



JOINT MEETING OF THE BOARD OF TRUSTEES  
AND FOUNDATION BOARD OF DIRECTORS  
Thursday, March 1, 2012– 3:00 p.m.  
Pavilion Cube – P2-3

Table of Contents

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(1)	Agenda	Pages 2-4
(2)	Proceedings and Minutes of Decisions and Resolutions Meeting of February 2, 2012	Pages 5-9
(3)	Gifts and Grants	Pages 10-11
(4)	Minutes of the January 12, 2012 Foundation Board of Directors	Pages 12-18
(5)	Minutes of the February 2, 2012 Student Outcomes Committee	Pages 19-86
(6)	Minutes of the February 22, 2012 Business Affairs Committee	Pages 87-111

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JOINT MEETING OF THE BOARD OF TRUSTEES  
AND FOUNDATION BOARD OF DIRECTORS

AGENDA

Thursday, March 1, 2012 – 3:00 p.m.  
Pavilion Cube – P2-3

- (1) Consent Agenda – Board of Trustees
  - (a) Proceedings and Minutes of Decisions and Resolutions  
Meeting of February 2, 2012
  - (b) Gifts and Grants
  - (c) Academic Program Audit: Computer Science Program
  - (d) Insurance Broker RFP
  - (e) Purchase of Indigo Press
- (2) Consent Agenda – Foundation Board
  - (a) Minutes of the Foundation Board of Directors  
Meeting of January 12, 2012
- (3) Report of the Student Outcomes Committee
  - (a) Dental Hygiene Program Recognition (A)
- (4) Report of the Chair – Board of Trustees
- (5) Report of the President – Foundation
- (6) Report of the President
- (7) New Business
- (8) Next Board of Trustees Meeting: Thursday, April 5, 2012  
3:00 p.m. – Isadore A. Shrager Boardroom M2-1

The meeting will be followed by a facilitated workshop for both boards.

Future Committee Meetings:

Student Outcomes	Thursday, March 1, 2012 1:30 p.m. – Room M2-34
Business Affairs	Wednesday, March 21, 2012 9:00 a.m. – Isadore A. Shrager Boardroom
Jane S. Abrahams Award Interviews	Thursday, April 5, 2012 12:00 noon – M2-34

Upcoming Events:

Spring Break – College Closed	March 5-10, 2012
Phi Theta Kappa Induction	Saturday, March 17, 2012 12:00 noon – S2-19 Winnet Student Life Building - Great Hall
Commission for Community Colleges Annual Meeting	April 2-3, 2012 Hershey Lodge and Convention Center Harrisburg, PA
College Budget Hearing	(TENTATIVE) Tuesday, April 10, 2012 1:00 p.m. – City Council Chambers Room 400

See attached list of Important Dates

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# Community College of Philadelphia

*The Path to Possibilities™*

TO: Board of Trustees

FROM: Stephen M. Curtis  
President

DATE: March 1, 2012

SUBJECT: Important Dates

The following is a list of important activities to which you are invited:

<b><u>Event</u></b>	<b><u>Date</u></b>	<b><u>Time</u></b>	<b><u>Board Representative</u></b>
Lobby Day  (TENTATIVE)	Tuesday, April 3, 2012	7:30 a.m. Harrisburg, PA	
College Budget Hearing	Tuesday, April 10, 2012	1:00 p.m. – City Council Chambers Room 400	
Retirees Reception	Thursday, April 19, 2012	4:00 p.m. – Pavilion Cube – P2-3	
Distinguished Leadership Awards Breakfasts:			
Northeast Regional Center	Tuesday, May 1, 2012	8:00 a.m.	
Northwest Regional Center	Wednesday, May 2, 2012	8:00 a.m.	
West Regional Center	Thursday, May 3, 2012	8:00 a.m.	
College Honors Tea	Wednesday, May 2, 2012	4:00 p.m. – Rotunda	
Nurses Pinning	Friday, May 4, 2012	10:00 a.m. Gymnasium	
Academic Awards & Reception	Friday, May 4, 2012	6:00 p.m. Large Auditorium – BG-10	
Commencement	Saturday, May 5, 2012	10:00 a.m. Liacouras Center	
Classified/Confidential Luncheon	Wednesday, May 9, 2012	12:00 noon Great Hall – S2-19	
Foundation Annual Golf Tournament	Monday, July 30, 2012	11:00 a.m. Commonwealth National Golf Club	
41st Annual ACCT Leadership Congress	October 10-13, 2012	Boston, MA	

COMMUNITY COLLEGE OF PHILADELPHIA  
Proceedings of the Meeting of the Board of Trustees  
Thursday, February 2, 2012 – 3:00 p.m.

Present: Ms. Fernandez, presiding; Mr. Bergheiser, Ms. Hernández Vélez, Ms. Holland, Mr. Honickman, Mr. Johnson, Mr. Lassiter, Representative Roebuck, Ms. Sumners Rush, Ms. Vieira, Mr. White, Dr. Curtis, Ms. Bauer, Ms. Brown-Sow, Ms. DiGregorio, Ms. Garfinkle-Weitz, Dr. Gay, Dr. Hawk, Dr. Hirsch, and Ms. Ray

Ms. Fernandez called the meeting to order, and stated that the agenda had been revised. Ms. Fernandez stated that the Board would approve the Consent Agenda, and brief reports from the Chair and the President would follow. The Board will then convene in Executive Session to consult with attorney regarding Board issues. Ms. Fernandez stated that because of the State Ethics Commission training, Ms. Holland had deferred her Student Outcomes presentation to a future meeting of the Board. She stated that the Pennsylvania State Ethics Commission training would follow the Executive Session.

(1) Consent Agenda – Board of Trustees

Ms. Fernandez asked for a motion on the following Consent Agenda:

- (a) Proceedings and Minutes of Decisions and Resolutions  
Meeting of January 5, 2012
- (b) Gifts and Grants
- (c) Dental Hygiene Program Audit
- (d) Mathematics Audit Follow-Up Report
- (e) Information Technology Infrastructure Upgrade
- (f) Migration from Novell to Microsoft Active Directory
- (g) Resolution for a Capital Application to be Submitted to the  
Pennsylvania Department of Education – Creation of 10 Smart Classrooms

Ms. Sumners Rush moved, with Ms. Hernández Vélez seconding, that the Board approve the Consent Agenda. The motion carried unanimously.

(2) Report of the Chair

(2a) Board Retreat

Ms. Fernandez thanked members of the Board for their participation in the January 17, 2012 Board Retreat. She stated that she had received positive feedback about the Retreat, and was following up on issues discussed at the Retreat.

At the request of Ms. Fernandez, Ms. Hernández Vélez circulated a proposed tentative schedule for Board of Trustees meetings. She stated that she, Ms. Fernandez, and Mr. Bergheiser had worked on the Board meeting schedule. Ms. Hernández Vélez asked members of the Board to review the document and provide feedback.

(2b) March 1, 2012 Joint Meeting of the Board of Trustees and Foundation Board of Directors

Ms. Fernandez reminded members of the Board that the March 1, 2012 Board meeting will be a joint meeting of the Board of Trustees and Foundation Board. The joint meeting will be a facilitated discussion of resource development. Ms. Fernandez stated that staff would like to plan a dinner catered by the Culinary Arts students following the March 1 Board meeting. She stated that the timeframe for the meeting and dinner will be from 3:00 p.m. to 6:30 p.m. Ms. Fernandez polled the Board to ascertain how many Board members would be available to stay for dinner. Five Board members indicated their availability for the dinner.

(3) Report of the President

(3a) Meetings with Legislators

Dr. Curtis stated that in anticipation of the Governor's and Mayor's budgets, he had been meeting with elected officials to advocate on behalf of the College. He stated that to date, he had met with Representatives William Keller, Babette Josephs, Tony Payton, Ms. Patricia Tisdale from Representative John Myers' office, and Kevin Boyle. Dr. Curtis stated that he is scheduled to meet with other elected officials in the coming weeks.

(3b) On-Campus Events

Dr. Curtis reported that the Wells Fargo Scholars Luncheon took place on January 18, 2012. Four scholarship recipients were in attendance as well as three Wells Fargo representatives.

Dr. Curtis reported that the Nurse Aide Graduation was held on February 1, 2012. The Kal and Lucille Rudman Foundation has been donating money to the College's Nurse Aide Program since 2008. Over 50 students have benefitted from the Nurse Aide scholarships.

Dr. Curtis reported that the VIST Financial Futures Breakfast was held earlier today. Five scholarship recipients were present as well as VIST Chief Executive Officer Bob Davis and Vice President Tina McDonald.

(4) New Business

There was no new business discussed.

(5) Next Meeting

The next meeting of the Board of Trustees is scheduled for Thursday, March 1, 2012 at 3:00 p.m. in the Pavilion Cub. The meeting will be a joint meeting of the Board of Trustees and Foundation Board of Directors.

The meeting adjourned at 3:30 p.m.

At this point in the meeting, the Board convened in Executive Session. Following the Executive Session, the Pennsylvania State Ethics Commission conducted ethics training.

COMMUNITY COLLEGE OF PHILADELPHIA  
Meeting of the Board of Trustees  
Thursday, February 2, 2012 – 3:00 p.m.  
MINUTES OF DECISIONS AND RESOLUTIONS

Present: Ms. Fernandez, presiding; Mr. Bergheiser, Ms. Hernández Vélez, Ms. Holland, Mr. Honickman, Mr. Johnson, Mr. Lassiter, Representative Roebuck, Ms. Summers Rush, Ms. Vieira, Mr. White, Dr. Curtis, Ms. Bauer, Ms. Brown-Sow, Ms. DiGregorio, Ms. Garfinkle-Weitz, Dr. Gay, Dr. Hawk, Dr. Hirsch, and Ms. Ray

(1) Consent Agenda – Board of Trustees

The Board approved the following Consent Agenda:

- (a) Proceedings and Minutes of Decisions and Resolutions  
Meeting of January 5, 2012
- (b) Gifts and Grants
- (c) Dental Hygiene Program Audit
- (d) Mathematics Audit Follow-Up Report
- (e) Information Technology Infrastructure Upgrade
- (f) Migration from Novell to Microsoft Active Directory
- (g) Resolution for a Capital Application to be Submitted to the  
Pennsylvania Department of Education – Creation of 10 Smart Classrooms

(2) Report of the Chair

(2a) Board Retreat

Ms. Fernandez thanked members of the Board for their participation in the January 17, 2012 Board Retreat.

(2b) March 1, 2012 Joint Meeting of the Board of Trustees  
and Foundation Board of Directors

The Board was reminded that the March 1, 2012 Board meeting will be a joint meeting of the Board of Trustees and Foundation Board.

(3) Report of the President

(3a) Meetings with Legislators

Dr. Curtis has been meeting with city and state legislators to advocate for funding on behalf of the College.

(3b) On-Campus Events

The Wells Fargo Scholars Luncheon took place on January 18, 2012.

The Nurse Aide Graduation was held on February 1, 2012.

The VIST Financial Futures Breakfast was held on February 2.

(4) New Business

There was no new business discussed.

(5) Next Meeting

The next meeting of the Board of Trustees is scheduled for Thursday, March 1, 2012 at 3:00 p.m. in the Pavilion Cub. The meeting will be a joint meeting of the Board of Trustees and Foundation Board of Directors.

The meeting adjourned at 3:30 p.m.

At this point in the meeting, the Board convened in Executive Session. Following the Executive Session, the Pennsylvania State Ethics Commission conducted ethics training.



**COMMUNITY COLLEGE OF PHILADELPHIA  
Office of Institutional Advancement  
Monthly Summary of Grants and Gifts  
March 2012**

**Foundation Grant**

The Independence Foundation has funded the Zip Code Project and Geriatrics Support grant for \$77,500. This grant continues support for the community health services provided by nursing students in the 19130 zip code, as well as additional support for grants from The John A. Hartford Foundation and the Hearst Foundations that foster appropriate geriatric training in nursing education on a national level.

**COMMUNITY COLLEGE OF PHILADELPHIA FOUNDATION**  
**Minutes from the January 12, 2012 Meeting – Noon**  
**Pavilion Building, The Cube**

**Present:** Arlene Yocum, presiding; Flora Becker, Lorraine Brown, Bruce Caswell, Stanley Cohen, Stephen Curtis, Varsovia Fernandez, Jane Green, Scott Magargee, Lorina Marshall-Blake (via conference call), Al Murphy, George Nise, Esther Ponnocks, Marsha Ray, Steve Simons, Craig Stock, Patricia Weigand, and Gil Wetzel (via conference call)

**Staff:** Molly Clark-Davis, Anne Greco, Lyvette Jones, Jean Kemper, Christy Mauro, Greg Murphy, and Tarsha Scovens

**I. Call to Order and Announcements**

Ms. Yocum called the meeting to order at 12:05 p.m.

**A. Announcements**

- Ms. Yocum welcomed Jane Green to the Board.
- Ms. Yocum acknowledged Ms. Marshall-Blake for her role in securing funding from Independence Blue Cross to support scholarships for Nursing students.
- Ms. Yocum noted that an updated contact list was included in the meeting handouts.
- Ms. Yocum announced that the March meeting of the Foundation Board will be a joint meeting with the College's Board of Trustees. The meeting date is March 1, 2012 at 3:00 p.m. in the Pavilion Building. She added that the format of the meeting will be a consent agenda followed by a discussion on the Strategic Planning process.
- Ms. Yocum thanked the newly formed Foundation Task Committee, which includes Craig Stock (chair), Stanley Cohen, Jac Ferber and Lorina Marshall-Blake, for their work. The committee is charged with reviewing the Foundation's By-laws and policies and procedures and making recommendations for changes.
- Ms. Yocum announced that the Pathways Magazine Breakfast will be held on Wednesday, February 22, 2012 at 8:00 a.m. in the College's Center for Business & Industry. The magazine's cover story and featured speaker will be Dr. Dario C. Altieri from the Wistar Institute. In addition, the Judge Edward R. Becker Citizenship Award presentation and lecture will be held on Monday, February 27, 2012 at 9:00 a.m. in the College's Center for Business & Industry. This year's recipient is Robert P. Casey, Jr. (U.S. Senator for PA).

**B. College Announcements**

- Dr. Curtis reminded the Board that a tour of the new Pavilion will commence following the meeting.
- He added that the old dining hall on Main Campus is currently being renovated to house student support services. In addition, the West Regional Center is being expanded.
- Dr. Curtis reported that there has been a decrease in enrollments at community colleges nationally. Community College of Philadelphia has experienced a 2-4% decrease in enrollments this past fall compared to a year ago, which equates to a \$100,000 loss in revenue.

- Dr. Curtis reported that the City’s originally enforced budget cut of \$500,000 has been reversed after the College submitted a proposal outlining the ways in which we are negatively impacted. Dr. Curtis reported that mid-year cuts at the State level include a reduction in PHEAA grants by 5% at all state universities, which is the equivalent of \$21 million. Community colleges have not yet received a cut from the State.
- Dr. Curtis stated that due to the decline in enrollments and changes in Pell grant eligibility, we are likely to lose additional revenue. In preparation for this loss, steps have been taken to lessen the impact.
- Dr. Curtis added that the College has asked the City for \$2 million in additional funding next year in order to sustain quality. At their request, we will produce a written statement outlining the scenarios that will arise if we lose 2%, 4%, and 5% of our funding.
- Ms. Yocum added that the Executive Committee has suggested that the Foundation Board think of ways to support the College at these difficult financial times.

**C. Institutional Advancement Announcements**

- Ms. Ray reviewed the fundraising report as of November 30, 2011 and stated that \$13.7 million has been raised in capital needs, which does not include the anticipatory Kresge Challenge match of \$1.2 million. She is confident that by June 30, 2012, we will have raised close to \$16 million in capital needs.
- Ms. Ray stated that we have seen a decrease in alumni giving and focus will be placed on efforts to engage them at different levels. With 630,000 students having gone through this school, only one-third represents the group having received an associate’s degree. She stressed the importance of defining our alumni in a way that includes all students. Ms. Ray added that she is currently referring to alumni as “grateful learners.”

**II. Approval of November 10, 2011 Minutes**

Dr. Caswell asked for any additions, deletions or corrections to the minutes of the November 10, 2011 Board meeting. Hearing none, Dr. Caswell asked for a motion to approve the minutes. Ms. Weigand moved to approve the minutes, and Dr. Brown seconded. The minutes were approved as submitted.

**III. Committee Reports**

**A. Fundraising Committee**

**1. Campaign Update/Kresge Challenge Update**

Ms. Ray reported that \$83.6 million has been raised with \$1.52 million remaining to be raised in order to receive the Kresge funds.

To meet the Kresge Challenge, Ms. Ray referenced the expected donations that will help us meet the goal. Specifically, she mentioned \$1,020,000 from the Gilroy and Lillian P. Roberts Foundation and \$100,000 for the Honickman/Downs Challenge, with \$10,000 needed to receive the match. Ms. Ray added that upon receipt of these funds, \$102,375 remains to be raised. Outstanding proposals to make up the difference include: \$50,000-\$400,000 proposal to the Hershey Foundation; \$1.1 million proposal to Pepsi to support the landscaping on Main Campus; and \$275,000 in individual solicitations.

## **2. Fundraising Report**

Ms. Ray announced that there are several other gifts in the works, including the gift from Daniel Veloric for the West Philadelphia Regional Center. She added that a lawyer has been hired to work with Mr. Veloric to define how the property and monies will be moved forward and what vehicles will satisfy both the College's and Mr. Veloric's vision. A gift agreement is likely to be in place by March 31, 2012.

