

2014 - 2015 Annual C.U.R.E. Report

Commonwealth Universal Research Enhancement



*CURE*



**pennsylvania**  
DEPARTMENT OF HEALTH

**Health Research Program**  
Pennsylvania Tobacco Settlement Act

Commonwealth of Pennsylvania  
Tom Wolf, Governor

Karen M. Murphy, Ph.D., R.N.  
Secretary of Health

## Message from the Secretary

On behalf of Governor Wolf, I am pleased to present the 2014-15 Annual Report of the Pennsylvania Commonwealth Universal Research Enhancement (CURE) Program. Established under Chapter 9 of Act 2001-77, the Tobacco Settlement Act, the CURE Program awards grants to Pennsylvania-based organizations for biomedical research, clinical investigations and health services research. Studies funded by the grants aim to improve the delivery of health care, promote health, prevent disease and injury, and translate research advances to community health care practice.

During state fiscal year (SFY) 2014-15, the fourteenth year of the CURE Program, health research grants totaling over \$44 million were awarded from Pennsylvania's share of the national tobacco settlement. Two types of health research grants were awarded: (1) formula grants, which were distributed by a pre-determined formula to institutions that already received funds from the National Institutes of Health (NIH); and (2) nonformula grants, which were selected through a competitive peer review process.

Twenty-six organizations received formula grants totaling \$30,179,100 during SFY 2014-15. These grants are funding 82 research projects and infrastructure projects, the majority of which are focused on biomedical research. Through these grants, researchers are addressing a broad range of research needs, such as bioengineering, biology of development and aging, cancer, cardiovascular disease, cell biology, diabetes, digestive sciences, endocrine, metabolism, nutrition and reproductive sciences, health of populations, hematology, immunology, infectious diseases, neuroscience, respiratory sciences, and substance abuse.

The Department of Health (Department) also awarded three new competitive nonformula grants totaling \$14,201,440. These grants will support studies on big data in health research.

Over the past fourteen years, the Department of Health has awarded nearly \$842 million in CURE Program grants. These grants fund laboratory construction, state-of-the-art research equipment acquisition and maintenance, ongoing research programs, and new research studies. The impact of the CURE program has been immeasurable. Its depth and breadth of research discoveries have included new developments in smoking cessation, genome-based therapeutics, heart and lung disease, nutrition and obesity, addiction, as well as pancreatic, liver, breast and lung cancers and leukemia. We invite you to learn more about this program and other department of Health initiatives by visiting the Department's website at <http://www.health.pa.gov>.



Karen M. Murphy, Ph.D., R.N.  
Secretary of Health

# Health Research Advisory Committee (as of June 30, 2015)

## Chair:

**Karen M. Murphy, Ph.D., R.N.**  
Secretary of Health  
Commonwealth of Pennsylvania

## Members:

**Dwight Davis, M.D.**  
Professor of Medicine and Medical Director, Cardiac Rehabilitation Program  
Pennsylvania State University School of Medicine

**Karen Wolk Feinstein, Ph.D.**  
President  
Jewish Healthcare Foundation

**Lewis H. Kuller, M.D., Dr. P.H.**  
University Professor of Public Health, Department of Epidemiology  
Graduate School of Public Health at the University of Pittsburgh

**Arthur S. Levine, M.D.**  
Senior Vice Chancellor for the Health Sciences and Dean, School of Medicine  
University of Pittsburgh

**Michael S. Parmacek, M.D.**  
Herbert C. Rorer Associate Professor of Medical Sciences, Division of Cardiovascular Medicine  
University of Pennsylvania Health System

**Lisa Staiano-Coico, Ph.D.**  
President  
The City College of New York

**Kim Smith-Whitley, M.D.**  
Assistant Professor of Pediatrics; Clinical Director, Division of Hematology  
The Children's Hospital of Philadelphia

# Contents of the Annual 2014-15 CURE Program Report

The Annual 2014-15 CURE Program Report consists of an overview of the health research program, accomplishments of the program for the 2014-15 state fiscal year, and a financial report of grant awards and expenditures for the year. This report also includes separate annual progress reports for each grant recipient and a research development report on the commercialization of research for recipients of \$400,000 or more in formula funds, as listed below.

## Albert Einstein Healthcare Network

- 2014 Formula Grant

## Allegheny-Singer Research Institute

- 2012 Formula Grant
- 2014 Formula Grant

## American College of Radiology

- 2010 Formula Grant
- 2011 Formula Grant
- 2012 Formula Grant
- 2014 Formula Grant
- Research Development Report

## Baruch S. Blumberg Institute (formerly Institute for Hepatitis and Virus Research)

- 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics

## Carnegie Mellon University

- 2010 Formula Grant
- 2011 Formula Grant
- 2012 Formula Grant
- 2014 Formula Grant
- Research Development Report

## Children's Hospital of Philadelphia

- 2010 Formula Grant
- 2011 Formula Grant
- 2012 Formula Grant
- 2014 Formula Grant
- Research Development Report

## Drexel University

- 2011 Formula Grant
- 2012 Formula Grant
- 2014 Formula Grant
- Research Development Report

## Duquesne University

- 2010 Formula Grant
- 2011 Formula Grant
- 2012 Formula Grant
- 2014 Formula Grant

## Geisinger Clinic

- 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
- 2011 Nonformula Grant on Translational Genomics
- 2012 Formula Grant
- 2014 Formula Grant
- 2014 Nonformula Grant on Big Data

## Haverford College

- 2010 Formula Grant
- 2011 Formula Grant

- 2012 Formula Grant
- Hepatitis B Foundation
  - 2014 Formula Grant
- Indiana University of Pennsylvania
  - 2010 Formula Grant
- Institute for Cancer Research (formerly Fox Chase Cancer Center)
  - 2012 Formula Grant
  - 2014 Formula Grant
  - Research Development Report
- Lankenau Institute for Medical Research
  - 2012 Formula Grant
  - 2014 Formula Grant
- Lehigh University
  - 2012 Formula Grant
  - 2014 Formula Grant
- Lincoln University
  - 2012 Formula Grant
- Magee-Womens Research Institute
  - 2014 Formula Grant
  - Research Development Report
- Monell Chemical Senses Center
  - 2014 Formula Grant
- National Disease Research Interchange
  - 2014 Formula Grant
- National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation
  - 2010 Formula Grant
  - 2011 Formula Grant
  - 2012 Formula Grant
  - 2014 Formula Grant
  - Research Development Report
- Pennsylvania State University
  - 2010 Formula Grant
  - 2010 Nonformula Grant on Substance Abuse
  - 2011 Formula Grant
  - 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
  - 2012 Formula Grant
  - 2014 Formula Grant
  - Research Development Report
- Philadelphia College of Osteopathic Medicine
  - 2011 Formula Grant
  - 2012 Formula Grant
- Salus University
  - 2014 Formula Grant
- Swarthmore College
  - 2014 Formula Grant
- Temple University
  - 2010 Formula Grant
  - 2011 Formula Grant
  - 2012 Formula Grant
  - 2014 Formula Grant
  - Research Development Report
- Thomas Jefferson University
  - 2010 Formula Grant
  - 2011 Formula Grant

- 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
  - 2012 Formula Grant
  - 2014 Formula Grant
  - Research Development Report
- Treatment Research Institute
- 2010 Nonformula Grant on Substance Abuse
  - 2014 Formula Grant
- UE LifeSciences Inc.
- 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
- University of Pennsylvania
- 2010 Formula Grant
  - 2010 Nonformula Grant on Substance Abuse
  - 2011 Formula Grant
  - 2011 Nonformula Grant on Translational Genomics
  - 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
  - 2012 Formula Grant
  - 2014 Formula Grant
  - 2014 Nonformula Grant on Big Data
  - Research Development Report
- University of Pittsburgh
- 2010 Formula Grant
  - 2010 Nonformula Grant on Substance Abuse
  - 2011 Formula Grant
  - 2012 Formula Grant
  - 2014 Formula Grant
  - 2014 Nonformula Grant on Big Data
  - Research Development Report
- University of the Sciences in Philadelphia
- 2011 Formula Grant
  - 2012 Formula Grant
  - 2014 Formula Grant
- Wistar Institute of Anatomy and Biology
- 2011 Nonformula Grant on Commercialization of Research Related to Cancer Diagnostics and Therapeutics
  - 2014 Formula Grant
  - Research Development Report

# Health Research Program Overview and Accomplishments

## Overview

Act 2001-77, the Tobacco Settlement Act (Act), authorized the Pennsylvania Department of Health to establish the Commonwealth Universal Research Enhancement (CURE) Program to fund health research using tobacco settlement monies. Of the tobacco settlement funds, 13.6 percent (called “formula funds”) are awarded by formula to institutions that have previously received awards from the National Institutes of Health (NIH) and National Cancer Institute (NCI); 5.4 percent (called “nonformula funds”) are awarded by competitive peer review.

The CURE program provides broad-based health research grants to Pennsylvania-based researchers, universities, medical schools and other institutions. A grant may be used to support more than one research project, but all research projects must be completed within 48 months of the start of the grant. Research projects may focus on basic biomedical research, patient-oriented clinical investigations or health services research. Up to 50 percent of the grant funds may be spent on infrastructure, which is defined in Act 149 of 2002 and includes office equipment and supplies, nonprofessional personnel, and laboratory or building construction or renovations used to conduct research.

Health research funds are awarded to projects that are consistent with the program’s research priorities. These priorities are determined by the Department in conjunction with the Health Research Advisory Committee. In developing the research priorities, consideration is given to the national health promotion and disease prevention objectives as applied to Pennsylvania. Priorities focus on critical research areas and the disparities in health status that occur among various populations within the commonwealth.

