

Jared Cohon, President, Carnegie Mellon University

Jay Devine, CEO, Devine + Partners/Board Chair of Neumann University

Jeffrey Cooper, University of Pennsylvania

Jeffrey Donor, Student, Clarion University of Pennsylvania

Jennifer Cleghorn, Team Pennsylvania Foundation

Jim DeGenova, Assistant Director for Mercer County, Keystone Community Education Council

John "SKI" Sygielski, President, Harrisburg Area Community College

John Rampulla, Deloitte Consulting LLP

John Smith, Partner, Reed Smith LLC

Joseph Marbach, Provost, La Salle University

Joshua Lang, Student, Shippensburg University

Julie Mercer, Deloitte Consulting LLP

Kathleen Chiodo, Parent, Montgomery County Community College

Kathy Humphrey, Dean of Students, University of Pittsburgh

Kathy Karich, Deloitte Consulting LLP

Keith Barrows, PA Foundations Association

Ken Mash, Vice President, APSCUF

Kevin Wilson, Vice President of Finance and Administration, Keystone College

Kimberly Geyer, Trustee, Butler County Community College

Laura Fisher, Senior Vice President, Special Projects, Allegheny Conference on Community Development

Lyndsay Birmelin, Director of Workforce Initiatives, Workforce Wayne

Mary Young, Association of Independent Colleges and Universities of Pennsylvania

Melissa Shaw, Student, East Stroudsburg University of Pennsylvania

Micah Toll, Student, University of Pittsburgh

Michael Dooris, Pennsylvania State University

Nathan Hench, Pennsylvania Higher Education Assistance Agency

Paul Hennigan, President, Point Park University

Paul Starkey, Penn College of Technology

Paul Taylor, Executive Vice President, Pew Research Center

Peter Miller, Senior Vice President and Chief of Staff, University of the Science

Rachel Martin, Administrative Director, Mercer County Career Center

Robert Pack, University of Pittsburgh

Rodney J. Landreneau, MD, Department of Cardiothoracic Surgery, University of Pittsburgh Medical Center

Ron Tomalis, Secretary of Education

Scott Sheely, Executive Director, Lancaster Co. Workforce Investment Board

Shawn Allen, Student, Greater Pittsburgh Literacy Council

The Honorable Brad Roae, Representative, 6th Legislative District

The Honorable Daniel D. Knorr, II, Mayor, Town of Bloomsburg

The Honorable Tom Corbett, Governor, Commonwealth of Pennsylvania

Thomas Foley, President, Mount Aloysius College

Thomas Leary, President, Luzerne County Community College

Thomas Thornton, Student, Mansfield University

Tim Gilmour, President, Wilkes University

William Marsh, President, American Bar Products

William Thompson, Thaddeus Stevens College of Technology

William Weber, Principal, Milton Hershey School

Executive Order 2012-01

Executive Order **Commonwealth of Pennsylvania** **Governor's Office**	
Subject: **Advisory Commission on Postsecondary Education**	*Number:* 2012-01
By Direction of: **Tom Corbett, Governor**	*Date:* **February 6, 2012**

WHEREAS, the Commonwealth of Pennsylvania offers rich and diverse opportunities for postsecondary education; and

WHEREAS, the commonwealth is experiencing shifts in the demographics of the postsecondary population that are placing new demands on postsecondary institutions; and

WHEREAS, the workforce needs of the commonwealth are changing and postsecondary institutions must adapt to these new needs; and

WHEREAS, commonwealth resources must be targeted to areas where they will have the most significant impact; and

WHEREAS, it has been determined that the Governor and the commonwealth would benefit from a review of the current state of postsecondary education with the objective of establishing a strategy to meet the changing and future demands in education and workforce development.

NOW THEREFORE, I, Tom Corbett, Governor of the Commonwealth of Pennsylvania, by virtue of the authority vested in me by the Constitution of the Commonwealth of Pennsylvania and other laws, do hereby establish the **Advisory Commission on Postsecondary Education** (hereafter referred to as the "Commission") as hereinafter set forth.

1. **Purpose.** The purpose of the Commission is to make recommendations related to the establishment and maintenance of a robust and responsive postsecondary education system in the commonwealth for the 21st century to serve the students and citizens of this commonwealth.

2. **Responsibilities.** The Commission shall have no authority to make binding recommendations, but shall:

   a. Identify key short and long term critical issues for postsecondary education in the commonwealth.

   b. Review current policies, procedures, regulations and legislation that impact the postsecondary education system in Pennsylvania.

c. Discern and evaluate trends in the delivery of postsecondary education, including, but not limited to, the role of technology as a delivery model.

   d. Compile an inventory of current initiatives and programs that are being pursued by postsecondary institutions in the commonwealth.

   e. Establish subcommittees, as needed and appropriate, under the direction of the Chair, to address specific topics and assist the Commission in its work.

   f. Make recommendations to the Governor related to:

      (1) policies to aid in the development and maintenance of a robust and sustainable postsecondary education system in the commonwealth that meets workforce needs and provides for educational options for students;

      (2) policies to ensure that postsecondary education is accessible and affordable for all students;

      (3) governance and financial structures that would enhance the postsecondary education system in Pennsylvania; and

      (4) opportunities for increased collaboration among academia, private sector and government.

3. **Composition of Commission.** The Commission shall consist of not more than 35 appointees representing various interests associated with postsecondary education in Pennsylvania, which appointees shall be chosen by and serve at the pleasure of the Governor. The Governor shall select one appointee as Chair of the Commission.

4. **Terms of Membership.** The members of the Commission shall serve from the date of their appointment by the Governor until November 15, 2012, or their removal from the Commission by the Governor, whichever occurs first. The Governor may fill vacancies that may occur and may remove any member from the Commission at his discretion.

5. **Compensation.** Members of the Commission shall receive no compensation for their service as Commission members. Nongovernment members shall be reimbursed for travel and related expenses in accordance with commonwealth policy.

6. **Staffing.** The Department of Education shall provide administrative staff resources to support the Commission.

7. **Cooperation by State Agencies.** All agencies under the Governor's jurisdiction shall cooperate with and provide assistance and support as needed by the Commission to carry out its functions effectively.

8. **Report.** The Commission shall submit a final report to the Governor on or before November 15, 2012.

9. **Effective Date.** This Executive Order shall take effect immediately.

10. **Termination Date.** This Executive Order shall remain in effect until November 15, 2012.

Postsecondary Education Landscape

Postsecondary Education: Issues, Trends and Initiatives

The postsecondary landscape in the commonwealth and across the nation is evolving and adapting to current challenges, both economic and demographic. This inventory was compiled by the Pennsylvania Department of Education, with input and assistance from the postsecondary education community. Although it is not comprehensive, it captures the major issues identified at the federal and state levels with regard to postsecondary challenges as required by the Governor's Executive Order 2012-01. While all efforts have been made to focus on specific commonwealth trends, there is a lack of data and, therefore, information is not always available. However, all of the initiatives included here are the efforts of the commonwealth education sectors as they engage in offering the citizens of Pennsylvania the best opportunities possible.

In our efforts to scan the environment in Pennsylvania and document the activities in which our postsecondary education providers are participating, it becomes readily apparent that Pennsylvania is fortunate to have a rich and diverse group of institutions with varying missions. As noted in the Master Plan for Higher Education of 2005, "Each sector strives toward excellence in its educational offerings with programs available to qualified, deserving and interested students. At the same time, various sectors respond to larger needs of society and strive for a balance of programs and resources devoted to student and societal demand."

I. Postsecondary Education Readiness

By 2018 nearly two-thirds of all American jobs will require some form of postsecondary education or training after high school (Carnevale, Smith and Strohl, "State Level Analysis" 87).[iii] Pennsylvania recognizes that every student must be prepared to enter the workforce or to pursue postsecondary opportunities.   In an effort to graduate all Pennsylvania students postsecondary ready, Pennsylvania has instituted numerous policies and reforms aimed at closing the gap between secondary preparation and postsecondary expectations, ensuring entry-level access to and success in postsecondary education and aligning state learning standards with the requirements of credit-bearing, first-year college courses.

I.I. Preparing Students through K-12 Education

In the past ten years, Pennsylvania has implemented wide-scale efforts aimed at increasing academic rigor, developing effective educators and building data systems that inform continuous improvement of the commonwealth's K-12 educational system.

Rigorous Academics
Clifford Adelman notes, "Research has found that the most reliable predictor of college success is the quality and intensity of the high school curriculum" (qtd. in Ward and Vargas 2). In July 2010, Pennsylvania moved closer toward the goal of graduating all students college- and career-ready when the State Board of Education adopted the Pennsylvania Common Core State Standards in mathematics and English language arts/literacy for K-12. These national standards articulate the skills and knowledge expected of K-12 students at all levels and ensure that quality

education is consistent and available, regardless of where students live in the state or the nation. The transition to the Pennsylvania Common Core State Standards began during the 2010-11 school year, with full implementation required by July 1, 2013. The standards were developed through a joint effort of the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO), along with teachers, administrators and experts. As of August 2012, 45 states, the District of Columbia, and three territories have adopted the Common Core State Standards (Achieve Inc. 3).[iv]

As a result of the new standards, the commonwealth is realigning benchmarks, anchors and assessments, such as the Pennsylvania System of School Assessment (PSSA). In 2009-10, the Keystone Exams were introduced into the commonwealth's system of high school graduation requirements. To receive a diploma, a student must meet local school district credit and attendance requirements and pass any additional district requirements. The Keystone Exams are end-of-course assessments designed to assess proficiency in algebra I, algebra II, geometry, literature, English composition, biology, chemistry, U.S. history, world history, and civics and government. At the state level, only five Keystone Exams will be required for graduation: algebra I, biology, literature, composition, and civics and government. In 2011, exams in algebra I, biology and literature were given to Pennsylvania high school students; the additional two exams will be released in the future. The five non-required exams will be created based upon available funding and used at the discretion of the local education agencies.

Pennsylvania's K-12 educators as well as instructors of Adult Basic Education use the Pennsylvania Standards Aligned System (SAS) portal to learn more about the state's academic standards, access research and share best practices. The SAS website is a free, collaborative resource that identifies six elements of student achievement, which, if utilized together, will provide schools and educators a common framework for continuous enhancement and improvement. The following are the six elements of student achievement:

Figure 1: Elements of Student Achievement

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Standards: Define what a student should know and be able to do as a result of instruction

Assessments: Provide tools and resources to support the process of assessing, evaluating and documenting student learning

Curriculum Framework: A set of teaching topics by subject and grade level, such as Big Ideas, Concepts, Competencies, Essential Questions and Vocabulary

Instruction: Defines four domains of teaching responsibility – Planning and preparation; Classroom environment; Instruction; and Professional responsibilities

Materials and Resources: Includes Voluntary Model Curriculum, learning progressions, units, lesson plans and multimedia content examples for use in planning and delivering instruction

<u>Safe and Supportive Schools</u>: Provides resources and exemplars to promote active student engagement in a safe and positive learning environment

Pennsylvania also participates in the Partnership for Assessment of Readiness for College and Careers (PARCC), a multi-state consortium aimed at aligning educational standards to the expectations of postsecondary education and careers ("About PARCC").[v] The mission of PARCC is to develop college-ready assessments and to use those assessments as one indicator of student postsecondary readiness. The Pennsylvania State System of Higher Education (PASSHE), the Pennsylvania Commission on Community Colleges, the Pennsylvania State University and the University of Pittsburgh participate in PARCC ("Pennsylvania" Partnership).[vi]

These efforts and initiatives reflect a move toward awarding credit based on assessment of skills and content knowledge, both in and out of the classroom and away from the Carnegie model of advancing students based on completion of basic course requirements and seat time. Competency-based strategies, such as online and blended learning, dual enrollment, service-learning opportunities and cooperative education provide flexibility for students to persist and complete their secondary education. Approximately 35 states have replaced or supplemented their current educational systems with competency-based strategies (Achieve Inc. 20).[vii]

<u>Educator Effectiveness</u>
Academic quality and rigor is the result of effective teaching by high-quality educators. Three key factors contribute to the quality of teachers in Pennsylvania's classrooms:

- Pennsylvania educator certification standards
- Approved teacher preparation programs
- Teacher effectiveness system

Pennsylvania educators are required to hold a Pennsylvania certificate for employment in the commonwealth's public schools. Five years ago the State Board of Education approved new educator certification standards. The Pennsylvania Department of Education (PDE) subsequently strengthened the professional core competencies required of educators in all certification areas and developed new educator certification tests to align with new content and pedagogical competencies in PreK-4, 4-8 and Special Education. Under these new requirements, all newly certified educators must complete a minimum number of credits in teaching diverse students in the regular classroom and in teaching English as a Second Language (ESL) students.

Educators prepare to teach in schools by completing a state-approved teacher preparation program that incorporates the competencies identified in educator certification guidelines provided by PDE. Pennsylvania has 93 colleges and universities that offer teacher preparation programs approved by PDE. Pennsylvania ranks fifth in the total number of graduates of teacher preparation programs in the nation. PDE reviews these teacher preparation programs every seven years. Beginning in 2013, PDE will evaluate teacher preparation programs based on program outcomes that include student performance on certification tests and total completers of programs.

Through the administration of the Eligible Partnerships Postsecondary Grant Program, PDE works with postsecondary institutions to deliver graduate courses that enable regular and special education teachers to become highly qualified in mathematics, science, English/language arts, social studies, art/music and/or foreign languages at the middle or secondary level. In response to educator shortages in specific areas, a number of alternative teacher preparation programs are emerging to meet the needs of mid-life career changers with high levels of content knowledge, particularly in science and mathematics.

Across the country teachers are being held accountable for student growth through measures such as value-added systems, standardized tests, and graduation and attendance rates. The U.S. Department of Education's Race to the Top Grants and the Gates Foundation Measures of Effective Teaching project have driven major changes in teacher evaluation based on standards and student learning outcomes.

Pennsylvania is in the third year of a multi-year project to improve the effectiveness of Pennsylvania educators. In 2012, the Pennsylvania General Assembly passed legislation (Act 82 of 2012) setting the timeline and requirements for an educator effectiveness system that incorporates high standards and multiple measures of student success. Pennsylvania's new teacher effectiveness evaluation system includes multiple measures of actual performance consisting of the educational profile of the school, student outcomes for teachers in tested subjects and locally developed elective assessments that meet state standards. PDE will introduce the new evaluation tool for teachers in fall 2013; tools for the evaluation of principals and education specialists will be released the following year.

The results of the teacher effectiveness efforts will be seen at all levels of the commonwealth's education system. Teacher preparation curricula will be realigned continually to prepare quality educators to be successful in this new environment. PDE will collaborate with teacher preparation program faculty to incorporate effectiveness data into their program curricula. Both pre-service and in-service programs will be realigned continually to prepare quality educators to be successful in this new environment.

<u>Building Data Systems for Continuous Improvement</u>
Education systems must address continuous improvement in postsecondary teacher preparation and teacher effectiveness. Indicators of student growth and success inform teachers and principals as to how they can improve instruction and services.
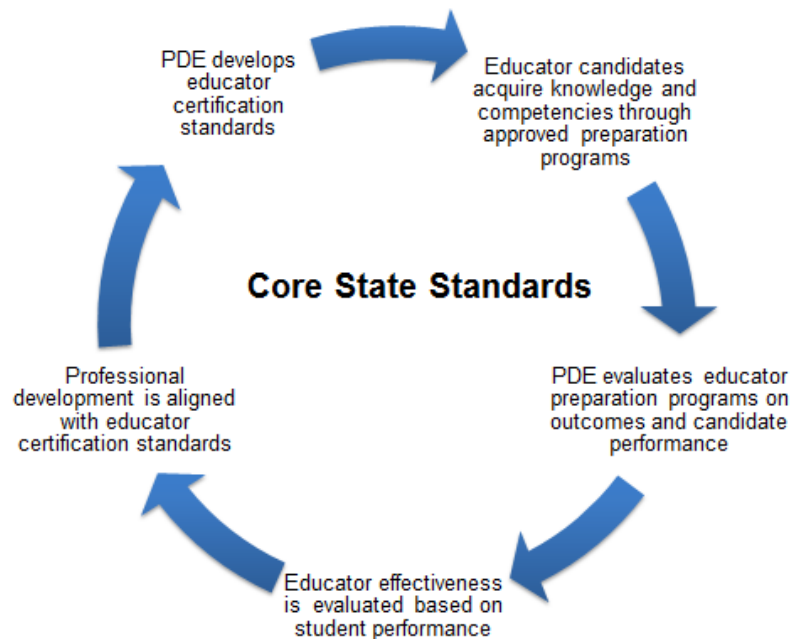
To this end, PDE is refining current data protocols to promote continuous professional learning of educators and to ensure certification requirements and teacher preparation programs meet current educational needs.

- Schools receive annual reports of their students' results on the Keystone and PSSA exams and a statistical analysis of that data through the Pennsylvania Value-Added Assessment System (PVAAS).
- PVAAS is being modified to provide data at the teacher level for use in the new teacher effectiveness evaluation system. Experts agree that a minimum of three years of data is necessary for evaluating an educator on student achievement. Consequently, it will be at

least four years before Pennsylvania teachers are evaluated on test data at the individual teacher level.

- PDE is using data to analyze the success of teacher preparation programs, but other linkages must be developed and data collected before PDE can tie program graduates to student performance. Data linking graduates to their employment profiles and their future student performance are not currently available in Pennsylvania.