The Kal and Lucille Rudman Foundation have committed \$50,000 to support the Kal and Lucille Rudman Media project. This project will enable the College to continue to build on its current success as a leader in media production and foster better partnerships with both Temple and Drexel. Mr. Rudman's long-term vision is to foster better partnerships that could lead to a regional educational channel. A future goal is to have the Rudman Foundation support the CCPTV station at the same level he supports the Temple and Drexel stations.

Ms. Ray announced that there are several pending proposals: \$300,000 proposal to Upward Bound to support the Math and Science programs; \$20,000 proposal to the Patricia Kind Family Foundation to support homeless students at the College; \$50,000 letter of intent to the Clineal Foundation to support our developmental education process; \$45,000 proposal to the Presser Foundation for the music program; several proposals to the Turkish Coalition for study abroad programs; and \$45,000 proposal to Mclean Contributionship to support our green landscaping project. Recently, we received \$77,500 from the Independence Foundation with \$49,000 in additional funds to come.

Ms. Ray stated that there are changes planned for the Foundation's two main fundraising events. The Pathways Awards will be a dinner event in the fall. Marc Byers, a music industry entrepreneur, has agreed to co-chair the event alongside Jane Green. With these changes and two chairs, we are confident a great deal of attention will surround this event. The Golf Tournament will be held on July 30, 2012 at the Commonwealth National Country Club in Horsham. George Burrell has agreed to help bring higher recognition to the event. Chakah Fattah will be an honorary chair along with Rhonda Cohen and Charlie Pizzi serving as chairs. Ms. Ray asked the Board members to get involved by serving on a committee for either of the fundraising events, or hosting a party-with-a-purpose.

Ms. Ray announced that the recent fundraising event with Chef G. Garvin was a success and generated a \$10,000 endowment to support students attending Chef Garvin's boot camp.

Mr. Stock stated that the Annual Fund has raised \$80,852 to date, which is nearly double the amount we raised during the same time period last year.

Ms. Yocum acknowledged Ms. Ray and the Institutional Advancement department for their hard work.

## **B. Investment Committee**

### **1. Treasurer's Report**

Dr. Brown presented the Treasurer's Report, which reflects expenses and revenues through November 30, 2011. Dr. Brown stated that we have increased our projected expenses of \$40,000 for hospitality and engagement events. She noted that the money has not been spent. Ms. Ray added that the recent Garvin/Thomas events utilized a great deal of hospitality funding, however funds were expended through the College's hospitality account.

Dr. Brown reviewed the revenue report and stated that it aligns with the Fundraising Report.

Dr. Brown asked for a motion to approve the Treasurer's Report. Ms. Weigand moved to approve the Treasurer's Report; and Ms. Becker seconded. The Treasurer's Report was approved as submitted.

### **2. Performance Report/Portfolio Balance**

Mr. Simons reviewed the Investment Summary for the period ended October 31, 2011 and noted that the market continues to be volatile. Mr. Simons reviewed the Flash Report as of December 31, 2011, which provides a more up-to-date performance review. He added that we have worked with the Commonfund to provide a blended index to more accurately reflect our portfolio's performance.

## **IV. Old Business**

### **A. Draft IRS Form 990**

Ms. Kemper stated that we are ahead of schedule with the timeline for the completion of the Form 990, which we plan to submit to the IRS in mid-February.

### **B. Task Committee**

Mr. Stock stated that the Task Committee is reviewing the Foundations' By-laws and policies and procedures to confirm whether the Foundation is abiding by the laws and discuss the need for moderate changes. Mr. Stock added that the Task Committee has met twice and will meet once more to finalize the recommendations.

## **V. New Business**

### **A. Tour of Pavilion Building**

Gary Bixby and Tom Hawk provided Board members with a tour of the Pavilion Building.

The meeting was adjourned at 1:00 p.m.

## Fundraising Report

(as of January 31, 2012)

### Expanding Possibilities

#### Progress to Goals

	GOAL	TOTAL RECEIVED	REMAINING
Student Scholarships and Programs	\$3,000,000	\$6,501,490	(\$3,501,490)
Main Campus and NERC Expansion*	\$7,000,000	\$6,755,659	\$244,341
<b>TOTAL</b>	<b>\$10,000,000</b>	<b>\$13,257,149</b>	<b>(\$3,257,149)</b>

NOTE: \*Includes government grants secured in support of the expansion.

Includes \$215,000 received in FY2008 in support of campaign (Facilities @ \$50,000; Student Support @ \$165,000).

### Expanding Possibilities

#### Funds Raised

	GOAL	TOTAL RECEIVED	REMAINING
Private Funds*	\$5,000,000	\$7,863,459	(\$2,863,459)
Government Funds	\$3,800,000	\$7,220,096	(\$3,420,096)
Kresge Challenge	\$1,200,000	\$0	\$1,200,000
<b>TOTAL</b>	<b>\$10,000,000</b>	<b>\$15,083,555</b>	

NOTE: Includes \$215,000 received in FY2008 in support of campaign.

Includes all private funds received regardless of gift designation.



## Fundraising Report

(as of January 31, 2012)

### Gifts & Pledges Purpose/Gift Designation Comparison

(includes gift, pledges, sponsorships and non-government grants)

as of 1/31/2012

		Fiscal Yr. 2009	Fiscal Yr. 2010	Fiscal Yr. 2011	Fiscal Yr. 2012	TOTAL
<b>Community/Public Service</b>	Dollars	\$34,800	\$75,700	\$77,500	\$87,921	\$275,921
<b>Student Scholarships</b>	Dollars	\$382,362	\$536,544	\$680,658	\$374,322	\$1,973,886
<b>Facilities/Equipment</b>	Dollars	\$172,445	\$1,114,411	\$479,482	\$1,237,972	\$3,004,310
<b>Student Programs</b>	Dollars	\$66,670	\$126,476	\$542,616	\$178,394	\$914,157
<b>Faculty</b>	Dollars	\$273,235	\$108,375	\$359,617	\$78,005	\$819,232
<b>Unrestricted Operating</b>	Dollars	\$227,179	\$183,041	\$135,332	\$115,401	\$660,953
<b>TOTAL</b>	Dollars	<b>\$1,156,692</b>	<b>\$2,144,547</b>	<b>\$2,275,205</b>	<b>\$2,072,015</b>	<b>\$7,648,459</b>

NOTE: Grand total does not reflect \$215,000 received in FY2008 in support of Expanding Possibilities campaign.

### Gifts & Pledges by Gift Type

(includes gift, pledges, sponsorships and non-government grants)

as of 1/31/2012

		Fiscal Yr. 2009	Fiscal Yr. 2010	Fiscal Yr. 2011	Fiscal Yr. 2012	TOTAL
<b>Deferred Giving</b>	Dollars	\$0	\$5,000	\$10,000	\$0	\$15,000
<b>Endowment Giving</b>	Dollars	\$79,136	\$241,653	\$259,513	\$133,575	\$713,876
<b>Sponsored Programs</b>	Dollars	\$359,264	\$218,069	\$953,025	\$321,793	\$1,852,151
<b>Unrestricted</b>	Dollars	\$227,179	\$183,041	\$135,332	\$115,401	\$660,953
<b>Other - Restricted</b>	Dollars	\$491,113	\$1,496,785	\$917,336	\$1,501,246	\$4,406,479
<b>TOTAL</b>	Dollars	<b>\$1,156,692</b>	<b>\$2,144,547</b>	<b>\$2,275,205</b>	<b>\$2,072,015</b>	<b>\$7,648,459</b>

NOTE: Grand total does not reflect \$215,000 received in FY2008 in support of Expanding Possibilities campaign.

### Gifts & Pledges Constituency Comparison

(includes gift, pledges, sponsorships and non-government grants)

as of 1/31/2012

		Fiscal Yr. 2009	Fiscal Yr. 2010	Fiscal Yr. 2011	Fiscal Yr. 2012	TOTAL
<b>Alumni</b>	Donors	559	660	432	180	1831
	Dollars	\$23,868	\$33,246	\$53,300	\$9,189	\$119,603
<b>Faculty and Staff</b>	Donors	360	331	380	281	1352
	Dollars	\$97,403	\$140,959	\$254,977	\$120,407	\$613,747
<b>Friends</b>	Donors	207	185	174	75	641
	Dollars	\$323,415	\$498,209	\$488,893	\$322,944	\$1,633,461
<b>Corporations</b>	Donors	91	83	65	37	276
	Dollars	\$164,427	\$1,040,972	\$331,132	\$170,144	\$1,706,675
<b>Foundations</b>	Donors	25	20	21	19	85
	Dollars	\$472,481	\$339,547	\$1,086,200	\$1,445,701	\$3,343,929
<b>Organizations</b>	Donors	28	24	22	6	80
	Dollars	\$75,098	\$91,614	\$60,702	\$3,630	\$231,044
<b>TOTAL</b>	Donors	<b>1270</b>	<b>1303</b>	<b>1094</b>	<b>598</b>	<b>4265</b>
	Dollars	<b>\$1,156,692</b>	<b>\$2,144,547</b>	<b>\$2,275,205</b>	<b>\$2,072,015</b>	<b>\$7,648,459</b>

**Government Sponsored Programs / Grants (i.e., earmarks, etc.)**

as of 1/31/2012

		Fiscal Yr. 2009	Fiscal Yr. 2010	Fiscal Yr. 2011	Fiscal Yr. 2012	TOTAL
Facilities/Equipment/Capital	Donors	3	1	2	1	7
	Dollars	\$3,065,728	\$1,006,624	\$1,983,932	\$1,007,332	\$7,063,616
Student Support	Donors	8	11	7	7	33
	Dollars	\$1,229,658	\$2,166,997	\$1,960,886	\$3,399,025	\$8,756,566
Faculty Support	Donors	6	5	3	2	16
	Dollars	\$214,606	\$187,939	\$164,914	\$74,810	\$642,269
Community Support	Donors	8	11	11	4	34
	Dollars	\$2,746,114	\$4,655,650	\$4,293,107	\$20,714,562	\$32,409,433
TOTAL	Donors	25	28	23	14	90
	Dollars	\$7,256,106	\$8,017,210	\$8,402,839	\$25,195,729	\$48,871,884

NOTE: The government grants listed below were received and support Expanding Possibilities. These grants count towards the total raised for the comprehensive campaign:

- EDA Grant - funded by U.S. EDA for \$1,641,473 (Facilities)
- NERC Expansion Project - funded by U.S. Small Business Administration for \$282,000 (Facilities)
- RACP – funded by Commonwealth of Pennsylvania for \$1,000,000 (Facilities)
- PBI Formula Grant -FY2011 – funded by U.S. Department of Education for \$1,351,494 (Facilities @\$748,176; Student Support @ \$603,318)
- SBA Earmark – federal grant for \$100,000 (Personnel @\$70,000; Supplies @ \$23,000; Equipment @ \$6,700)
- PBI Formula Grant -FY2012 – funded by U.S. Department of Education for \$ 445,129 (all Student Support)
- PBI Competitive Grant -FY2012 – funded by U.S. Department of Education for \$2,400,000 (all Student Support)

**TOTAL AMOUNT: \$7,220,096**

**Facilities = \$3,701,349 (includes SBA earmark supplies and equipment, not personnel); Student = \$3,448,447**

**STUDENT OUTCOMES COMMITTEE OF THE  
BOARD OF TRUSTEES**

**MINUTES**

**Thursday, February 2, 2012**

**1:30 p.m. – Room M2-34**

**Presiding:** Ms. Stacy Holland  
**Present:** Dr. Stephen Curtis, Ms. Varsovia Fernandez,  
Dr. Judith Gay, Dr. Samuel Hirsch, Mr. Chad Lassiter, Dr. James  
Roebuck, and Ms. Dorothy Sumners Rush  
**Guest:** Dr. Marian McGorry

**(1) Executive Session**

There was no Executive Session.

**(2) Public Session**

**a) Approval of Minutes of January 5, 2012 (Action Item)**

The minutes were accepted.

**b) Recommendation for Sustained Excellence Recognition for Dental Hygiene Program (Action Item)**

Dr. Gay recommended the Dental Hygiene Program for the Board of Trustees Recognition of Sustained Excellence. The nomination has the support of the Dean of the Division of Mathematics, Science and Health Careers, Dr. Celenza, as well as the support of Dr. Curtis. Dr. Gay reviewed the criteria that the Board of Trustees passed in June 2008. She stated that the Dental Hygiene Program exceeds the criteria, particularly by having a pass rate on the credentialing exam of over 90% for seven years (and 100% for three of the seven years) for more than 100 students in the program. There was a brief discussion of the retention rate in the program. Dr. Gay stated that the retention rate was discussed in the Dental Hygiene Program Audit. In addition to being a demanding program, students sometimes have life challenges that make it difficult to complete the program on time. Since 2008, however, retention has increased by 12.5% and currently exceeds the Commission on Dental Accreditation standard.

**Action: The Student Outcomes Committee of the Board agreed to recommend to the full Board the Dental Hygiene Program for the Board of Trustees Recognition of Sustained Excellence.**

There was a brief discussion about whether the recommendation should be presented in the public session of the next Board meeting or the executive session. Dr. Curtis agreed to confirm that the recommendation should be discussed in the public session.

**c) Academic Program Audit: Computer Science Program (Action Item)**

Dr. McGorry presented the highlights of the Computer Science Program Audit. After discussion, the Student Outcomes Committee of the Board postponed approving the Computer Science Audit. The Computer Science Program is required to provide a status report on achievement of the recommendations in the audit by January 2013. Additionally the Program must explain: What innovations are planned moving beyond the one year of activities in the audit? What is the program doing to enhance enrollment and improve graduation rates? Finally, the Student Outcomes Committee of the Board expect faculty to be present at the meeting when the status report is presented.

**d) Community College Baccalaureate (Information Item)**

Dr. Curtis provided an overview of a proposal to seek authorization from the Pennsylvania State Board of Education to offer selected baccalaureate-level curricula leading to one of three degrees: Bachelor of Applied Science; Bachelor of Applied Technology; or Bachelor of Science. The proposal is a collaborative effort with the College, Bucks County Community College, Delaware County Community College and Montgomery County Community College. The proposed model will enable the four community colleges to provide a core of baccalaureate offerings, at an affordable tuition rate, that will expand pathways for students, particularly in career and technical areas.

**Next Meeting:**

The next meetings of the Student Outcomes Committee of the Board is scheduled for Thursday, March 1, 2012 at 1:30 p.m. in conference room M2-34.

**Attachments:**

Minutes of January 5, 2012  
Academic Program Audit: Computer Science Program  
Community College Baccalaureate  
Recommendation for Sustained Excellence Recognition for Dental Hygiene Program

**STUDENT OUTCOMES COMMITTEE OF THE  
BOARD OF TRUSTEES**

**MINUTES**

**Thursday, January 5, 2012**

**1:30 p.m. – M2-34**

**Presiding:** Dr. James Roebuck, Jr.

**Present:** Dr. Stephen Curtis, Ms. Varsovia Fernandez, Dr. Judith Gay, Dr. Samuel Hirsch,  
Ms. Dorothy Sumners Rush

**Guests:** Dr. Mary Anne Celenza, Ms. Theresa Grady, Mr. Brenton Webber

**(1) Executive Session**

There was a discussion of Honorary Degree nominations submitted by Board members.

**(2) Public Session**

**(a) Approval of Minutes of December 1, 2011**

The minutes were accepted.

**(b) Modified Program Audit: Dental Hygiene Program**

Dr. Celenza presented positive highlights reflected in the modified Dental Hygiene Program Modified Audit: (1) faculty attention to student retention; (2) faculty attention to curricular revision; (3) faculty attention to program accreditation standards; and, (4) faculty attention to the community. Dr. Celenza also mentioned a recent development, not reflected in the audit – a discussion about having a series on CCPTV. Finally, Dr. Celenza identified the next steps for the program: (1) increase efforts to help students persist; and, (2) increase the use of technology.

Board members wanted to know how people find out about the program. Ms. Grady responded that some are dental assistants who want to move up to the position of dental hygienist. Some approach the College thinking that the program is for dental assisting. Not many come to the program straight out of high school. Ms. Grady said that she has found through high school visits that it is not initially seen as an attractive career field by students. Dr. Hirsch stated that that when potential students visit the College, they do a rotation through the health career labs and have an interactive experience of making a model. That approach has been helpful. Ms. Grady was also asked about other career opportunities for dental hygienists. She responded that some dental hygienists practice on their own and some go into areas like sales.

Dr. Curtis mentioned that two things that stand out in his mind about the dental hygiene program are the free dental clinic that the program operates and the alumni survey showing that the average salaries of graduates tend to be at the top of the list.

There was a discussion about student persistence in the program – do students fail to complete the program because they do not need to graduate to practice? Ms. Grady stated that in order to sit for the credentialing exam, students must complete an accredited program; after getting a license, there is a requirement for continuing education to maintain it. The program is challenging and life circumstances sometimes interfere with program completion. Faculty, however, are very engaged in thinking about student success and constantly survey students to check on them.

**Motion: The Student Outcomes Committee recommends that the Board of Trustees accept the Dental Hygiene Modified Program Audit and re-certify the Dental Hygiene Program for five years.**

**(c) Math Audit Update**

Dr. Celenza stated that Department Head Brenton Webber would report on the follow up to the follow up report that the Mathematics Department last provided to the Student Outcomes Committee of the Board. Mr. Webber stated that the department had completed the follow up to all of the recommendations from the audit that are currently due, including: (1) creation of an enrollment management plan; (2) creation of a faculty improvement plan; (3) creation of an assessment plan; and, (4) completion of course documentation.

There was a discussion of Math 263, which has been low-enrolled in the past. According to Mr. Webber, the Department now has a dual enrollment effort for Math 163 and 263 with Masterman High School. Other ways to attract enrollment were discussed including: College advertisements; the Colonial Math Challenge sponsored by the Department for high school students; speaker series; encouraging students to consider getting a joint degree. Also, some students who have participated in a supplemental instruction initiative have re-discovered an interest in mathematics. Other ideas from the Student Outcomes Committee included partnering with businesses to sponsor events and connecting with students through events like the City-wide chess tournament.