Each year, recipients of health research grant awards report progress on research projects. This information is used to compile the annual report to the legislature. This year’s annual report, as well as past reports, can be found at <http://www.health.state.pa.us/cure>. This website is continually updated with the most recent information about the health research program, including announcements concerning research priorities, request for applications and meetings of the Health Research Advisory Committee.

## Health Research Advisory Committee

Chaired by the secretary of health, this eight-member advisory committee provides advice and recommendations on research priorities, grant accountability and evaluation procedures, and other related issues. Health research grants awarded by the CURE Program must address research priorities, which are established by the Department in conjunction with the Health Research Advisory Committee. The research priorities are reviewed and revised as needed. The committee met on one occasion during the 2014-15 state fiscal year. At the November meeting, the committee recommended that all of the nonformula funds for 2014-2015 be focused on research related to “big data” in Health Research.

Notices of the committee meeting were advertised in the local newspaper and on the Department's CURE website. Minutes of the committee meetings were posted on the CURE web page after the committee approved the minutes.

## **Health Research Priorities and Grant Awards**

Separate health research priorities are established for formula and nonformula funds. The priorities are reviewed each year and revised as necessary. The health research priorities for the formula funds have remained unchanged since the first year of the program, while the research priorities for the nonformula funds have changed every year. The priorities for the formula funds are listed below, followed by the priorities for nonformula funds for the state fiscal year 2014-15. Nonformula research priorities for years prior to 2014-15 may be viewed at the CURE web page (<http://www.health.state.pa.us/cure>) under the "CURE Health Research Priorities" link.

### **Priorities for Formula-Funded Research**

Broad-based research priorities were established for the formula-funded research so that institutions could concentrate on the most promising areas of research depending on their areas of expertise, which vary widely. The research priorities for the formula grants are as follows.

The research priorities shall include the identification of critical research areas, disparities in health status among various commonwealth populations, expected research outcomes and benefits, and disease prevention and treatment methodologies.

The research priorities are clinical, health services and/or biomedical research as defined in Act 2001-77. The ultimate goal of the research should be to improve health status and access. The Department should encourage, through the application process and accountability requirements, research that:

- emphasizes collaboration;
- promotes business and community involvement;
- increases infrastructure and research capacity;
- increases the number of new investigators, new grants, new discoveries and new products;
- leverages new and existing research funds; and
- leads to population-based applications that address disparities in health status among various commonwealth populations.

An institution that receives \$400,000 or more in formula funds shall also comply with the requirements of Section 908 (c) of Act 2001-77.

### **Priorities for 2014-15 Nonformula-Funded Research (recommended on Nov. 4, 2014)**

For the purpose of priority setting, the Health Research Advisory Committee recommends combining the two nonformula funding categories of clinical and health services research and other research. At least 50 percent of the funds must be spent on clinical research, health

services research, or both clinical research and health services research. The research priority for nonformula-funded research is Big Data in Health Research.

### Big Data in Health Research

The priority is research to develop methods, software and other technologies designed to analyze vast data sets at the level of molecules, proteins, organelles, cells, tissues, organs, physiological systems, organisms, populations, health care systems and ecosystems.

With the rapid expansion of high-throughput laboratory technologies and electronically integrated health care systems, biomedical researchers have access to more and more complex data than ever before. Vast data sets exist at the level of molecule, protein, organelle, cell, tissue, organ, physiological system, organism, population, health care system and ecosystem. Health care systems now electronically record an ever-increasing volume and variety of variables from patient monitoring systems, imaging, and “omics” technologies, as well as data in electronic health records (EHRs). The major challenge now is to manage these large and growing data sets and discover within them insights that can guide future research, education and clinical care.

Pennsylvania institutions are currently well represented in major national health research initiatives focused on big data, including the National Institutes of Health (NIH) Big Data to Knowledge (BD2K) and the Patient-Centered Outcomes Research Institute (PCORI) Clinical Data Research Networks (CDRN). The commonwealth is well positioned to take a leadership role in advancing the field and exploiting its expertise and resources for significant advances in biomedical research and health care. The goal moving forward is to embrace the size and complexity of available data through the transfer, merging, storage, visualization and processing of disparate data and the use of new algorithms and software tools to computationally discover predictive and causal relationships.

Research activities should lead to improved design, implementation and utilization of data systems, both research and clinical, to enhance the exploitation of data from the molecular to the population level to improve the health and well-being of Pennsylvanians.

Funding for the big data priority must be spent on biomedical research or clinical research or health services research or any combination of these types of research as defined in Act 2001-77. Activities that are not biomedical, clinical or health services research as defined by Act 2001-77 will not be considered.

#### Research may include, but is not limited to, the following areas:

- Research to develop algorithms and software/application programming interfaces to discover causality in big data from multiple sources. Some examples of driving biomedical projects on which to focus these efforts include cancer metastases, neurodegenerative disorders and autoimmune diseases.
- Research that integrates some or all of the following data: uni- or multimodal, multiplatform, or multiscale data across diverse data types and sources (for example, omics, imaging, laboratory, clinical, socioeconomic, environmental, social media, wearable or mobile devices, company loyalty programs, self-reported data) to create single or multiscale models

of molecular, cellular, organ, system, organism, or population processes or behaviors. Some examples of driving biomedical projects on which to focus these efforts include obesity, chronic obstructive pulmonary disease, non-alcoholic fatty liver disease and infectious disease outbreaks/epidemics.

- Research focused on the integration and mining of the EHR systems of multiple health care providers and systems across the commonwealth for comparative effectiveness research or modeling. Some examples of driving clinical projects on which to focus these efforts include atrial fibrillation, diabetes mellitus and otitis media.
- Research to develop and test in community-based health care systems analytics software to identify linkages at the patient level (for example, clinical flags raised through comparison with hundreds to millions of other patients in the database with similar data) and at the system level (for example, quality assurance flags raised when trends are detected). Some examples of driving clinical projects include post-surgical complications, preventive screening, rare diseases and pharmacogenomic testing indicators.
- Clinical research or health services research or both types of research that integrate multiple data sources through cloud computing in a way that addresses issues related to security, confidentiality, and consent.
- Research to model statewide health behaviors, trends and needs prediction through the merging of multiple large data sets, including the integration of statewide datasets (for example, Pennsylvania Health Care Cost Containment Council [PHC4], Pennsylvania Cancer Registry, Epidemiologic Query and Mapping System [EpiQMS], Behavioral Risk Factor Surveillance System [BRFSS], Pennsylvania Statewide Immunization Information System [PA-SIIS]).

Research in the following areas will not be considered:

- Focus on enhancing computing infrastructure;
- Focus on data collection/generation or the development of technology to generate data;
- Secondary statistical or epidemiological analysis of single large data sets (or multiple comparable data sets of the same type of data);
- Narrow focus on a single disease without demonstration of generalizability of the selected approach to health research or clinical care more broadly;
- Genome-wide association studies or other research focused on identifying disease risk or cause rather than on developing methods for using large omic or other data sets to identify disease risk or cause; and
- Design and development of registries, tissue banks, and other health data systems.

The research should hold the potential for addressing the health needs of underserved segments of the population, including rural, urban, racial/ethnic minorities, older adults or other high-risk constituencies in the commonwealth. To foster cross-institutional collaborative research among organizations across the commonwealth, an applicant must conduct research in collaboration with other research institutions and organizations. Collaboration is encouraged between academic institutions, health care systems, health care insurers, public health agencies or businesses, or any combination of these organizations. To the extent possible, organizations that are not academic medical centers, such as smaller colleges and universities and local public health agencies, should be included in addition to major research institutions. Collaboration with a minority-serving academic institution or a minority-serving community-based organization in

Pennsylvania is strongly encouraged and should include the mentoring and training of students. All research collaborators must play a substantive and meaningful role in multiple aspects of the proposed research. Research proposals must include clear objectives and targeted outcomes. No more than 50 percent of the funds may be used for research infrastructure as defined in the Act, as amended (for example, equipment, supplies, nonprofessional personnel, and laboratory or building construction or renovation).

### **Awarding of the 2014-15 Formula Grants**

The process of awarding the 2014-15 formula grants began with a determination of eligibility of Pennsylvania's institutions. The Department downloaded from the NIH Office of Extramural Research data on NIH awards made to Pennsylvania institutions for the past three years. For each Pennsylvania institution, the NIH provided the total awards made by all NIH Institutes and Centers (including those from NCI), as well as a list of the awards made to individual investigators at each institution. The list of awards included all types of financial support that NIH awarded to Pennsylvania institutions, including research grants, training grants, fellowships, R&D (research and development), except contracts.

Each potentially grant-eligible institution received the list of the NIH and NCI awards that were made to their institution along with a certification form. The organizations were asked to certify that the awards data were correct, or, if incorrect, to provide copies of the NIH notice of grant or contract award documentation for additional awards. As a result of this process, 26 organizations certified that they met the requirements for eligibility and would apply for funding. The Department then used the verified amounts of NIH/NCI funds for the 26 institutions that intended to apply for the funding to calculate the amount of formula funds available to each institution for 2014-15.

All health research fund recipients are required by Act 2001-77 to complete a grant application, which contains information specified in the Act as well as other information deemed necessary by the Department. It should be noted that the application includes a memorandum of understanding that requires applicants to abide by federal ethical and procedural standards of conduct as prescribed by the NIH on the date that the memorandum is executed.

On Nov. 13, 2014, the Department emailed the grant application to the 26 institutions that indicated they were eligible and planning to apply for formula funds. Applications were due on Dec. 30, 2014, with a start-up date of Jan. 1, 2015.