Figure 2. Cycle of Effective Educator Development in Pennsylvania

PDE develops educator certification standards

Educator candidates acquire knowledge and competencies through approved preparation programs

Core State Standards

PDE evaluates educator preparation programs on outcomes and candidate performance

Professional development is aligned with educator certification standards

Educator effectiveness is evaluated based on student performance

Adapted from "Gearing Up: Creating a Systemic Approach to teacher Effectiveness", National Associate of State Boards of Education, 2011

I.II. Engaging At-Risk Students and Dropouts

As of 2011, Pennsylvania's high school dropout rate stood at 22 percent ("National Dropout Rates").[viii] Pennsylvania institutions are actively engaged in initiatives that promote and encourage "at-risk" students to complete high school and continue on to postsecondary education.

The Community College of Philadelphia is one of 33 colleges in 20 states administering the Gateway to College National Network. Through this program, students ages 16 to 21, who have dropped out of school or are significantly behind in credits and unlikely to graduate, are enabled to complete their high school diploma requirements. The students complete their credits at a community or technical college, while earning college credit in a postsecondary degree or certificate program ("Program Overview").

In cooperation with local school districts and intermediate units, and with assistance provided by grant and private foundation funds, Marywood University offers the Students Achieving Success and Inspiring Excellence program. This program is aimed at inspiring underrepresented, at-risk

high school students to achieve greater success in their current academic environment and to pursue postsecondary educational opportunities ("Marywood University's SASIE Program"). Several Pennsylvania postsecondary institutions receive federal grant funds to provide access to and promote success in education for students from disadvantaged backgrounds. Clarion University, Delaware Valley College, the Pennsylvania State University, Seton Hill University and the University of Pennsylvania received federal grant funding to provide academic, career and financial counseling to 9,573 students as part of the Talent Search Program ("Talent Search Program: Award"). Nineteen postsecondary institutions received grants to participate in the Upward Bound and Upward Bound Math-Science programs ("Upward Bound Program: Awards"). The goal of Upward Bound is to increase the rate at which students enroll in and graduate from postsecondary education ("Upward Bound Program: Purpose"). Both programs are designed to provide academic and personal support and services to high school students from low-income families ("Talent Search Program: Purpose").

I.III. Preparing Students through Adult Basic Education

The 2008-2010 American Community Survey (ACS) 3-Year Estimates indicate that 1,040,839 Pennsylvanians over the age of 25 lack a high school diploma ("State and County Literacy Estimates").[ix] Furthermore, the 2003 National Assessment of Adult Literacy (NAAL) found that 13 percent of Pennsylvanians age 16 years and older lack basic prose skills. NAAL defines those who lack Basic Prose Literacy Skills as "[a]dults in the Below Basic group and those not able to take the assessment because of a language barrier" (National Assessment of Adult Literacy: State and County Estimates of Low Literacy). Their literacy skills range from "being unable to read and understand any written information to being able only to locate easily identifiable information in short, commonplace prose text in English, but nothing more advanced" ("State and County Literacy Estimates").[x] The ACS 2006-2010 5-Year Estimates demonstrate that for a language spoken at home, 448,943 Pennsylvanians reported (for those five years and older) their ability to speak English as "less than very well." ("State and County Literacy Estimates").[xi] A comparison to the 1992 Pennsylvania State Adult Literacy Survey shows little improvement in this area ("State and County Literacy Estimates").

The need for adult basic education is also evident in workforce statistics. According to the Center for Workforce Information and Analysis, 525,000 Pennsylvania workers were unemployed as of August 2012 ("PA Workstats"). While over half a million workers continue to be without jobs in Pennsylvania, employers report difficulties finding skilled workers. Mary Gardner Clagett and Ray Uhalde confirm this trend at the national level, citing an inability of U.S. manufacturers to fill added positions over the last two years due to a disparity between the skills they need and the skills of the unemployed (6). Similar skill shortages are evident in health care and professional and business services, as well. An increase in the number of adults with basic literacy skills could create the potential for many of those individuals to pursue additional education. The competencies obtained from subsequent training could then help shore up the gap between the skills employers demand and the skills employees can offer during this period of national economic regrowth.

Literacy instruction takes place in adult basic and family literacy education programs, and in developmental education courses in postsecondary institutions. Outcomes for adult education are

measured nationwide by the following factors: educational gain, obtaining and retaining unsubsidized employment, earning a secondary school credential, and entering postsecondary education or training (Implementation Guidelines 30).

Adult Basic Education programs in the commonwealth provide a full range of instructional services which develop the basic skills necessary for individuals to participate fully in the education of their children, find and keep family-sustaining employment, or obtain a secondary school credential. PDE's Division of Adult Education provides professional development for adult education and family literacy program administrators and teachers, as well as training for volunteer tutors of adult education.

In 2010, PDE reported that 30,113 Pennsylvanians age 16 years and older enrolled in adult basic education classes. Within this total:

- 8,524 were ESL students.
- 12,563 individuals demonstrated educational gain; 15,504 individuals left the program before demonstrating any gain; and 2,510 individuals maintained their level of proficiency while remaining enrolled in the program for another year.
- 8,635 individuals entered employment; 10,760 individuals maintained or improved employment; 3,197 individuals entered postsecondary education or training; and 6,029 individuals earned a secondary school credential.

One potential pathway to a secondary school credential is taking and passing the GED® tests. Many U.S. employers consider the GED® credential equal to a high school diploma, and colleges and universities accept the GED® transcript for admissions purposes.

Research demonstrates GED® credential holders are more likely to achieve higher earnings, have fringe benefits, be unemployed less frequently, and report higher job satisfaction than un-credentialed high school dropouts (Song 9-11). GED® credential holders tend to work primarily in six industries: construction; manufacturing; retail trade; professional and related services; education, health, and social services; and entertainment, accommodations, and food services (Song 9). The 2010 GED® Testing Program Statistical Report notes that 21,578 Pennsylvanians completed the battery of GED® tests with 15,244 testers satisfactorily passing the tests (American Council on Education 7).

In addition to the GED®, PDE offers the Commonwealth Secondary School Diploma credential to Pennsylvanians who do not possess a high school diploma and who have met the following criteria (specified in 22 PA Code Section 4.72):

- A Pennsylvania resident without a high school diploma must complete a minimum of one full year or 30 credits at an accredited institution of postsecondary education.
- A Pennsylvania resident without a high school diploma and who is not enrolled in a public, licensed private, registered accredited or licensed nonpublic secondary school must earn a passing score as determined by PDE on the GED® Tests.

In 2011, Pennsylvania issued 1,296 Commonwealth Secondary School Diplomas based on 30 college credits or one year of postsecondary education.

II. Postsecondary Education Access and Success

Access and success are contingent upon meeting the needs of the evolving demographics of the college-going population.
The National Center for Educational Statistics (NCES) provides the following statistics about today's postsecondary population:

- Enrollment of students age 25 years and older rose 42 percent between 2000 and 2010. NCES projects a 20 percent enrollment increase for this population by 2020.[xii]
- In 2010, approximately 71 percent of undergraduates ages 16 to 24 were employed.
- By 2020, the number of public high school graduates will decrease by 18.3 percent (from 130,298 to 106,440 students) in Pennsylvania due to an associated decrease in birth rates. (Hussar and Bailey 51).

Total enrollment in postsecondary degree-granting institutions is expected to increase 13 percent between fall 2009 and fall 2020 (Hussar and Bailey 19). By that time, NCES projects enrollment in degree-granting institutions to:

- Increase by 9 percent for students ages 18 to 24; by 21 percent for students ages 25 to 34; and by 16 percent for students age 35 and older (Hussar and Bailey 21);
- Increase by 16 percent for part-time students compared to 11 percent for full-time students (Hussar and Bailey 22); and
- Increase by 1 percent for White students, 25 percent for Black students, 46 percent for Hispanic students, 25 percent for students who are Asian/Pacific Islander, but decrease by 1 percent for students who are American Indian/Alaska Native (Hussar and Bailey 23).

Although overall enrollment numbers are projected to continue to increase through 2020, there is a marked difference in the rates of increase for the years between 1995 and 2009 (43 percent) and 2009 projected through 2020 (13 percent) (Hussar and Bailey 20).

II.I. Removing Barriers to Access and Success

Raising the state's level of education attainment requires eliminating barriers so that all students are able to enter and complete postsecondary education successfully. Students and families need counseling regarding readiness, postsecondary and career options, and financial literacy. Secondary and postsecondary institutions play a key role in providing this guidance and must address the varying needs of the evolving college-going population.

College and career guidance for a majority of students and their families first occurs in high school. Counselors use workshops, presentations and one-on-one advising to assist students and parents with exploring postsecondary career and educational opportunities, selecting high school course offerings, planning and preparing for college admissions, and arranging internships and job-shadowing experiences in the workforce. Yet, according to the National Association for College Admission Counseling, public school guidance counselors spend just 23 percent of their time on college counseling (qtd. in Conley, Felder-Snipes, and Klugman).[xiii]

Recognizing the limitations of traditional in-school counseling, postsecondary institutions and organizations offer further support and services to high school students and their families. The

Pennsylvania Association for College Admission Counseling organizes regional college fairs during the school year to connect students with representatives from a variety of postsecondary institutions and military branches and to learn more about the college selection process. Web portals such as the Pennsylvania Higher Education Assistance Agency's (PHEAA) Education Planner and NCES' College Navigator link students to resources they can use to prepare for education beyond high school, to apply for financial aid and to decide on a career. Free mobile apps like CollegeSnapps guide students through the college admissions process by sending students a series of interactive messages and reminders.

Secondary schools are also taking steps to ensure students are financially literate. According to Jump$tart Coalition for Personal Financial Literacy, 24 states require students to take some form of personal finance as a high school graduation requirement. Of these 24 states, 20 require personal finance instruction be incorporated into other subject matter. The remaining four require at least a one-semester course devoted to personal finance ("State Financial Education Requirements").[xiv] Although courses in economics and personal finance are offered by many Pennsylvania high schools, they are not required for graduation.

Junior Achievement (JA) is a national organization dedicated to educating students in grades K-12 about entrepreneurship, work readiness and financial literacy through hands-on programs. There are eight locations throughout the commonwealth which help prepare young people for the real world by showing them how to generate wealth and effectively manage it, how to create jobs which make their communities more robust, and how to apply entrepreneurial thinking to the workplace. JA's High School programs include economic and business curricula, an after-school student-led enterprise, and a one-day workplace capstone experience. Volunteers bring real-life business experience and guidance into the classroom at a time that represents an essential crossroads for young people.[xv]

Remedial Education
A significant portion of students applying to institutions of higher education are not prepared to enter directly into college-level courses when they enroll. Research demonstrates that approximately 40 percent of students entering postsecondary education require some remediation (Smith 24). Students are graduating from high school without obtaining the level of education needed to successfully move on to postsecondary education and beyond. Reasons for remedial education include access and cost issues, weaknesses of K-12 education, quality of teacher preparation programs and the lack of educational opportunities for underserved students (Crowe)[xvi].

According to the NCES, "[i]n 2007–08, 42 percent of first-year undergraduate students at public 2-year institutions (typically community colleges) reported having ever taken a remedial college course—a percentage that was higher than students at institutions of any other level or control." Four-year institutions in the following categories had smaller percentages of first-year students who reported having ever taken a remedial college course: public non-doctorate institutions (39 percent of students), public doctorate institutions (24 percent), private not-for-profit non-doctorate institutions (26 percent), and private not-for-profit doctorate institutions (22 percent) (National Center for Education Statistics "Remediation and Degree Completion (Indicator 22-2011)").[xvii] Trends indicate that remediation and the challenges of meeting the student needs are

likely to grow and continue to be an issue for community colleges (Alliance for Excellent Education *Paying Double*).[xviii]

Not all students requiring remediation are recent high school graduates. Many adult students are returning to education after being out of school for a number of years and often have remedial education needs. Other adult students may require remedial education in order to gain English language proficiency.

Remedial education places a burden on students and institutions in a number of ways. There are limitations on the number of remedial credits in which a student may enroll in order to maintain eligibility for state and federal student aid. Additionally, remediation courses often do not count toward graduation which result in students paying for these courses with time and money that could have been dedicated toward credit-bearing classes that progress them toward graduation (Alliance for Excellent Education: "Saving Now and Saving Later" 4).[xix]

Studies demonstrate that increased remediation may lead to lower success outcomes in postsecondary education. A U.S. Department of Education study in 2004 performed by Community Research Partners found that "[j]ust 30 percent of first-time undergraduates enrolling in remedial reading courses completed a certificate or degree within eight years of leaving high school, compared with 69 percent of those not needing any remediation" (11).[xx] This results in lost investments not only by the students but by federal and state governments as well. The students who do not persist and complete their degrees impact public higher education institutions through loss of financial aid dollars and state support. Additionally, tax dollars initially support preparation of students while they are in high school and then again support the cost of providing remediation. Further analysis demonstrates that in 2007-08, remedial education cost the nation approximately $3.6 billion in direct costs (Alliance for Excellent Education: "Saving Now and Saving Later" 4).[xxi]

Lower-performing students are not alone in requiring remedial education; four out of five students taking remedial courses demonstrate a high school grade point average above a 3.0 (Alliance for Excellent Education: "Saving Now and Saving Later" 3).[xxii] While PSSA examinations are not the only indicator of student high school performance or college readiness, the HumRRo study commissioned by the Pennsylvania State Board of Education indicates that student scores on the PSSA examinations have a strong correlation with performance on the SAT examination, the common college entry requirement (Thacker, Dickinson and Koger).[xxiii] If a Pennsylvania student scores poorly on the PSSA, he or she may not be college ready (Preparing Youth for Success in a 21st Century Economy).[xxiv]

Adult Students

Between 2009 and 2020, national postsecondary enrollment is projected to increase by 16 percent for students who are age 35 years and older (Projections of Education Statistics to 2020-Section 5).[xxv] Adult and nontraditional-aged students may require alternative schedules and program delivery, and funding. Student efforts to meet these requirements often result in inconsistent enrollment patterns. This population also encounters social and personal challenges (e.g., family obligations, full- or part-time jobs) that may act as barriers to their academic success and prevent program completion.

Graduate! Philadelphia is a program of The Graduate! Network, Inc., a Philadelphia-based national not-for-profit organization dedicated to increasing the number of adults with college degrees in the Greater Philadelphia region. Graduate! Philadelphia provides free guidance and support to adults who want to return to college and complete their degrees. Partner postsecondary education institutions include the Center for Urban Theological Studies, Chestnut Hill College, Cheyney University, Community College of Philadelphia, East Stroudsburg University, Peirce College, Penn State University, Philadelphia University, Rosemont College and Temple University.

In 2011-12, the Pennsylvania State University and the University of Pennsylvania received more than $1.5 million and served 6,181 adult students through the Educational Opportunity Centers (EOC) program ("Educational Opportunity Centers: FY 2011 Awards").[xxvi] The purpose of this federal program is to increase the number of adult participants enrolling in postsecondary education institutions by providing financial and economic literacy and assisting students through the application process.[xxvii]

Adults have personal and professional learning experiences that often can earn them college credit and set them on a path toward a postsecondary credential. Colleges and universities refer to this as "prior learning" since the experiences occurred before enrolling in college. According to a March 2012 study by The Council for Adult and Experiential Learning (CAEL), students with credit earned through prior learning assessment (PLA) are more than twice as likely to graduate with a postsecondary degree as non-PLA students (Klein-Collins 34).[xxviii] The study also showed that PLA has the potential to reduce the amount of time a student takes to earn a degree (Klein-Collins 46).

Two statewide initiatives support students' efforts to earn and apply postsecondary credit based on prior learning. The Pennsylvania Consortium on Prior Learning Assessment is a group of higher education institutions that have agreed to abide by, fully implement, and oversee the Prior Learning Assessment General Guidelines developed by PDE in cooperation with more than 30 higher education institutions, non-profit groups, and the Department of Labor and Industry. In August 2012, the 14 PASSHE universities partnered with CAEL to allow students to seek and receive credits for learning obtained through professional experience, technical training programs, military service and Massive Open Online Courses (Fain).[xxix] PASSHE universities are among 100 institutions that have agreed to defer prior learning assessment to CAEL and to accept the organization's credit recommendations as any other transfer credit. The initiative is expected to be of particular interest and benefit to adults living in areas of the state with limited access to public postsecondary education.

Some institutions offer child care on their campuses to accommodate students with young children. A study conducted by the American Council on Education (ACE) found that over 50 percent of low-income adult students with children are single (qtd. in Markowitz and Russell, 2).[xxx] This poses logistical challenges for these students who are juggling child care with work and other family demands. Students often have trouble arranging child care that is flexible enough to change on a semester-by-semester basis with their class and work schedules. Institutions are also seeing a greater demand for courses that are held at night, on weekends and online which has been partially driven by these adult students.

Wilson College's Women with Children allows eligible single mothers to enroll full-time in a bachelor degree program while living on campus with their children (20 months and older) year-round. On-campus childcare is available for preschool children. Mothers in the program are able to participate in all aspects of campus life, including sports, clubs, the honors program, and student government (Wilson College).[xxxi]

Service Members and Veterans

Pennsylvania has shown a strong commitment to educating veterans, active-duty service members and their dependents since the original GI Bill was enacted in 1944.

Eighty-three postsecondary institutions in the commonwealth demonstrate a commitment to educating veterans and service members through their voluntarily participation in the Service members Opportunity Colleges Consortium (SOC Consortium).[xxxii] Supported by the U.S. Department of Defense (DOD) and American Association of State Colleges and Universities (AASCU), consortium members enroll thousands of service members, their family members, and veterans annually in postsecondary degree programs worldwide.