**Action: The Student Outcomes Committee recommends accepting the Mathematics Audit follow up report and recommends that the Board of Trustees require a follow-up report Spring 2013 on implementation of the enrollment management plan and the assessment plan.**

**(d) Presentation of Student Outcomes at Board Retreat**

This topic was not discussed.

The meeting was adjourned.

**(3) Next Meeting**

The next meeting of the Student Outcomes Committee of the Board is February 2, 2012 at 1:30 p.m. in conference room M2-34.

**Attachments**

Minutes of December 1, 2011

Modified Program Audit: Dental Hygiene Program

Mathematics Audit Update Report

*Community College of Philadelphia*

*Academic Program Audit: Computer Science Program*

*Division of Business and Technology*

Authors:

Linda Hansell  
Charles Herbert  
Michelle T. Williams  
Craig Nelson

November 11, 2011

## Table of Contents

I. Executive Summary.....	3
II. Program .....	3
III. Faculty.....	8
IV. Outcomes and Assessment .....	10
V. Facilities and Equipment.....	19
VI. Demand and Need for the Program.....	21
VII. Operating Costs and Efficiency.....	22
VIII. Findings and Recommendations.....	22
Appendices.....	26

## **I. Executive Summary**

The Computer Science program at Community College of Philadelphia is a small, select, and mathematically intense program leading to an Associate in Science in Computer Science degree. The program, which has been in place at the College since 1986, is housed in the Computer Technologies Department of the Division of Business and Technology. The major objective of the program is to prepare students to transfer to Computer Science baccalaureate degree granting programs at four-year colleges and universities.

The original curriculum was based on the fundamentals of Computer Science--programming and algorithm development, the development of data structures, and familiarity with computer architecture. To that end, the program requires the completion of five 4-credit laboratory-based courses: *CSCI 111-Programming and Algorithm Development I*, *CSCI 112-Programming and Algorithm Development II*, *CSCI 211-Data Structures*, *CSCI 212-Computer Architecture and Assembly Language*, and *CSCI 213-Computer Organization*.

It has not been necessary to modify the Computer Science core within the program because the theoretical basis for the description of the courses has not changed, although minor changes to the degree structure have been made as College-wide degree requirements have changed.

The Computer Science program has averaged 6 graduates over the last 6 years. The program's students are predominantly male between the ages of 22-29 years of age. Black students represent the largest racial/ethnic group in the Computer Science program. In general, the ratio of full-time to part-time students in the program has been close to 50-50.

Four full-time faculty members with an array of expertise in the discipline each teach part of their course load in the program. Part-time instructors rarely teach Computer Science courses. The program is advised by representatives of an over-arching Computer Technologies Department Advisory Committee composed of representatives from industry and four-year colleges and universities.

The program's major strengths include the retention rate which tends to be better than the College average and the satisfaction of current students.

Recommendations for changes to the program include: improving student recruitment and retention, developing formal articulation agreements with transfer institutions, aligning the program's learning outcomes with the new state-wide curriculum guidelines, and seeking program accreditation.

## **II. Program**

### **Mission**

The Associate in Science in Computer Science program is a small select program designed to mirror the first two years of four-year computer science and software engineering curricula, including courses in computer science, math, physics, English, the social sciences and the

humanities. The curriculum is math intensive with select admissions standards--including placement in Mathematics 161 or above and English 101 or above.

## **Major Goals**

The major goal of the program is to prepare students for transfer as third-year students to baccalaureate programs in computer science, software engineering and related fields.

## **History of the Program**

The Computer Science curriculum at Community College of Philadelphia was developed in the mid-1980's based on the first two years of the curriculum guidelines for baccalaureate programs in Computer Science published by the Association for Computing Machinery (ACM)<sup>1</sup>, the primary professional organization in Computer Science.

In the Fall of 1985 a conference was held at Community College of Philadelphia with the department chairs from eight local four-year colleges in attendance: Drexel University, LaSalle University, Rutgers University, Saint Joseph's University, Temple University, University of Pennsylvania, Villanova University and West Chester University. All of the participating schools agreed in principle to articulation agreements for the program, although only Drexel University signed a formal articulation agreement.

In 1993 the ACM and the Institute of Electrical and Electronic Engineers (IEEE) jointly formed the Computer Science Advisory Board (CSAB), which now serves as the primary body for coordinating accreditation of baccalaureate programs in Computer Science. CSAB member accrediting agencies also include the Accreditation Board for Engineering and Technology (ABET). At the time of our last audit, their standards for accreditation of four-year programs were based on the older course-oriented ACM guidelines. The CSAB guidelines list semester-hours of competency to be included in every baccalaureate degree in Computer Science. Our Associate in Science in Computer Science program was consistent with the first half of a four-year program that met the CSAB standards at the time of our last audit.

Despite the changing nature of computer technology, the fundamental basis for the courses in the program has not changed in the 25 years since the program was established, with two major exceptions. First the degree now requires completion of *CIS 103-Applied Computer Technology* in response to changes in the College's General Education Requirements. Second, the rise of *object-oriented programming (OOP)*<sup>2</sup> in the 1990's required course revisions to reflect that change, most importantly, in the programming sequence of courses (CSCI 111, CSCI 112, and CSCI 211). Object-oriented programming is now regarded as the primary approach to professional programming and software engineering.

Changes in the equipment and programming languages used in the courses have occurred in response to technological innovations in computing, such as using newer operating systems and new devices for data storage.

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<sup>1</sup> See the ACM Website at: <http://www.acm.org/>

<sup>2</sup> For more about object-oriented programming see:

[http://www.webopedia.com/TERM/O/object\\_oriented\\_programming\\_OOP.html](http://www.webopedia.com/TERM/O/object_oriented_programming_OOP.html)

## Description of the Curriculum

The degree centers on five four-credit courses in Computer Science, listed below in their curricular sequence, and a series of Math courses. Students must also complete two physics courses. Originally there were six Computer Science courses, but *CSCI 121-Discrete Structures*, is now offered in the Mathematics Department as *MATH 163-Discrete Mathematics*.

In *CSCI 111-Programming and Algorithm Development I* and *CSCI 112-Programming and Algorithm Development II* students currently use the Java NetBeans programming environment to create computer programs based on algorithms they have designed in response to mathematical and scientific problems. Students also learn to mathematically analyze algorithms for completeness, correctness, and spatial and temporal efficiency.

In *CSCI 211-Data Structures*, students learn to develop and manipulate a variety of complex object-oriented data structures, such as arrays, queues, stacks, linked lists, trees, and graphs.

In *CSCI 212-Computer Architecture and Assembly Language*, students learn to write assembly language programs that interface with both the core of a computer's operating system and directly with other electronic hardware. They study the architecture of the Intel 80x86 family of processors for the bulk of the course, but spend some time comparing that family to several other families of processors in widespread use today. Currently CSCI 212 is only offered online, creating a de facto requirement that Computer Science students complete at least one course online.

*CSCI 213-Computer Organization* is a more theoretical course in which students learn about the organization and design of modern computer systems, from simpler topics such as viewing a computer system as a collection of units that are functionally dependent on input, to more complex topics required as a foundation for courses in baccalaureate programs, such as the geometry of N-dimensional hypercubes as the basis for designing modern parallel processing computer systems and the implications of RISC technology (Reduced Instruction Set Computing) on the design of operating system and communications software. *CSCI 212* and *CSCI 213* are most often taken concurrently by students.

The five courses together prepare students to deal with a variety of issues in computer science as they continue their pursuit of a four-year degree. Computer Science 111 and 112 form a strong sequence in object-oriented programming and algorithm development, which leads naturally to Computer Science 211 as a course in the development of data structures. It is impossible to pursue the study of data structures, which lie at the heart of modern computer software on all levels, without a firm grounding in objects and algorithms, since data structures and the algorithms that create and manipulate them are inextricably linked as software objects.

Computer Science 212 and Computer Science 213 are taken together any time after the first programming course to familiarize students with fundamental systems level problems in Computer Science that can be addressed in part by applying skills developed in other courses.

The analysis of the temporal and spatial complexity of algorithms is an important element in the curriculum. For more than fifty years computer scientists have continued to develop algorithms and data structures to deal with a wide range of problems, but it is not enough to simply create a correct algorithm. Algorithms need to be temporally and spatially efficient. As a program's data set grows larger, the amount of time it takes the program to run and the amount of storage space it uses also grow larger. However, has the software been written so that this growth is linear, exponential, or according to some other function? A mathematical foundation in computer

science is necessary to foster the development of software with reduced time complexity and efficient use of storage space. The Computer Science core of this curriculum, together with the required Mathematics courses, is intended to provide such a foundation.

Computer Science students must complete a calculus sequence (MATH 171 and 172), a course in linear algebra (MATH 271), and a discrete mathematics course (MATH 163). They must also complete two math-based physics courses (PHYS 111-112 or PHYS 140-241), two English courses (ENGL 101 and 102) and elective courses in the humanities and social sciences. The mathematics courses are necessary because of the mathematical nature of computer science, while the physics courses will help students to deal with some of the practical aspects of the physical nature of computer design and architecture, including a foundational knowledge of electricity, magnetism, optics, and related topics affecting the design and performance of computer systems.

Other general education requirements are included for three reasons:

- their inclusion is consistent with the mission statement, philosophy and policies of the College,
- they are often required at four-year institutions for similar reasons, and
- computer scientists must be able to read, write and speak well, work with others, and have an educated understanding of the world around them, especially of the interaction between social and technological phenomena. Computers are both sophisticated calculators and sophisticated communications systems deeply embedded in modern social processes. Knowledge of human social and cultural phenomena makes students better software designers.

### **Revisions since Inception of Program**

The program was first offered in 1986, and audited in 1991, 1995, 1999, and 2005. No major revisions to the program have been made. *CSCI 121-Discrete Structures*, was transferred to the Math Department as *MATH 163-Discrete Math* following the 1999 audit, primarily to be taught by math specialists.

Changes in pre-requisites and course content have been made periodically over the years. Most recently, there were minor revisions of all five Computer Science courses (CSCI 111, 112, 211, 212, and 213) in 2010, which included changes in courses prerequisites.

As mentioned above, the underlying principles that form the basis for the first two years of post-secondary study of Computer Science have changed relatively little since the 1980's. The most significant changes include looking at newer processors and arrangements of internal hardware, such as memory and data communications architectures, and the move to object-oriented programming since the late 1990's.

Currently all of our programming courses emphasize object-oriented programming using the *Java* programming language, which is very similar to the *C++* programming language and its modern derivatives, *Objective C*, used to program some Apple devices, and *Visual C++*, used in some Microsoft Programming environments. Graduates should be experts in *Java* programming, and should easily be able to adapt their skills to *C++* and its derivatives.

## Curricular Innovations and Departmental Organizational Changes

The major innovations in the program have been described above, including the move to object-oriented programming and the use of newer hardware and software.

The Computer Science program has resided in the Data Processing Department, which changed its name to the Computer Studies Department, then the Computer Information Systems Department, before merging with the Office Administration Department in 2009 to become the Computer Technologies Department.

Responsibility for the program has rested with the Department Chair since the late 1990's.

## The Future of Computer Science

Computer Science and Software Engineering continue to be rapidly growing high priority occupations, both locally and nationally, according to the United States Department of Labor (USDOL) and the Pennsylvania Department of Labor and Industry (DLI).

According to the USDOL's Occupational Outlook Handbook (OOH)<sup>3</sup>:

*“...employment of computer software engineers and computer scientists is projected to increase much faster than the average for all occupations. Job prospects should be best for those with a bachelor's degree and relevant experience. ... Employment of computer software engineers is expected to increase by 32 percent from 2008-2018, which is much faster than the average for all occupations. In addition, this occupation will see a large number of new jobs, with more than 295,000 created between 2008 and 2018.”*

DLI lists four Standard Occupational Classification (SOC) codes for Computer Science and Software Engineering<sup>4</sup>:

15-1021	Computer Programmers
25-1021	Computer Science Teachers, Postsecondary
15-1031	Computer Software Engineers, Applications
15-1032	Computer Software Engineers, Systems Software

All of the above are listed as a High Priority Occupations, expected to grow “*much faster than average*” in the state by 2016. In Philadelphia, DLI projects a 42 percent increase for applications developers and a 22 percent increase for systems developers by 2016, with roughly 160 new openings annually in the City Philadelphia and three to five times that number in the surrounding counties.

Wages in the field are well above average. Again quoting from the USDOL's OOH:

*“In May 2008, median annual wages for computer applications software engineers were \$85,430. The middle 50 percent earned between \$67,790 and \$104,870. ... In May 2008, median annual wages of wage-and-salary computer*

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<sup>3</sup> On the Web at: <http://www.bls.gov/oco/ocos303.htm>

<sup>4</sup> This table and DLI data cited herein are available from links on the Web at: <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=611015&mode=2>

*systems software engineers were \$92,430. The middle 50 percent earned between \$73,200 and \$113,960.”*

In the Philadelphia, the median annual earnings for applications software developers was \$83,600. For systems software developers it was \$89,430.

The major directions in the field include a shift from traditional computer programming toward software engineering, and the emergence of new devices, particularly hand-held devices such as multifunctional cell phones and tablet computers.

In the past, there were two distinct groups of programmers—junior-level programmers who could code solutions to problems, and senior-level programmers who could design solutions. They fit into three categories: systems programmers, scientific programmers, and business programmers.

Today, the opportunities for junior-level programmers, called simply computer programmers, is diminishing, while the demand for senior-level programmers, now often referred to as software engineers, is rapidly increasing. In the past, junior-level programmers could secure a job with an associate’s degree or technical training. Today, employment in programming for people with less than a bachelor’s degree is diminishing.

There has also been a change in the classification of programmers. Instead of being employed as systems, scientific, or business programmers, software developers are now described simply as systems programmers who build the behind-the-scenes system software such as operating systems, printer drivers, and networking software, and applications programmers who build the software that users see, such as games and office applications software.

### **III. Faculty**

#### **Profile of Faculty**

Currently, four faculty members teach Computer Science courses within the program, Charles Herbert, Fred Goldberg, Dan Melamed, and Craig Nelson. All four are full-time faculty.

#### **Faculty Qualifications and Expertise and Faculty Support of the Curriculum**

**Charles Herbert** helped establish the program and has been teaching Computer Science courses at the College since the program was founded. He holds a B.S. degree in Mathematics and a B.A. degree in Education from Villanova University, and an M.S. degree in Computer Science from Saint Joseph’s University. Mr. Herbert has been the author of numerous papers and conference presentations, has authored four textbooks, and contributed chapters to several others. He has served as a reviewer of papers submitted for publication to the Journal of the ACM and as a reviewer of Computer Science grant proposals for the NSF. In addition to teaching at the College, he often teaches courses and seminars at other institutions, primarily in the summers, including Villanova, Saint Joseph’s University, Rutgers University and Arcadia University in the Philadelphia area; and Purdue University, Indiana University, the University of Mississippi, East Tennessee State University in the US; and Cambridge University and the University of Bologna in Europe.

**Fred Goldberg** has been a member of the full-time faculty since courses were first offered at the College in the 1960’s and is currently the senior member of the College’s faculty. He holds a B.S. in Electrical Engineering and a B.A. in Liberal Arts from the University of Pennsylvania. (At the time his degrees were granted, electrical engineering degrees were granted to students

studying computing.) Mr. Goldberg has several years of experience in industry, in addition to working on computer systems at the University of Pennsylvania as a student assistant and post-graduate assistant. Mr. Goldberg previously served as Department Chair, and served as the collective bargaining unit's Secretary for more than 20 years.

**Dan Melamed** holds a B.S. in Computer Engineering from Spring Garden College and has been a full-time faculty member since 1998. Prior to that, he was an adjunct instructor and VL for more than 15 years. He has co-authored and presented several papers about teaching computing and teaching computer literacy. Mr. Melamed has been working as a computer programming consultant in private industry since 1991, and is a musician who has experience as a music teacher.

**Craig Nelson** is a graduate of Community College of Philadelphia who holds B.S. and M.S. degrees in Computer Science from Drexel University. He is currently enrolled in a doctoral program in Computer Science at Drexel University and has served as a graduate assistant at Drexel. He became a member of the full-time faculty in 2010, after many years of service as a manager of the College's Student Academic Computing Centers and the computing lab facilities that existed before their formation. He served as an adjunct faculty member teaching Computer Information Systems and Computer Science since 2005.

Mr. Goldberg and Mr. Melamed teach sections of CSCI 111 and 112. Mr. Herbert and Mr. Nelson teach those courses and CSCI 211, 212, and 213. All four instructors also teach Computer Information Systems courses.

### **Contributions to the Life of the College**

Mr. Herbert has served the College as a department chair, curriculum coordinator, curriculum facilitator, assistant dean, grant author and administrator, and coordinator for a number of special projects. He has served on various committees, including numerous hiring committees, two Middle States Accreditation Committees, the college's Curriculum Sub-Committee, the Technology Coordinating Committee and for the past four years on the Institution-Wide Committee. He recently served as Co-Chair of the Pennsylvania Program Articulation Committee for Computer Science.

Mr. Goldberg has served as department chair, curriculum coordinator, and as a member of numerous committees throughout the College including hiring committees, several Middle States Accreditation Committees, the Business Affairs Sub-Committee, and the Institution-Wide Committee. His primary involvement has been with the Faculty Federation, which he served as Secretary for more than 25 years. He has been a member of the faculty and staff negotiating team in every round of collective bargaining since the inception of the Federation.