The amount of the formula grant awards varied widely, from approximately \$324 to \$5 million. Typically, the smaller grantees invested in ongoing research or new research projects that could be completed within one year, whereas organizations receiving millions of dollars used their funds to support multiple new and existing research projects and research infrastructure projects to be carried out over the four years allowed by Act 2001-77.

The 2014-15 formula grants funded a total of 76 research projects and 6 research infrastructure projects. Of these projects, 78 percent were biomedical research, 11 percent were clinical research and 11 percent were health services research.

At the time the grant applications were submitted to the Department, 26 percent of the proposed research projects reported other sources of funding in addition to the formula funds to support the proposed research activities. Seventeen percent of the projects were seeking other sources of funding to help continue or expand their research efforts.

The adoption of broad-based research priorities led to a wide range of research projects, although cancer outranked other areas as the primary focus. The areas of research addressed by the 76 research projects are shown below.

<b>Focus of Research Projects</b>		
<b>Research Focus</b>	<b>Number of Projects</b>	<b>Percentage*</b>
Oncological sciences	16	21%
Cell biology, biological chemistry, macromolecular biophysics, genomes and genetics	12	16%
Neurosciences	11	14%
Health of populations, behavioral and biobehavioral processes	10	13%
Bioengineering, surgical sciences and technology	6	8%
Immunology	6	8%
Endocrine, metabolism, nutrition and reproductive sciences	5	7%
Infectious diseases and microbiology	2	3%
Hematology	2	3%
Cardiovascular sciences	2	3%
Digestive sciences	2	3%
Biology of development and aging	1	1%
Respiratory sciences	1	1%
<b>Total research projects</b>	<b>76</b>	<b>101%</b>

\* Percentages may not total 100% due to rounding.

### **Awarding of the 2014-15 Nonformula Grants**

For state fiscal year 2014-15, the Department of Health developed a Request for Applications (RFA) to solicit proposals for research projects that focused on Big Data in Health Research. On Jan. 21, 2015, the RFA was posted collaborative research on the Department of General Services web page and emailed to persons who requested to be notified about health research RFAs. The announcement of the RFA was also sent to Pennsylvania colleges and universities, hospitals, medical schools, health departments, Statewide Health Improvement Partners (SHIP) and prior health research formula grant recipients.

Prior to the application due date, applicants were required to submit letters of intent describing their proposed research projects. These letters of intent were used to determine the disciplines needed for the peer review process.

All nonformula-funded research projects are subject to peer review, the process used by the NIH and other funding agencies to review and rate the scientific merit of research proposals. Researchers, physicians and scientists who possess expertise in the area addressed by the proposal serve on peer review panels. Peer review assures that the proposals are rated by experts who understand the scientific merit and significance of complex, highly specialized research methodologies.

For the 2014-15 nonformula grants, Oak Ridge Associated Universities (ORAU) managed the peer review process for the Department. Based on the research descriptions contained in the letters of intent, ORAU recruited peer reviewers. One peer review panel was formed.

The peer review panel also reviewed the proposals to determine if there were any ethical issues. According to Act 2001-77, the secretary of health must convene an Ethics Advisory Board if there are any ethical issues that may lead to the denial of funding. In 2014-15, none of the projects were found to have any ethical issues that would lead to the denial of funding.

Based on the rankings established by the relevant peer review panel, the Department's final review committee recommended that the top three collaborative research on Big Data in Health Research proposals be awarded nonformula research grants, with start-up dates of June 1, 2015.

## **Performance Review**

### **Overview of the Process**

According to Act 2001-77, any applicant that receives a health research grant is subject to a performance review at the end of the research project or more often as deemed necessary by the Department. The Department contracted with Oak Ridge Associated Universities to oversee and manage the performance review process. Two types of performance reviews are performed each year: (1) final performance reviews for grantees that have completed their research projects; and (2) interim performance reviews of nonformula grants when they are partially completed. The performance reviews are based on the requirements specified in Act 2001-77 and the criteria developed by the Department in consultation with the Health Research Advisory Committee.

The following criteria are applied to every project contained in the formula grant using information submitted by research grant recipients. The criteria for formula and nonformula grants are slightly different. Formula grants are not selected by a peer review process, whereas nonformula grants are subject to peer review prior to selection for funding by the Department. Therefore, for nonformula grants, the performance reviewers are not asked to consider questions that were considered during peer review, e.g., questions concerning the significance of the project for improving health and adequacy of research design.

### **Formula Grant Evaluation Criteria**

**How well did the project meet its stated objectives? If objectives were not completely met, was reasonable progress made?**

- Did the project meet the stated objectives?
- Were the research design and methods adequate in light of the project objectives?
- Consider these questions about data and empirical results: Were the data developed sufficiently to answer the research questions posed? Were the data developed in line with the original research protocol?
- If changes were made to the research protocol, was an explanation given, and, if so, is it reasonable?
- Consider (only for clinical research projects) the extent of laboratory and clinical activities initiated and completed and the number of subjects relative to the target goal.
- Were sufficient data and information provided to indicate or support the fact that the project met its objectives or made acceptable progress?
- Were the data and information provided applicable to the project objectives listed in the strategic research plan?

**What is the likely beneficial impact of this project? If the likely beneficial impact is small, is it judged reasonable in light of the dollars budgeted?**

- What is the significance of this project for improving health?
- Consider the value of the research completed toward eventual improvement in health outcomes.
- Consider any changes in risk factors, services provided, incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of impact and effectiveness of the research being conducted.
- Consider any major discoveries, new drugs, and new approaches for prevention, diagnosis, and treatment that are attributable to the completed research project.
- What are the future plans for this research project?

**Did the project leverage additional funds, or were additional grant applications submitted as a result of the project?**

- If leveraging of funds was expected, did these funds materialize?
- Are the researchers planning to apply for additional funding in the future to continue or expand the research?

**Did the project result in any peer-reviewed publications, licenses, patents or commercial development opportunities? Were any of these submitted/filed?**

- If any of the above listed were expected, did these materialize?
- Are the researchers planning to submit articles to peer-reviewed publications, file for any licenses or patents, or begin any commercial development opportunities in the future?
- Consider the number/quality of each.

**Did the project enhance the quality and capacity for research at the grantee's institution?**

- Were there improvements made to infrastructure?
- Were any new investigators added, or were any researchers brought into the institution to help carry out this research?
- Were funds used to pay for research performed by pre- or post-doctoral students?

**Did the project lead to collaboration with research partners outside of the institution or new involvement with the community?**

- Are the researchers planning to begin any collaborations as a result of the research?
- For clinical research only: Consider the number of hospitals and health care professionals involved and the extent of penetration of the studies throughout the region or the commonwealth.

**Nonformula Grant Evaluation Criteria**

**How well did the grant meet its stated objectives? If objectives were not completely met, was reasonable progress made?**

- Did the grant meet the stated objectives?
- Consider these questions about the data and empirical results: Were the data developed sufficiently to answer the research questions posed? Were the data developed in line with the original research protocol?
- If changes were made to the research protocol, was an explanation given, and, if so, was it reasonable?
- Consider (only for clinical research grants) the extent of laboratory and clinical activities initiated and completed and the number of subjects relative to the target goal.
- Were sufficient data and information provided to indicate or support the fact that the project met its objectives or made acceptable progress?
- Were the data and information provided applicable to the project objectives listed in the strategic plan?

**What is the likely beneficial impact of this grant? If the likely beneficial impact is small, is it judged reasonable in light of the dollars budgeted?**

- Consider any changes in risk factors, services provided, incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of impact and effectiveness of the research being conducted.
- Consider any major discoveries, new drugs, and new approaches for prevention, diagnosis, and treatment that are attributable to the completed research grant.
- What are the future plans for this research grant?

**Did the grant leverage additional funds or were additional grant applications submitted?**

- If leveraging of funds was expected, did these funds materialize?

- Are the researchers planning to apply for additional funding in the future to continue or expand the research?

**Did the grant result in any peer-reviewed publications, licenses, patents or commercial development opportunities? Were any of these submitted/filed?**

- If any of the above listed were expected, did these materialize?
- Are the researchers planning to submit articles to peer-reviewed publications, file for any licenses or patents or begin any commercial development opportunities in the future?
- Consider the number/quality of each and what was proposed in the original application.

**Did the grant enhance the quality and capacity for research at the grantee's institution?**

- If any improvements in infrastructure were expected, were they made?
- Were any new investigators added, or were any researchers brought into the institution to help carry out this research?
- Were funds used to pay for research performed by pre- or post-doctoral students?

**Did the grant lead to collaboration with research partners outside of the institution or new involvement with the community?**

- Are the researchers planning to begin any collaboration as a result of the research?
- For clinical research only: Consider the number of hospitals and health care professionals involved and the extent of penetration of the studies throughout the region or the commonwealth.

**Assignment of Performance Review Ratings to Research Projects and Grants**

Research projects within each grant are reviewed and assigned an overall rating by a minimum of three reviewers. These reviewers are experts in the technical fields of the grant projects. They also have been screened for conflicts of interest. Reviewers are instructed not to compare research projects to each other but to base all comments on the documented evaluation criteria.

The final overall rating for a research project is the average rating obtained from all of the reviewers of each project. If a grant consists of only one research project, the overall grant rating will be the average overall rating for the research project. If the grant consists of more than one research project, the overall grant rating is an average rating for all projects funded by the grant.