Within PDE, the Division of Veterans Education reviews and approves postsecondary programs in which service members and veterans may enroll and use military educational benefits. PDE has approved 13,343 educational programs at 613 degree and non-degree granting institutions in the commonwealth. In the past year, 20,644 veterans and eligible individuals used GI Bill benefits to pursue postsecondary training and education in Pennsylvania:

- 16,000 students used Chapter 33/Post 9/11 GI Bill
- 848 students used the Chapter 30/Montgomery GI Bill
- 1,469 students used Chapter 1606 benefits (for reservists who have not had active duty)
- 145 students used Chapter 1607 benefits (for reservists who have had active duty)
- 1,478 students used Chapter 35 (for dependents of 100 percent disabled veterans or military personnel killed on active duty)
- 704 students used Chapter 31 (for 100 percent disabled veterans)

The actual number of veterans and service members enrolled in postsecondary education is unknown since institutions only identify service members and veterans if they use GI Bill benefits.

The Troops to Teachers program provides funds to recruit, prepare and support former members of the military as teachers in high-poverty schools. Under this program, the secretary of education works with the DoD through the Defense Activity for Non-Traditional Education Support (DANTES) initiative. The program provides assistance, including stipends of up to $5,000 to eligible members of the armed forces so that they can obtain certification or licensing as elementary school teachers, secondary school teachers, or vocational/technical teachers and become highly qualified teachers by demonstrating competency in each of the subjects they teach. Candidates for Troops to Teachers attend an institution of their choosing.[xxxiii]

Veterans Upward Bound is designed to motivate and assist veterans in the development of academic and other skills to increase the rate at which participants enroll in and complete postsecondary education programs. In 2011-12, the University of Pennsylvania received a $347,576 grant to provide services to 120 veterans ("Veterans Upward Bound Program Awards

FY 2011").[xxxiv] The program provides assessment and enhancement of basic skills through counseling, mentoring, tutoring and academic instruction in the core subject areas ("Veterans Upward Bound Program: Purpose").[xxxv]

Educationally Underserved Counties

Students in rural areas of the state may find it challenging to enroll in postsecondary education when a physical campus is not within a reasonable distance. Thirty-five of Pennsylvania's 67 counties have been designated as "educationally underserved" based on the following criteria: 1) a Community Education Council (CEC) has been established in the county because it is, by PDE's definition, an educationally underserved area; or 2) a community college main, branch campus or off-campus location is not located in the county.

Figure 3: Educationally Underserved Counties in Pennsylvania

Armstrong	Clinton	Forest	Lawrence	Potter	Union
Bedford	Clearfield	Franklin	Lycoming	Schuylkill	Venango
Bradford	Crawford	Fulton	McKean	Snyder	Warren
Cameron	Elk	Huntington	Mercer	Somerset	Washington
Centre	Erie	Jefferson	Mifflin	Sullivan	Wyoming
Clarion	Fayette	Juniata	Montour	Tioga	

Source: Technical College Program 2008-2009 Year-End Report, PDE, 2009.

The Community Education Councils are non-profit organizations that bring higher education opportunities to rural and educationally underserved communities in Pennsylvania. CECs assess the education and training needs of communities and partner with providers to offer educational programs. CECs serve as a vehicle for employment opportunities, which meet the community's current and future economic development needs. Programming includes:

- Courses or classes leading to professional, vocational or occupational certification or licensure or a postsecondary degree;
- GED® preparation;
- Workforce skill development or enhancement; and
- Customized job training for community employers.

An example of how Pennsylvania is responding to the needs of citizens living in educationally underserved areas is the postsecondary model employed in Somerset and Bedford counties. In the mid-1980s, communities in these counties experienced high unemployment with a low percentage of residents pursuing postsecondary education or training. After discussions with postsecondary institutions, Allegany College of Maryland (ACM) began offering classes in those counties. To date, ACM's Somerset and Bedford campuses have served over 20,000 students in

postsecondary and job training education. Through the Southern Tier Education Council, the commonwealth is able to provide a subsidy for students attending these campuses.

Low-Income Students

Nationally, data show a correlation between postsecondary enrollment and the level of family income. The chart below demonstrates this relationship. The data reflect that more often than not, the higher the level of family income, the more likely recent high school graduates enroll in postsecondary education. In the most recent year shown (2008), those at the lowest two income quintiles are seen to have increased their postsecondary enrollment rate to compare more closely with those in the third income quintile.

Figure 4: Postsecondary Enrollment Rates of Recent High School Graduates by Family Income, 1984-2008
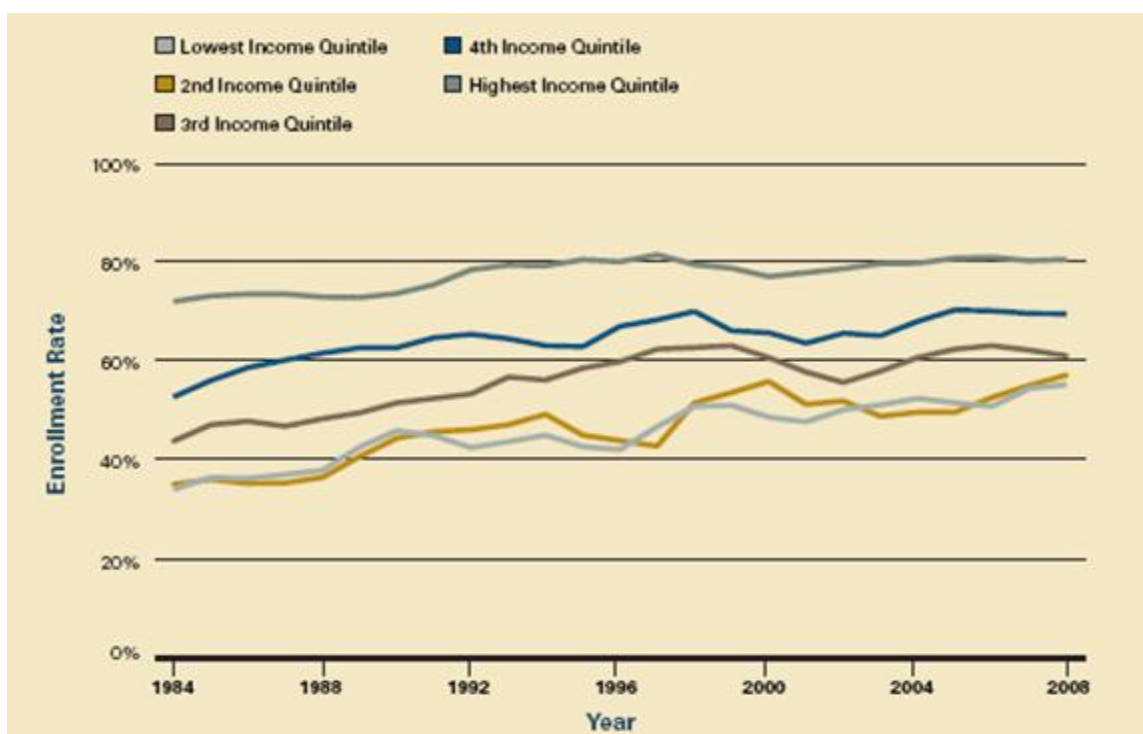
Note: Based on enrollment in college within 12 months of high school graduation. Income quintiles are defined in terms of all households. In 2008, the upper income limits of the quintiles were: lowest, $19,000; 2nd, $35,000; 3rd, $55,050; and 4th, $88,230. High school graduates are not evenly distributed among income quintiles because graduation rates are lower among students from low-income backgrounds. Enrollment rates reflect moving averages, with the rate for each year the average of three years — the specified year and the two preceding years. **Source**: National Center for Education Statistics, 2010.

Since 2004, the Department of Public Welfare (DPW) and the Pennsylvania Commission for Community Colleges have partnered to support the Keystone Education Yields Success (KEYS) program. This program assists Temporary Assistance for Needy Families and Supplemental Nutrition Assistance Program beneficiaries who enroll in career-specific certificate or degree programs at one of Pennsylvania's community colleges. Each participant is assigned a "KEYS student facilitator" to assist in career advising, education planning and scheduling, as well as in obtaining financial aid, transportation and child care. KEYS students have 24 months to

complete their studies. Originally funded for students pursuing an associate degree, the program now provides options to pursue a one-year certificate program as well as a credit-bearing short-term program which leads to marketable skills. The approximate annual cost to offer the program is $3.5 million.

Pennsylvania's community colleges participate in the "Achieving the Dream" initiative funded by the Lumina Foundation. The purpose of this national effort is to improve student success and narrow the achievement gap, particularly for low-income students and students of color, through the use of data and best practices. Seven of Pennsylvania's community colleges are considered "Leader Colleges," a term used to describe colleges which have shown three years of sustained improvement in at least one of the Achieving the Dream performance areas. These areas include completion of certificates or degrees, term-to-term and year-to-year retention, completion of college-level math and English courses, as well as advancement from developmental to credit-bearing courses and/or course completion.

The College Access Challenge Grant Program (CACGP) is a federal grant program aimed at increasing the number of low-income students who are prepared to enter and succeed in postsecondary education by fostering partnerships among federal, state, and local governments and philanthropic organizations. PDE partners with PHEAA, the Pennsylvania State University, Project GRAD USA and the National College Advising Corps - Keystone Region at Franklin and Marshall College to provide advising, financial aid literacy and student support services to high school students and their families.

The Act 101 Program is a state-funded program supporting institutions of higher education which provide services to academically and financially disadvantaged students. Services include counseling and mentoring to successfully complete postsecondary study. As of 2012-13, 33 postsecondary institutions in Pennsylvania received Act 101 funds ("Act 101 Program").[xxxvi]

Northampton Community College is one of six colleges selected to pilot the American Association of Community Colleges' "Benefits Access Completion Initiative." This three-year program will provide $4.84 million in coordinated income support for low-income students. The program assists students in completing college sooner than may have been previously possible. It also helps students to achieve financial independence. The program joins federal and state support in the schools to offer guidance on economic stability and support for graduation. The initiative is supported by the Ford, Kresge, Lumina, Annie E. Casey and Open Society Foundations.

Pennsylvania Highlands Community College received a $379,952 grant from the U.S. Department of Education as part of the Strengthening Institutions Program. This national program assists institutions of higher education to operate independently and expand capacity to serve low-income students and to strengthen the academic quality, institutional management and fiscal stability. The college is using the funds to establish a career counseling center for incoming students. Counselors provide guidance regarding academic programming and continue to work with graduates through job placement or transfer plans.

Minority Students
While the nation's total number of high school-age students is decreasing, leading to lower graduation numbers, NCES predicts the U.S. will see an increase in some ethnic groups within that graduating population. The number of graduates who are Hispanic will increase 27 percent; Asian/Pacific Islanders will increase 46 percent and the American Indian/Alaska Native population will increase 1 percent ("Projections of Education Statistics to 2020- Section 2").[xxxvii] Corresponding to the national decrease, the number of public high school graduates who are White will decrease 11 percent and the African American student population will decrease 2 percent. Enrollment in postsecondary institutions is predicted to increase for minority populations according to information prepared in March 2012 by NCES.

Figure 5: Actual and Projected Numbers for Enrollment in All Postsecondary Degree-Granting Institutions, by Race/Ethnicity: Fall 1995 through Fall 2020
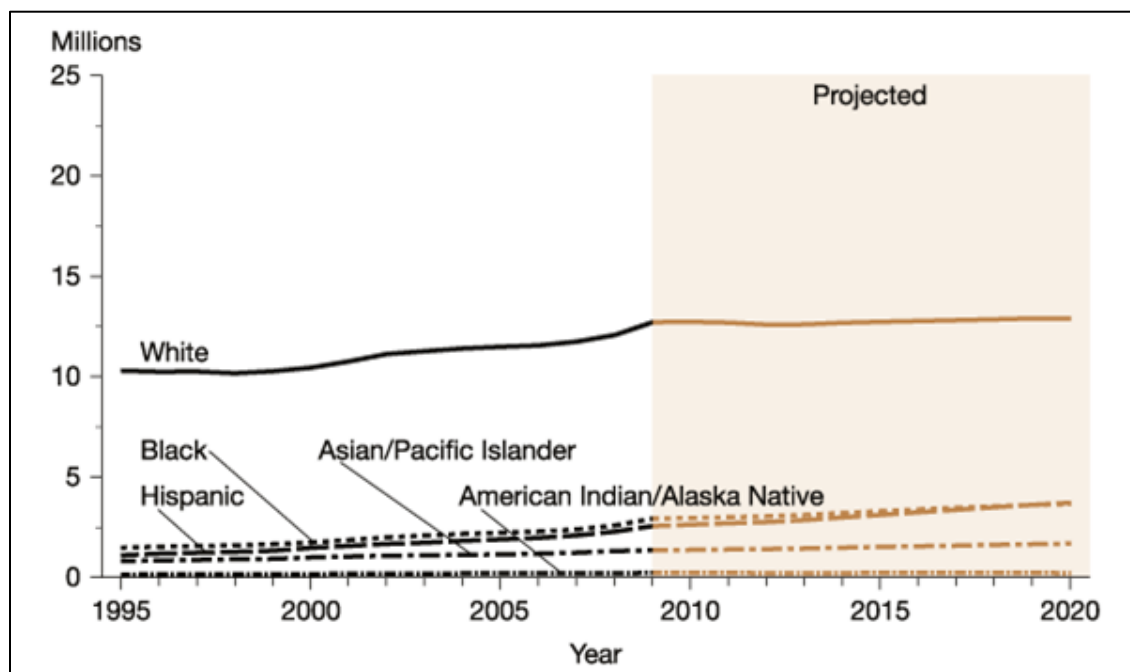
NOTE: Race categories exclude persons of Hispanic ethnicity. Enrollment data in the "race/ethnicity unknown" (all years) and "two or more races" (2008 and 2009 only) categories of the IPEDS "Fall Enrollment Survey" have been prorated to the other racial/ethnic categories at the institutional level. Mean absolute percentage errors of selected education statistics can be found in table A-2, appendix A.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, "Fall Enrollment Survey" (IPEDS-EF:95–99), and Spring 2001 through Spring 2010; and Enrollment in Degree-Granting Institutions by Race/Ethnicity Model, 1980–2009. (This figure was prepared March 2011.)

From 1999–00 to 2009–10, the number of degrees earned among U.S. residents increased for students of all racial/ethnic groups for each level of degree, but at varying rates ("Fast Facts-Degrees conferred by sex and race").[xxxviii]

Table 1: Number of Degrees Conferred to U.S. Residents by Degree-Granting Institutions, Percentage Distribution of Degrees Conferred, by Level of Degree and Race/Ethnicity: Academic Years 1999–2000 and 2009–2010

Level of Degree and Race/Ethnicity	Number of Degrees Conferred		Percentage Distribution	
	1999–2000	2009–2010	1999–2000	2009–2010
Associate's	554,845	833,337	100.0	100.0
White	408,772	552,863	73.7	66.3
Black	60,221	113,905	10.9	13.7
Hispanic	51,573	112,211	9.3	13.5
Asian/Pacific Islander	27,782	44,021	5.0	5.3
American Indian/Alaska Native	6,497	10,337	1.2	1.2
Bachelor's	1,198,809	1,602,480	100.0	100.0
White	929,106	1,167,499	77.5	72.9
Black	108,013	164,844	9.0	10.3
Hispanic	75,059	140,316	6.3	8.8
Asian/Pacific Islander	77,912	117,422	6.5	7.3
American Indian/Alaska Native	8,719	12,399	0.7	0.8
Master's	406,761	611,693	100.0	100.0
White	324,981	445,038	79.9	72.8
Black	36,595	76,458	9.0	12.5
Hispanic	19,384	43,535	4.8	7.1
Asian/Pacific Islander	23,538	42,072	5.8	7.0
American Indian/Alaska Native	2,263	3,960	0.6	0.6
Doctor's[1]	106,494	140,505	100.0	100.0
White	82,984	104,426	77.9	74.3
Black	7,080	10,417	6.6	7.4
Hispanic	5,039	8,085	4.7	5.8
Asian/Pacific Islander	10,684	16,625	10.0	11.8
American Indian/Alaska Native	707	952	0.7	0.7

[1] Includes Ph.D., Ed.D., and comparable degrees at the doctoral level. Includes most degrees formerly classified as first-professional, such as M.D., D.D.S., and law degrees.

NOTE: NOTE: Degree-granting institutions grant associate's or higher degrees and participate in Title IV federal financial aid programs. Reported racial/ethnic distributions of students by type of degree, field of degree, and sex were used to estimate race/ethnicity for students whose race/ethnicity was not reported. Race categories exclude persons of Hispanic ethnicity. Nonresident aliens are excluded because information about their race/ethnicity is not available. Detail may not sum to totals because of rounding.

SOURCE: Modified from U.S. Department of Education, National Center for Education Statistics. (2012). *The Condition of Education 2012* (NCES 2012-045), Table A-47-2.

PASSHE has retained the Center for Urban Education (CUE) in a two-year, $1 million project to raise college completion rates for underrepresented students. As of spring 2012, all of PASSHE's 14 universities are using the CUE's Equity Scorecard™ process to incorporate equity measurements into their accountability program. The Equity Scorecard™ process is comprised of two major areas, Admissions and Retention. The process is data-driven, using existing data on admissions, graduation rates, GPA, and other fields to identify achievement gaps for all racial and ethnic student groups that have been historically underrepresented in higher education.

The Equity Scorecard™ process was initiated by PASSHE's Chief Academic Officers and approved by the Council of Presidents. It is a PASSHE-wide initiative, funded by PASSHE diversity grants. The primary goal of the Equity Scorecard™ initiative is to teach process assessment and improvement skills. Institutions are rewarded when they meet their improvement goals.