Mr. Melamed has served on several hiring committees within the Department, and has participated in various college-wide committees, including serving as a delegate on the Faculty Federation's Education Committee. For the past ten years, he has coordinated Credit-By-Exam for CIS 103, a course which now has more than five thousand students each year. He has served as Assistant to the Department Chair for the past several semesters and has been a contributing author for several grant proposals.

Mr. Nelson has served on numerous college committees and is currently serving as the Co-chair of the College's Technology Coordinating Committee. He also has an active record of participation in activities sponsored by Student Affairs. He recently began serving as the faculty moderator for the Student Computing Club.

### **Professional Development**

The Department has emphasized professional development and participation in professional organizations, especially for full-time faculty. As a result, all full-time faculty in the Department have regularly participated in in-house training and in conferences sponsored by professional organizations, to further enhance their skills and knowledge in the discipline. Three of the four full-time faculty routinely attend and present papers at professional conferences, including those sponsored by the League for Innovation in the Community College, and The Community College Computing Consortium of Pennsylvania, and the ACM.

## **IV. Outcomes and Assessment**

### **Graduates**

The Computer Science program has averaged 6.0 graduates per year over the last six years. The fewest was 3 in 2007 and the largest is 10 this year. Two additional students are expected to complete their degree requirement in the current semester, Fall 2011.

Number of program graduates

<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
5	3	6	5	7	10

### **Student Profile**

Enrollment data drawn from the College's Institutional Research website indicates that Computer Science students are predominantly male between the ages of 22-29.

Enrollment in the Computer Science program held steady at roughly 55 to 65 students before beginning to drop in 2007. It bottomed out at 42 students in the Spring of 2009, but in the past two years it has grown back to previous levels. The credit FTE count experienced a similar phenomenon. This enrollment pattern did not match that of the College as a whole.

Credit Headcount

	<b>Fall 2005</b>	<b>Spring 2006</b>	<b>Fall 2006</b>	<b>Spring 2007</b>	<b>Fall 2007</b>	<b>Spring 2008</b>	<b>Fall 2008</b>	<b>Spring 2009</b>	<b>Fall 2009</b>	<b>Spring 2010</b>
<b>Program</b>	<b>65</b>	<b>63</b>	<b>55</b>	<b>64</b>	<b>46</b>	<b>47</b>	<b>45</b>	<b>42</b>	<b>53</b>	<b>64</b>
College-wide	16,236	16,978	16,871	17,019	17,334	17,661	17,327	18,023	19,047	19,965

Credit FTE headcount

	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
<b>Program</b>	<b>50</b>	<b>46</b>	<b>42</b>	<b>47</b>	<b>36</b>	<b>36</b>	<b>35</b>	<b>33</b>	<b>42</b>	<b>53</b>
College-wide	11,017	11,329	11,523	11,296	11,881	11,823	11,883	12,128	13,361	13,784

Computer Science students are predominantly male. Female student enrollment has decreased since Spring 2006, with a significantly lower percentage of female students than the College as a whole.

Program Enrollment by Gender Compared to College-wide Enrollment (percent)

Gender		Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
Female	<b>Program</b>	<b>27.0</b>	<b>14.5</b>	<b>17.2</b>	<b>13.0</b>	<b>17.0</b>	<b>24.4</b>	<b>14.3</b>	<b>11.3</b>	<b>9.4</b>
	College	66.5	66.5	66.8	66.6	66.4	66.3	65.8	65.3	65.3
Male	<b>Program</b>	<b>69.8</b>	<b>85.5</b>	<b>82.8</b>	<b>87.0</b>	<b>83.0</b>	<b>75.6</b>	<b>85.7</b>	<b>88.7</b>	<b>90.6</b>
	College	32.2	32.3	32.1	32.3	32.7	32.9	33.1	33.8	33.9
Unknown	<b>Program</b>	<b>3.2</b>	<b>0.0</b>							
	College	1.2	1.2	1.1	1.1	.9	.9	1.1	.9	.8

Black students represent the largest racial/ethnic group in the Computer Science program. The program enrolls a higher percentage of Asian and American Indian students than the College as a whole. The percentage of Black and of Hispanic students is less than it was five years ago, while the percentage of Asian students has increased. The number of Black students has begun to rise again, but the number of Hispanic students remains low.

Program Enrollment by Racial/Ethnic Background

	Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
Amer Indian or Alaskan Native	2	2	2	1	0	1	1	1	0	1
Asian	8	2	6	8	8	7	6	6	10	13
Black, Non-Hispanic	27	30	19	27	16	15	17	13	14	20
Hispanic	5	5	5	5	6	7	5	4	2	2
Other	4	3	2	2	0	1	0	1	5	8
Unknown	3	6	6	4	3	2	2	1	6	8
White, Non-Hispanic	16	15	15	17	13	14	14	16	16	12

Program Enrollment by Racial/Ethnic Background as Compared to College-Wide Distribution (percent)

Race		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
Amer Indian or Alaskan Native	<b>Program</b>	<b>3.1</b>	<b>3.2</b>	<b>3.6</b>	<b>1.6</b>	<b>0.0</b>	<b>2.1</b>	<b>2.2</b>	<b>2.4</b>	<b>0.0</b>	<b>1.6</b>
	College	.5	.6	.5	.4	.5	.4	.4	.4	.4	.3
Asian	<b>Program</b>	<b>12.3</b>	<b>3.2</b>	<b>10.9</b>	<b>12.5</b>	<b>17.4</b>	<b>14.9</b>	<b>13.3</b>	<b>14.3</b>	<b>18.9</b>	<b>20.3</b>
	College	7.4	7.3	7.7	8.1	8.2	7.8	7.2	7.0	6.8	6.7
Black, Non-Hispanic	<b>Program</b>	<b>41.5</b>	<b>47.6</b>	<b>34.5</b>	<b>42.2</b>	<b>34.8</b>	<b>31.9</b>	<b>37.8</b>	<b>31.0</b>	<b>26.4</b>	<b>31.3</b>
	College	46.7	47.8	46.9	47.4	46.8	47.6	46.4	46.9	46.8	47.6
Hispanic	<b>Program</b>	<b>7.7</b>	<b>7.9</b>	<b>9.1</b>	<b>7.8</b>	<b>13.0</b>	<b>14.9</b>	<b>11.1</b>	<b>9.5</b>	<b>3.8</b>	<b>3.1</b>
	College	5.9	5.8	6.1	6.2	6.5	6.4	7.0	6.6	6.9	7.2
Other	<b>Program</b>	<b>6.2</b>	<b>4.8</b>	<b>3.6</b>	<b>3.1</b>	<b>0.0</b>	<b>2.1</b>	<b>0.0</b>	<b>2.4</b>	<b>9.4</b>	<b>12.5</b>
	College	5.0	4.8	4.6	4.6	4.2	4.4	4.1	3.9	4.2	4.4
Unknown	<b>Program</b>	<b>4.6</b>	<b>9.5</b>	<b>10.9</b>	<b>6.3</b>	<b>6.5</b>	<b>4.3</b>	<b>4.4</b>	<b>2.4</b>	<b>11.3</b>	<b>12.5</b>
	College	6.1	6.5	6.8	6.9	7.8	7.9	9.0	9.9	9.9	9.7
White, Non-Hispanic	<b>Program</b>	<b>24.6</b>	<b>23.8</b>	<b>27.3</b>	<b>26.6</b>	<b>28.3</b>	<b>29.8</b>	<b>31.1</b>	<b>38.1</b>	<b>30.2</b>	<b>18.8</b>
	College	28.4	27.3	27.4	26.3	26	25.4	25.9	25.3	25.1	24.1

The majority of Computer Science students are between the ages of 22-29.

Enrollment by Age as Compared to College-wide Enrollment (Percent)

Years		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
16-21	<b>Program</b>	<b>33.8</b>	<b>25.4</b>	<b>32.7</b>	<b>25.0</b>	<b>41.3</b>	<b>27.7</b>	<b>28.9</b>	<b>19.0</b>	<b>32.1</b>	<b>25.0</b>
	College	33.8	28.3	35.8	30.0	36.9	30.7	36.6	29.7	35.5	26.9
22-29	<b>Program</b>	<b>40.0</b>	<b>38.1</b>	<b>38.2</b>	<b>45.3</b>	<b>32.6</b>	<b>55.3</b>	<b>48.9</b>	<b>59.5</b>	<b>49.1</b>	<b>45.3</b>
	College	30.2	33.6	30.0	34.2	30.3	35.1	30.7	36.1	33.0	37.3
30-39	<b>Program</b>	<b>16.9</b>	<b>20.6</b>	<b>18.2</b>	<b>18.8</b>	<b>15.2</b>	<b>8.5</b>	<b>11.1</b>	<b>9.5</b>	<b>11.3</b>	<b>18.8</b>
	College	17.2	18.1	16.2	17.4	15.9	16.8	15.9	17.4	16.2	17.8
40+	<b>Program</b>	<b>6.2</b>	<b>11.1</b>	<b>7.3</b>	<b>9.4</b>	<b>6.5</b>	<b>6.4</b>	<b>8.9</b>	<b>9.5</b>	<b>3.8</b>	<b>6.3</b>
	College	14.6	15.6	14.2	14.9	13.8	14.6	14.3	14.6	13.7	14.0
Unknown	<b>Program</b>	<b>3.1</b>	<b>4.8</b>	<b>3.6</b>	<b>1.6</b>	<b>4.3</b>	<b>2.1</b>	<b>2.2</b>	<b>2.4</b>	<b>3.8</b>	<b>4.7</b>
	College	4.1	4.4	3.8	3.6	3.1	2.8	2.5	2.2	1.6	1.3

Generally, the ratio of full-time to part-time students has been consistently close to 50-50, with the exception of the Spring 2006 semester, when there were 65.1% part-time students and 34.9% full-time students.

Program Full-time/Part-Time Enrollments as Compared to College-wide Enrollments (Percent)

		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
FT	<b>Program</b>	<b>47.7</b>	<b>34.9</b>	<b>49.1</b>	<b>46.9</b>	<b>54.3</b>	<b>51.1</b>	<b>51.1</b>	<b>54.8</b>	<b>47.2</b>	<b>50.0</b>
	College	31.8	30.0	33.3	29.0	32.8	29.2	32.7	30.0	35.3	32.2
PT	<b>Program</b>	<b>52.3</b>	<b>65.1</b>	<b>50.9</b>	<b>53.1</b>	<b>45.7</b>	<b>48.9</b>	<b>48.9</b>	<b>45.2</b>	<b>52.8</b>	<b>50.0</b>
	College	68.2	70.0	66.7	71.0	67.2	70.8	67.3	70.0	64.7	67.8

## Retention Data

On average, 68.4% of Computer Science students enrolled in the Fall semester return to the same program the subsequent Spring semester. Fall to Spring persistence behavior is similar to that of the College as a whole, although it has spiked in the last few semesters. On the average, graduation rates in the Computer Science program are twice the college-wide rate.

Students who returned to the Same Program or a different program in the subsequent Spring Semester (Percentage)

		Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
Returned Same Program	<b>Program</b>	<b>56.9</b>	<b>72.7</b>	<b>65.2</b>	<b>62.2</b>	<b>84.9</b>
	College	65.6	64.3	64.2	64.6	68.4
Returned Different Program	<b>Program</b>	<b>4.6</b>	<b>5.5</b>	<b>4.3</b>	<b>8.9</b>	<b>5.7</b>
	College	3.6	4.1	5.2	5.1	4.8
Graduated Fall	<b>Program</b>	<b>6.2</b>	<b>1.8</b>	<b>4.3</b>	<b>2.2</b>	<b>5.7</b>
	College	1.9	1.7	2.1	1.8	2.0
Did not return Spring	<b>Program</b>	<b>32.3</b>	<b>20.0</b>	<b>26.1</b>	<b>26.7</b>	<b>3.8</b>
	College	28.9	29.9	28.6	28.5	26.4

Students enrolled in the Computer Science program in the Fall semester either return to the same program, or do not return to the College the subsequent Fall semester. Program students are, on the average, twice as likely to graduate the subsequent Fall semester as students in the entire student body.

Students who returned to the Same Program or a different program in the subsequent Fall Semester (Percentage)

		Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
Returned Same Program	<b>Program</b>	<b>36.9</b>	<b>38.2</b>	<b>37.0</b>	<b>33.3</b>	<b>50.9</b>
	College	36.0	36.2	35.0	37.1	38.5
Returned Different Program	<b>Program</b>	<b>10.8</b>	<b>12.7</b>	<b>6.5</b>	<b>8.9</b>	<b>11.3</b>
	College	7.2	7.5	8.2	8.5	7.6
Graduated	<b>Program</b>	<b>6.2</b>	<b>7.3</b>	<b>13.0</b>	<b>11.1</b>	<b>7.5</b>
	College	7.7	8.1	8.1	8.3	8.1
Did not return Fall	<b>Program</b>	<b>46.2</b>	<b>41.8</b>	<b>43.5</b>	<b>46.7</b>	<b>30.2</b>
	College	49.1	48.3	48.8	46.1	45.8

## Academic Performance

With the exception of the Spring 2006 semester, the GPA of Computer Science students is 15 percent higher than that of the College as a whole, 25 percent higher over the past two years. Generally, students in the program complete more than 90 percent of their college-level credits attempted, more than 95 percent since the Spring of 2009.

Student success at departure has been steadily increasing in the program since the Spring of 2006, and is significantly higher than the College as a whole.

### Course Completion and Average GPA

		Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009
% of college-level credits attempted/completed	<b>Program</b>	<b>75.6</b>	<b>92.2</b>	<b>85.3</b>	<b>90.8</b>	<b>94.1</b>	<b>93.3</b>	<b>96.1</b>	<b>96.3</b>
	College	88.9	88.7	87.1	88.5	87.6	89.4	88.2	87.1
Average GPA	<b>Program</b>	<b>2.15</b>	<b>2.87</b>	<b>2.79</b>	<b>2.83</b>	<b>2.9</b>	<b>3.02</b>	<b>3.27</b>	<b>3.31</b>
	College	2.64	2.62	2.59	2.64	2.61	2.67	2.65	2.60

### Academic Standing (percent)

		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009
Good Standing	<b>Program</b>	<b>90.8</b>	<b>85.7</b>	<b>94.5</b>	<b>93.8</b>	<b>84.8</b>	<b>87.2</b>	<b>82.2</b>	<b>95.2</b>	<b>94.3</b>
	College	90.8	88.1	88.8	86.2	83.8	82.2	85	83.0	85.6
Dropped insufficient progress/ poor scholarship	<b>Program</b>	<b>1.5</b>	<b>4.8</b>	<b>3.6</b>	<b>1.6</b>	<b>0.0</b>	<b>4.3</b>	<b>6.6</b>	<b>2.4</b>	<b>0.0</b>
	College	2.6	3.8	3.0	4.3	3.4	5.5	3.7	5.7	1.2
Probation - FT/PT/ Prov.	<b>Program</b>	<b>7.7</b>	<b>9.5</b>	<b>1.8</b>	<b>4.7</b>	<b>15.2</b>	<b>8.5</b>	<b>11.1</b>	<b>2.4</b>	<b>5.7</b>
	College	6.5	8.2	8.1	9.5	12.7	12.2	11.2	11.5	13.3

### Success at Departure (percent)

Status		Fall 2005	Spring 2006	Fall 2006	Spring 2007	Fall 2007	Spring 2008
Graduated	<b>Program</b>	<b>17.6</b>	<b>0.0</b>	<b>11.1</b>	<b>7.7</b>	<b>9.1</b>	<b>17.6</b>
	College	5.8	12.1	5.2	13.9	6.5	14.0
Long term success	<b>Program</b>	<b>35.3</b>	<b>41.7</b>	<b>44.4</b>	<b>53.8</b>	<b>45.5</b>	<b>52.9</b>
	College	38.3	38.4	35.5	35.3	33.6	35.6
Short term success	<b>Program</b>	<b>0.0</b>	<b>4.2</b>	<b>11.1</b>	<b>11.5</b>	<b>18.2</b>	<b>11.8</b>
	College	17.4	16.9	18.1	16.4	19.0	17.1
Unsuccessful	<b>Program</b>	<b>47.1</b>	<b>54.2</b>	<b>33.3</b>	<b>26.9</b>	<b>27.3</b>	<b>17.6</b>
	College	38.4	32.6	41.1	34.4	40.9	33.4

- Long term success is defined as departure with a GPA of 2.0 or greater and 12 or more cumulative hours earned
- Short Term success is defined as departure with GPA of 2.0 or greater with 11 or fewer cumulative hours earned.
- Unsuccessful is defined as all departing students not otherwise classified including students who never completed a college-level course

## **Program Learning Outcomes**

The program level student learning outcomes have been developed and are as follows:

Upon completion of this program graduates will be able to:

1. Use technology effectively to communicate and analyze information related to computer programming, algorithm development and software engineering.
2. Work as a part of a professional team to design, code, test and debug mathematically-based, object-oriented computer software.
3. Demonstrate a fundamental knowledge of information transfer and control in modern computer systems, including knowledge of assembly languages, computer architecture and computer organization.
4. Demonstrate a basic understanding of mathematical concepts important in computer science and software engineering, including differential and integral calculus, linear algebra and discrete mathematics.
5. Develop object-oriented algorithms and data structures using the structured sequential logic of computer programming languages in an object-oriented environment and implement those solutions as Java applications and Java applets.
6. Analyze the temporal and spatial efficiency of algorithms and data structures and redesign them for increased efficiency where possible.