The performance review ratings are as follows:

1.00 – 1.33 = Outstanding

1.34 – 2.66 = Favorable

2.67 – 3.00 = Unfavorable

The rating is made according to the following guidelines

- Outstanding indicates that: (1) major strengths were identified throughout the project with few, if any, weaknesses; (2) the project met all or most of its stated objectives; and (3) the project is likely to have some beneficial impact.
- Favorable indicates that: (1) strengths were identified within the project with one or more weaknesses; (2) the project met some of its stated objectives and/or made acceptable progress to do so; and/or (3) the project may or may not have a beneficial impact.
- Unfavorable indicates that: (1) major weaknesses were identified that are pervasive throughout the project; (2) the project did not meet any of its objectives or did not make any acceptable progress to meet the objectives; (3) the project is not likely to have any beneficial impact; (4) insufficient data and information were provided to support the fact that the project met any of its objectives or made acceptable progress; or (5) the information and data provided were not applicable to the project objectives listed in the strategic plan.

The overall rating reflects the adequacy of the research activities performed during the funding period, taking into consideration all of the significant attributes identified in the review, including the following categories:

- Major strength – an attribute of the project or grant that clearly distinguishes it well above the standards set by the program objectives and that provides compelling justification for continued funding
- Strength – a noteworthy attribute of the project or grant compared to the objectives
- Weakness – a noteworthy deficiency or flaw compared to program objectives
- Major weakness – a very serious, if not fatal, flaw or deficiency compared to the objectives or common research practices

### **Use and Impact of Performance Review Reports**

The Department sends a report of the performance review to the grantees. The report includes the overall rating for the grant and the ratings for each research project contained in the grant, as well as reviewer comments on the strengths and weaknesses of the research projects and recommendations for future improvement. The Department requires that each grantee submit a written response describing how the weaknesses and recommendations will be addressed in future health research grants.

A grant that receives an unfavorable performance review by the Department may be subject to a reduction in funding or become ineligible for health research funding in the future. The consequence of receiving one unfavorable grant rating is a written warning outlining the future

funding impacts of subsequent unfavorable ratings. A second consecutive unfavorable grant rating will render the grantee ineligible to receive any nonformula funds in the next funding cycle and will result in a 25 percent reduction in the amount of formula grant funds that the grantee would have received if there were no reduction. A third consecutive unfavorable grant rating will render the grantee ineligible to receive any nonformula funds in the next funding cycle and will result in a 50 percent reduction in the amount of formula grant funds that the grantee would have received if there were no reduction. A fourth consecutive unfavorable grant rating will render the grantee ineligible to receive any nonformula or formula funds in the next funding cycle.

### **Progress Reports for Research Grants Active during SFY 2014-15**

This report contains a summary of the research progress made by the 2010-11, 2011-12, 2012-13, and 2014-15 grantees during the 2014-15 state fiscal year (July 1, 2014 – June 30, 2015). For information on grants that ended prior to July 1, 2010, refer to prior annual CURE program reports at <http://www.health.state.pa.us/cure>.

## **Research Development Accomplishments of Formula Grant Recipients**

In accordance with Act 2001-77, the Department of Health requested institutions receiving \$400,000 or more in formula funds to describe various initiatives and activities that they would undertake to enhance the commercialization of research results. The grant applications for these institutions included the following information related to commercialization initiatives:

- A plan for licensure and commercial development of research results;
- Copies of standard agreement forms used to license research results;
- A description of opportunities planned to train researchers about licensing and the commercial development of research;
- Outreach efforts planned to inform the business community of research developments at the institution;
- Plans to establish partnerships with postsecondary educational institutions for training students and health professionals in biomedical research; and
- A plan for collaboration with Pennsylvania's Life Sciences Greenhouses and other institutions to participate in the development of research.

Annual progress reports submitted by grantees receiving \$400,000 or more in formula funds included an update describing accomplishments related to these training, outreach and commercialization activities. A report of research development activities for the 2014-15 state fiscal year is included with each institution's progress report.

# Financial Report

All of the \$45,597,103 allocated for the Health Research Program for the state fiscal year 2014-15 was committed to health research grants or a contract for peer and performance review. This section of the report provides an overview of the health research funding provisions of Act 2001-77 and summarizes the commitments and expenditures for the grants that were awarded during the 2010-11 through 2014-15 state fiscal years. These are the only grants that may have incurred expenditures during the 2014-15 state fiscal year. The financial reports for grants awarded during prior state fiscal years may be viewed in prior annual CURE reports at <http://www.health.state.pa.us/cure>.

Chapter 3 of Act 2001-77 allocated 19 percent of the tobacco settlement funds for health research. Eighteen percent of the tobacco settlement funds are allocated in accordance with Sections 906 and 908 of the Act, and 1 percent of the tobacco settlement funds are allocated in accordance with Section 909.

Section 906 funds are divided into two separate types of funds. Seventy percent of Section 906 funds (called “formula funds”) are awarded on the basis of a formula calculated using an institution’s average award from the NIH for the past three consecutive years. Thirty percent of Section 906 funds (called “nonformula funds”) are awarded as a result of a competitive bid. Section 908 further breaks down the distribution of the formula funds, reserving 20 percent of Section 906 formula funds for two institutions that averaged more than \$175 million in NIH funding and 17 percent of the Section 906 funds for one institution that averaged more than \$175 million in federally supported research and development funds as reported by the National Science Foundation, as well as more than \$60 million in NIH funding.

Section 909 funds (“formula funds”) are allocated to institutions on the basis of a formula calculated using an institution’s average award from the National Cancer Institute for the past three years.

## **2010-11 Grant Awards and Expenditures**

During the 2010-11 state fiscal year, the Department awarded \$44,440,665 in formula grants and \$16,684,527 in nonformula grants. Tables 1 and 5 show the amount of the grant awards and the expenditures for the last five state fiscal years.

## **2011-12 Grant Awards and Expenditures**

The Department awarded \$42,126,900 in formula grants and \$15,364,071 in nonformula grants. Tables 2 and 6 show the amount of the grant awards and the expenditures for the last four state fiscal years.

## **2012-13 Grant Awards and Expenditures**

The Department awarded \$41,896,467 in formula grants. Table 3 shows the amount of the grant awards and the expenditures for the last three state fiscal years.

## **2013-14 Grant Awards and Expenditures**

The process of awarding the SFY 2013-14 research grants was halted in October 2013 due to the freezing of discretionary funding from the Master Settlement Agreement by the state as a result of an unfavorable arbitration ruling. Therefore, no health research grants were awarded, and no funds from the SFY 2013-14 were expended during 2013-14 and 2014-15 state fiscal years. In May 2015, the funds were approved for release, and plans were made to issue the 2013-14 formula funds in the amount of \$14,965,807 in response to the formula RFA to be issued during the 2015-16 state fiscal year. Also, plans were made to award the 2013-14 nonformula funds in the amount of \$5,737,203 in response to the nonformula RFA to be released during the 2015-16 state fiscal year.

## **2014-15 Grant Awards and Expenditures**

The Department awarded \$30,179,100 in formula grants and \$14,201,440 in nonformula grants. The \$14,201,440, which was awarded in nonformula funds for research on big data, includes \$5,737,203 from the 2013-14 state fiscal year appropriation and \$8,464,237 from the 2014-15 state fiscal year appropriation. Plans were made to award \$2 million of the remaining 2014-15 state fiscal year nonformula funds during the upcoming state fiscal year in response to a Request for Applications for an expanded access study on the effect of pharmaceutical grade Cannabidiol (CBD) in children with intractable epilepsy.

Tables 4 and 7 show the amount of the grant awards and the expenditures for the last state fiscal year.

## **Anticipated Disbursement Schedule by Fiscal Year**

The 2014-15 Health Research Grant recipients received the full amount of the grant award. When grant funds are awarded in a fiscal year, recipients are required to invest the funds in an insured interest-bearing account or in accordance with other investment guidelines contained in the grant agreement. Earnings derived from the investments must be applied toward health research projects approved by the Department. Any unspent funds at the completion of the grant award period are returned to the Department for reinvestment in the tobacco settlement investment account.

## **Aggregate Amount of Research Grants Awarded to Each Institution**

Some institutions received both formula and nonformula grants. Table 8 provides the aggregated amount of research grants awarded to each institution since the inception of the program.

**Table 1. 2010-11 Formula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Years 2010-11; 2011-12; 2012-13; 2013-14 and 2014-15**