II.II. Postsecondary Affordability

Cost is a factor in a student's decision about whether and where to enroll in postsecondary education. Tuition and fees tend to increase from one year to the next. Students' level of aid fluctuates depending upon their financial circumstances, academic progress and enrollment patterns.

The *Higher Education Opportunity Act* of 2008 (HEOA) requires each postsecondary institution that participates in Title IV federal student aid programs to post a net price calculator on its website. The U.S. Department of Education also has modified the Free Application for Federal Student Aid has been streamlined to make it easier to complete. However, students and their families often need further guidance. For this reason, PHEAA, the commonwealth agency charged with administering federal and state financial aid, hosts financial aid nights throughout Pennsylvania and provides toolkits that high school counselors can use to host their own financial aid events.

PHEAA's Board of Directors and a State Grant Advisory Committee coordinate the administration and management of funds. Together the board and committee develop and approve recommendations for administration of the state grant program. The Pennsylvania State Grant Program provides State Grants to low and moderate income students to help them afford the costs of higher education.

To be considered for a Pennsylvania State Grant, you must demonstrate financial need and satisfy eligibility requirements, several of which are listed below:
- Student aid recipients must have a high school diploma, GED or completed an approved home-school program.
- Financial aid is available only for approved postsecondary schools.
- The requirement that a student must enroll at least half-time (at least six-credit hours) in order to qualify for financial aid.
- Eligible programs of study must be at least two academic years in length, which excludes short-term certificate and diploma programs.

- No more than 50 percent of program instruction may be delivered through distance education ("Pennsylvania State Grant Program: Prepare").[xxxix]

Beginning July 1, 2012, students who do not have a high school diploma or GED® credential are ineligible for federal financial aid. Increased costs can result in students electing not to pursue postsecondary education or to rely on loans to finance their education. This increased reliance on student loans has generated attention over the amount of debt students are amassing while attending postsecondary education. In Pennsylvania, the average debt for students of public and private non-profit four-year colleges and universities was $28,599 in 2010 ("Pennsylvania: List of Pennsylvania Institutions").[xl] Nationally, the total amount of outstanding student loan debt (including both federal and private student loans) is estimated to be in excess of $1 trillion ("Student Loan Debt Clock").[xli] Of additional concern are students who do not complete degree programs yet incur large amounts of debt.

Colleges vary in their approach to reducing the financial burden to students.

- Cabrini College cut tuition by 12.5 percent and pledged to keep tuition and fees under $30,000 through May 2015 ("Cabrini College").[xlii]
- Pennsylvania Highlands Community College reduced the per-credit rate by more than half for remedial courses taken in summer 2012, and reduced tuition and services fees by $1 each for spring 2013 (Reabuck).[xliii]
- For-profit University of Phoenix froze tuition at the July 1, 2012 rates for all new and currently-enrolled students who are consistently enrolled and graduate within a set time frame ("University of Phoenix Tuition Freeze").[xliv]
- As of July 2012, Shippensburg University has lowered tuition from 250 percent of in-state tuition to 225 percent for all out-of-state residents and offers additional discounts for out-of-state students who are high-achieving or select a major in science, technology, engineering or math (STEM) ("Out-of-State Tuition Advantage Program").[xlv]
- Temple University froze undergraduate base tuition for 2012-13 at 2011-12 levels and simultaneously increased its undergraduate scholarship budget by 10 percent to reduce the amount students have to borrow for their education ("Temple Trustees Announce Base Tuition Freeze for Next Year.").[xlvi]

A major contributing factor to student debt is the cost of textbooks and course materials. According to a 2005 report issued by the General Accountability Office, college textbook prices have increased an average of 6 percent each year, twice the rate of inflation, for the past two decades. The burden and increasing cost of textbooks, compounded by the increasing cost of college tuition, room, board and transportation may place students in the position of choosing between purchasing course materials or paying rent.

Efforts to reduce student spending on textbooks resulted in the introduction of more than 200 pieces of legislation in 36 states and at the federal level from 2004 to 2011. The Higher Education Opportunity Act of 2008 includes significant requirements regarding textbook affordability for postsecondary institutions receiving federal financial assistance and publishers. In 2010, Pennsylvania adopted the College Textbook Affordability, Accountability and Accessibility Act (Article XX–F of Act 104) which requires institutions of higher education to

coordinate efforts with bookstores, faculty members and textbook publishers to lower the cost of college textbooks.

In addition, postsecondary institutions across the state offer used textbooks, participate in textbook rental and buyback programs, make available digital versions of popular textbooks, and encourage instructors to create custom textbooks and course packs rather than require multiple textbooks for a course.

Several new and emerging models related to textbook affordability examine the use of licensing, student fees, revenue sharing, system-wide purchases and open access textbooks.

- **Licensing and Student Fee Models**: An institution pays a licensing fee to a publisher for access to various course materials and technologies. Students pay a fee to access the course materials electronically.
- **Revenue Sharing**: The publisher sells rental textbooks to bookstores at a reduced price and then receives a share of the rental revenue earned by the institution.
- **System-wide Licensing Agreements**: A campus or institutional system contracts with a publisher for a broad range of educational materials at a single price.
- **Open Educational Resource**: These electronic textbooks have nonrestrictive licenses, which means faculty members are able to modify text as long as the original copyright holder is cited correctly.

III. Postsecondary Education Completion

The Bill and Melinda Gates Foundation states "while college enrollment is at an all-time high, completion rates have remained virtually flat over the past 30 years. More than half of all the students who enter the postsecondary system don't earn a degree or credential within eight years of enrolling" ("Why College Completion").

The 2009 report by Public Agenda, "With Their Whole Lives Ahead of Them," includes survey responses from more than 600 young adults age 22 to 30. This report compares those who did not complete college with those who did. The competing demands of work, school, and family were found to be the primary reasons students did not complete their education. "In order to create an educated workforce that will have access to good-paying jobs, we have to help colleges and universities adapt to the realities of their students' lives. Flexible schedules, greater access to financial aid, childcare, high-quality online courses—these are vital considerations in the effort to dramatically increase postsecondary completion rates" ("Today's College Student").

III.I. Time to Degree

There exists a correlation between education attainment rates, per capita income, and the resulting revenues generated by the states and communities, which in turn, contribute to the economy. Having more citizens with college degrees means higher per capita income and ultimately, greater tax revenues for a state (American Association of State Colleges and Universities: "The Path to Prosperity" 3).[xlvii] The longer it takes students to complete their degrees, the longer it takes for them to enter the workforce and contribute to the local and state economy.

At the national level, approximately 58 percent of all first-time students seeking bachelor's degrees who started at a four-year college full-time completed within six years. Females were more likely to earn their degrees within that time period than were males (61 percent vs. 56 percent). The percentage of students also varied across racial and ethnic groups: 69 percent of Asian/Pacific Islander, 62 percent of White, 50 percent of Hispanic, and 39 percent each of Black and American Indian/Alaska Native students completed degrees within that six-year period ("Chapter 6: Postsecondary Education Indicator 42: Graduation Rates and Degrees Conferred").[xlviii] Comparable data elements for Pennsylvania are not readily available.

To improve graduation rates and time to graduation, Temple University has implemented a "critical paths" program in the undergraduate curriculum. Faculty identify critical markers to be met at the end of each of the first seven semesters for every degree program. Students who fail to achieve all of the markers on their degree path are identified for intervention by academic advisers to provide services to return students to a four-year graduation pathway as quickly as possible.[xlix]

Accelerated Learning Opportunities

Accelerated learning opportunities in high school such as Advanced Placement (AP) and Dual Enrollment courses can lessen time and cost to obtaining a college degree. AP courses are offered to students by the high school and follow a national curriculum. To receive college-level credit, students must pass a standardized final assessment. In 2012, 718 Pennsylvania high schools offered AP courses; 550 of those schools were public (*School Report of AP Examinations 2011-2012*).[1] By contrast, Dual Enrollment allows high school juniors and seniors to take college-level, credit bearing courses offered by postsecondary institutions and to receive secondary and postsecondary credit.

In 2005, Pennsylvania allocated $5 million for a statewide Dual Enrollment Program aimed at preparing students for the rigor of postsecondary academics and providing a pathway from high school to college, especially for at-risk students and underrepresented populations. Dual Enrolment funding was distributed to school districts and Career and Technical Education Centers (CTCs) in the form of Dual Enrollment grants to students. In accordance with statute, supplemental grants were made available to low-income students to help further off-set the cost of tuition, books and transportation. The Dual Enrollment Program also provided the opportunity for specialized programming to enhance college and career readiness among at-risk students through the Early College High School, Middle College High School, and Gateway to College programs. In total $41 million was allocated to the Dual Enrollment Program between 2004-2005 and 2009-2010, the last year the program received a state subsidy (*Dual Enrollment 2008-09 Final Report*).[li]

Colleges across Pennsylvania offer students opportunities to earn transferable college credit while in high school. DeSales University's dual enrollment program allows eligible high school students to take college-level courses online at a reduced tuition rate ("Dual Enrollment for High School Students").[lii] The University of Pennsylvania's Pre-College Program gives high school juniors and seniors a taste of college by allowing students to enroll in summer courses alongside university undergraduates and earn official academic credit ("Pre-College Program").[liii] Through the Penn College *NOW* program, Pennsylvania College of Technology courses are taught by approved high school teachers at 24 local schools and CTCs ("Penn College NOW").[liv]

III.II. Persistence

Despite a student's desire or initial intention, students often drop out or "stop out" of postsecondary education. According to NCES, approximately 49 percent of 2003-04 beginning postsecondary students had attained some type of postsecondary degree (certificate, associate degree, or bachelor's degree) by June 2009 (Chapter 6: Postsecondary Education, Indicator 37: Persistence and Attainment").[lv] Approximately 31 percent of these students had attained a bachelor's degree; 9 percent had attained either a certificate or an associate degree. Among the 51 percent who had not attained a postsecondary degree, 15 percent were still enrolled in a postsecondary institution. The most common reasons for leaving without completing were personal reasons (53.4 percent), financial reasons (30.8 percent), family responsibilities (21 percent), dissatisfaction (16.7 percent), and academic problems (13 percent) (Chapter 6: Postsecondary Education, Indicator 37: Persistence and Attainment").
Pennsylvania recognizes the importance of time to degree completion, relative to growing its economy. Initiatives in Pennsylvania designed to support student persistence include the following:

In November 2011, the federal **Student Support Services[lvi] (SSS)** program awarded nearly $7 million to 26 postsecondary institutions in Pennsylvania for projects which provide students with opportunities for academic development and motivation toward successful postsecondary completion ("Student Support Services Program FY 2011 Grantees and Funding").[lvii] The goal of SSS is to increase the college retention and graduation rates of participants ("Student Support Services Program: Purpose"). In the 2011-12 academic year, approximately 5,000 students at Pennsylvania institutions were supported by SSS.

West Chester University fosters student success by implementing the Early Alert Program, a proactive system of communication and collaboration of professors, program staff, academic advisors and university students. The program features early identification of students having trouble with targeted course material, provides students timely support and direction to resources, helps students learn useful self-advocacy skills, and provides assistance through the college transition process.

III.III. Transfer and Articulation

Transfer plays a significant role in the commonwealth's degree completion agenda. Seamless pathways leading from an associate degree to a bachelor's degree promote degree attainment for community college students who transfer to four-year institutions. Transparent transfer policies save students time and money by reducing loss of credit when they transfer from one institution to another.

According to a national study by the NSC Research Center, between 2006 and 2011:

- One-third of college students transferred at least once.
- Two-year public institutions are the most frequent transfer destination for students, regardless of where the student started.
- More than 37 percent of students transfer in the second year of enrollment.

- Approximately 27 percent of all first-time transfer students select a transfer institution that is out of state.

The reasons for student transfer and mobility are complex and varied.

- Students transfer in pursuit of a better institutional fit or program of study.
- Students are earning college credit through Advanced Placement coursework and Dual Enrollment programs while still enrolled in high school.
- Veterans and service members are earning credit for military experience and by passing assessments offered through the College Level Examination Program and DANTES.
- Adult students, who are known for irregular enrollment patterns due to work and family obligations, often amass credit from several institutions on their way to completing a postsecondary credential.

An increasing number of students also are opting to attend a local community college before enrolling in a bachelor's degree program. In 2010-11, the national average for tuition and fees for a full-time student enrolled in a public two-year college was $2,713, compared to $7,605 at public four-year institutions. Tuition and fees tend to be significantly higher at private for-profit and nonprofit institutions (Baum, Little and Payea 1).[lviii] Between 2000 and 2009, the total fall enrollment in community colleges increased from 5.7 million to 7.1 million. Approximately 41 percent of students (2.9 million) were enrolled full-time (Baum, Little and Payea 3).[lix]

In 2006, Pennsylvania enacted legislation authorizing the creation of a statewide college credit transfer system for the commonwealth's public colleges and universities. The system allows students to transfer individual courses and full associate degrees among the participating colleges and universities. The system is comprised of five key components:

1. The Transfer and Articulation Oversight Committee (TAOC) that establishes policy and maintains the transfer system in accordance with the law.
2. Participating institutions, including all of Pennsylvania's community colleges, PASSHE universities and state-related universities as well as regionally accredited independent institutions of higher education that elect to join.
3. The Transfer Credit Framework, an advising tool that allows for the transfer of up to 30 credits of foundation-level coursework to any of the participating institutions.
4. Statewide Program-to-Program Articulation allows students with Associate of Arts (AA) and Associate of Science (AS) degrees to transfer as juniors into a participating college or university and receive at least 60 credit hours toward a bachelor's degree in a compatible program of study.
5. The Pennsylvania Transfer and Articulation Center (PA TRAC) web portal, an interactive website with free access to college profiles, searchable databases, transfer tips and checklists.

As of October 2012, 36 institutions participate in the statewide transfer system. According to the law, all participating institutions must agree to accept up to 30 credits earned at other participating institutions as part of the Transfer Credit Framework. However, only the community colleges, PASSHE universities and those institutions that have elected to join the transfer system (Carlow University, Lackawanna College, Lincoln University, Pennsylvania

College of Technology, and Saint Francis University) are required to participate in Statewide Program-to-Program Articulation.

The transfer of individual courses under the Transfer Credit Framework affected students matriculated at the participating institution as of fall 2008. Beginning fall 2012, the system has been expanded to include statewide program articulation. This recent statewide initiative is another way the commonwealth and the participating institutions are ensuring seamless articulation and maximizing access to postsecondary education.

In addition to this framework, individual Pennsylvania postsecondary institutions strive to assist students with transfer and articulation. Temple University enrolls more than 3,700 new undergraduate transfer students each year who seek to complete their baccalaureate degree. Specialized articulation agreements with Pennsylvania and regional community colleges, as well as transfer procedures and generous credit acceptance policies for individual students who wish to transfer from other four-year institutions, provide for ease of access (Transfer Procedures").[lx]

IV. Postsecondary Career Readiness

The Center on Education and the Workforce at Georgetown University (GUCEW) forecasts that by 2018 nearly two-thirds of all American jobs will require a postsecondary credential (13). In Pennsylvania, it is estimated that 57 percent (3.5 million) of all jobs will require postsecondary training beyond high school (Carnevale, Smith, and Strohl "State-Level Analysis" 87). In 2010, Pennsylvania ranked 37th in the nation in terms of the proportion of jobs forecasted to be available for high school dropouts in 2018, and 25th in jobs that will require a bachelor's degree.

Table 2: Pennsylvania's Rank in Jobs Forecasted for 2018, by Education Level

PENNSYLVANIA'S RANK IN JOBS FORECASTED FOR 2018, BY EDUCATION LEVEL.		
Education level	2018 Jobs	Rank
High school dropouts	478,000	37
High school graduates	2,331,000	3
Some college, no degree	1,098,000	48
Associate's degree	599,000	21
Bachelor's degree	1,213,000	25
Graduate degree	637,000	14

SOURCE: The Georgetown University Center on Education and the Workforce, "Projections of Jobs and Education Requirements Through 2018." June 2010

In 2010, U.S. postsecondary degree-granting institutions conferred a total of 3.4 million postsecondary degrees. Of this total, 25 percent were associate degrees, 49 percent were bachelor's degrees, 21 percent were master's degrees, and 5 percent were doctoral degrees. To meet the anticipated workforce demands both in Pennsylvania and nationally, postsecondary institutions have engaged state agencies, educational institutions and industry partners in a number of initiatives. In June 2012, the U.S. Department of Labor awarded the state Department of Labor and Industry $1 million as part of the Workforce Data Quality Initiative Grant program.

These funds are to be used over the next three years to research, identify, and create ways to connect education, workforce, and welfare data for longitudinal analysis. By identifying and creating linkages between the data sets, the commonwealth will have the ability to better determine the outcome of taxpayer supported programs and make more informed policy and funding decisions.

IV.I. Creating Career Pathways

Given the projected increased need for more workers with postsecondary credentials coupled with the projected decline of high school graduates to fill that need (Carnevale, Smith, Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018*) it is reasonable to anticipate a shortage of trained workers. Several states, including Washington, Oregon, Wisconsin, Ohio, Minnesota, Illinois and Arkansas have worked to document strategies and best practices that move their citizens along career and education pathways that lead to industry-recognized credentials and meet the needs of each state's employers.

Creating these pathways has taken considerable leadership from each state and requires intensive coordination between secondary, career and technical, postsecondary and adult basic education, local Workforce Investment Boards, local one-stop workforce development service centers, other workforce development partners and employers.