**Course Specific Student Learning Outcomes** have been developed for each course. They are as follows:

### **Programming and Algorithm Development I (CSCI 111)**

Upon completion of this course students will be able to:

1. create computer programs using a modern high-level, object-oriented programming language.
2. work as a part of a professional team to design, code, test and debug mathematically-based, object-oriented computer software.
3. correctly use the elements of logical structure within “object-oriented software methods.
4. create source code for, compile, and execute object-oriented software that is algorithmically correct.
5. demonstrate a knowledge of input and output routines, data types, and data operations.
6. create separate “software modules that will interact one another.

## **Programming and Algorithm Development II (CSCI 112)**

Upon completion of this course students will be able to:

1. demonstrate and understanding of the concepts of recursion and the ability to create recursive software.
2. create recursive and non-recursive object-oriented software methods to search and sort arrays of numeric and string data.
3. create object-oriented software to create and process computer graphics.
4. create object-oriented software to open, close and process object-oriented data files.
5. create software to perform simple matrix algebra on matrices stored as two-dimensional arrays of numeric data.

## **Data Structures and Algorithms (CSCI 211)**

Upon completion of this course students will be able to:

1. define in writing each of the following data structures, and describe the advantages and disadvantages of using each, along with examples of their common specialized applications: simple linked list, circular linked list, doubly linked list, stack, queue, circular queue, heap, binary tree and B tree.
2. describe and create object-oriented recursive and non-recursive algorithms to implement, maintain, sort, and search linear data structures.
3. list the elements of a given binary tree in pre order, in order and post order formats.
4. describe and create object-oriented software to establish and maintain a balanced binary search tree using methods such as AVL trees or red-black trees.
5. implement object-oriented algorithms to establish and maintain a B tree index to records of data.
6. implement a heap of data for use in a practical application, such as in a priority queue.
7. estimate and compare the temporal and spatial complexity of algorithms for the maintenance of data structures.

## **Data Structures and Algorithms (CSCI 212)**

Upon completion of this course students will be able to:

1. describe the theoretical architecture of a modern electronic computer.
2. describe the specific architectures of several families of microprocessors.
3. describe the assembly language of at least one family of modern computers.
4. describe the how data is stored in at least one family of modern computers.
5. Apply accepted programming techniques to assembly language software development.
6. implement assembly language code for arithmetic calculation.
7. demonstrate the proper use of first, second and third order logic structures in assembly language code.
8. implement assembly language code to handle input and output devices.
9. demonstrate the proper use of parameter passing in assembly language software with multiple program modules.

## Computer Organization (CSCI 213)

Upon completion of this course students will be able to:

1. describe the binary and hexadecimal number systems including computer arithmetic,
2. describe the history and development of modern computers,
3. describe the Von Neumann computer architecture, and its strengths and weaknesses, including the Von Neumann bottleneck and how it affects machine performance
4. list and describe the functional units of a modern central processing unit
5. describe the concepts of parallel, pipelined, superscalar, /CISC and RISC computer architectures.
6. Describe the hierarchy of memory in a modern computer system and how it affects software performance.
7. List some of the outstanding problems in computer system architecture and what changes in computer architecture we are likely to see over the next several years.

### Summary of Student Survey Results

Surveys were emailed or mailed to 55 current students, 61 graduates, and 160 former students of the Computer Science program. Responses were received from 25 current students, 3 graduates, and 1 former student. The complete survey results are shown in Appendix B.

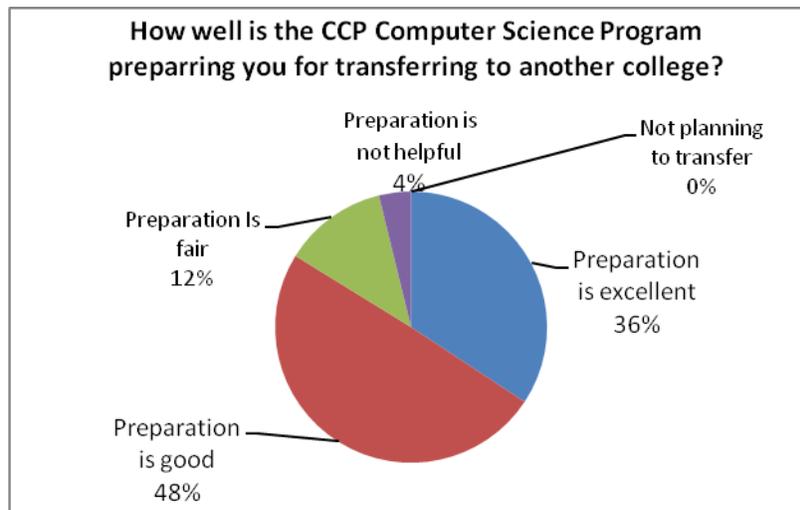
Results show that a large majority of students are/were satisfied with the program. Of the current students who responded to the surveys, 84% said that they are satisfied with the instruction they are receiving. The three program graduates who responded said that they were satisfied with the instruction they received.

Likewise, many students are/were satisfied with the support they received from program faculty. Of the current students who responded, 84% said they were satisfied while two of the three graduates said they were satisfied with the support they received from program faculty.

Many current students detailed how the professors were very helpful in class. They also noted that they were given plentiful advice about transferring. In response to the question, ***“Do you feel that you are accomplishing/have accomplished the educational objectives you set for yourself at Community College of Philadelphia”***, all current students and program graduates said that they either fully or partly accomplished their educational objectives.

All program graduates transferred to another institution after graduation from CCP. When asked, ***“How well did the Computer Science Program prepare you for the academic demands at the college to which you transferred,”*** one program graduate indicated that preparation was good, and the other two indicated that preparation was fair. The 3 program graduates who responded mentioned that had the programming aspect of the curriculum been better, they would have felt more prepared at their transfer institution.

Current students responded to the question, ***“How well is the CCP Computer Science Program preparing you for transferring to another college?”*** While 36% and 48% said that preparation was excellent and good, respectively, 12% and 4% said that preparation was fair or not helpful. Students cited the same issue with the programming aspect of the curriculum.



**Figure 3**

Survey respondents cited a variety of strengths of the Computer Science program. The following is a sample of responses:

- In learning the basic and general knowledge, the basic knowledge prepares you to adapt between programming languages. Since every couple of years, there is a new language you have to learn to keep with the market. The general knowledge is base (sp) on the components that you can program to provide a business solution, such as three-tier architecture: Presentation, Logic, and data.
- As explained before, it gives you the basic tools for a better reasoning when challenged by a problem.
- “The pRogRAMMiNg class (sp) ARE gREAT”
- “Hands on programming projects”
- “GOOD CHOICES ABOUT PROGRAMMING LANGUAGES LIKE JAVA AND ASSEMBLY”
- “A lot of fundamental programming practice.”
- “The peers and faculty”.
- “The entire department is open to ideas and have office hours.”
- “Good teachers”
- “Flexible class times, small group, more one on one help and getting the help you need.”
- “The professors within the curriculum. They are highly educated and extremely helpful.”
- “It helps me work the programming portions when I’m in computer-related classes”.

In response to the question ***“What do you feel needs to be changed or added to the Computer Science program in order to improve the program?”***, students cited that they felt that the programming work was too easy. Samples of responses are as follows:

- Use updated programming technology about the architecture client-server model and teach on how to use different data backend software, like SQL, MySQL, ORACLE, ETC.
- CCP need to have harder lab assignment especially data structure class. CCP need to have C programming course.

- My teachers were great, the material was great and well explained, but the programming homework can be a little more challenging, not to make the program difficult, just so the student comes with stringer skills into the next institution.

Graduates of the program responded to the question ***“What courses or topic could have been added to the Computer Science Program curriculum that would have been more useful to you in performing your current job?”*** with the following suggestions:

- Database management
- Web application

There was one former student who responded to the survey. A sample of the questions and responses can be found below:

In response to the question ***“Which of the following reasons were important to you when you enrolled in the Computer Science Program at CCP?”*** the former student made the comment:

- “To meet the prerequisites to get into a graduate program in Drexel's software engineering master after receiving my undergraduate degree at Arcadia University in History.”

When asked the question, ***“What do you think are the strengths of the Computer Science Program?”***, the former student made the following comment:

- “I think that CCP has many competent teachers in their Cis/CS department. Competent teachers make it easier for students to learn a hard subject.”

Finally, in response to the question, ***“What do you think needs to be changed or added to the Computer Science Program in order to improve the program?”*** the former student wrote:

- “I would have liked to have been able to take more advanced Computer Science class's (sp) than what was offered. Also class's (sp) should be recorded so that a lecture can be revisited by a student. This would also allow for a (sp) online class at the same time.”

## **V. Resources**

The current classroom space, offices and other general facilities used for the program are adequate to meet the needs of the program and its students. Given the technical nature of the program, special attention needs to be paid to the computer hardware and software needs of the program.

### **Currently in Use**

Standard modern personal computer systems are generally sufficient to run the software used for Computer Science courses and no specialized hardware is currently used for the program, except for demonstrations using equipment that is owned by faculty members, such as Apple computers and various cell phones and tablets. As a result, Computer Science courses can be taught using

the computerized classroom in which *CIS 103-Applied Computer Technology* is taught. Since CIS 103 is a course with over 70 sections each semester, Computer Science courses can be taught in almost any computerized classroom in the College without the need for special hardware accommodations.

The software used in the program includes:

- **Android Software Development Kit (SDK)**
- **Apache Tomcat**
- **Eclipse IDE for Java**
- **Java Development Kit 7 (JDK 7)**
- **Java NetBeans Integrated Development Environment (IDE)**
- **Java Runtime Environment (JRE)**
- **JUnit – Unit Testing Framework**
- **Microsoft Macro Assembler (SDK)**
- **Microsoft Office**
- **Microsoft Visio**
- **MySQL Server**
- **Note Pad ++**
- **Open Source Software**
- **Oracle Express Server**

Microsoft and Oracle software Visio are available under departmental and college-wide purchasing agreements and are used in other courses and programs in the College as well.

All of the other software listed is available as open-source software under GNU licenses or similar licenses.

A more detailed description of the program's use of the listed software is included as Appendix C in this document.

### **Additional Needs of the Program**

The current hardware and software for the program has been adequate because faculty members have been using their personal property to conduct demonstrations in the course. They have done so willingly, and have not requested demonstration equipment. However, as topics such as gaming and mobile application development become more important, especially if individual courses in these areas are to be offered within the program, The College should acquire such equipment. Development for gaming and mobile platforms happens on standard personal computers, so no new computer labs are needed, but sample equipment should be acquired for demonstrations and so the students can test and display their work on the devices for which the software was written.

Computer Science programs in four-year institutions offer a variety of tracks for students to pursue, with Gaming, Applications Software Engineering, Mobile Application Development and Human Computer Interaction (HCI) among the most popular. As suggested elsewhere in this document, the curriculum should be modified to match the new state-wide standards, which

allow for choosing one of these courses as an elective in the second year of the program. When new courses in gaming and mobile applications development are made available to students as elective courses, then the College should acquire the demonstration hardware for those courses. The estimated cost for this should be in the range of one thousand to three thousand dollars per year. The demonstration equipment would be used in CSCI 111, 112, and 211.

## **VI. Demand and Need for the Program**

### Computer Science

Computer Scientists solve complex business, scientific, and general computing problems by creating new technology. Often times, Computer Scientists work with electrical engineers, mechanical engineers, and other specialists. In the Occupational Outlook Handbook published by the United States Department of Labor’s Bureau of Labor Statistics, “Employment of computer scientists is expected to grow by 24 percent from 2008 to 2018, which is much faster than the average for all occupations. Employment of these computer specialists is expected to grow as individuals and organizations continue to demand increasingly sophisticated technologies.” High skilled workers, such as those who graduate from a Ph.D. program are in high demand. As we advance technologically, so will the demand for computer scientists knowledgeable in fields such as networking technology, computing speeds, software performance, embedded systems, and information security.<sup>5</sup>

In Pennsylvania, Computer Science careers are among the highest in expected growth between 2004 and 2014. In particular, Network Systems Analysts can expect the highest growth rate of 46.5% between 2004 and 2014 followed closely by Applications Software Engineers and Systems Software Engineers with growth rates 43.1% and 35.4%, respectively. The “hot jobs” identified by Pennsylvania Work Statistics were mostly computer-related jobs.<sup>6</sup>

Three careers for which a background in Computer Science is useful are among the 22 “Hot Jobs in Philadelphia” for 2010<sup>7</sup>, and are projected to see double-digit job growth over the next five years. These jobs and their estimated growth rate are:

<b>Estimated Percent Growth 2010-2015</b>	
Computer Applications Software Engineers	15%
Computer Systems Analysts	18%
Network Systems and Data Communications Analysts	28%

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<sup>5</sup> <http://www.bls.gov/oco/ocos304.htm>

<sup>6</sup> [http://www.paworkstats.state.pa.us/project/college\\_degree.pdf](http://www.paworkstats.state.pa.us/project/college_degree.pdf)

<sup>7</sup> [http://www.pwib.org/downloads/Hot%20Jobs%20in%202010%20Report\\_April.pdf](http://www.pwib.org/downloads/Hot%20Jobs%20in%202010%20Report_April.pdf)

## VII. Operating Costs and Efficiency

### Credit Hours Produced and Cost per Credit Hour

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
<b>Program Courses</b>					
Credit hours produced	14,547	14,505	15,532	15,297	18,516
Cost per credit hour	\$119.31	\$127.19	\$120.77	\$124.68	\$117.33
<b>College-Wide Average</b>					
Credit hours produced	339,439	338,545	348,808	348,969	388,581
Cost per credit hour	\$129.79	\$137.13	\$144.42	\$144.65	\$138.33

### Annual Total Program Costs Per FTE

	2005-2006	2006-007	2007-2008	2008-2009	2009-2010
<b>Program</b>	\$6,647.13	\$6,997.40	\$7,565.73	\$7,324.94	\$7,087.57
College-wide Average	\$6,666.82	\$7,019.64	\$7,486.11	\$7,343.31	\$7,190.51

Source: Office of Finance and Planning: Table 30

	Program 2007-2008	College- Wide Average 2007-2008	Program 2008-2009	College-Wide Average 2008-2009	Program 2009-2010	College-Wide Average 2009-2010
# FTE	41.5	13,941	39.1	14,207.50	55.6	15,808.7
Total Operating Cost					\$394,069	\$113,672,550
Direct Instr'l Cost*			\$138,203	\$50,476,857	\$183,326	\$53,751,446
Indirect Cost					\$210,743	\$59,921,104
Indirect Cost per FTE		\$3,494.94				
Direct Cost per FTE	\$3,549.20	\$3,494.96	\$3,534.60	\$3,552.83	\$3,295.75	\$3,400.11

Total Operating, Average Direct and Indirect Costs FY 2007-08 and 2008-2009

\* Direct Costs include all expenses associated with the instructional cost centers, including the allocation of fringe benefits.

Source: Office of Finance and Planning: Table 29

## VIII. Findings and Recommendations

The Computer Science program has had a long history at the College. Over the years, it has been associated with various industry leaders in the field of computer science, from the Association for Computing Machinery, the Institute of Electrical and Electronic Engineers, to the Computer

Science Advisory Board. The program is currently advised, in part, by an advisory committee that is overarching in its duties, as it is an entity that advises all of the Computer Technologies programs at the College. The advisory committee is diverse in its composition, as it has members from area businesses, schools, and industries such as CISCO, Drexel, Temple, University of Pennsylvania, the United States Department of Labor and The City of Philadelphia.

The current students indicated that they were satisfied with the program and with the level of instruction they received. Based on student responses to surveys, the program is somewhat beneficial in terms of preparing students for transfer to other institutions of higher education.

With only 3 responses, it is difficult to draw conclusions about program graduates

The program's students tend to fair well academically, as their average GPAs have been higher than the College's for 8 of 9 semesters. Additionally, students in the program are more likely than not to be successful upon departure from the College. However, the program is small. With regard to program enrollment by age, the program enrolls more 22-29 year old students, than the College as whole. The program has also consistently enrolled fewer females over time. Moreover, there has been an average of 6 graduates in the Computer Science program in the last six years

In light of the fact that the computer science field is expected to experience growth much faster than other fields, as indicated by data from the Bureau of Labor Statistics, and the program's expressed purpose of "...mirror[ing] the first two years of a four-year computer science curricula", the following recommendations are being made:

**Recommendation 1:** Align the program with the Pennsylvania Department of Education's curriculum guidelines for Computer Science established in 2011 by the Transfer and Articulation Oversight Committee (TAOC). Update the program's curriculum following the guidelines and standards associated with the Computer Science Advisory Board (CSAB)<sup>8</sup>.

Timeline: Spring 2012

**Recommendation 2:** Explore program accreditation as an option to keep the program up-to-date with the latest industry standards and to ensure that the program consistently mirrors the first two years of a baccalaureate program.

Timeline: 2012-2013

**Recommendation 3:** Create a sub-committee of the over-arching Computer Technologies Advisory Committee to address only the curricular, resources, and other program concerns of the Computer Science program.

Timeline: Spring 2013

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<sup>8</sup> For more information on the CSAB see: [www.csab.org](http://www.csab.org)

**Recommendation 4:** Designate a specific faculty member to be responsible for supervision of the program. That person should be responsible for implementing the goals of the program.

Timeline: 2012-2013

**Recommendation 5:** Develop and implement a comprehensive enrollment management plan that includes an assessment of current and past efforts, effectiveness, and new recruitment strategies. The plan should aim to increase program enrollment of:

- a. Traditional-Aged College Students  
Consider partnership with the School District of Philadelphia and outreach organizations that address transition-to-college initiatives.
- b. Female Students  
Consider STEM initiatives (especially gender specific initiatives) on and off-campus.
- c. Internal Students  
Consider students who may be unsure of their major but who have excellent skills in computer science, or students who may be shadowing the program but have a different program major.