<b>2010-11 Formula Grant Institutions</b>	<b>Funds Awarded</b>	<b>Expenditures SFY 2010-11*</b>	<b>Expenditures SFY 2011-12*</b>	<b>Expenditures SFY 2012-13*</b>	<b>Expenditures SFY 2013-14*</b>	<b>Expenditures SFY 2014-15*</b>
Albert Einstein Healthcare Network	\$74,176.00	\$16,357.85	\$27,343.73	\$30,550.33	\$0	\$0
Allegheny-Singer Research Institute	\$120,384.00	\$81,034.28	\$39,239.17	\$0	\$0	\$0
American College of Radiology	\$1,700,785.00	\$55,754.87	\$309,793.82	\$249,250.87	\$433,782.02	\$395,152.25
Carnegie Mellon University	\$860,191.00	\$3,173.18	\$176,038.26	\$370,447.84	\$286,055.28	\$24,794.85
Children's Hospital of Philadelphia	\$3,548,977.00	\$124,690.81	\$574,061.80	\$1,009,668.47	\$1,057,210.70	\$784,655.30
Children's Hospital of Pittsburgh	\$527,174.00	\$59,678.80	\$229,628.10	\$219,468.03	\$0	\$0
Drexel University	\$1,275,294.00	\$94,346.47	\$923,584.57	\$169,233.83	\$92,512.02	\$0
Duquesne University	\$116,091.00	\$19,739.02	\$53,106.39	\$16,598.28	\$13,037.64	\$9,675.51
Fox Chase Cancer Center	\$2,851,328.00	\$622,203.00	\$1,250,433.00	\$796,396.00	\$193,506.00	\$0
Geisinger Clinic	\$80,673.00	\$0	\$80,695.55	\$0	\$0	\$0
Haverford College	\$30,855.00	\$2,301.00	\$9,005.00	\$7,061.00	\$5,734.00	\$6,820.00
Hepatitis B Foundation	\$859.00	\$374.50	\$485.28	\$0	\$0	\$0
Indiana University of Pennsylvania	\$9,268.00	\$0	\$2,665.01	\$1,391.44	\$4,071.82	\$624.32
Institute for Hepatitis and Virus Research	\$16,013.00	\$4,334.00	\$11,681.67	\$0	\$0	\$0
Lankenau Institute for Medical Research	\$175,518.00	\$77,932.36	\$97,649.10	\$0	\$0	\$0
Lehigh University	\$88,081.00	\$11,767.85	\$69,672.69	\$6,956.46	\$0	\$0
Lincoln University	\$33,493.00	\$2,500.00	\$30,998.90	\$0	\$0	\$0
Madlyn and Leonard Abramson Center for Jewish Life	\$17,571.00	\$0	\$17,589.60	\$0	\$0	\$0
Magee-Womens Research Institute and Foundation	\$1,209,415.00	\$448,831.81	\$760,592.25	\$0	\$0	\$0
Monell Chemical Senses Center	\$216,916.00	\$66,852.40	\$150,113.84	\$0	\$0	\$0
National Disease Research Interchange	\$62,393.00	\$27,700.07	\$26,292.41	\$8,453.52	\$0	\$0
National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation	\$967,922.00	\$17,345.92	\$316,642.29	\$347,026.87	\$71,014.83	\$220,295.18
Pennsylvania State University	\$7,001,127.00	\$897,653.00	\$1,558,769.00	\$2,382,554.00	\$1,559,319.00	\$608,062.00
Philadelphia College of Osteopathic Medicine	\$19,326.00	\$5,314.65	\$3,450.45	\$1,616.52	\$9,023.19	\$0
Pittsburgh Tissue Engineering Initiative, Inc.	\$9,815.00	\$1,066.48	\$8,759.19	\$0	\$0	\$0
Public Health Management Corporation <sup>1</sup>	\$17,081.00	\$153.76	\$16,952.86	\$0	\$0	\$0
Salus University <sup>2</sup>	\$45,203.00	\$8,732.36	\$36,511.52	\$0	\$0	\$0
Temple University	\$2,050,596.00	\$0	\$747,950.60	\$505,849.12	\$158,144.69	\$641,243.17
Thomas Jefferson University	\$3,085,950.00	\$182,305.61	\$1,285,901.40	\$1,078,311.82	\$421,661.70	\$133,569.08
Treatment Research Institute	\$139,351.00	\$12,280.00	\$78,857.00	\$48,832.00	\$0	\$0
University of Pennsylvania	\$8,236,620.00	\$151,026.83	\$2,679,609.46	\$1,724,083.80	\$2,103,350.05	\$1,580,041.58
University of Pittsburgh	\$8,236,620.00	\$1,007,002.00	\$2,673,345.00	\$2,643,538.00	\$1,250,056.00	\$681,500.00
UPMC McKeesport	\$32,934.00	\$0	\$32,942.82	\$0	\$0	\$0
Wistar Institute	\$1,582,665.00	\$558,727.67	\$1,039,567.95	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$44,440,665.00</b>	<b>\$4,561,180.55</b>	<b>\$15,319,929.68</b>	<b>\$11,617,288.20</b>	<b>\$7,658,478.94</b>	<b>\$5,086,433.24</b>

\* Grantees receive the full amount of the grant award at the start of the grant. They must invest the funds in an insured, interest-bearing account and apply earnings derived from the interest toward health research projects. Amounts shown in the expenditures columns include expenditures on funds derived from interest earnings. Therefore, an institution's total expenditures may exceed the amount shown in the "Funds Awarded" column, which shows the amount of the original grant award, excluding any interest earned.

<sup>1</sup> Formerly known as Philadelphia Health Management Corporation <sup>2</sup> Formerly known as Pennsylvania College of Optometry

**Table 2. 2011-12 Formula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Years 2011-12; 2012-13; 2013-14 and 2014-15**

<b>2011-12 Formula Grant Institutions</b>	<b>Funds Awarded</b>	<b>Expenditures SFY 2011-12*</b>	<b>Expenditures SFY 2012-13*</b>	<b>Expenditures SFY 2013-14*</b>	<b>Expenditures SFY 2014-15*</b>
Albert Einstein Healthcare Network	\$52,011.00	\$17,090.50	\$34,926.89	\$0	\$0
Allegheny-Singer Research Institute	\$98,254.00	\$15,540.03	\$83,126.27	\$0	\$0
American College of Radiology	\$1,777,126.00	\$29,336.40	\$278,096.35	\$552,813.06	\$574,943.29
Carnegie Mellon University	\$943,032.00	\$12,813.20	\$298,218.95	\$187,792.17	\$398,088.66
Children's Hospital of Philadelphia	\$3,521,179.00	\$185,024.88	\$787,484.70	\$832,433.80	\$743,290.31
Children's Hospital of Pittsburgh	\$228,401.00	\$75,380.48	\$146,650.35	\$0	\$0
Drexel University	\$1,320,271.00	\$196,185.28	\$901,616.09	\$190,035.00	\$37,418.25
Duquesne University	\$107,464.00	\$6,956.87	\$72,214.19	\$20,614.43	\$7,645.10
Fox Chase Cancer Center	\$2,472,183.00	\$1,004,939.00	\$1,171,868.00	\$301,082.00	\$0
Geisinger Clinic	\$75,516.00	\$13,559.74	\$47,475.80	\$0	\$0
Haverford College	\$28,802.00	\$9,737.00	\$12,428.00	\$6,652.00	\$0
Hepatitis B Foundation	\$654.00	\$282.50	\$371.76	\$0	\$0
Lankenau Institute for Medical Research	\$136,919.00	\$63,762.36	\$73,192.85	\$0	\$0
Lehigh University	\$80,151.00	\$8,829.43	\$37,964.35	\$34,225.77	\$0
Lincoln University	\$47,451.00	\$34,262.73	\$11,096.55	\$0	\$0
Magee-Womens Research Institute and Foundation	\$971,921.00	\$379,173.21	\$592,751.31	\$0	\$0
Monell Chemical Senses Center	\$210,715.00	\$77,210.70	\$133,569.87	\$0	\$0
National Disease Research Interchange	\$59,685.00	\$10,879.88	\$48,832.96	\$0	\$0
National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation	\$851,360.00	\$7,717.06	\$379,648.61	\$210,490.28	\$99,608.39
Pennsylvania State University	\$6,637,701.00	\$257,664.00	\$681,596.00	\$1,302,116.00	\$2,236,580.00
Philadelphia College of Osteopathic Medicine	\$16,761.00	\$4,528.77	\$1,793.42	\$0	\$6,233.88
Pittsburgh Tissue Engineering Initiative, Inc.	\$8,731.00	\$5,618.99	\$1,876.01	\$0	\$0
Salus University <sup>1</sup>	\$39,748.00	\$3,787.07	\$36,030.89	\$0	\$0
Temple University	\$2,186,053.00	\$254,153.71	\$175,940.42	\$1,085,580.06	\$177,735.21
Thomas Jefferson University	\$2,899,793.00	\$870,269.87	\$765,464.19	\$382,140.22	\$166,504.16
Treatment Research Institute	\$155,813.00	\$20,320.00	\$103,644.00	\$32,218.00	\$0
University of Pennsylvania	\$7,809,060.00	\$201,675.09	\$1,760,420.38	\$1,166,104.74	\$3,942,123.26
University of Pittsburgh	\$7,809,060.00	\$641,269.00	\$2,542,040.00	\$1,971,007.00	\$2,106,956.00
University of the Sciences in Philadelphia	\$32,583.00	\$0	\$7,343.47	\$9,002.95	\$1,192.67
Wistar Institute	\$1,548,502.00	\$740,018.42	\$814,367.06	\$0	\$0
<b>TOTAL</b>	<b>\$42,126,900.00</b>	<b>\$5,147,986.17</b>	<b>\$12,002,049.69</b>	<b>\$8,284,307.48</b>	<b>\$10,498,319.18</b>

\* See footnote on Table 1.