Adult Basic Education
In Pennsylvania, system reform began in 2005 with the Career Gateway project. The purpose of this federally-funded two-year pilot program was to improve the ability of adults to enter and persist in postsecondary education and training and to strengthen collaboration among the commonwealth's adult basic education programs, postsecondary education, training providers, local Workforce Investment Boards, and PA CareerLinks. The Career Gateway project had the following results:

- Ten adult education programs were funded between 2005 and 2007. Each adult education program strengthened its transition-related student support services on-site and through collaborations with their local PA CareerLink offices and postsecondary education and training providers including community colleges, career and technical education centers, and private licensed schools.
- The program supported 400 students statewide. Students served by the program demonstrated that they had gained adequate or extensive knowledge of career opportunities in high demand occupations, education requirements for desired careers and financial literacy. Fifty percent of students served by the program enrolled in postsecondary education or training programs.

In 2008 and 2009, the Governor and the General Assembly appropriated additional funds in the General Budget for IMPACT grants. These grants enabled implementation of improvements as a result of lessons learned from the Career Gateway pilot. In 2010, PDE continued to enhance the Career Gateway and IMPACT models through technical assistance from the U.S. Departments of Labor and Education.

Based on these evolving efforts, PDE created and began funding the Career Pathways project in 2011. Through funding administered by PDE, the Institute for the Study of Adult Literacy at the Pennsylvania State University provides technical assistance to local adult education programs. Assistance includes support to:

- Develop relationships between adult education administrators and their workforce development and postsecondary education partners.
- Provide support services that enable students to transition to postsecondary education and work in high priority occupations with career ladders that lead to family-sustaining employment.
- Augment curricula with career exploration material.
- Adapt adult education program formats to acclimate students to postsecondary education structures.

The result of this work has been a 12 percent increase (from 33 percent to 45 percent) in the percent of adult basic education students who transitioned to postsecondary education and training, out of the population of students who were ready to do so.

Statewide Articulation for Perkins-Allocated Institutions
In accordance with the federal Carl D. Perkins Career and Technical Education Improvement Act of 2006, PDE's Bureau of Career and Technical Education requires postsecondary institutions receiving Perkins funding to articulate with secondary schools that offer PDE-approved Career and Technical Education (CTE) programs of study. The "SOAR" (Students Occupationally and Academically Ready) program serves as a pathway from secondary to postsecondary education and ensures students make the transition without experiencing delays or duplication of learning. Credit is awarded for skills and tasks learned at the secondary school level then applied to a postsecondary degree, diploma, or certificate program. Through SOAR, students prepare for High Priority Occupations identified as high-demand and high-wage careers.

As of October 2012, 42 postsecondary institutions have established 226 statewide agreements in 38 CTE program areas. Out-of-state institutions may participate in the SOAR program as well. PDE uses an electronic transfer and articulation system to make SOAR and related credit opportunities available. This includes:

- A system in which postsecondary institutions equate tasks and skills from the secondary program of study to coursework in a similar postsecondary program of study at their respective institutions;
- A searchable database for credit equivalencies and articulation agreements;
- The ability for PDE to add programs of study and related comprehensive competencies as needed; and
- Electronic notifications alerting postsecondary institutions that articulation agreement are set to expire and need to be renewed.

The following represent additional examples of efforts to advance career pathways in Pennsylvania.

At the University of Pittsburgh, the Office of Career Development and Placement Assistance provides services to students beginning in their first year of study, and continuing through

graduate school and/or the job search process. The University of Pittsburgh offers an internship guarantee through the Internship Preparation Program. Students are guaranteed placement in at least one internship or other experimental learning opportunity ("About CDPA").[lxi] For recent graduates who are actively seeking employment, a Career Coach is also available to provide individualized support and assistance until the student is placed in an employment opportunity.

PASSHE's initiative, The Harrisburg Internship Semester (THIS), enables students within its 14 universities to intern with policymakers, independent boards, agencies, and commissions in Pennsylvania government. Each student earns a total of 15 semester credit hours for the experience. Nine credits are earned for the internship placement experience, three credit hours are earned through participation in a rigorous academic seminar, and the remaining three credit hours are completed through an individually directed project involving substantial research and analysis ("The Harrisburg Internship Semester (THIS)").[lxii]

Temple University started a similar program in 1999, called the Pennsylvania Capital Semester. Selected students experience total immersion in state institutions and politics in Harrisburg. The internship is sponsored by the Institute of Public Affairs, and takes place each fall semester. Students in any major or college at Temple University are eligible for placement ("Pennsylvania Capital Semester"). [lxiii]

In 2011, Pennsylvania's community colleges received a $20 million Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant to expand capacity and meet the skill needs of state or local industries while increasing attainment of college degrees and other industry-recognized credentials. The colleges will focus on advanced manufacturing, energy conservation and healthcare information technology industries ("TAACCCT Grant.").[lxiv]

As of fall 2012, Edinboro University of Pennsylvania offers an Associate of Applied Science (AAS) in Applied Technology degree. The new program was developed in collaboration with Precision Manufacturing Institution and regional training institutions to fill local job openings in the following areas: computer numerical control machinists, machine technicians and operators, electronics technicians, electronics engineering technology and mechatronics technology (Pennsylvania State System of Higher Education).[lxv]

ShaleNET is a consortium led by Westmoreland County Community College and Pennsylvania College of Technology. This workforce solution was funded by a grant awarded under the Community-Based Job Training Grants, implemented by the U.S. Department of Labor's Employment and Training Administration. The consortium is creating various training programs in cooperation with natural gas industry employers ("About ShaleNET").[lxvi]

Since 2008, PASSHE has revised 60 existing programs and approved 23 new degree programs, all of which are required to include collaboration with business and industry and other institutions to provide a continuum of education that meets workforce needs. Current programs under development include Marcellus Shale exploration and production, science, technology, computer security, and allied health fields. In 2012, Mansfield University established the Marcellus Institute, an academic gas partnership program, to prepare students for careers in the gas industry field. Mansfield's Marcellus Institute offers an Applied Associate degree in Natural

Gas Production and Services, and a Bachelor of Science in Safety Management (Pennsylvania State System of Higher Education).[lxvii]

An additional initiative from Pennsylvania's private higher education sector is Lackawanna College's active partnerships with Marcellus Shale related companies in order to meet their needs for trained employees. Most notably, the college's Petroleum and Natural Gas Technology associate degree programs continue to graduate highly trained, sought after workers for family-sustaining wage earning positions in the industry. Active collaboration with the supported companies ensures Lackawanna College graduates are prepared to step immediately into the workforce and, as a result, has a near 100 percent placement rate.

Drexel University undergraduates receive real world work experience through the university's Co-operative Education Program. Under the Co-op plan, students attend classes full-time during their first year and then alternate six-month periods of full-time study with paid full-time employment at university-approved employers. Students can choose from more than 1,500 employers in 41 states and 45 international locations, or conduct an independent study. The university's Steinbright Career Development Center supports students through career counseling, workshops, job fairs, and résumé reviews ("Guide to Cooperative Education").[lxviii]

Bidwell Training Center, a part of Manchester Bidwell Corporation, is an accredited career and academic school. Based out of Pittsburgh, Bidwell offers nine high-caliber, market-relevant career training programs that lead to entry-level employment.[lxix] Many of Bidwell's training programs feature hands-on internships with various companies and the organization works with local and national corporate partners to identify high-demand careers that will be sustainable. This also enables students to combine skills learned in the classroom with on-the-job experience and provides an opportunity to begin the transition from school to employment. Bidwell offers GED preparation, life skill counseling, and remedial learning in math and reading to assist students without a high school diploma or the necessary academic skills to excel in its programs. Bidwell Training Center was honored in 2000 with the Epic Award.[lxx]

Lehigh Career & Technical Institute (LCTI) is a Pennsylvania public secondary institution providing academic education and technical training to students from nine participating school districts in Lehigh County. LCTI is the largest career and technical school in the commonwealth and the third largest in the US, serving approximately 3000 high school students and 1600 adult students each year. LCTI is a nationally-recognized facility for training secondary and postsecondary students and operates a wide range of innovative training programs for both in and out of school youth as well as programs for adult learners.[lxxi]

IV.II. Science, Technology, Engineering and Mathematics (STEM)

The GUCEW predicts that by 2018, 5 percent of all jobs in Pennsylvania will be in the STEM fields with nearly half being in computer-related occupations (Carnevale, Smith, and Melton 42).[lxxii] Approximately 30 percent of all associate degrees conferred in 2010 were in a STEM field of study. Pennsylvania actively participates in initiatives aimed at developing a pipeline of skilled workers in STEM-related fields.

Montgomery County Community College received a $10,000 grant from the TD Charitable Foundation to launch "How Scientists View the Environment." The program encourages youth to learn about science and explore careers in this high-demand field through the Green STEM summer program (Montgomery County Community College Foundation).[lxxiii]

The Pennsylvania Initiative for Nanotechnology (PIN) [lxxiv] is a statewide strategy that combines and focuses the efforts of the Pennsylvania Department of Community and Economic Development (DCED), institutions of higher education, regional economic development organizations and more than 125 companies throughout the commonwealth. PIN leverages Pennsylvania clusters of research, industry, and workforce assets to make Pennsylvania a global leader in nanotechnology research, commercialization and economic development activities. PIN grants have been awarded to the Pennsylvania State University, Lehigh University, Drexel University, the University of Pennsylvania, Carnegie Mellon University, and the University of Pittsburgh ("Pennsylvania Initiative for Nanotechnology").[lxxv]

In October 2011, the National Science Foundation awarded Shippensburg University a $749,506 grant for the PA STEM University Partnership for the Advancement of Academic Women (PA STEMUP) program. Partnering with Shippensburg University are Elizabethtown College, Harrisburg University of Science and Technology (HU) and the Innovation Transfer Network (ITN). The grant will be used to promote the recruitment, retention and advancement of women in STEM disciplines ("Partner Projects").[lxxvi]

The National Science Foundation Graduate Research Fellowship Program recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based Master's and doctoral degrees at accredited institutions nationally. Fellows benefit from a three-year annual stipend of $30,000 along with a $10,500 cost of education allowance for tuition and fees, opportunities for international research and professional development, and the freedom to conduct their own research at any accredited U.S. institution of graduate education they choose. NSF Fellows are anticipated to become knowledge experts who can contribute significantly to research, teaching, and innovations in science and engineering ("National Science Foundation Graduate Research Fellowship Program"). [lxxvii]

IV.III. Manufacturing and Technology

According to a 2012 report by the Pennsylvania Governor's Manufacturing Advisory Council[lxxviii], Pennsylvania is the sixth largest manufacturing state in the United States, outranking other historically industrial states, including Michigan, Indiana, New York and New Jersey (qtd. 3). With gross state product now reaching $71 billion, manufacturers in Pennsylvania account for over 12 percent of the total output in the commonwealth (qtd. 3). In 2011, manufacturing employment in Pennsylvania grew by 12,100 workers, bringing the commonwealth's total manufacturing workforce to 574,600 (qtd. 3). However, manufacturing leaders continue to note an increasing skills gap as they attempt to build their internal staff capacity in response to industry growth (4). Fewer workers are entering the industry, 25 percent of current workers are over the age of 55, and more than 80 percent of manufacturers report a serious or moderate skills gap in their employees (qtd. 10).

Among the strategies identified by the Governor's Council are:

- Establish a public-private partnership that will organize engaged manufacturers and school leaders to partner in support of educational pathways to manufacturing careers.
- Develop industry-led standardization of skill needs and curriculum, in cooperation with the education and workforce development community in Pennsylvania.
- Expand and better support career and technical education in Pennsylvania.
- Support proven strategies to increase the workforce pipeline for manufacturers, such as the PATHWAYS for Career Success (formerly known as the 2+2+2 career pathway model).
- Create measures and support systems for educators and districts tied to effectiveness.

Reflective of these strategies, Pennsylvania continues to encourage and support collaborations between local government, postsecondary education and industry sectors in an effort to stimulate economic activity and advance the commonwealth as a global leader.

The Workforce & Economic Development Network (WedNETPA) is a cooperative workforce training initiative funded by the DCED. Postsecondary partners include 14 community colleges, 11 PASSHE Universities, Pennsylvania College of Technology, the North Central PA Regional Planning and Development Commission, University of Pittsburgh-Bradford, Greater Altoona Career and Technology Center and Lancaster County Career and Technology Center ("About WEDnetPA."). [lxxix]

Since 2002, DCED has also provided funding to develop integrated and seamless educational programs across secondary, two-year and four-year postsecondary institutions. The PATHWAYS for Career Success Program creates a pipeline of highly skilled workers in emerging industries, such as advanced manufacturing and materials, biotechnology and information technology ("About Pathways for Career Success"). [lxxx]

In August 2012, the Department of Defense awarded a $30 million federal grant to a partnership team from Pennsylvania, northeast Ohio and West Virginia to develop the Additive Manufacturing Innovation Institute (AMII). The goal of the program is to develop more efficient manufacturing processes. Pennsylvania partners include representation from advanced manufacturing firms, the National Center for Defense Manufacturing and Machining, Carnegie Mellon University, Lehigh University, Penn State University, Philadelphia University, Robert Morris University, and the University of Pittsburgh. The initiative also engages community colleges, the Pennsylvania College of Technology, industry organizations and Pennsylvania's Industrial Resource Centers to deliver new training and curricula in additive manufacturing technology (Pennsylvania, Governor's Office). [lxxxi]

In March 2012, Harrisburg Area Community College (HACC) became a Motoman Endorsed Robotics Instructor Training (MERIT) Center. Through the MERIT program, universities and community colleges are able to offer the same level and quality of Motoman training to the regional manufacturing workforce (Yaskawa American, Inc.). [lxxxii]

Westmoreland County Community College offers a cooperative Associate of Applied Science Degree in Electric Utility Technology that prepares students through classroom and hands-on

field work for jobs as electric utility line workers. The program is expected to provide West Penn Power with qualified workers as it replaces an aging workforce and the industry expands (Westmoreland County Community College).[lxxxiii]

Kennemetal Inc. is home to the Young Engineers Program. The program was started in September of 2011 in partnership with the Greater Latrobe School District to help attract young students into engineering and manufacturing careers by showcasing them through experience. The 15 week program is hosted at Kennemetal's state-of-the-art technology center in Latrobe and includes a combination of classroom discussions, hands-on projects and mentoring led by Kennemetal's research and engineering team.[lxxxiv]

IV.IV. Private Career Schools

Career education is also provided in Pennsylvania at private licensed schools.   The Private Licensed Schools Act of 1986 defines a private licensed school as "(a) school or classes operated for profit or tuition that provides resident instruction to prepare an individual to pursue an occupation in the skilled trades, industry or business; or (that provides) systematic instruction by correspondence or by telecommunication in a field of study."

Licensed schools are located in 46 of Pennsylvania's 67 counties. In the 2011-12 academic year, there were 279 private licensed schools. These schools offer certificates, diplomas and specialized associate degrees in 1,828 programs. These programs are categorized in 29 general career fields, including allied health, business, mechanics and repair, culinary services, computers, transportation, construction and technology.

The schools enrolled 35,013 students in specialized degree programs and 113,930 in certificate and diploma programs in 2010-11. The schools awarded 9,011 specialized associate degrees and 53,969 certificates and diplomas.

Of the students for whom gender was reported in 2010-11, 48.5 percent were women and 51.5 percent were men. Of the students for whom race/ethnicity was reported, 59.6 percent were White, Non-Hispanic; 27.6 percent were Black, Non-Hispanic; 8.9 percent were Hispanic; 1.8 percent were Asian/Pacific Islander, 0.4 percent were Native American; 0.1 percent were Native Hawaiian/Pacific Islander and 1.6 percent were of two or more races.

The schools report a job placement rate of 71 percent in jobs related to the field of study.

V. Postsecondary Funding and Cost Challenges

Historically, Pennsylvania and the nation have experienced periods of decline and associated recovery with respect to the funding of postsecondary education. In the three years immediately preceding the recession of 2008, postsecondary education was slowly recovering from such a cycle of decline. Because of the severity of the recession, funding has not adequately resulted in pre-recession financial strength. Compounding the financial challenges of the recession and resulting decreases of state and local support, the higher education community has seen a 12.5 percent increase in enrollment between 2005 and 2011. This increase in enrollment is also part

of the historical cycles we have seen associated with challenging financial times. Competition for resources and resultant decreases in state funding, along with increases in tuition, present as barriers to education attainment. There was an effort by the federal government to provide financial relief in the form of American Recovery and Reinvestment Act of 2009 (ARRA) funds. Yet, even with ARRA support, funding per individual student has decreased in most states. Given the patterns of decline and subsequent recovery in funding of postsecondary education noted in the past decade, there is reason to believe that the country as a whole recognizes the contributions of education to an innovative and successful economic future (State Higher Education Executive Officers).[lxxxv]

V.I. Sources of Revenue

The following are the major classifications of revenue sources for most colleges and universities:

- Tuition and fees charged to students – net of financial aid
- Governmental (federal, state and local) units
- Gifts, endowment income, investment revenues
- Auxiliary income derived from non-instructional activity within the institution

Some sources of revenue are limited in scope and may only be spent in support of an associated or predefined activity. Examples of this include gifts made for the purpose of financial aid to students, or facility improvement and revenue derived from either gifts or government support that is limited in scope to research activity.