Timeline: Begin Fall 2012

**Recommendation 6:** Increase emphasis on securing computer science specific articulation agreements with area schools and universities that have 4-year computer science degree programs. Securing articulation agreements that are specific to computer science would help to ensure that the graduates of this program have additional options in terms of seamless pathways from the College to a baccalaureate degree granting institution.

Timeline: Begin Fall 2012

**Recommendation 7:** Using authentic assessment, continue to refine and implement the outcomes assessment plan at the program and course levels to ensure excellence in student learning and academic success. The goal is to complete assessment of all student learning outcomes within five years with 20% of the course student learning outcomes completed each year.

Timeline: Spring 2012

**Recommendation 8:** Develop a detailed Technology Plan with Academic Computing to monitor and assess the hardware and software needs of the program to ensure that the technology used for courses is current. The plan should consider acquisition of hand-held devices and gaming consoles for use in class for computer science students to have practical experiences with developing applications for these devices.

Timeline: Spring 2012

## APPENDICES

### Appendix A: Computer Technologies Advisory Board

#### COMPUTER TECHNOLOGIES DEPARTMENT

#### ADVISORY COMMITTEE

#### Fall 2011-Spring 2014 Appointments

Jody Bauer, Chief Information Officer  
Community College of Philadelphia  
Information Technology Systems  
1700 Spring Garden Street  
[jbauer@ccp.edu](mailto:jbauer@ccp.edu)  
Philadelphia, PA 19130  
Office: (215) 751-8526

Mr. Steve Bradley  
Cisco Systems, Inc.  
301 Lindenwood Drive, Suite 210  
Malvern, PA 19355  
[stbradle@cisco.com](mailto:stbradle@cisco.com)  
Office: (610) 695-6204  
Mobile: (610) 212-9831  
Fax: (610) 695-6004

Ms. Christine Brutschea  
Mercy Health System  
Chief Information Officer  
Information Technology, MHS  
One West Elm Street  
Conshohocken, PA 19428  
w 610-567-5210  
m 610-742-7869  
f - 610-271-9178  
[Cbrutschea@mercyhealth.org](mailto:Cbrutschea@mercyhealth.org)  
[www.mercyhealth.org](http://www.mercyhealth.org) ( <http://www.mercyhealth.org/> )

Mr. James Carty, Chief Security Officer  
Federal Bureau of Investigation  
Philadelphia Division  
William J. Green, Jr. Building  
600 Arch Street, 8th Floor  
Philadelphia, PA 19106  
Phone: (215) 418-4000  
[jcarty@ccp.edu](mailto:jcarty@ccp.edu)

Ms. Amy Edwards, MS  
Program Manager, Computing and Security Technology  
Goodwin College, Drexel University  
3001 Market Street, Suite 100  
Philadelphia, PA 19104  
(Tel) 215.895.0946  
(Fax) 215.571.393  
[amy.d.edwards@drexel.edu](mailto:amy.d.edwards@drexel.edu)

Mr. Brian Finnegan  
Information Technology, Faculty Chair  
Peirce College  
1420 Pine Street  
Philadelphia, PA 19102  
[brfinnegan@peirce.edu](mailto:brfinnegan@peirce.edu)  
(Tel) 215.545.6400

Mr. Robert Gallagher  
Director of Information Technology  
Temple University School of Podiatric Medicine  
148 North 8th Street  
Philadelphia, PA 19107  
[rgallagher@ccp.edu](mailto:rgallagher@ccp.edu)  
(Tel) 215.625.5230

Mr. James Gist, Information Technology, CTE  
Office of Secondary School Reform  
Division of Career and Technical Education  
School District of Philadelphia  
440 N. Broad Street, 2nd Floor, Portal A  
Philadelphia, PA 19130  
Phone: (215) 400-5908  
Fax: (215) 400-4232  
Email: [jgist@philasd.org](mailto:jgist@philasd.org)

Cynthia D. Jones, Associate CIO – Applications  
University of Pennsylvania Health System  
3001 Market Street – Fourth Floor  
Philadelphia, PA 19104  
(215)662-7535 (office)  
(215)796-7944 (cell)  
[Cynthia.jones@uphs.upenn.edu](mailto:Cynthia.jones@uphs.upenn.edu)

Mr. Ron Leonard, Office of Apprenticeship  
U.S. Department of Labor  
170 S. Independence Mall West  
Curtis Building, Suite 820 East  
Philadelphia, PA 19106  
Leonard.ronald@dol.gov  
2158614841  
2158614833

Mr. Robert E. Minor III, Deputy CIO of Infrastructure  
Chief Information Security Officer  
City of Philadelphia, Division of Technology  
1234 Market Street, 15th Floor  
Philadelphia, PA 19107  
Email; Bob.minor@phila.gov  
Phone 215-686-8142  
Cell 215-760-4155

Ashley L. Podhradsky , D.Sc.  
Assistant Professor, Computing and Security Technology  
Goodwin College, Drexel University  
School of Technology and Professional Studies  
3001 Market Street, Suite 100  
Philadelphia, PA 19104  
**Telephone:** 215 571 3929  
**Email:** ashley.podhradsky@drexel.edu  
**Fax:** 215 895 4988

Mr. Lester “Skip” Shuda, CEO  
Team and a Dream  
224 Lansdowne Ave  
Wayne, PA 19087  
**Phone:** (877) DREAM.05 or  
(877) 373-2605  
**Fax:** (877) 460-2680  
**E-mail:** [skip@teamandadream.com](mailto:skip@teamandadream.com)  
[www.teamandadream.com](http://www.teamandadream.com)  
Mobile: (610) 662-6158  
Twitter: @skipshoe

Updated April 8, 2011

## Appendix B: Student Survey Results

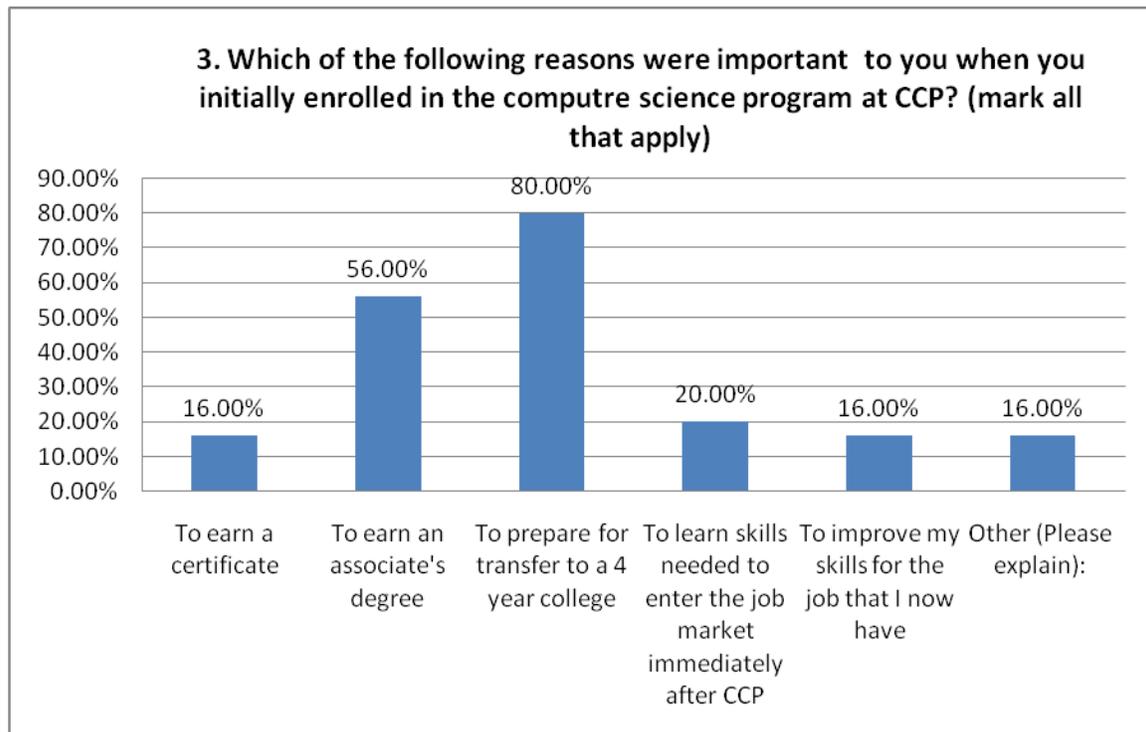
### Survey Results – Current Students

N = 25

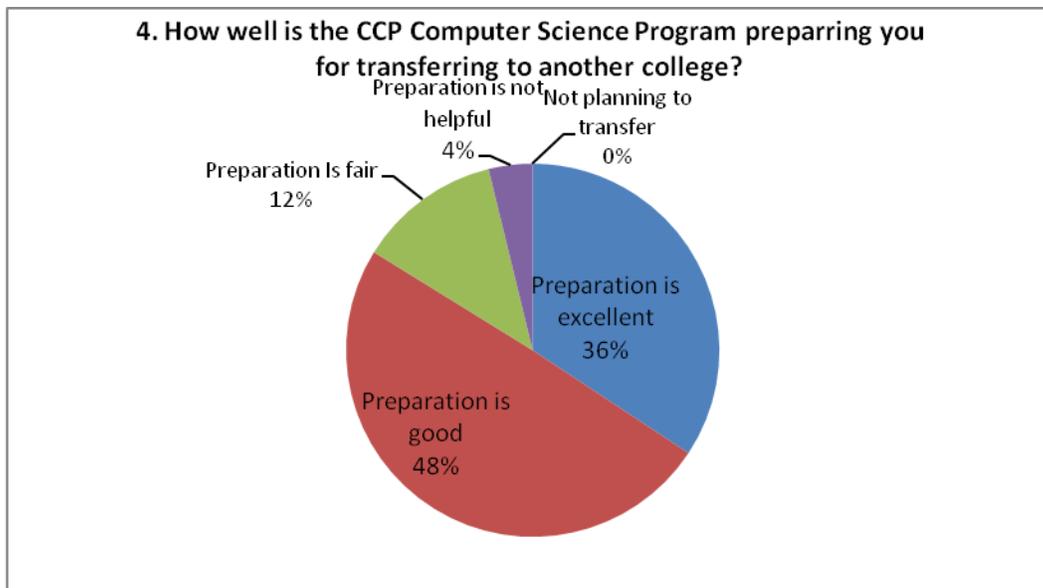
1. When did you enter the Computer Science Program?								
Fall 2006	Fall 2008	Fall 2009	2009	Spring 2010	Fall 2010	Fall 2011	2011	Spring 2011
1	2	1	1	2	7	5	1	5

2. Are you currently attending CCP full-time or part-time?		
Answer Options	Response Percent	Response Count
Full-time	60%	15
Part-time	40%	10

3. Which of the following reasons were important to you when you enrolled in the Computer Science Program at CCP? (Mark all that apply)		
Answer Options	Response Percent	Response Count
To earn a certificate	16.0%	4
To earn an Associate degree	56.0%	14
To prepare for transfer to a four year college	80.0%	20
To learn skills needed to enter the job market immediately after CCP	20.0%	5
To improve my skills for the job that I now have	16.0%	4
Other (please explain)	16.0%	4

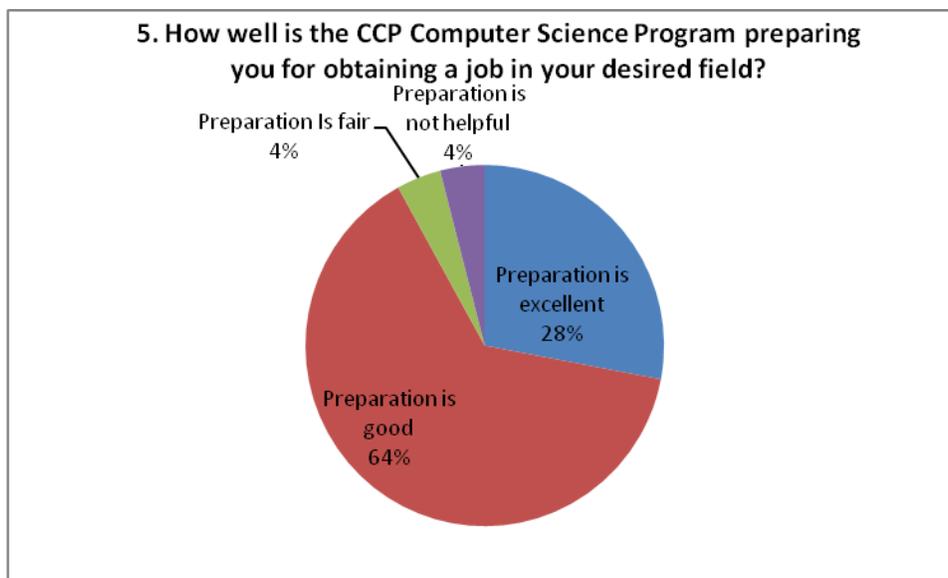


4. How well is the CCP Computer Science Program preparing you for transferring to another college?		
Answer Options	Response Percent	Response Count
Preparation is excellent	36.0%	9
Preparation is good	52.0%	13
Preparation is fair	12.0%	3
Preparation is not helpful	4.0%	1
Not planning to transfer	0.0%	0
Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.		
Number	Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.	
1	Until now, we learned to programming in java but we did not learn other programming.	
2	Java and netbus are great tools to understand how things work; instead of just using tools available.	
3	The teachers teach us very good	
4	It has prepared me well, however I would like guest lecturers from professors from Drexel.	
5	The teachers are doing a good job.	
6	I made a poor decision by coming to CCP. It is very difficult to transfer into top schools from here. Even with a 4.0.	
7	He's a great teacher.	



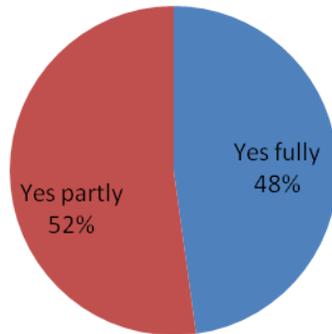
5. How well is the CCP Computer Science Program preparing you for obtaining a job in your desired field?		
Answer Options	Response Percent	Response Count
Preparation is excellent	28.0%	7
Preparation is good	64.0%	16
Preparation is fair	4.0%	1
Preparation is not helpful	4.0%	1

Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.		3
<b>Number</b>	<b>Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.</b>	
1	Again Professor Herbert relates work done in class to real work in the field constantly which is very important for the students.	
2	I feel that the preparation offered through the CCP Computer Science Program is not quite adequate for obtaining a job in my desired field, especially when considering today's extremely competitive job market. The major reason for this is, again, because a lot of instructors don't really care whether their students can understand what they're talking about or not. Plus, a less major reason is that I feel the Computer Science courses are still too basic and simple to be of any direct use for obtaining and maintaining a job in my desired field.	
3	Again Professor Herbert relates work done in class to real work in the field constantly which is very important for the students.	



<b>6. Do you think you are accomplishing the educational objectives that you set for yourself at Community College of Philadelphia?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes, fully	44.0%	11
Yes, partly	48.0%	12
No	0.0%	0
Please comment		
<b>Number</b>	<b>Please comment</b>	
1	I wish I was guided towards a program that focused more on Networking when I asked for help from the advisers.	
2	That part of the reason, again, is because of poor instructions being received from poor-quality instructors.	

6. Do you think you are accomplishing the educational objectives you set for yourself at Community College of Philadelphia?



**7. What do you think are the strengths of the Computer Science Program?**

Number	Response Text
1	Good teachers
2	Good
3	The entire department is open to ideas and have offices hours.
4	Good choices about programming languages like java and assembly
5	The peers and faculty.
6	A lot of fundamental programming practice.
7	None bad
8	Hands on programming projects
9	The programming class are great.
10	No classes during the summer semesters.
11	It's alright.
12	Its helps me work on the programming portions when I'm in computer-related class.
13	The professors within the curriculum. They are highly educated and extremely helpful.
14	Flexible class times, small group, more one on one help and getting the help you need.

**8. What do you think needs to be changed or added to the Computer Science Program in order to improve the program?**

Number	Response Text
1	All teachers need to follow the same guidelines and there needs to be more resources for students, the assignments cannot always be done just using the book.
2	A uniform teaching on the subjects between teachers.
3	Need more available classes during all semesters (right now only a few classes are available during one or the other semester.
4	Networking
5	I don't think there is anything that needs to be changed as of now.
6	Make CSCI 211 available for the spring semester.

7	Seriousness, rigor, professors.
8	A mobile App course, assembly language needs to be taught on campus and with better real world applications i.e. games, calculators, pro games.
9	Wish it could be a four years degree
10	More courses
11	Introduce java script with java programming
12	More course should be offered in this year.
13	Tutoring
14	A little other programming knowledge.
15	Programming courses in mobile technology.
16	Offer classes at other campuses.

9. Are you satisfied with the instruction you are receiving?		
Answer Options	Response Percent	Response Count
Yes	92.0%	23
No	4.00%	1

9a. If no, why not?	
Number	Response Text
1	Again, because of poor-quality instructors.

10. Are you satisfied with the support you are receiving from the program faculty?		
Answer Options	Response Percent	Response Count
Yes	84.00%	21
No	4.00%	1

10a. If yes, please give an example of the type of support you are receiving.	
Number	Response Text
1	Dr Herbert was very instrumental in telling my class what colleges in the area we could apply to and he also let us know additional classes that were not included in the curriculum that we take.
2	Any questions are always answered.
3	Professor Herbert is always willing to help you as busy as he is.
4	Plenty of time given in lab, the teacher will sit with you until the problem is resolved, and the CBI SACC is generally readily available.
5	reference letter
6	Advice as to which classes are best suited for me to maximize my transfer credits
7	perfect follow up with home work.
8	Advice on transferring after CCP and more knowledge about the current technology.
9	Answering questions, providing software, etc.