<sup>1</sup> Formerly known as Pennsylvania College of Optometry

**Table 3. 2012-13 Formula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Years 2012-13; 2013-14 and 2014-15**

<b>2012-13 Formula Grant Institutions</b>	<b>Funds Awarded</b>	<b>Expenditures SFY 2012-13*</b>	<b>Expenditures SFY 2013-14*</b>	<b>Expenditures SFY 2014-15*</b>
Albert Einstein Healthcare Network	\$61,734.00	\$13,371.03	\$48,433.14	\$0
Allegheny-Singer Research Institute	\$79,614.00	\$19,184.02	\$48,454.71	\$12,070.53
American College of Radiology	\$1,851,408.00	\$0	\$291,854.15	\$344,892.71
Carnegie Mellon University	\$1,028,926.00	\$44,624.73	\$114,736.42	\$249,259.35
Children's Hospital of Philadelphia	\$3,713,220.00	\$183,703.98	\$1,020,817.92	\$1,294,829.55
Drexel University	\$1,401,259.00	\$187,281.27	\$933,669.04	\$283,872.40
Duquesne University	\$100,224.00	\$16,090.81	\$28,347.88	\$24,634.50
Geisinger Clinic	\$110,249.00	\$15,100.54	\$58,502.56	\$28,575.68
Haverford College	\$18,238.00	\$2,445.18	\$2,869.00	\$10,235.32
Hepatitis B Foundation	\$720.00	\$360.00	\$360.28	\$0
Institute for Cancer Research <sup>1</sup>	\$2,176,686.00	\$380,307.00	\$1,722,373.00	\$77,547.00
Lankenau Institute for Medical Research	\$115,879.00	\$59,794.05	\$30,885.16	\$25,253.96
Lehigh University	\$75,533.00	\$5,032.50	\$38,180.84	\$28,315.06
Lincoln University	\$44,916.00	\$0	\$34,428.25	\$10,503.47
Magee-Womens Research Institute and Foundation	\$1,017,609.00	\$475,875.97	\$541,777.22	\$0
Monell Chemical Senses Center	\$234,200.00	\$93,320.64	\$140,941.48	\$0
National Disease Research Interchange	\$56,394.00	\$11,812.81	\$44,618.33	\$0
National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation	\$967,037.00	\$0	\$306,423.85	\$337,205.85
Pennsylvania State University	\$6,589,749.00	\$123,596.00	\$346,788.00	\$602,469.00
Philadelphia College of Osteopathic Medicine	\$14,266.00	\$5,117.90	\$452.36	\$603.92
Salus University <sup>2</sup>	\$40,030.00	\$2,524.79	\$0	\$0
Temple University	\$2,220,937.00	\$938,946.07	\$629,040.74	\$330,039.09
Thomas Jefferson University	\$2,776,880.00	\$525,803.34	\$1,153,013.66	\$416,071.50
Treatment Research Institute	\$174,793.00	\$7,706.00	\$167,510.00	\$0
University of Pennsylvania	\$7,752,646.00	\$247,241.74	\$4,485,746.64	\$869,581.44
University of Pittsburgh	\$7,752,646.00	\$782,140.00	\$3,174,804.00	\$1,580,164.00
University of the Sciences in Philadelphia	\$29,488.00	\$0	\$15,043.35	\$14,451.85
Wistar Institute	\$1,491,186.00	\$646,178.82	\$850,245.47	\$0
<b>TOTAL</b>	<b>\$41,896,467.00</b>	<b>\$4,787,559.19</b>	<b>\$16,230,317.45</b>	<b>\$6,540,576.18</b>

\* See footnote on Table 1.

<sup>1</sup> Formerly known as Fox Chase Cancer Center <sup>2</sup> Formerly known as Pennsylvania College of Optometry

**Table 4. 2014-15 Formula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Year 2014-15**

<b>2014-15 Formula Grant Institutions</b>	<b>Funds Awarded</b>	<b>Expenditures SFY 2014-15*</b>
Albert Einstein Healthcare Network	\$68,170.00	\$16,281.79
Allegheny-Singer Research Institute	\$42,788.00	\$0
American College of Radiology	\$1,268,999.00	\$0
Carnegie Mellon University	\$669,247.00	\$36,919.68
Children's Hospital of Philadelphia	\$3,695,893.00	\$0
Drexel University	\$1,079,197.00	\$267,468.39
Duquesne University	\$65,557.00	\$0
Geisinger Clinic	\$137,129.00	\$11,113.00
Hepatitis B Foundation	\$324.00	\$164.00
Institute for Cancer Research <sup>1</sup>	\$1,246,366.00	\$300,920.00
Lankenau Institute for Medical Research	\$80,638.00	\$41,017.95
Lehigh University	\$68,785.00	\$1,171.20
Magee-Womens Research Institute and Foundation	\$837,715.00	\$347,366.67
Monell Chemical Senses Center	\$187,425.00	\$34,331.35
National Disease Research Interchange	\$41,096.00	\$0
National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation	\$606,228.00	\$35,626.02
Pennsylvania State University	\$4,608,037.00	\$243,845.00
Salus University <sup>2</sup>	\$23,918.00	\$1,602.94
Swarthmore College	\$11,956.00	\$0
Temple University	\$1,656,950.00	\$0
Thomas Jefferson University	\$1,695,434.00	\$0
Treatment Research Institute	\$125,033.00	\$9,714.00
University of Pennsylvania	\$5,421,220.00	\$73,182.05
University of Pittsburgh	\$5,421,220.00	\$549,931.00
University of the Sciences in Philadelphia	\$6,940.00	\$0
Wistar Institute	\$1,112,835.00	\$542,391.85
<b>TOTAL</b>	<b>\$30,179,100.00</b>	<b>\$2,513,046.89</b>

\* See footnote on Table 1.

<sup>1</sup> Formerly known as Fox Chase Cancer Center <sup>2</sup> Formerly known as Pennsylvania College of Optometry

**Table 5. 2010-11 Nonformula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Years 2010-11; 2011-12; 2012-13; 2013-14 and 2014-15**

2010-11 Nonformula Grant Institutions	Funds Awarded	Expenditures SFY 2010-11*	Expenditures SFY 2011-12*	Expenditures SFY 2012-13*	Expenditures SFY 2013-14*	Expenditures SFY 2014-15*
Pennsylvania State University (Substance abuse)	\$2,191,427.00	\$0	\$502,175.09	\$491,233.52	\$523,221.75	\$654,018.04
Treatment Research Institute (Substance abuse)	\$4,493,185.00	\$3,338.00	\$539,778.00	\$1,068,633.00	\$1,273,261.00	\$1,584,636.00
University of Pennsylvania (Substance abuse)	\$4,999,999.00	\$11,653.42	\$1,024,485.01	\$1,667,875.18	\$1,461,356.32	\$807,632.50
University of Pittsburgh (Substance abuse)	\$4,999,916.00	\$0	\$1,022,089.76	\$941,514.59	\$1,124,199.15	\$1,766,928.71
<b>TOTAL</b>	<b>\$16,684,527.00</b>	<b>\$14,991.42</b>	<b>\$3,088,527.86</b>	<b>\$4,169,256.29</b>	<b>\$4,382,038.22</b>	<b>\$4,813,215.25</b>

\* See footnote on Table 1.

**Table 6. 2011-12 Nonformula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Years 2011-12; 2012-13; 2013-14 and 2014-15**

2011-12 Nonformula Grant Institutions	Funds Awarded	Expenditures SFY 2011-12*	Expenditures SFY 2012-13*	Expenditures SFY 2013-14*	Expenditures SFY 2014-15*
Apogee Biotechnology Corporation (Cancer commercialization)	\$832,608.00	\$62,616.68	\$489,326.26	\$282,119.40	\$0
Carnegie Mellon University (Cancer commercialization)	\$983,783.00	\$0	\$263,884.79	\$662,942.09	\$0
Geisinger Clinic (Cancer commercialization)	\$1,000,000.00	\$3,991.55	\$405,945.75	\$498,410.44	\$94,060.59
Institute for Hepatitis and Virus Research (Cancer commercialization)	\$909,170.00	\$5,588.00	\$379,464.00	\$437,439.00	\$88,245.44
Oncocotics, Inc. (Cancer commercialization)	\$1,295,646.00	\$0	\$247,439.77	\$1,051,203.00	\$0
The Pennsylvania State University (Cancer commercialization)	\$1,000,000.00	\$6,824.61	\$326,424.37	\$412,504.59	\$254,866.43
Thomas Jefferson University (Cancer commercialization)	\$744,156.00	\$0	\$305,078.98	\$439,077.02	\$484.41
UE Sciences Inc. (Cancer commercialization)	\$878,244.00	\$38,662.50	\$415,481.46	\$317,016.41	\$111,890.28
University of Pennsylvania (Cancer commercialization)	\$1,000,000.00	\$0	\$377,007.11	\$602,772.70	\$0
The Wistar Institute (Cancer commercialization)	\$991,990.00	\$10,769.60	\$357,134.29	\$542,382.76	\$94,350.42
Geisinger Clinic (Translational genomics)	\$2,909,969.00	\$22,593.59	\$413,990.00	\$604,197.70	\$563,857.51
University of Pennsylvania (Translational genomics)	\$2,818,505.00	\$0	\$383,451.06	\$781,914.95	\$801,395.80
<b>TOTAL</b>	<b>\$15,364,071.00</b>	<b>\$151,046.53</b>	<b>\$4,364,627.84</b>	<b>\$6,631,980.06</b>	<b>\$2,009,150.88</b>

\* See footnote on Table 1.

**Table 7. 2014-15 Nonformula Grants — Funds Awarded and Summary of Expenditures for State Fiscal Year 2014-15**

<b>2014-15 Nonformula Grant Institutions</b>	<b>Funds Awarded</b>	<b>Expenditures SFY 2014-15*</b>
Geisinger Clinic (Big Data)	\$4,385,863.00	\$0
University of Pennsylvania (Big Data)	\$4,772,786.00	\$0
University of Pittsburgh (Big Data)	\$5,042,791.00	\$0
<b>TOTAL</b>	<b>\$14,201,440.00</b>	<b>\$0</b>

\* See footnote on Table 1.