According to research reported in Trends in College Spending 1998-2008, there are four significant trends with regard to institutional revenue:

1. Per capita revenues increased across all of higher education, but there was considerable volatility in both state and local appropriations and private investment returns. During this time period research institutions showed considerable growth in federal funds.
2. In public institutions, cuts in state and local appropriations after the 2001 recession gave rise to tuition increases, which continued even when appropriations later rebounded. Tuitions continued to rise during this time period, even as appropriations were restored, primarily at four-year institutions, not at community colleges.
3. Despite access to significant resources from gifts, investments, and endowment income in many private institutions, tuitions continued to increase. As noted above, with regard to restoration of state and local funds, tuitions continue to rise while recognizing capacity in resources from private sources and investments.
4. Public and private institutions tend to use different strategies to maximize tuition revenues. Generally speaking, public institutions employ additional fees and less tuition discounting while private institutions offer significant aid associated with higher sticker prices (Desrochers, Lenihan and Wellman 14-15).[lxxxvi]

The average tuition and fees at Middle States Accredited postsecondary institutions have increased approximately 9 percent at two-year public institutions and 37 percent at four-year public institutions between 2002 and 2012 (College Board "Trends in College Pricing").[lxxxvii] In 2010, average in-state tuition at Pennsylvania's colleges and universities was above the national average of $6,829, at $10,761 (Dēmos 11). [lxxxviii] It is challenging to discuss the sources of

revenue without a discussion of the interdependent relationships between revenue and the tuition and fees charged to students. It is not the intention of this report to provide an exhaustive debate on the nature of those relationships, which exhibit some variability among sectors. Rather, this picture of the postsecondary landscape in Pennsylvania seeks to recognize that each sector has unique challenges in dealing with the recent economic downturn and associated reductions of revenue in all revenue sources.

The composition of revenue sources may vary among higher education institutions, with some being more dependent on one source of revenue over another. Differences in sources of revenue at public and private institutions are noted in the following charts:

Figure 6: Institution Revenue per FTE Student in 2010 Dollars at Public Institutions, by Revenue Source, 1999-2000 to 2009-10, Selected Years
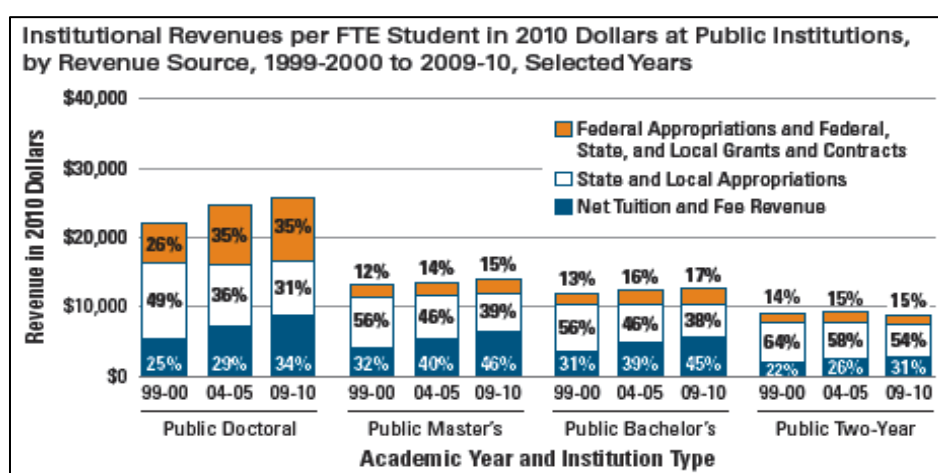
Source: College Board Trends in College Pricing 2012

Figure 7: Institution Revenue per FTE Student in 2010 Dollars at Private Nonprofit Institutions, by Revenue Source, 1999-2000 to 2009-10, Selected Years
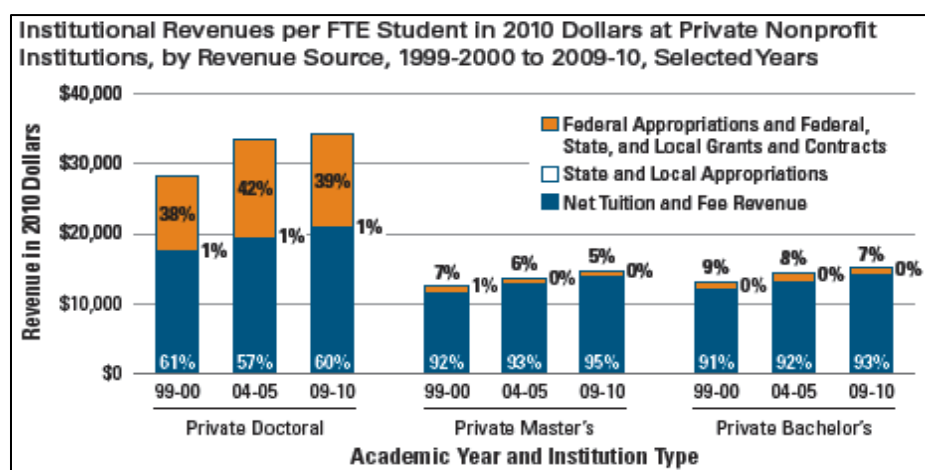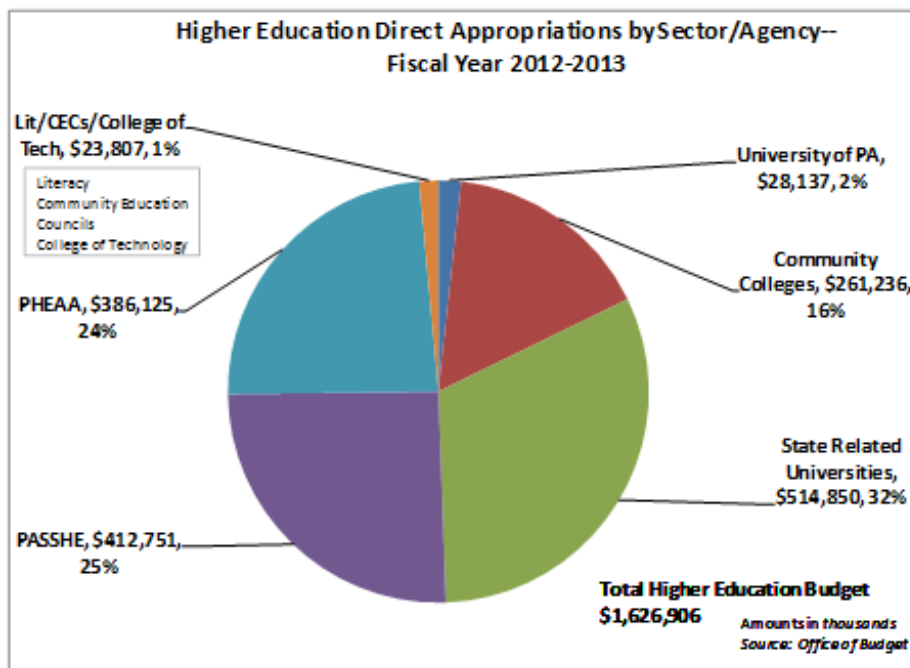

Source: College Board Trends in College Pricing 2012
Note: Net tuition revenue is the amount of revenue an institution takes in from tuition and fees, net of all institutional grant aid provided to students. Some of this revenue comes in the form of financial aid to students from federal and state governments and other sources.

State Support

The commonwealth invests approximately $1.6 billion annually in postsecondary education. This amount includes direct appropriations to public institutions as well as funding distributed by PHEAA through the State Grant Program.

Figure 8: Higher Education Direct Appropriation by Sector/Agency – Fiscal Year 2012-13

Higher Education Direct Appropriations by Sector/Agency--
Fiscal Year 2012-2013

Lit/CECs/College of Tech, $23,807, 1%
- Literacy
- Community Education Councils
- College of Technology

University of PA, $28,137, 2%

Community Colleges, $261,236, 16%

PHEAA, $386,125, 24%

State Related Universities, $514,850, 32%

PASSHE, $412,751, 25%

Total Higher Education Budget $1,626,906
Amounts in thousands
Source: Office of Budget

Performance Funding

The Pennsylvania State System of Higher Education (PASSHE) was among the first public university systems in the nation to voluntarily implement performance funding (Miao)[lxxxix]. The formula uses a portion of its income to encourage the universities to improve in areas such as student retention and graduation rates, campus diversity, program quality and faculty productivity. In 2011, the Board of Governors changed the performance funding model by focusing performance measures on improving student success, increasing access and ensuring stewardship of public resources. Beginning in fall 2012, universities will be measured on five common indicators and five additional indicators, which the universities will be able to choose based on their strategic directions. For all of the indicators, the universities will be measured on their progress toward institution-specific goals and against external comparisons or expectations. Whenever possible, external comparisons will be based on similar universities participating in national studies. All of the indicators will be based on three basic themes of student success, access and stewardship. These themes support PASSHE's strategic initiatives. The strategic initiatives are predicated on the need to transform how, when and where student learning occurs; how the resources necessary to ensure learning need to be sustained; how the PASSHE universities relate to their various communities; and how the State System partners with the commonwealth in creating and delivering a shared vision of the future. The performance funding program will measure how well the universities succeed in transforming teaching and

learning, securing resources, engaging their communities and regions and providing leadership for the future.

Institutional Endowments and Alumni Donations
The Chronicle of Higher Education reports that college and university endowments have decreased in value by over $96 billion between 2008 and 2009 (shortly after the beginning of the recession). More than half of the institutions responding to a *Chronicle* survey noted losses in excess of 20 percent of their total endowment value ("College and University Endowments, 2008-2009").[xc] At the same time, donors were unable to continue making contributions, as their personal wealth was suffering as well (Marcus).[xci] Many institutions use endowment income as a source of financial aid. With a greater number of students qualifying for aid and less endowment income available, institutional budgets have become strained. It is hopeful to note that endowments are slowly returning to pre-recession levels and institutions are beginning to see positive returns on their investments ("College and University Endowments, 2010-2011").[xcii]

V.II. Uses of Revenue

Increasing postsecondary costs have been a concern for state and federal policymakers for several decades. In a 1998 report to Congress on college costs and pricing, the National Commission on the Cost of Higher Education noted great confusion over the distinction between cost and price at the postsecondary level (qtd. in Jones 74).[xciii] The "cost" of postsecondary education refers to the amount the institution spends to educate a student; the "price" is the amount the student pays to attend a particular institution. While evidence illustrates that the price a student must pay to attend an institution of higher learning has increased, higher education leaders argue that the costs to educate a student are still not covered by tuition income and increased prices in tuition seen throughout the sectors. The degree to which the costs are not covered varies between sectors.

According to standard accounting principles, the following expenses are common to most higher education institutions:

- Instruction (i.e., faculty salaries, benefits, all expenses directly related to teaching)
- Research (i.e., sponsored or organized research)
- Public Service (i.e., external groups, community groups)
- Student Services (i.e., admissions/enrollment, counseling)
- Academic Support (i.e., libraries)
- Institutional Support (i.e., administrative salaries, legal support, public relations)
- Facilities (i.e., plant and maintenance expenses)
- Auxiliary Enterprises (i.e., costs associated with maintaining rooms and providing board)

According to research presented in *Trends In College Spending 1998-2008*, the *significant trends* with respect to spending patterns over the 1998-2008 time period include:

1. The peak, or near-peak, spending year in most higher education sectors and spending areas was 2008.
2. All sectors increased spending on education and costs per student; research institutions boosted spending on research; but no sector devoted significant new resources to public

service in recent years. Education and related spending is the core metric used to measure student-related expenditures.

3. Among all types of institutions, the share of spending going to pay for the direct cost of instruction has declined slightly.
4. Private research institutions set a high bar for spending, and other sectors had difficulty trying to keep up (Desrochers, Lenihan and Wellman 19-22).

Faculty and Staff Compensation

At the forefront of the discussion over rising costs at institutions of higher education is the debate over costs associated with faculty salaries and overall compensation. A major component of the personnel cost (classified under Instruction) at postsecondary institutions is the cost of faculty. Total faculty compensation, including health insurance and other fringe benefits, has risen more rapidly over the past two decades than faculty salaries, but much more slowly than published tuition and fees (College Board "Trends in College Pricing" 29).[xciv] The cost of health insurance and the funding of retirement plans have increased rapidly in the past decade and have contributed to the overall increase in cost at postsecondary institutions. Faculty costs are often nondiscretionary and governed by contracts at non-profit institutions.

In the last 20 years, Pennsylvania postsecondary institutions have relied increasingly on contingent faculty (defined as adjuncts, teaching assistants, non-tenure track faculty, clinical faculty, part time staff, lecturers and instructors). Nationally, part-time faculty members and instructors teach 42 percent of the courses at all public colleges and universities. In Pennsylvania, contingent faculty members teach:

- 56 percent of community college courses, identical to the national share
- 59 percent of course work at the state-related universities counting graduate employees and 55 percent not including graduate employees (Brill and Herzenberg 2)[xcv]

There are many reasons why an institution may hire multiple part-time faculty members rather than invest in one full-time person. As mentioned earlier, economics certainly play a role in deciding the status of a position when hiring. However, additional reasons include the need for flexibility when considering the staffing demands of sabbaticals, research activities and fluctuations in student course scheduling (Joint State Government Commission 23). [xcvi]

Utility Costs

In addition to health insurance costs at institutions, utility costs have accounted for an increasing portion of institutional budgets over the last decade. Utility costs allow for some measure of containment and institutions have explored various cost savings measures. Energy costs for a standard 50,000-square-foot building on a postsecondary campus can exceed $100,000 per year ("Managing Energy Costs in Colleges and Universities").[xcvii] Many institutions have realized cost savings from consortia purchasing and energy efficient upgrading of lighting and equipment as well as switching to alternative energy systems. One such consortia arrangement is the Lehigh Valley Association of Independent Colleges (LVAIC). The LVAIC works with member institutions to identify goods and services that can be purchased collaboratively. This activity allows the organization to leverage the purchasing power of the institutions. Collectively, the members of LVAIC have saved more than $32 million since 2001 ("Overview and Groups").[xcviii]

Technology and Equipment Costs

Cost related to technology and equipment has become an increasing share of the total operating costs at postsecondary education institutions over the last 20 years. Technology costs include the initial purchase price of the equipment or software, maintenance and repair costs and contracts to provide ongoing support and service. Additional staffing needs may be required to support specialized equipment and software. The rapidly changing technology environment further strains postsecondary institutional budgets as institutions feel pressured to utilize technologically advanced instructional equipment in the classroom.

Deferred Facility Maintenance

Colleges and universities across the country are experiencing an increasing urgency regarding deferred maintenance issues on their campuses. Even with routine annual maintenance of their physical plants, campus buildings have large-scale maintenance needs that are often deferred due to a lack of funding. Many of the commonwealth's public college and university campuses were built in the 1960s and 1970s. College and university administrators have recognized large needs in capital funding for deferred maintenance items.

Pennsylvania's 14 community colleges have identified more than 100 deferred maintenance projects on their campuses at an estimated cost of $189 million (Bosak).[xcix] Projects include code and ADA compliance issues for many buildings that are over 40 years old, as well as other problems due to the aging infrastructure and subsequent capital renewal demands. The PASSHE system has identified $2.6 billion in its current backlog of deferred maintenance and capital renewal needs and these include many of the same types of project needs found at the community colleges and other sectors of higher education (Moran).[c]

According to Sightlines, the company founded to help colleges and universities manage their facilities investments, many states are currently quantifying their outstanding deferred maintenance issues across multiple sectors of higher education. States are articulating a plan to fund and address the various projects within their higher education communities. Sightlines estimates that a dollar spent in upkeep on a campus facility today equates to three to four dollars in the future if the ongoing maintenance is not addressed (Cadamus).[ci]

The table below provides the average facility densities (individuals occupying buildings) at colleges and universities nationwide. The higher density at community colleges means not only are the facilities more expensive to maintain and operate, they also need total facility renovation or replacement in a much shorter time period.

Table 3: Average Density of College and University Facilities

Average Density of College and University Facilities (number of individuals per 100,000 square feet)	
Sector	Density
4-year Private	250
4-year Public	400-500
Community Colleges	800-900

Source: James Cadamus Personal Interview, 2012

VI. Postsecondary Transparency and Accountability

The changing global economy demands productive systems of education that are accountable and transparent. Students and families require access to clear information about costs and quality before they invest valuable time and money. Public officials and taxpayers want to know how the commonwealth's postsecondary system is performing. More specifically, they want to know the money being investing in that system, regardless of the source, is leading to the knowledge, competencies and skills desired by employers.

National Efforts
The Higher Education Act of 1965, as amended, requires a basic level of transparency for a majority of the nation's postsecondary institutions. The act requires every college, university and technical and vocational institution participating in the federal student financial aid programs to report data on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices and student financial aid ("About IPEDS").[cii] Data elements are collected annually by NCES**.** Information is then made public through the College Navigator[ciii] and IPEDS Data Center[civ] websites. As of fall 2011, 424 postsecondary institutions in Pennsylvania report data to NCES.

State Efforts
A robust statewide unit level data system is critical to educators and state leaders in their work to assess student success and behavior, set appropriate policies and implement improvements. According to a 2006 study by the National Center for Higher Education Management Systems, 40 states have a postsecondary student record database. States use these data systems to:

- Report timely and accurate education data through standardized and ad hoc reporting capabilities
- Report performance measures, such as graduation and retention rates, and job placement/workforce development rates
- Improve decision-making through the use of high-quality data and decision support tools
- Provide longitudinal data on progress and behavior over time
- Conduct research, evaluation and analysis

The Pennsylvania Information Management System (PIMS) is used to collect unit-level data that are mandated by federal statute or regulation or as required by the Pennsylvania Public School Code of 1949, as amended. Over the next three years, the Pennsylvania Departments of Labor and Industry, Education and Public Welfare, supported by a federal grant from the U.S. Department of Labor will be working to connect education data from PIMS to workforce and welfare data. Through the Workforce Data Quality Initiative Grant program the commonwealth will have the ability to determine the outcome of taxpayer supported programs and make more informed policy and funding decisions.