11. What is your current job title and what type of work you do in your primary job?	
Number	Response Text
1	Tutor I tutor high school kids in Math
2	Residential Counselor
3	COMpuTeR Lab MONITOR ANSWER bASIC qUESTIONS AbOUT COMMO n COMPUTER ApplicATIOn USEd by

	STUDENTS And ARE RESpONSible FOR hElpiNG MAINTAIN thE COMpUTER IAb.
4	Accounting
5	No Job
6	Preparation cashier
7	Senior Web Developer Web development-PHP, HTML, CSS, Java Script
8	Sale support
9	Subway Operator
10	Driver Driver
11	Job Not Related to Computer Science but would like a job in my field

12. Is this job directly related to the field of Computer Science?		
Answer Options	Response Percent	Response Count
Yes	8.00%	2
No	28.00%	7

13. Was your enrollment in the Computer Science Program helpful to you in getting this job?		
Answer Options	Response Percent	Response Count
Yes	4.00%	1
No	32.00%	8

14. Were you employed in this job prior to enrolling in the Computer Science Program at CCP?		
Answer Options	Response Percent	Response Count
Yes	24.00%	6
No	12.00%	3

15. If yes, have your experiences in the Computer Science Program at CCP helped you do your job better?		
Answer Options	Response Percent	Response Count
Yes	4.0%	1
No	24.0%	6

16. How could your Community College of Philadelphia education be more useful to you in performing your job?	
Number	Response Text
1	Helps me with better logic and to better explain concepts to students.
2	LEARN MORE AbOUT MobilE TEChNology
3	Professors with more passion, but more importantly more knowledge.

17. How many hours per week on average do you work in this job?	
Number	Response Text
1	20
2	20
3	32
4	40
5	15-20
6	40
7	48
8	25
9	20
10	27

18. If you are not employed now, is this employment status by your choice?		
Answer Options	Response Percent	Response Count
Yes	62.5%	5
No	37.5%	3
	<ul style="list-style-type: none"> <li>to much work for the major and both a job . you can only do one or the other.</li> </ul>	

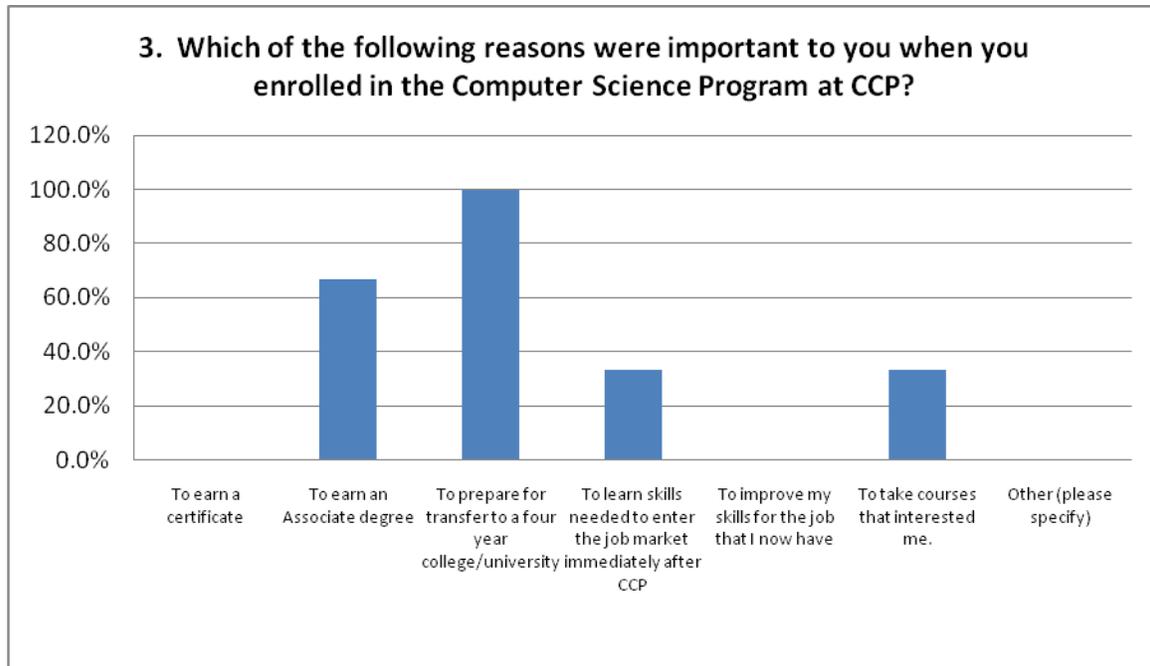
**Survey Results – Program Graduates**  
N = 3

1. When did you enter the Computer science Program?	
Fall 1995	Spring 2006
1	1

2. When did you graduate from the Computer Science Program?		
Spring 1997	Summer 2008	2008
1	1	1

3. Which of the following reasons were important to you when you enrolled in the Computer Science Program at CCP? (Mark all that apply)		
Answer Options	Response Percent	Response Count

To earn a certificate	0.0%	0
To earn an Associate degree	66.7%	2
To prepare for transfer to a four year college/university	100.0%	3
To learn skills needed to enter the job market immediately after CCP	33.3%	1
To improve my skills for the job that I now have	0.0%	0
To take courses that interested me.	33.3%	1
Other (please specify)	0.0%	0



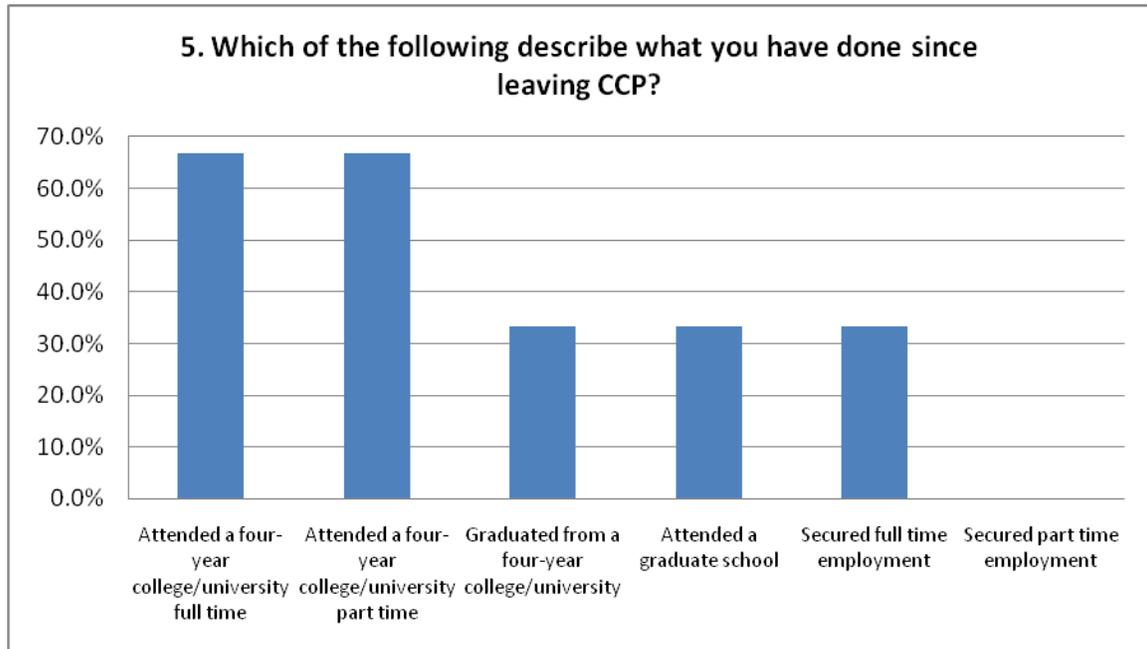
**4. Did you accomplish the educational objectives that you set for yourself at Community College of Philadelphia?**

Answer Options	Response Percent	Response Count
Yes, fully	66.7%	2
Yes, partly	33.3%	1
No	0.0%	0

**5. Which of the following describe what you have done since leaving CCP? (Mark all that apply)**

Answer Options	Response Percent	Response Count
Attended a four-year college/university full time	66.7%	2
Attended a four-year college/university part time	66.7%	2
Graduated from a four-year college/university	33.3%	1
Attended a graduate school	33.3%	1
Secured full time employment	33.3%	1
Secured part time employment	0.0%	0
Other	33.3%	1

Number	Please comment.
1	I am graduating this Fall 2010 (Temple University)



**6. Name of most recently attended college, date started, and major:**

Number	Response Text
1	Temple University
2	Temple University, Fall 2008, Computer Science
3	Temple University, Fall 2009, Computer Science

**7. Present enrollment status at the college listed in Question 6**

Answer Options	Response Percent	Response Count
Still attending full time	0.0%	0
Still attending part time	33.3%	1
Stopped attending before graduating	0.0%	0
Graduated	66.7%	2
If graduated, what is your degree and date of graduation?		2
Number	If graduated, what is your degree and date of graduation?	
1	Master of Science in Computer Science and Information Technology 2001	
2	Graduating this December 2010	

**8. If you transferred to another college, how well did the Computer Science Program prepare for the academic demands at the college to which you transferred?**

Answer Options	Response Percent	Response Count
Preparation was excellent	0.0%	0
Preparation was good	33.3%	1

Preparation was fair	66.7%	2
Preparation was not helpful	0.0%	0
Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.		3
<b>Number</b>	<b>Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.</b>	
1	I learn the basic knowledge of programming, which was a good foundation for my career; however the problem that I see is that the materials teach on the period that I was in CCP was not updated with the latest technology used in the market. I am not sure what technology are you teaching now but If I was a current student in your program, I will like to be used programming languages that are at least 3 years old. When I was in CCP, I was learning programming using Pascal language. This language was not longer used or they were few jobs in the marker with this requirement.	
2	At CCP there is no C programming class, so when transferred to Temple, I was struggle with the operating system class	
3	The Computer Science program at CCP is good, it gives you the basic tools you need and it allows you to think critically and apply logic. The only thing I would recommend is that the programming part be a little more challenging. I say this because it is not that easy at the institution I'm in now.	

9. Were you satisfied with the instruction you received in the Computer Science program?		
Answer Options	Response Percent	Response Count
Yes	100.0%	3
No	0.0%	0

10. Were you satisfied with the support you received from the program faculty?		
Answer Options	Response Percent	Response Count
Yes	66.7%	2
No	33.3%	1

10a. If yes, please give an example of the type of support you received.	
Number	Response Text
1	CCP was very affordable
2	The teachers were very helpful and explained the material in a way that was easy for the students to understand

10b. If no, what type of support were you looking for and did not receive?	
Number	Response Text
1	Even that I had a good teacher, I think that I need more support in the labs assignments

11. What do you feel are the strengths of the Computer Science Program?	
Number	Response Text
1	In learning the basic and general knowledge, the basic knowledge prepares you to adapt between programming languages. Since every couple of years, there is a new language you have to learn to keep with the market. The general knowledge is base on the components that you can program to provide a business solution, such as three-tier architecture: Presentation, Logic, and data.
2	Honestly, I think CCP Computer Science was very weak compared to Temple University

3	As explained before, it gives you the basic tools for a better reasoning when challenged by a problem.
---	--

12. What do you feel needs to be changed or added to the Computer Science Program in order to improve the program?	
Number	Response Text
1	Use updated programming technology, teach about the architecture client-server model and teach on how to use different data backend software, like SQL SERVER, MySQL ORACLE, ETC.
2	CCP need to have harder lab assignment especially data structure class. CCP need to have C programming course.
3	My teachers were great, the material was great and well explained, but the programming homework can be a little more challenging, not to make the program difficult, just so the student comes with stronger skills into the next institution.

13. If you transferred to another college or university, did your transfer institution accept your Computer Science courses?		
Answer Options	Response Percent	Response Count
Yes, all of them	100.0%	3
Yes, some of them	0.0%	0
None of them	0.0%	0
Please list the courses that did not transfer		0

14. If you transferred to another college/university, did your transfer institution accept your non-Computer Science courses?		
Answer Options	Response Percent	Response Count
Yes, all of them	66.7%	2
Yes, some of them	33.3%	1
None of them	0.0%	0
Please list the courses that did not transfer		0

15. What is your current job title and what type of work you do in your primary job?	
Number	Response Text
1	<p>Title: Senior Officer of Process Analysis</p> <p>Description</p> <ul style="list-style-type: none"> <li>• Manage and implement technical solutions to improve business process.</li> <li>• Interact with program staff and senior management to address Ad hoc data requests</li> <li>• Act as technical liaison between the Program and Research Data departments in Transition Workforce Development</li> <li>• Manage and mentor a team of software developers.</li> <li>• Managed projects and ensured tasks completion in a timely manner.</li> <li>• Analyze, define, and document requirements, design and develop detailed interfaces and functionality, architect and implement technical solutions from hardware and software.</li> <li>• Develop web base applications and automated process using languages such as java script, XML, VB.NET, ASP.NET, C-Sharp, and T-SQL. Use developing tools such as Microsoft Visual Studio, SQL Server Management Studio and data management tools such as Data Transformation Services (DTS) and SQL Server Integration Services (SSIS).</li> <li>• Applications develop to integrate and migrate data from multiple database system from internal and external partners, Identify discrepancies base on the business rules and data entry, Fiscal payment, Business Performance, and email reporting distribution.</li> <li>• Develop custom data views and reports in Crystal Reports and MS Reporting Services.</li> </ul>

	<ul style="list-style-type: none"> <li>• Administration and setup of the Kronos web base application, Kronos data collection system and SQL server.</li> <li>• Maintain SQL database including performance tuning. Perform disaster recovery including all software installations, network, and system settings.</li> <li>• Resolve any systems failure, including hardware and software malfunctions.</li> <li>• Coordinated with the Technical Support Specialist, all activities related to technical training users. Provide 2nd tier user support.</li> <li>• Development and plan documentation for hardware and software upgrade.</li> </ul>
2	Student Career Program - Oversee and maintain database (Database administrator)

16. Is this job directly related to the field of Computer Science?		
Answer Options	Response Percent	Response Count
Yes	100.0%	2
No	0.0%	0

17. Was your enrollment in the Computer Science Program helpful to you in getting this job?		
Answer Options	Response Percent	Response Count
Yes	100.0%	2
No	0.0%	0

18. Were you employed in this job prior to enrolling in the Computer Science Program at CCP?		
Answer Options	Response Percent	Response Count
Yes	0.0%	0
No	100.0%	2

18a. If no, how well did the Computer Science program prepare you for your job?		
Answer Options	Response Percent	Response Count
Preparation was excellent	0.0%	0
Preparation was good	50.0%	1
Preparation was fair	50.0%	1
Preparation was not helpful	0.0%	0
Please explain. We would appreciate your comments on your Computer Science courses as well as your other general education courses.		0

19. What courses or topic could have been added to the Computer Science curriculum that would have been more useful to you in performing your current job?	
Number	Response Text
1	Database management, web application

20. How many hours per week on average do you work in this job?	
Number	Response Text
1	50 hours
2	20 hours

21. If you are not employed now, is this employment status by your choice?		
Answer Options	Response Percent	Response Count
Yes	0.0%	0
No	100.0%	1

## Appendix C: Software Used in Computer Science Courses

### **MICROSOFT VISIO**

In CSCI 111 students are exposed to concepts and skills in Data Modeling and Process Modeling. Data modeling is demonstrated and assessed through the use of Unified Modeling Language (UML) Class Diagrams. Process modeling is demonstrated through using Flow Chart Diagrams. Microsoft Visio is currently one of the leading choice tools in industry for these activities. Students are encouraged to gain a moderate level of proficiency using Visio. Adapting Microsoft Word as a modeling tool is also illustrated for modeling assignments that are less sophisticated.

In CSCI 112 Data Modeling and Process Modeling with MS Visio is continued with emphasis moving towards creating Abstract Data Types and Understanding Entity Relationship (ER) Diagrams. Additionally, Visio is used to demonstrate and encourage developing wireframe diagrams for designing interface's and understanding Human Computer Interactions (HCI).

Finally in CSCI 211 Data Modeling and Process modeling are used to convey the frameworks of complex data structures such as: Linked lists, Binary Trees, Spanning Trees. Emphasis is still placed on constructing Flow Chart, and ADT using Class Diagrams.

Currently students are able to obtain this software free of charge through our association with Microsoft's MSDN program.

### **Microsoft Office**

All Computer Science Courses: CSCI 111, CSCI 112, CSCI 211, CSCI 212, and CSCI 213 require students to create several technical documents in association with application and project submissions. It is encouraged that students use a professional document editing environment to create these documents. Microsoft Office provides a variety of professional tools to assist in the construction of these documents. This includes but not limited to spreadsheet software, presentation software, word processing that supports team collaboration features.

### **Open Source Software**

**Open-source software (OSS)** is computer software that is available in source code form: the source code and certain other rights normally reserved for copyright holders are provided under a software license that permits users to study, change, improve and at times also to distribute the software. The computer Science program attempts to integrate OOS into the program to minimize software cost and expose students to relevant research in Computer Science and Software Engineering.

### **MySQL SERVER**

MySQL is the world's most popular open source database software. MySQL is an enterprise level Relational Database Management System (RDMS). It is Available under a "dual licensing" model, free software/open source GNU General Public License (commonly known as the "GPL"). Java's JDBC technology is an API that provides cross-DBMS connectivity to a wide range of SQL databases and access to other tabular

data sources, such as spreadsheets or flat files. In CSCI 112 several weeks are spent teaching students to process Structured Query Language (SQL) Data Manipulation Language (DML) statements through the Java programming language. Students learn to write platform independent Java programs that can be used to manipulate the data in a wide range of SQL databases without the requirement to modify and/or recompile the Java programs when moving from platform to platform or from DBMS to DBMS. This is briefly revisited in CSCI 211.