**Table 8. Total Grants Awards** — Formula and Nonformula Funds Awarded for State Fiscal Years 2001-02; 2002-03; 2003-04; 2004-05; 2005-06; 2006-07; 2007-08; 2008-09; 2009-10; 2010-11; 2011-12; 2012-13; 2013-14 and 2014-15

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Albert Einstein Healthcare Network	\$96,908	\$168,475	\$186,128	\$182,685	\$165,620	\$1,599,403
	\$147,561	\$141,075	\$135,484	\$119,376	\$74,176	
	\$52,011	\$61,734	\$0	\$68,170		
Allegheny-Singer Research Institute	\$4,240,705	\$307,259	\$264,887	\$209,634	\$226,528	\$6,440,579
	\$223,389	\$237,838	\$202,774	\$186,525	\$120,384	
	\$98,254	\$79,614	\$0	\$42,788		
American Aging Association	\$0	\$0	\$1,875	\$1,706	\$1,699	\$8,727
	\$1,638	\$1,809	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0		
American Association for Cancer Research	\$0	\$142,976	\$115,950	\$89,360	\$83,371	\$511,423
	\$79,766	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0		
American College of Radiology	\$0	\$2,053,097	\$2,156,639	\$2,372,081	\$2,590,126	\$24,903,801
	\$2,511,654	\$2,433,581	\$2,144,345	\$2,043,960	\$1,700,785	
	\$1,777,126	\$1,851,408	\$0	\$1,268,999		
Apogee Biotechnology Corporation	\$0	\$0	\$0	\$0	\$0	\$832,608
	\$0	\$0	\$0	\$0	\$0	
	\$832,608	\$0	\$0	\$0		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Arcadia University	\$0	\$0	\$0	\$0	\$17,426	\$32,581
	SFY 2006-07 \$15,155	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Bryn Mawr College	SFY 2001-02 \$9,368	SFY 2002-03 \$8,581	SFY 2003-04 \$10,932	SFY 2004-05 \$9,536	SFY 2005-06 \$9,544	\$82,486
	SFY 2006-07 \$10,431	SFY 2007-08 \$11,524	SFY 2008-09 \$12,570	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Carnegie Mellon University	SFY 2001-02 \$4,362,007	SFY 2002-03 \$1,081,443	SFY 2003-04 \$962,758	SFY 2004-05 \$822,602	SFY 2005-06 \$737,186	\$15,469,770
	SFY 2006-07 \$649,424	SFY 2007-08 \$710,806	SFY 2008-09 \$747,818	SFY 2009-10 \$910,547	SFY 2010-11 \$860,191	
	SFY 2011-12 \$1,926,815	SFY 2012-13 \$1,028,926	SFY 2013-14 \$0	SFY 2014-15 \$669,247		
Children's Hospital of Philadelphia	SFY 2001-02 \$2,800,005	SFY 2002-03 \$3,727,099	SFY 2003-04 \$3,657,085	SFY 2004-05 \$8,419,246	SFY 2005-06 \$7,612,406	\$62,004,913
	SFY 2006-07 \$3,315,523	SFY 2007-08 \$5,609,842	SFY 2008-09 \$8,349,536	SFY 2009-10 \$4,034,902	SFY 2010-11 \$3,548,977	
	SFY 2011-12 \$3,521,179	SFY 2012-13 \$3,713,220	SFY 2013-14 \$0	SFY 2014-15 \$3,695,893		
Children's Hospital of Pittsburgh	SFY 2001-02 \$479,289	SFY 2002-03 \$720,940	SFY 2003-04 \$723,892	SFY 2004-05 \$700,355	SFY 2005-06 \$722,169	\$7,712,756
	SFY 2006-07 \$732,956	SFY 2007-08 \$879,637	SFY 2008-09 \$958,038	SFY 2009-10 \$1,039,905	SFY 2010-11 \$527,174	
	SFY 2011-12 \$228,401	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Delaware Water Gap Science Institute	SFY 2001-02 \$15,998	SFY 2002-03 \$0	SFY 2003-04 \$0	SFY 2004-05 \$0	SFY 2005-06 \$0	\$15,998
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Donald Guthrie Foundation for Education and Research	SFY 2001-02 \$39,698	SFY 2002-03 \$55,570	SFY 2003-04 \$46,918	SFY 2004-05 \$34,542	SFY 2005-06 \$21,219	\$197,947
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Drexel University *	\$164,560	\$197,969	\$6,130,470	\$1,100,707	\$1,055,561	\$21,328,626
	\$1,048,705	1,138,730	\$1,215,241	\$4,200,662	\$1,275,294	
	\$1,320,271	\$1,401,259	\$0	\$1,079,197		
Drexel University College of Medicine *	\$2,243,051	\$1,445,034	\$0	\$0	\$0	\$3,688,085
	\$0	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0		
Duquesne University	\$75,689	\$100,115	\$89,848	\$89,469	\$82,990	\$1,199,110
	\$71,320	\$84,549	\$94,131	\$121,663	\$116,091	
	\$107,464	\$100,224	\$0	\$65,557		
Family Planning Council	\$0	\$0	\$18,107	\$14,582	\$12,184	\$44,873
	\$0	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0		
Geisinger Clinic	\$167,916	\$183,198	\$163,358	\$128,587	\$110,724	\$9,834,949
	\$89,315	\$92,771	\$95,564	\$104,117	\$80,673	
	\$3,985,485	\$110,249	\$0	\$4,522,992		
Haverford College	\$0	\$0	\$0	\$0	\$0	\$77,895
	\$0	\$0	\$0	\$0	\$30,855	
	\$28,802	\$18,238	\$0	\$0		
Hepatitis B Foundation	\$0	\$0	\$0	\$0	\$0	\$15,242
	\$5,368	\$3,707	\$2,537	\$1,073	\$859	
	\$654	\$720	\$0	\$324		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Immaculata University	\$4,962	\$6,378	\$5,090	\$0	\$0	\$16,430
	\$0	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0	\$0	
Indiana University of Pennsylvania	\$0	\$0	\$0	\$0	\$0	\$9,268
	\$0	\$0	\$0	\$0	\$9,268	
	\$0	\$0	\$0	\$0	\$0	
Institute for Cancer Research *	\$3,831,779	\$4,508,784	\$3,818,851	\$3,195,298	\$3,001,121	\$39,517,893
	\$2,768,335	\$3,038,276	\$3,131,563	\$3,477,323	\$2,851,328	
	\$2,472,183	\$2,176,686	\$0	\$1,246,366	\$0	
Institute for Hepatitis and Virus Research	\$0	\$0	\$0	\$0	\$0	\$925,183
	\$0	\$0	\$0	\$0	\$16,013	
	\$909,170	\$0	\$0	\$0	\$0	
Juniata College	\$0	\$0	\$0	\$0	\$9,495	\$18,840
	\$9,345	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0	\$0	
Lankenau Institute for Medical Research	\$307,220	\$409,168	\$346,399	\$287,621	\$244,328	\$2,994,833
	\$212,216	\$214,033	\$223,613	\$241,281	\$175,518	
	\$136,919	\$115,879	\$0	\$80,638	\$0	
Lehigh University	\$84,515	\$117,425	\$127,442	\$131,021	\$130,662	\$1,364,194
	\$116,229	\$116,442	\$108,901	\$119,007	\$88,081	
	\$80,151	\$75,533	\$0	\$68,785	\$0	