Institutional Efforts
Postsecondary institutions from every sector increasingly rely on data to assess the effectiveness of undergraduate and graduate education and to improve institutional quality. Institutions are paying close attention to how and what data elements are reported and working hard to educate faculty, personnel and the public on the value of data-driven policy making and planning.

Postsecondary institutions in Pennsylvania are demonstrating their commitment to quality and accountability through participation in a number of national and state initiatives:

- Pennsylvania's community colleges adopted the American Association of Community Colleges' Voluntary Framework of Accountability as their statewide accountability rubric. These nationally-defined metrics measure student learning outcomes and assess how colleges perform in areas, such as student progress and achievement in both credit and noncredit career and technical education programs. The colleges are also among 280 community colleges nationwide to participate in the National Community College Benchmarking Project in 2011, which strives to standardize a national benchmarking process to allow for comparative analysis ("About Us").[cv]
- PASSHE's 14 universities and the Office of the Chancellor participate in the Voluntary System of Accountability, an initiative of public four-year universities to supply clear, accessible and comparable information on the undergraduate student experience. The resulting "College Portrait" enables students to compare institutions based on student and campus characteristics, cost of attendance, success and progress rates, campus safety, class size, student experiences on campus and student learning outcomes ("About the College Portrait").[cvi] PASSHE universities also are involved in a project supported by the Council on Undergraduate Research to enhance the way students learn, faculty teach and courses are delivered in STEM programs. The Council also optimizes student access and success in STEM-related fields.
- Nearly 150 postsecondary institutions in Pennsylvania voluntarily submit data to the National Student Clearinghouse (NSC), a national education verification and reporting service. The NSC uses student outcomes data and education research to provide institutions with longitudinal and other data on postsecondary education progress.
- Since 2000, 97 of Pennsylvania's four-year colleges and universities, including all 14 PASSHE universities, have participated in the National Survey of Student Engagements, an annual survey that collects information about student participation in learning and personal development (National Survey of Student Engagement 47). [cvii] Institutions use data from the survey and subsequent reports to identify aspects of the undergraduate experience that can be improved through changes in policies and practices.

VII. The Impact of Technology on Postsecondary Education

Technology has the ability to free education from the site-based, traditionally structured model. As education leaders plan for the future of their campuses, the planning process now includes considerations of server space and bandwidth in addition to buildings, classrooms, desks and lab tables. Strategic thought must be given to the amount of investment made at any point in time, due to the rapidly changing nature of technology.

VII.I. Internet-based Education

Technology's impact on the delivery of education has been substantial. In addition to correspondence and video education, there now exist blended or hybrid programs, as well as completely online courses and degree programs. A wide range of opportunities to enroll into a single course, certificate program, non-degree program and full degree program are available to a wider audience.

Online learning—for students and for teachers—is one of the fastest growing trends in educational uses of technology (U.S. Dept. of Education Evaluation). [cviii] A study published in 2011 by the U.S. Department of Education found that "From 2000 to 2008, the percentage of undergraduates enrolled in at least one distance education class expanded from 8 percent to 20 percent, and the percentage enrolled in a distance education degree program increased from 2 percent to 4 percent ("Distance Education in Higher Education").[cix]

As of late 2010, online learning opportunities were made available to students in 48 states and Washington, D.C. These opportunities were offered by a number of different providers, including state virtual schools, multi-district full-time online schools, single-district programs and programs run by consortia or postsecondary institutions (U.S. Department of Education Understanding 2).[cx]

Online programs may offer "synchronous" or "asynchronous" learning environments. The former demonstrates real-time instruction and participation; the latter allows for time lapse between instruction and participation. The asynchronous environment may allow for greater access to higher education, because the student has the ability to participate according to his or her availability – likely one of the reasons online instruction was chosen initially.

Data show that students who need flexibility are taking advantage of distance education. A higher percentage of undergraduates who had a job took distance education courses (22 percent) than those who had no job (16 percent) and a higher percentage of students attending classes exclusively part time took distance education courses (25 percent) than those attending classes exclusively full time (17 percent) ("Distance Education in Higher Education").[cxi]

Harrisburg Area Community College (HACC) is the first community college in Pennsylvania and one of six colleges nationwide participating in Apples' **iTunes U**, a free application that allows access to college courses through iPhones, iPods and iPads. As of February 2012, faculty from HACC, Duke University, Massachusetts Institute of Technology, Stanford University, Yale University and The Open University had created 100 free online courses for the iTunes U library. HACC faculty created six of those courses. While some of the participating colleges require users to be registered students at their institution, HACC's iTunes U courses are available to anyone. However, only students enrolled at HACC receive credit.

Table 4: Number and percentage of post-baccalaureate students in postsecondary institutions taking distance education courses, by selected characteristics: 2007-08

Selected characteristic	Taking any distance education courses		Taking their entire program through distance education	
	Number of students (in thousands)	Percent of total enrollment	Number of students (in thousands)	Percent of total enrollment
Total	**763**	**22.1**	**302**	**8.7**
Sex				
Male	268	19.3	104	7.5
Female	495	23.9	199	9.6
Race/ethnicity				
White	532	23.1	211	9.2
Black	102	25.1	42	10.4
Hispanic	60	21.8	20	7.4
Asian	47	12.7	16	4.3
Native Hawaiian/Pacific Islander	‡	31.5 !	‡	13.9 !
American Indian/Alaska Native	‡	17.0 !	‡	3.4 !
Two or more races	17	24.1	‡	15.3
Age				
15 through 23	59	14.9	‡	1.6
24 through 29	220	16.0	75	5.4
30 or older	484	28.8	221	13.1
Attendance status				
Exclusively full-time	213	15.2	74	5.3
Exclusively part-time	441	28.4	192	12.3
Mixed full-time and part-time	110	21.7	36	7.2
Type of job student had				
No job	55	12.3	21	4.8 !
Regular job only	613	28.1	260	11.9
Work-study/assistantship job only	38	8.0	‡	1.2
Both regular job and work-study/assistantship job	58	16.0	16	4.3
Dependency status				
Dependent	†	†	†	†
Independent, no dependents, not married[1]	275	15.8	82	4.7
Independent, no dependents, married	125	22.0	54	9.4
Independent, with dependents, not married[1]	92	29.0	34	10.7
Independent, with dependents, married	271	32.8	133	16.0
Veteran status				
Veteran	39	36.3	20	18.8
Not veteran	724	21.6	282	8.4
Field of study				
Business/management	156	26.1	76	12.8
Education	229	27.7	80	9.7
Computer science, mathematics and engineering	60	19.5	28	9.3
Health	90	22.3	37	9.1
Humanities	36	15.5	7	3.1

Selected characteristic	Taking any distance education courses		Taking their entire program through distance education	
	Number of students (in thousands)	Percent of total enrollment	Number of students (in thousands)	Percent of total enrollment
Law	10	6.0	‡	1.7
Life sciences	23	13.7	‡	4.2
Social/behavioral sciences	44	18.7	21	9.1
Other[2]	116	22.3	43	8.2
Control of institution				
Public	401	22.9	150	8.6
Private not-for-profit	267	18.3	88	6.0
Private for-profit	95	37.7	64	25.4

† Not applicable.

! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

‡ Reporting standards not met.

[1] Includes separated.

[2] Includes physical sciences, other programs, and students with no major.

NOTE: Estimates pertain to all postsecondary students who enrolled at any time during the school year at an institution participating in Title IV programs. Distance education participation includes participation at any institution for students attending more than one institution during the school year. Data include Puerto Rico. Detail may not sum to totals because of survey item nonresponse and rounding. Race categories exclude persons of Hispanic ethnicity. For more information on race/ethnicity, please see *supplemental note 1*. For more information on the classification of postsecondary education institutions, see *supplemental note 8*.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

The Pennsylvania State University offers a fully online option to obtain postsecondary education. The World Campus has 12,000 fully online students this year, over 50,000 course enrollments including both fully online and campus-based students and more than 80 undergraduate and graduate degrees and certificate programs. It is one of the largest online educational delivery systems of its kind at a non-profit college or university. Several World Campus programs have received national awards from Sloan-C, an association of higher education institutions and organizations engaged in online learning.

Hybrid Models

Many institutions are acknowledging the need to incorporate some aspect of distance learning into their educational programs. This is often represented by hybrid models of instruction. Hybrid instruction blends both the physical classroom and distance elements to the educational program or course. This allows a student more flexibility in attaining postsecondary education while fulfilling other obligations or residing far from campus, since part of the program's instruction is completed outside of the classroom or over the Internet. Instructors may participate in more "active learning" styles, such as incorporating case studies and group discussion or projects. This type of learning requires students to involve themselves and accomplish more on their own, which can result in subject mastery and better test scores (Fanter).[cxii] Since hybrid models incorporate positive features of both face-to-face and distance learning environments, they can provide for a more successful learning atmosphere for the student.

VII.II. Web-Based Curriculum

Web-based curriculum promotes customization based on teacher and student needs. Current and emerging software allows instructors to create unique lessons catered to a specific topic or combinations of topics. It also allows for individualized learning. Effective use of multimedia, hypertext, and other design features can increase accessibility and comprehensibility of course

content for different kinds of learners, including students with disabilities and English language learners. It can also help students acquire multiple literacies (U.S. Dept. of Education Understanding).[cxiii] Web-based curriculum may be utilized in both an online and classroom setting.

VII.III. Open Educational Resources

The United Nations Educational, Scientific and Cultural Organization defines Open Educational Resources (OERs) as "any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or license fees." Users are given permission to revise, reuse, remix, and redistribute the content of those educational resources ("Open Educational Resources"). [cxiv] This reduces the cost of course content, textbooks and course delivery.

According to AmericanProgress.org,

> In a dramatic sign of how quickly things are changing, some of what we might otherwise call "traditional" postsecondary institutions are incorporating this same free curriculum into their tuition-based course models. Many of these online learning options are becoming more sophisticated. They can now go beyond discussion boards and web-based file sharing and instead offer instruction that responds to the needs of individual learners. Students can even supplement that learning with other resources such as classroom lectures by professors from elite institutions available on sites such as Peer 2 Peer University, a grassroots open education project ("Open Educational Resources").[cxv]

OER materials are openly licensed and can be made freely available, reducing dependency on access management. This serves traditional universities well, especially advanced research universities, in that they can continue to forge their knowledge generation and expand their databases, and will need to be able to update and revise materials. Pennsylvania State University's College of Earth and Mineral Sciences has been utilizing OERs since 2008. College faculty members create digital educational resources that students use in their respective courses. Resources include digital video, texts, simulations, animations and illustrations, all which are organized by course ("Introduction").[cxvi]

OpenCourseware (OCW) is a structured subcategory of the OER movement. OCW refers to university-created materials which are provided freely to the public through the Internet. Since being developed by the Massachusetts Institute of Technology in 2002, more than 250 universities have published their academic material openly on the web and have shared materials from more than 15,000 courses in a wide range of disciplines and languages (Carson).[cxvii] Other prominent participants of OCW include Yale University, University of Michigan and University of California–Berkeley.

Massive Open Online Courses (MOOCs) describes online courses which are "open," meaning they reach mass communities of learners, typically are available at no charge and are distributed freely to the public. MOOCs gained national attention when Stanford University had 160,000 students enroll in (and 25,000 students complete) an artificial intelligence course (Carson and Schmidt).[cxviii]

Open educational resources and open courseware facilitates an interconnected approach to learning. If a student is interested in a course that is unavailable locally, it is almost guaranteed a comparable course can be found online at another institution. Because of technology, non-traditional learners are granted access nearly anywhere and at any time.

VII.IV. Open Universities

Open universities are generally structures of postsecondary education established to provide higher education to students regardless of background or income. Typically, the only entry requirement for students is a high school diploma, and students attend for free or are charged a reduced rate. Open institutions operate with the idea that education should not be restricted due to income, societal or geographic constraints. Open universities or the programs offered by them are not typically accredited in the United States. Therefore, these types of institutions are best suited to students seeking personal development or career advancement. Open universities may be funded through minimal student fees, grants, collaborations and partnerships, contract income, and appropriations provided by higher education funding bodies.

VII.V. Maintenance of Quality

Initiatives noted below address the need to maintain quality in an environment of increased technology in postsecondary instruction.

Higher education institutions are offering programs which focus on online instruction. In its Master of Science in Education program, Walden University offers an "Online and Distance Learning" specialization. This concentration provides future postsecondary educators with a deep understanding of the most current distance learning technologies, and instructs on the management and value assessment of online programs for various learning styles ("Online and Distance Learning").[cxix] In Pennsylvania, Drexel University's Master of Science in Higher Education program offers acquisition of practical skills using the latest learning technologies and strategies, research, software applications, and management systems ("Master of Science in Higher Education".[cxx]

In an effort to ensure effective instruction and use of the technology, institutions are also offering various forms of professional development to faculty members who teach online courses. Training may be provided by a third-party vendor associated with the technical platform (i.e., Blackboard, Desire2Learn, Pearson) or by the institutions. Harrisburg Area Community College promotes quality online instruction by requiring all online faculty to complete training through the college's "Online Academy". Instructors are taught the skills and pedagogy required to successfully develop and teach online courses based on HACC's Virtual Campus Course Assessment Rubric ("Online Academy").

VII.VI. Improving Affordability Through Technology

Many factors influence a student's ability to attend a physical campus. Online/distance learning provides an additional option to students. With online education, the need for commuting is diminished or alleviated completely, thus doing away with the cost of commuting and the time spent doing so. Also relieved is the added cost of room and board that some traditional higher education students incur.

Tuition for online education can be considered to be more affordable than traditional tuition costs. Studies that examine the costs of online learning programs in comparison with face-to-face instruction have consistently found savings associated with online learning, although the costs of both forms of education vary considerably (U.S. Dept. of Education Understanding).[cxxi]

Although some of the big, established online institutions charge more than $1,500 a course, many of the newer entrants and public universities charge significantly less. Colorado State University-Global, which started offering online classes in 2008, asked in-state students signing up for their first online course this spring for $797. In 2007, Lamar University in Beaumont, Texas, started offering graduate education courses for just $412.50 apiece, which means a student could get a master's for as little as $4,950 in 18 months. Next fall, the public university plans to launch undergraduate online courses for a tuition that school officials predict will very likely come in under $500 for a standard three-credit course – no matter where the student lives.

Textbook Alternatives
The increased demand of supplemental instructional materials, including websites, online content, videos, compact discs and electronic course materials is one contributing factor to the consistent rise in textbook prices. In response, several technologically-based textbook alternatives are becoming more widely available, which help to alleviate the growing burden of textbook costs.

As an alternative to a printed textbook, publishers offer digital versions of popular textbooks. Students can either rent or purchase access to electronic textbooks through a bookstore or directly from the publisher. Most digital versions include a range of features, e.g., learning management systems, self-assessments, tests and quizzes, adaptive learning services and tutoring.

Institutions of higher education can also utilize licensing and student fee models. The university collects a fee from students to purchase the rights content in textbooks and other course materials. This fee is remitted to the publisher and buys the right to an electronic version of course material(s). For those students who wish to have a hard copy of the text, publishers would agree to sell a low-cost or discounted edition of the textbook to the campus bookstores or grant permission for the bookstore or other printer to provide print on demand copies of the textbook. This approach ensures lower prices and that students will have their course materials available the first day of class.

Electronic textbooks available with nonrestrictive licenses are referred to as OERs. OER employs a Creative Commons license, which enables faculty members to modify text as long as

the original copyright holder is cited correctly. OER materials can be downloaded permanently and at no charge. Printed copies often can be ordered online at a reduced price.

California recently enacted legislation providing undergraduates free access to online textbooks for 50 of the most common courses at the state's public colleges and establishing the Digital Open Source Library to host them. The California Open Education Resources Council is charged with creating and overseeing the book approval process. Books created under the Council will be placed under a Creative Commons license and encoded so they may be reused, including outside of California. Students will have the option of paying $20 for a hard copy of the textbook (Schwartz).[cxxii]

VII.VII. Current Technological Initiatives in Pennsylvania to Enhance Services

Pennsylvania's adaptation to the growth of technology is evident in initiatives which not only incorporate technology in the classroom, but which also utilize technology to enhance services provided by the institutions.

Technology is being utilized to facilitate students and institutions during the application and transfer process. In an effort to provide additional support to the Commonwealth's PK-20 education system, PDE has contracted with Parchment Inc. to implement the Pennsylvania Electronic Student Transcripts And Records System (PA eSTARS), a statewide network for exchanging student records and transcripts at all grade levels. This unified digital system will increase schools' operational efficiencies and allow student information to be safely shared between schools, whether a student moves to another town or state or applies to college. Over 3,000 public schools and institutions of higher education in Pennsylvania are eligible to benefit from this voluntary initiative. A federal grant awarded to PDE will be used to cover the initial implementation costs for eligible schools that sign up prior to July 1, 2013. Starting in July 2013, schools electing to participate in PA eSTARS will be required to pay their own start-up costs.

The Keystone Initiative for Network Based Education and Research (KINBER)[cxxiii] is a non-profit coalition of Pennsylvania's education, research, healthcare, economic development and other non-profit based communities ("Home"). Postsecondary members include Bucknell University, Carnegie Mellon University, Drexel University, Lehigh University, the Pennsylvania State University, University of Pennsylvania, University of Pittsburgh, Temple University, University of Scranton, the Pennsylvania Commission for Community Colleges, PASSHE and the Association of Independent Colleges and Universities of Pennsylvania. KINBER encourages innovative partnerships in the areas of digital resources, regional peering, telemedicine, high performance computing and network-centric information technology applications.