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Lincoln University *	\$17,070	\$19,364	\$21,977	\$22,412	\$20,913	\$250,767
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$23,171	SFY 2010-11 \$33,493	
	SFY 2011-12 \$47,451	SFY 2012-13 \$44,916	SFY 2013-14 \$0	SFY 2014-15 \$0		
Madlyn and Leonard Abramson Center for Jewish Life	SFY 2001-02 \$32,827	SFY 2002-03 \$41,864	SFY 2003-04 \$48,506	SFY 2004-05 \$39,055	SFY 2005-06 \$35,639	\$234,473
	SFY 2006-07 \$19,011	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$17,571	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Magee-Womens Research Institute and Foundation	SFY 2001-02 \$544,531	SFY 2002-03 \$681,269	SFY 2003-04 \$683,748	SFY 2004-05 \$631,282	SFY 2005-06 \$600,197	\$11,405,988
	SFY 2006-07 \$598,185	SFY 2007-08 \$894,069	SFY 2008-09 \$1,194,952	SFY 2009-10 \$1,541,095	SFY 2010-11 \$1,209,415	
	SFY 2011-12 \$971,921	SFY 2012-13 \$1,017,609	SFY 2013-14 \$0	SFY 2014-15 \$837,715		
Medical Diagnostic Research Foundation	SFY 2001-02 \$0	SFY 2002-03 \$57,612	SFY 2003-04 \$62,239	SFY 2004-05 \$58,488	SFY 2005-06 \$50,384	\$228,723
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Mercy Hospital of Pittsburgh	SFY 2001-02 \$28,721	SFY 2002-03 \$0	SFY 2003-04 \$0	SFY 2004-05 \$0	SFY 2005-06 \$0	\$28,721
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Monell Chemical Senses Center	SFY 2001-02 \$257,357	SFY 2002-03 \$312,634	SFY 2003-04 \$284,558	SFY 2004-05 \$302,317	SFY 2005-06 \$281,629	\$3,216,898
	SFY 2006-07 \$256,897	SFY 2007-08 \$213,928	SFY 2008-09 \$217,894	SFY 2009-10 \$240,428	SFY 2010-11 \$216,916	
	SFY 2011-12 \$210,715	SFY 2012-13 \$234,200	SFY 2013-14 \$0	SFY 2014-15 \$187,425		
MPC Corporation	SFY 2001-02 \$218,236	SFY 2002-03 \$266,553	SFY 2003-04 \$246,020	SFY 2004-05 \$193,969	SFY 2005-06 \$160,481	\$1,498,157
	SFY 2006-07 \$160,944	SFY 2007-08 \$136,227	SFY 2008-09 \$115,727	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
National Disease Research Interchange	\$57,995	\$80,999	\$77,132	\$59,884	\$55,546	\$786,545
	\$49,644	\$53,760	\$58,338	\$73,679	\$62,393	
	\$59,685	\$56,394	\$0	\$41,096		
National Surgical Adjuvant Breast and Bowel Project (NSABP) Foundation	\$0	\$0	\$2,278,516	\$1,856,715	\$1,588,633	\$14,252,869
	\$1,286,019	\$1,306,064	\$1,288,794	\$1,255,581	\$967,922	
	\$851,360	\$967,037	\$0	\$606,228		
Oncoceutics, Inc.	\$0	\$0	\$0	\$0	\$0	\$1,295,646
	\$0	\$0	\$0	\$0	\$0	
	\$1,295,646	\$0	\$0	\$0		
Oncology Nursing Society	\$24,693	\$28,676	\$33,420	\$31,527	\$32,860	\$213,341
	\$26,655	\$23,037	\$12,473	\$0	\$0	
	\$0	\$0	\$0	\$0		
Pennsylvania State University	\$7,390,257	\$9,286,165	\$13,948,556	\$8,225,637	\$7,845,194	\$113,624,132
	\$11,408,096	\$11,450,510	\$7,628,852	\$8,412,824	\$9,192,554	
	\$7,637,701	\$6,589,749	\$0	\$4,608,037		
Philadelphia College of Osteopathic Medicine	\$9,517	\$16,087	\$0	\$0	\$0	\$153,917
	\$15,859	\$19,760	\$17,036	\$25,305	\$19,326	
	\$16,761	\$14,266	\$0	\$0		
Philadelphia FIGHT	\$55,224	\$66,088	\$62,772	\$42,916	\$29,970	\$256,970
	\$0	\$0	\$0	\$0	\$0	
	\$0	\$0	\$0	\$0		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Pittsburgh Tissue Engineering Initiative	\$0	\$0	\$22,965	\$23,447	\$26,589	\$166,366
	SFY 2006-07 \$25,651	SFY 2007-08 \$21,247	SFY 2008-09 \$15,697	SFY 2009-10 \$12,224	SFY 2010-11 \$9,815	
	SFY 2011-12 \$8,731	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Public Health Management Corporation *	\$0	\$0	\$19,349	\$11,489	\$6,505	\$118,878
	SFY 2006-07 \$7,898	SFY 2007-08 \$14,218	SFY 2008-09 \$20,369	SFY 2009-10 \$21,969	SFY 2010-11 \$17,081	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Salus University *	\$38,785	\$47,559	\$48,971	\$45,969	\$52,203	\$618,823
	SFY 2006-07 \$52,788	SFY 2007-08 \$63,639	SFY 2008-09 \$60,332	SFY 2009-10 \$59,678	SFY 2010-11 \$45,203	
	SFY 2011-12 \$39,748	SFY 2012-13 \$40,030	SFY 2013-14 \$0	SFY 2014-15 \$23,918		
Swarthmore College	\$0	\$0	\$0	\$7,697	\$0	\$19,653
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$11,956		
Temple University	\$2,189,275	\$8,231,989	\$7,351,100	\$2,165,659	\$6,186,915	\$42,417,338
	SFY 2006-07 \$1,839,493	SFY 2007-08 \$1,957,901	SFY 2008-09 \$2,005,437	SFY 2009-10 \$2,375,033	SFY 2010-11 \$2,050,596	
	SFY 2011-12 \$2,186,053	SFY 2012-13 \$2,220,937	SFY 2013-14 \$0	SFY 2014-15 \$1,656,950		
Thomas Jefferson University	\$4,922,826	\$6,229,638	\$5,488,272	\$8,200,818	\$8,413,995	\$63,426,036
	SFY 2006-07 \$3,674,642	SFY 2007-08 \$3,591,514	SFY 2008-09 \$3,455,597	SFY 2009-10 \$8,246,521	SFY 2010-11 \$3,085,950	
	SFY 2011-12 \$3,643,949	SFY 2012-13 \$2,776,880	SFY 2013-14 \$0	SFY 2014-15 \$1,695,434		
Treatment Research Institute	\$0	\$62,697	\$75,727	\$78,251	\$97,407	\$6,000,073
	SFY 2006-07 \$119,268	SFY 2007-08 \$148,376	SFY 2008-09 \$158,950	SFY 2009-10 \$171,222	SFY 2010-11 \$4,632,536	
	SFY 2011-12 \$155,813	SFY 2012-13 \$174,793	SFY 2013-14 \$0	SFY 2014-15 \$125,033		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
UE LifeSciences Inc.	\$0	\$0	\$0	\$0	\$0	\$878,244
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$878,244	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
University of Pennsylvania	SFY 2001-02 \$8,694,420	SFY 2002-03 \$19,312,867	SFY 2003-04 \$15,657,124	SFY 2004-05 \$16,302,480	SFY 2005-06 \$11,229,640	\$181,215,196
	SFY 2006-07 \$16,885,133	SFY 2007-08 \$16,698,663	SFY 2008-09 \$14,506,173	SFY 2009-10 \$19,117,860	SFY 2010-11 \$13,236,619	
	SFY 2011-12 \$11,627,565	SFY 2012-13 \$7,752,646	SFY 2013-14 \$0	SFY 2014-15 \$10,194,006		
University of Pittsburgh	SFY 2001-02 \$20,288,781	SFY 2002-03 \$20,278,241	SFY 2003-04 \$10,877,580	SFY 2004-05 \$14,547,334	SFY 2005-06 \$13,381,559	\$166,469,928
	SFY 2006-07 \$8,472,940	SFY 2007-08 \$12,801,469	SFY 2008-09 \$16,662,331	SFY 2009-10 \$9,897,440	SFY 2010-11 \$13,236,536	
	SFY 2011-12 \$7,809,060	SFY 2012-13 \$7,752,646	SFY 2013-14 \$0	SFY 2014-15 \$10,464,011		
University of the Sciences in Philadelphia	SFY 2001-02 \$12,149	SFY 2002-03 \$9,779	SFY 2003-04 \$0	SFY 2004-05 \$0	SFY 2005-06 \$0	\$90,939
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$0	SFY 2010-11 \$0	
	SFY 2011-12 \$32,583	SFY 2012-13 \$29,488	SFY 2013-14 \$0	SFY 2014-15 \$6,940		
UPMC McKeesport	SFY 2001-02 \$0	SFY 2002-03 \$0	SFY 2003-04 \$0	SFY 2004-05 \$0	SFY 2005-06 \$0	\$240,075
	SFY 2006-07 \$58,248	SFY 2007-08 \$47,237	SFY 2008-09 \$53,071	SFY 2009-10 \$48,585	SFY 2010-11 \$32,934	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
West Chester University	SFY 2001-02 \$0	SFY 2002-03 \$0	SFY 2003-04 \$0	SFY 2004-05 \$0	SFY 2005-06 \$0	\$4,080
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$4,080	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		

**Table 8. Total Grants Awards (continued)**

ALL FORMULA AND NONFORMULA GRANT INSTITUTIONS	SFY TOTAL AWARDS					GRAND TOTAL
	SFY 2001-02	SFY 2002-03	SFY 2003-04	SFY 2004-05	SFY 2005-06	
Wills Eye Health System *	\$11,119	\$11,779	\$11,748	\$9,146	\$8,591	\$3,650,749
	SFY 2006-07 \$0	SFY 2007-08 \$0	SFY 2008-09 \$0	SFY 2009-10 \$3,598,366	SFY 2010-11 \$0	
	SFY 2011-12 \$0	SFY 2012-13 \$0	SFY 2013-14 \$0	SFY 2014-15 \$0		
Wistar Institute	SFY 2001-02 \$1,397,012	SFY 2002-03 \$1,751,632	SFY 2003-04 \$5,099,020	SFY 2004-05 \$1,531,984	SFY 2005-06 \$1,474,006	\$28,263,904
	SFY 2006-07 \$5,569,982	SFY 2007-08 \$1,473,209	SFY 2008-09 \$1,461,800	SFY 2009-10 \$1,778,081	SFY 2010-11 \$1,582,665	
	SFY 2011-12 \$2,540,492	SFY 2012-13 \$1,491,186	SFY 2013-14 \$0	SFY 2014-15 \$1,112,835		
<b>TOTAL — ALL INSTITUTIONS</b>	SFY 2001-02 \$65,114,465	SFY 2002-03 \$82,027,003	SFY 2003-04 \$81,225,929	SFY 2004-05 \$72,177,508	SFY 2005-06 \$68,413,215	<b>\$841,875,842</b>
	SFY 2006-07 \$62,535,683	SFY 2007-08 \$65,629,448	SFY 2008-09 \$66,355,938	SFY 2009-10 \$73,503,483	SFY 2010-11 \$61,125,192	
	SFY 2011-12 \$57,490,971	SFY 2012-13 \$41,896,467	SFY 2013-14 \$0	SFY 2014-15 \$44,380,540		

\* Drexel University College of Medicine, originally MCP Hahnemann in SFY 2001-02, was combined with Drexel University in SFY 2003-04.

\* Lincoln University did not start their SFY2006-07 grant and returned their entire formula grant award \$15,403 + interest \$595.74 to the commonwealth on 9/9/08.

\* Public Health Management Corporation was formerly known as Philadelphia Health Management Corporation (July 2008).

\* Salus University was formerly known as Pennsylvania College of Optometry (July 2008).

\* Wills Eye Health System was formerly known as Wills Eye Hospital (July 2009).

\* Institute for Cancer Research was formerly known as Fox Chase Cancer Center (July 2012).