The following are KINBER-sponsored initiatives:

1. The Pennsylvania Research and Education Network (PennREN), KINBER's first project, will deliver a statewide platform for connecting its members through facilities based fiber-optic networking. Members can utilize PennREN's services for advancing their initiatives while KINBER provider partners can offer open access for expanding broadband access across the Commonwealth. PennREN will initially light over 1,600 miles of fiber on a middle-mile network that will connect over 70 locations ("Home").

2. Since 1998, Drexel University has offered its Application Services Platform[cxxiv] which offers smaller schools the same range of top-tier services that leading research institutions have used for years without up-front costs for hardware, software, people, or professional services ("Application Services Platform").

VIII. The Impact of Pennsylvania Research University Initiatives

The nation's and the world's progress into the 21st century is greatly attributed to academic research. The Commonwealth of Pennsylvania houses some of the nation's top-ranked research institutions, which provide contributions both by students and top faculty who are highly experienced within their respective fields. A reoccurring theme noted among Pennsylvania's research universities is the belief that interdisciplinary research provides the broadest range of possible solutions.

The University of Pennsylvania (Penn) has annual Research and Development expenditures exceeding $700 million. [cxxv] Under the Penn Integrates Knowledge (PIK) program, the university recruits the best scholar-teachers, with 14 distinguished faculty members having been recruited as PIK professors to date. [cxxvi] Penn engages with communities all over the world including China, India, Africa, Latin America and others. Notably, Penn has partnered with the University of Botswana to construct the country's first medical school, and helped establish the Center for AIDS Research. Started 10 years ago, Penn Medicine crafted a program to train healthcare providers. Today, the program serves as a model for future global engagement ("Fact Sheet: Engaging Globally"). As of 2012, more than 160 academic centers, institutes and programs contribute to Penn's breadth and depth of research ("The Penn Compact- Integrating Knowledge").

Carnegie Mellon University's research community is made up of over 90 centers and institutes and promotes cross-discipline solutions to benefit from multiple perspectives ("Research"). [cxxvii] Although Carnegie Mellon's research projects incorporate a large array of fields, a concentration in four areas reflects much of the research being performed currently. In the area of Computing, IT and Security, the university created CyLab, a broad new IT security initiative ("Projects and Initiatives"). [cxxviii] Within Arts and Humanities, Carnegie Mellon has established the first-of-its kind Entertainment Technology Center and is internationally recognized as a key contributor in the arts and humanities ("Projects and Initiatives"). Regarding contributions to the field of Energy and Environment, the Electricity Industry Center, The Steinbrenner Institute for Environmental Education and Research and the Robert L. Preger Intelligent Workplace are all home to projects that will improve the environment for years to come ("Projects and Initiatives"). Although Carnegie Mellon does not have a traditional medical school, its contributions to the field of Life Sciences are vast, and collaborations with other institutions are resulting in the potential to improve the quality of life for millions ("Projects and Initiatives").

The University of Pittsburgh (Pitt) ranks fifth among all U.S. universities in competitive research grants awarded to its faculty members by the National Institutes of Health. Pitt also ranks in the top 10 in the nation in terms of total federal science and engineering research and development support, according to the National Science Foundation. The Top American Research Universities' annual report The Center for Measuring University Performance states that in four of the past five years, Pitt has been ranked at the top of the nation's public research universities.

Over that five-year period, only eight universities have been ranked in that top group: Berkeley, Florida, Illinois, Michigan, North Carolina, Pitt, UCLA, and Wisconsin. Pitt's research has contributed to the state's economy with $737 million in sponsored research expenditures, supporting more than 26,000 jobs.

Legislative and Regulatory Review

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
State Board of Education	Higher Education Institutions	Public School Code of 1949, as amended	24 P.S. § 1-118	Establishes reporting for postsecondary PIMS	This chapter provides for the collection of identifying information of students attending institutions of higher education, establishes a procedure for students to opt-out of such data collection, and creates an advisory group to provide recommendations to the Secretary regarding data collection.
State Board of Education	Professional Educators	Public School Code of 1949	24 P.S. § 1-1205.1	Authorizes post-baccalaureate certificates for professional educators	This chapter provides for the approval of post-baccalaureate teacher certification programs.
State Board of Education	Professional Educators	Public School Code of 1949	24 P.S. § 1-§ 1205.2; Act 48 of 1999	Requires continuing professional education for teachers	This Act establishes requirements for continuing education for teachers to maintain certification. It is currently under two-year moratorium, per Act 24 of 2012.
State Board of Education	School Administrators	Public School Code of 1949	24 P.S. § 1-1207; Act 45 of 2007	Establishes Pennsylvania Inspired Leadership program	This Act establishes leadership standards for school leaders and requires attendance at training programs to meet Act 48 requirements. It also establishes a Principals' Induction Program to address core leadership standards and a Continuing Professional Education Program. It is currently under two-year moratorium, per Act 24 of 2012.
State Board of Education	School Districts and Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-1501-F	Establishes Science Technology Partnerships	This article institutes higher education involvement in approved science technology partnerships.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
State Board of Education	School Districts and Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-1601-B	Establishes concurrent enrollment partnerships	This article provides for grants to be made to school districts that have created concurrent enrollment partnerships with institutions of higher education. It is currently unfunded.
State Board of Education	Career and Technical Centers	Public School Code of 1949, as amended	24 P.S. § 1-1801	Establishes technical institutes	This article sets provisions for the establishment of technical institutes for postsecondary education at Area Vocational-Technical Schools.
State Board of Education	Community Colleges	Public School Code of 1949, as amended	24 P.S. § 1-1901-A	Establishes community colleges	This article provides for the establishment of community colleges and establishes a three-tiered funding model to include student tuition, local sponsor support, and a funding formula for allocation of the state appropriation.
State Board of Education	Thaddeus Stevens College of Technology	Public School Code of 1949, as amended	24 P.S. § 1-1901-B	Establishes the Thaddeus Stevens College of Technology	This article provides for the establishment and continued operation and administration of the Thaddeus Stevens College of Technology.
State Board of Education	Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-1901-D	Establishes Community Education Councils	This article provides for the creation of Community Education Councils and allocation of state funding. The community education councils are non-profit organizations that bring higher education opportunities to rural or educationally underserved communities in Pennsylvania.
State Board of Education	Higher Education Institutions	Public School Code of 1949, as amended	24 P.S. § 1-1901-F	Establishes Technical College Program	This article creates a grant program for higher education institutions to provide two-year occupational programs in educationally underserved areas of the state. It is not currently funded.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
PASSHE Board of Governors	State System of Higher Education Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2001-A	Establishes the State System of Higher Education	This article establishes the Pennsylvania State System of Higher Education (PASSHE) and transfers authority of the state-owned universities to the PASSHE Board of Governors. It establishes the office of the Chancellor and outlines the powers and duties of the office.
State Board of Education	State funded Institutions of Higher Education	Public School Code of 1949, as amended	24 P.S. § 1-2001-C	Establishes the Transfer and Articulation Oversight Committee	This article creates the Transfer and Articulation Oversight Committee (TAOC) with the responsibility of identifying common courses that are transferable among the public colleges and universities within the Commonwealth.
PDE and Joint State Government Commission	State-Related Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2001-D	Establishes requirements for State-Related University Reporting	This article requires state-related institutions to provide data to PDE and the Joint State Government Commission in any year during which they receive a non-preferred appropriation.
State Board of Education	Senior Citizens	Public School Code of 1949, as amended	24 P.S. § 1-2001-E	Establishes the Older Pennsylvanian Higher Education Program	This article allows institutions of higher education to permit older Pennsylvanians to enroll in credit or noncredit courses at no charge for tuition. The institution shall cooperate with the Area Agency on Aging to disseminate information about the courses being offered by the institution.
State Board of Education	Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2001-F	Addresses cost of course materials at institutions of higher education	This article establishes the College Textbook Advisory Committee to address affordability and accountability.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
State Board of Education	Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2001-G	Requires sexual violence education	This chapter requires institutions of higher education and private licensed schools to establish a sexual violence awareness education program.
State Board of Education	Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2301-A	Requires institutions of higher education to have a policy regarding credit card marketing on campus.	This statute requires institutions to establish a policy to regulate the marketing of credit cards on campus.
State Board of Education	All Sectors	Public School Code of 1949, as amended	24 P.S. § 1-2601-B	Establishes the State Board of Education	This article creates the State Board of Education providing for membership, powers and duties, reports and relationship with PDE.
PHEAA	Higher Education Institutions and Students	Act 16 of 1993, amended the Public School Code of 1949	24 P.S. § 1-2601-G	Establishes Graduate Opportunity Fund	This article requires PHEAA to establish and administer a fund to provide financial assistance to disadvantaged students who attend or desire to attend graduate school.
PDE	Higher Education Institutions	Public School Code of 1949, as amended	24 P.S. § 1-2601-H	Extends power to confer degrees to for-profit institutions	This article permits PDE to issue a Certificate of Authority as a degree-granting institution to for-profit corporations.
PHEAA	Professional Educators	Act 48 of 2003, amended the Public School code of 1949	24 P.S. § 1-2601-I	Establishes a loan forgiveness program to support teacher recruitment	This article creates a loan forgiveness program for first-year teachers who are employed in certain designated school districts.
PHEAA	Postsecondary Institutions	Higher Education Equal Opportunity Act or Act 101 of 1971	72 P.S. § 1-1738-E	Establishes the Higher Education Equal Opportunity Program	Establishes the Higher Education Equal Opportunity Program to support equal educational opportunity for minority and underserved students.
PDE	None	Public School Code of 1949, as amended	24 P.S. § 3-2501	Establishes Area College Centers	This statute creates Area College Centers for veterans returning after WWII. No centers are currently operating.
Board of Trustees of Temple University	Temple University	Temple University-Commonwealth Act	24 P.S. § 3-2510	Establishes Temple University as a State-related institution	This statute establishes Temple University as an instrumentality of the state and a State-related institution.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
Board of Trustees of the University of Pittsburgh	University of Pittsburgh	University of Pittsburgh-Commonwealth Act	24 P.S. § 3-2510	Establishes the University of Pittsburgh as a State-related institution	This statute establishes the University of Pittsburgh as an instrumentality of the state and a State-related institution.
Board of Trustees of Lincoln University	Lincoln University	Lincoln University-Commonwealth Act	24 P.S. § 3-2510	Establishes Lincoln University as a State-related institution	This statute establishes Lincoln University as an instrumentality of the state and a State-related institution.
Board of Trustees of the Pennsylvania State University	Pennsylvania State University and Pennsylvania College of Technology	Pennsylvania College of Technology Act	24 P.S. § 3-2510	Establishes Pennsylvania College of Technology as an affiliate of Penn State	This statute recognizes Pennsylvania College of Technology as an affiliate of the Pennsylvania State University.
Board of Trustees of the Pennsylvania State University	Pennsylvania State University	Act 50 of 1855	24 P.S. § 5-2531	Establishes The Pennsylvania State University as the Commonwealth's land grant institution	This chapter creates the institution that is now The Pennsylvania State University and designates it as the Commonwealth's land grant institution.
Pennsylvania Human Relations Commission	Institutions and Students	Pennsylvania Fair Educational Opportunities Act	24 P.S. § 17-5001	Establishes the Pennsylvania Fair Educational Opportunities Act	This chapter establishes the policy of fair educational opportunities regardless of sex, age, race or creed and vests the Pennsylvania Human Relations Commission with the authority to carry out the act.
PHEAA	Higher Education Institutions and Students	Act 290 of 1963 – Pennsylvania Higher Education Assistance Agency Act	24 P.S. § 18--5101	Establishes Pennsylvania Higher Education Assistance Agency	This chapter creates the Pennsylvania Higher Education Assistance Agency (PHEAA).
PHEAA	Private, Non-Profit Postsecondary Institutions	Act 174 of 1974 – The Institutional Assistance Grants Act	24 P.S. § 18-5181	Establishes Institutional Assistance Grants	This chapter creates a grant program for private, non-profit, non-sectarian postsecondary institutions that do not receive a separate direct appropriation from the Commonwealth.
PHEAA	Professional Educators	Act 155 of 1988 – Urban and Rural Teacher Loan Forgiveness Act	24 P.S. § 18-5191	Establishes urban and rural teacher loan forgiveness	This chapter establishes Commonwealth support for an urban and rural teacher loan forgiveness program for Pennsylvania residents teach in urban and rural public schools.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
PHEAA and PDE	Higher Education Institutions and Students	Act 22 of 1999 – New Economy Technology Scholarship Act	24 P.S. § 18-5199	Establishes the New Economy Technology Scholarship (NETS)	This chapter establishes the New Economy Technology Scholarship program to provide scholarship funds to students enrolled in identified technology programs to support workforce needs.
State Board of Education	Students and Staff	Public School Code of 1949, as amended	24 P.S. § 20-5301	Requires eye protective devices in laboratories	Every person in any shop or laboratory in public or private schools, colleges and universities who is engaged in or is within the area of known danger must wear protective eye-devices.
Secretary of Education	Postsecondary Institutions	Public School Code of 1949, as amended	24 P.S. § 20-5311	Establishes drug and alcohol abuse programs	This Act provides for drug and alcohol abuse education programs and grants to educational agencies, other public or private agencies, institutions or organizations.
Institutions, Law Enforcement Agencies and the Courts	Institutions and Students	Public School Code of 1949, as amended	24 P.S. § 20-5351	Establishes anti-hazing law	States any person who causes or participates in hazing commits a misdemeanor of the third degree.
Education Commission of the States	All Sectors	Interstate Compact	24 P.S. § 21-5401	Establishes Pennsylvania participation in the Interstate Compact	This chapter creates the Education Commission of the States.
State-funded institutions	Postsecondary Institutions	Higher Education Facilities Act	24 P.S. § 22-5501	Establishes the Higher Education Facilities Authority	This chapter finances short-term revenue anticipation loans to reduce interest expense to fund working capital requirements of institutions.
PDE	Higher Education Institutions	Dormitory Sprinkler System Act	24 P.S. § 22A-5551	Assists institutions with installation of dormitory sprinkler systems	This chapter provides for a program to assist public and private institutions of higher education to install sprinkler systems in dormitories.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
Workforce Investment Board	Employers and Workforce	Workforce Investment Act	24 P.S. § 29A-6250	Establishes Workforce Development Boards	This chapter establishes a unified workforce investment system by establishing the Pennsylvania Workforce Investment Board; providing for critical job training grants; and authorizing local workforce investment boards.
Secretary of Education	Higher Education Institutions	Higher Education Gift Disclosure Act	24 P.S. § 30-6301	Requires higher education gift disclosure	This chapter requires the disclosure of gifts to institutions of higher education made by foreign governments, foreign legal entities, and foreign persons.
PDE	Families	Act 143 of 1986– PA Adult Literacy Act	24 P.S. § 31-6401	Establishes adult and family literacy education programs	This legislation provides for the coordination and broadens the scope of educational activities to uneducated and undereducated adults in this Commonwealth and their families, including those who speak other languages, and to provide programs to those individuals who have previously been underserved.
State Board of Private Licensed Schools	Private Licensed Schools	Private Licensed Schools Act	24 P.S. § 32-6501	Establishes the State Board of Private Licensed Schools	This statute establishes the Board of Private Licensed Schools to license and regulate trade, business, and correspondence schools. It also establishes the criteria for approval of applications, fees to fund the operation of the Board, requirements for operation, and enforcement and revocation procedures.

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
State Board of Education	Higher Education Institutions	English Fluency in Higher Education Act	24 P.S. § 35-6801	Establishes a reporting requirement for English language fluency of instructors	This chapter requires institutions of higher education to evaluate their faculties for fluency in the English language, provide for certifications as to that fluency, and impose penalties.
Pennsylvania Treasury	Families	Tuition Account Program and College Savings Bond Act	24 P.S. § 36-6901	Establishes the Tuition Account Program	This legislation establishes the Tuition Account Program.
PHEAA	Professional Educators	Act 73 of 1993 – Early Childhood Education Professional Loan Forgiveness Act	24 P.S. § 38-7101	Creates a loan forgiveness program for early childhood educators	This chapter provides for the Early Childhood Education Professional Loan Forgiveness Program for teachers in approved child-care facilities.
State-funded institutions	State Funded Institutions and Families	Public School Code of 1949, as amended	24 P.S. § 39-7201	Establishes a scholarship program for children of public service officers	This chapter provides for a waiver of tuition and other fees for children of certain deceased police officers, National Guard members, firefighters and correction employees at community colleges and state-owned and state-related institutions of higher education.
Secretary of Education	Higher Education Institutions	Certification of Institutions	24 Pa. C.S.A. § 65-6501	Approval and oversight of institutions of higher education	This chapter establishes the basic standards for degree-granting institutions in Pennsylvania, procedures for establishing new institutions, making fundamental changes to existing institutions, and revoking institutional authorization. It also protects the use of the words "college," "university," and "seminary."

Governing Body	Sector Impacted	Statute Name	Citation	Activity	Description
Secretary of Education	Higher Education Institutions	Public School Code of 1949, as amended	24 Pa. C.S.A. § 65-6503E; Act 69 of 2012	Permits degree-granting institutions to add programs without approval by the Department of Education	This Act allows non-profit colleges and universities that have operated continuously in the state for at least 10 years and have accreditation to offer new programs and degrees without PDE approval.
State Military Commission	Children of Veterans	Act 1133 of 1987-State Veterans Commission Act, as amended	24 Pa. C.S.A. § 87-8701	Establishes the Educational Gratuity Program	The Educational Gratuity Program provides financial assistance (up to $500 per semester/term for four years) to children of honorably discharged veterans who have service-connected disabilities and served during a period of war or armed conflict, or children of veterans who die or died in service during a period of war or armed conflict.

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