Additionally, MySQL server is used the CIS 205 Database Management Systems course.

### **Oracle Express Server**

Additionally, students will also get exposure to Oracle Express Server. This demonstrates the transparency of Java Program Applications across multiple database platforms. Oracle Express is a free RDMS. Assist in further illustrating that Java programs can be used to manipulate the data in a wide range of SQL databases without the requirement to modify and/or recompile the Java programs when moving from DBMS to DBMS

### **The NetBeans Integrated Development Environment (IDE)**

NetBeans is one of the most accepted application development environment in the software industry for developing applications in Java. This software development tool is used through CSCI 111, CSCI 112 and CSCI 211. The NetBeans platform allows application development from a set of modular programming components. It is a framework for simplifying the development of applications. The NetBeans IDE supports development of a variety of Java application types including: standard client applications, web applications, and mobile applications.

### **Note Pad ++**

Notepad++ is a free (under the GPL license) source code editor which supports several programming languages under Windows environment. Notepad++ - is Notepad Plus Plus is a Notepad replacement program with features enhancement geared toward programmers. Some important features are letting users manage different documents simultaneously and the ability to zoom in on software code for presentations. Useful supported languages by Notepad++ are: C++, Java, C#, XML, HTML, PHP, batch file, SQL, Objective-C, CSS, and Flash action script. This application is used in CSCI 111, CSCI 112 and CSCI 211 to illustrate example code of algorithmic solutions.

### **Java Development Kit 7 (JDK 7)**

The Java JDK is a free open source development framework for the Java programming Language. It contains all the predefined classes (Java Language Compiler, objects and associated methods) necessary to develop professional application in Java.

### **Java Runtime Environment (JRE) -**

The JRE is a free open source Java Programming Language interpreter, also referred to as the Java Virtual Machine. The JAVA Virtual Machine is included in the JAVA JDK, it is required in the client computer in order to run Java applications.

### **Android Software Development Kit (SDK) –**

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. The Android SDK provides the tools and Application Program Interface (APIs) necessary to begin developing applications on the Android Operating System Platforms using the Java programming language.

### **Eclipse IDE for Java**

Eclipse IDE for Java is an open source project focused on building an open development of extensible frameworks, tools and runtimes for building, deploying and managing Java software across the lifecycle of the Application. It contains essential tools for Java development, including a Java IDE, a CVS client, XML Editor, and Maven integration. The primary focus for using this application is its seamless integration with the Android SDK. Used to demonstrate software development for devices supporting the Android Operating System (OS)

### **JUnit – Unit Testing Framework**

The JUnit testing framework is a free open source for programmer-oriented testing framework for Java. The JUnit framework is an open-source project. JUnit is a simple framework to write repeatable tests for Java applications. The framework permits programmers testing their own software. Typically testing is not closely integrated with development. This prevents programmers from measuring the progress of development; it is difficult to determine when application functionality starts working or when it stops working. Using JUnit programmers can cheaply and incrementally build a test suite that will help measure progress, spot unintended side effects, and focus development efforts. Students in CSCI 112 and CSCI 211 are exposed to the JUnit testing software.

### **Apache Tomcat**

Apache Tomcat is an open source software implementation of the Java Servlet and Java Server Pages (JSP) technologies. It permit student to learn how to build web applications using servlets and JSP. Additionally, it permits students to deploy and test web applications. In CSCI 112 and CSCI 211 students are exposed to the basic steps of using Tomcat to set up a development environment, organize source code, and then build and test a web application.

### **Microsoft Macro Assembler SDK**

An assembly language is a low-level programming language for computers, microprocessors, microcontrollers, and other programmable devices. It implements a symbolic representation of the machine codes and other constants needed to program in a given CPU architecture. An assembly language is specific to certain physical (or virtual) computer architecture. Assembler is used to translate assembly language statements into the target computer's machine code. CSCI 212 focuses on writing assembler programs for the Intel x86 and x86-64 processing chips CPU, processor registers and memory

locations. The Microsoft Assembler Software Development Kit (SDK) is used as the application development tool for the course.

### **Hardware Needs**

Currently, Computer Science requires standard desktop personal computers. The desktops must have memory and storage capable of running the standard college configuration of Windows and Microsoft Office. They should be configured with the standard data communication ports Universal Serial Bus (USB), DVD drives and networking access. Additionally, the desktops should have storage to install the software outlined above.

**The Community College Baccalaureate:  
A Proposal to Expand Career Pathways for Students**

**Submitted to**

**Pennsylvania State Board of Education  
Mr. Larry Wittig, Chair**

**Submitted by**

**Bucks County Community College  
Community College of Philadelphia  
Delaware County Community College  
Montgomery County Community College**

**February xxx, 2012**

## **The Community College Baccalaureate: A Proposal to Expand Career Pathways for Students**

### **Proposal**

Bucks County Community College, Community College of Philadelphia, Delaware County Community College and Montgomery County Community College seek authorization to offer selected baccalaureate-level curricula leading to one of three degrees: Bachelor of Applied Science; Bachelor of Applied Technology; or Bachelor of Science. In line with models that exist in at least seventeen other states, adding these options to current college offerings will enable the four community colleges in Southeastern Pennsylvania to provide a core of baccalaureate offerings, at an affordable tuition rate, that will expand pathways for students, particularly in career and technical areas.

### **Rationale**

Since the first two-year public institution was founded in 1901, community colleges have evolved to provide increasing options for the approximately 12 million students who currently utilize their programs and services. Initially, in response to the demand of students not able to attend a university due to lack of qualifications or financial means, “post-graduate high school programs” (Associate of Arts) were developed for students desiring to transfer to four-year institutions. Other programs followed, including vocational, technical, workforce and remedial programs, as well as Associate of Science and Associate of Applied Science degree programs, the last of which was primarily considered a terminal degree.

In recent years, an increasing number of community colleges across the United States have begun offering selected baccalaureate degrees, particularly in areas tied to labor demands (see Appendix C for specific examples). This trend is further underlined by the 2010 Carnegie listing of Undergraduate Instructional Program Classifications. The Associate’s Dominant classification now includes 240 institutions that award both associate’s and bachelor’s degrees, but the majority of whose degrees awarded are at the associate’s level. Consistent with the fundamental philosophy of community colleges—access to postsecondary education, particularly for the unserved and the underserved—this proposal focuses on that same basic concept, the community college baccalaureate degree.

A number of factors reshaping higher education today have significant implications for the role of community colleges in offering selected baccalaureate degrees: an increase in jobs requiring the baccalaureate as the entry-level credential; the rising cost of tuition at baccalaureate-level institutions; limited programs and access to meet these demands; an older and part-time

population of students who are in the workforce; and a more global market (Walker, 2005). There is also national, state and local interest in seeing an increase in the number of college degree-holders for purposes of economic stability and social equity.

President Barak Obama has challenged America to have the world's highest proportion of college graduates by the year 2020. According to 2010 U.S. Census data, Pennsylvania ranks 35<sup>th</sup> among our 50 states in the percentage of its residents who hold an associate's or bachelor's degree. Locally, Philadelphia Mayor Michael Nutter has established as one of his major goals doubling the city's 18 % college-attainment rate over the next five to ten years. Philadelphia currently ranks 83rd out of the 100 largest U.S. cities in the percentage of residents who hold college degrees. Community colleges, which enroll nearly half of all college undergraduates in the U.S., play an important role in meeting these college completion goals, especially in ensuring a diverse workforce and serving the growing number of students who balance work and family obligations with their studies.

Adding baccalaureate options to Pennsylvania's community colleges will increase geographical, financial and academic access to baccalaureate higher education. Such options will expand opportunity for students who balance full- or part-time employment, family obligations, limited options for commuting and limited options for attending college during regular business hours.

Almost half of all undergraduates who attend college—including the majority of first-generation and minority students—attend one of the nation's community colleges. Of that number, close to one-half declare attaining a bachelor's degree as their goal, yet only an estimated quarter of those students manage to achieve transfer to bachelor's-level programs. This lack of transfer can mean a significant difference in individual earning power over a lifetime (*Improving Access to the Baccalaureate*, 2004).

## **Employment Needs**

Most jobs in the “new knowledge economy” require a postsecondary education and are found in white collar office settings, education, health care, and science and advanced technology employment areas. “The share of education and health care jobs with at least some college degree increased from fewer than half in the 1970s to more than 75% today, with more than 52% with a bachelor's or graduate degree.... The share of technology jobs has doubled from roughly 4 to 8 % of all jobs. In 1973, 63% of technology workers had at least some college, while 86% now have postsecondary education. More than half have at least a bachelor's degree...” (Carnevale, Strohl and Smith, 2009, p. 23).

Between 2008 and 2018, new jobs in Pennsylvania requiring postsecondary education and training will grow by 181,000 (57%). The total job demand (new jobs and job openings due to retirement) at the baccalaureate and graduate levels by occupation is:



(See “Projections of Jobs and Education,” The Georgetown University Center on Education and the Workforce, June 2010, in Appendix A.)

The Philadelphia Workforce Investment Board (PWIB), which researches education/workforce alignment on a regular basis, has compiled a list of occupations aligned with existing applied baccalaureate programs in the U.S. and estimated the demand for those occupations in Southeast Pennsylvania (see Appendix B). Occupations estimated to be in high demand are: accountants/auditors, financial analysts, elementary school teachers, computer systems analysts, and registered nurses.

Both the Georgetown University and PWIB analyses identify career and technical occupations that are supported directly by community college associate degree curricula that could be expanded to include baccalaureate-level preparation as well.

### **The Rise in Entry Level Credentials**

As noted above, one of the factors leading to consideration of community college baccalaureate options has been the move to increase entry level credentials for licensed fields such as nursing, interpreter education, and respiratory care.

#### Nursing

The U. S. Department of Labor estimates that there will be one million available nursing jobs in 2018 due to job growth and the number of retiring nurses. Simultaneously, the U.S. will experience an expected increase in an aging population (*Community College Times*, October

2010). For many years the primary source for producing registered nurses has been associate degree nursing programs. The American Association of Community Colleges (AACC) notes that “Half of all new nurses and the majority of other new health-care workers are educated at community colleges” (AACC 2011 Fact Sheet).

A recent report by the Institute of Medicine recommends increasing the percentage of nursing baccalaureate degree-holders from 50% to 80% by 2020. At St. Petersburg College, a Florida community college, the Bachelor of Science in Nursing (B.S.N.) program has had tremendous success. Students, particularly those in their 30s who have earned their associate degrees, are taking advantage of this two-plus-two program. Several local hospitals are encouraging this career growth opportunity by offering financial support to their nurses (Furlong, 2005). This is but one of many successful community college B.S.N. examples already thriving across the U.S.

In the past few years, two developments have impacted the hiring of associate degree nursing graduates: (1) a weak economy, coupled with the uncertainty of health care reform; and (2) implementation of a policy requiring an applicant to have a B.S.N. in order to be hired by some hospitals. In the Philadelphia region, Thomas Jefferson University, Hospital of the University of Pennsylvania, and Hahnemann University Hospital are magnet hospitals. A criterion for magnet hospitals is that the institution encourages nurses to continue their education. That is costly if reimbursement is involved, so these hospitals prefer to hire B.S.N. graduates only. Fox Chase Cancer Center also prefers B.S.N. graduates. However, while a B.S.N. is very strongly preferred, these hospitals make some exceptions for their employees or for outstanding graduates who completed an associate degree in nursing.

Elsewhere in the Delaware Valley, a B.S.N. is required at Main Line Health hospitals (Lankenau and Bryn Mawr) as well as the Veterans Administration Hospital. Main Line Health instituted new eligibility requirements for nursing hires beginning in December 2009: B.S.N. for all external applicants, GPA 2.8 or greater, and completion of two essay questions. They report that they had over 600 applications for 70 positions and that they filled all 70 positions with B.S.N. graduates. Further, they report that their current workforce is 55% B.S.N. Mercy Fitzgerald Hospital, a member of the Mercy Health System, is yet another example of an employer who has announced the B.S.N. requirement for future hires.

Community College of Philadelphia (CCP) nursing graduates of 2009 were, for the most part, successful in finding jobs. Most (81%) are working full time as registered nurses in a variety of settings (community clinics, psychiatric hospitals, rehabilitation, hospice, long term care), community hospitals (Mercy, Chestnut Hill), and teaching hospitals (Temple, Hahnemann, Albert Einstein). Alumni report that the job search was easier if they had been employed by the hiring hospital while a student and if they were enrolled in a B.S.N. program. One-third of the 2009 alumni reported that they had begun to study for a B.S.N. within six months of graduation.

There is consensus among nursing educators that the trend of associate degree nursing students enrolling in a B.S.N. program immediately upon graduation is increasing and will continue to increase. For community colleges, which continue to provide the bulk of new registered nurses nationally, multiple pathways into the nursing profession (L.P.N., A.D.N., B.S.N.) are a natural outgrowth of the community college mission. In expanding the pool of baccalaureate-prepared nurses, community colleges can address another significant issue, the predicted nurse educator shortage in the country. The average age for nursing faculty is 56 years old. A larger baccalaureate pool will be required to produce replacement nurses with master's and doctoral degrees.

### Interpreter Education

A second example of evolving entry-level requirements can be found in interpreter education. In Pennsylvania there are four accredited programs for American Sign Language interpreters: Bloomsburg University (B.S.); Mount Aloysius (A.A., B.A.); Community College of Philadelphia (A.A.S.); and Community College of Allegheny County (Certificate). Currently, students can sit for the National Interpreter Certification if they hold at least an associate's degree. By 2012, students will need to have a bachelor's degree (in any field, not necessarily interpreter education) to take the examination, a motion passed by the membership of the Registry of Interpreters for the Deaf in 2003. With a strong job market for nationally certified sign-language interpreters, the demand for programs will only increase.

Again, where an associate degree level curriculum already exists, expanding to a bachelor's level program is a natural outgrowth of current faculty and program expertise, as well as direct credential support for local or regional workplace demand.

### Respiratory Care

Depending on their training, respiratory therapy majors can become respiratory therapists, respiratory therapy technicians, pulmonary function technologists, or neonatal-pediatric specialists. With more education and experience, they may advance to management positions, becoming medical and health services managers. According to the U.S. Bureau of Labor Statistics, the outlook for careers in the field of respiratory therapy is very good. Respiratory therapists with a specialization in pediatrics or cardiopulmonary care are expected to have the best opportunities.

Although the Commission on Accreditation for Respiratory Care (CoARC) supports the development of academic advancement pathways for the associate degree graduate in gaining baccalaureate and graduate degrees, the members of the Commission continue to strongly support the associate degree as the minimum degree required for entry to the profession.

However, one of the ten recommendations from the “Transitioning the Respiratory Therapist Workforce for 2015 and Beyond” conference in July 2010 was to request that CoARC change its standards to require a baccalaureate or graduate degree for entry into the profession. Currently, about 85 percent of respiratory care programs in the United States are two-year programs.

In addition, in the Greater Philadelphia Region, Thomas Jefferson University and Children’s Hospital of Philadelphia are already de facto requiring baccalaureate-prepared candidates for their respiratory positions (Source: CCP Respiratory Care Advisory Committee meeting, November 16, 2011).

Nursing, interpreter education and respiratory care are but three examples of the changes that are developing, usually in licensed professions, in entry level credentials required for future certification.

### **Economic Stability**

As national and global economies evolve, there will be greater demand for programs which integrate academic pedagogy with applied learning strategies relevant to employment. A community college baccalaureate will allow people working full-time to earn a degree at a community college who might otherwise not be able to do so. This has economic impact implications. “By collaborating closely with employers, the community college can develop a curriculum that is relevant and immediately applicable to current and emergent needs, especially those that require a baccalaureate degree for entry or advancement within that profession” (Walker and Floyd, 2005, p. 96).

An increase in such programs can also make the U.S. more competitive in the global market by producing skilled and credentialed workers. Since baccalaureate degree holders earn more, they will also contribute to local, state and regional economic stability. In the applied program, the majority of technical and discipline major courses will be offered at the associate degree level, and there will be a shift of some general education courses to the upper division (Wallace, 1999). “Also, because of most four-year colleges’ reluctance to offer an applied baccalaureate, the community college would not be competing with senior institutions or duplicating their programs” (Townsend, 2005, p. 181).

### **Access**

With more career-oriented students looking to further their education in order to increase career mobility, there is mounting concern that four-year schools will not be able to meet the demand.

A 2003 survey conducted by the Community College Baccalaureate Association was sent to 500 presidents, of whom 101 responded. Some of the findings were:

- Over a third of respondents indicated that four-year institutions in their area are not meeting baccalaureate demand.
- More than a third affirmed that the majority of their students do not transfer to four-year colleges and universities because of geographical or financial barriers.
- Over two-thirds agreed that there are specific, high-demand career fields that require a baccalaureate and that currently the four-year institutions in their area are not meeting these demands (Floyd, 2005, p. 42).

More recently, Judith Bilsky, executive vice chancellor in the Florida Department of Education's Office of Student and Academic Success, noted that community college baccalaureate programs in that state have enrolled a different population from university baccalaureate programs: "For instance, whereas three-fourths of the students in the state's public four-year institutions are between the ages of 18 and 25, more than three-fourths of students in community college baccalaureate programs are older than 26 (with most of those being older than 35)" (Inside Higher Ed, 8/12/10). Bilsky added, ". . .these new [community college baccalaureate] programs are also attracting students from 'underserved populations' that have not typically thrived at the state's four-year institutions. She does not expect future expansion of these degrees to 'compete' in any way with those offered by existing state universities" (Inside Higher Ed, 8/12/10).

### **Community Colleges in Other States Offering the Baccalaureate**

"As degree requirements increase, community colleges have begun offering bachelor's degrees and postgraduate certificates, especially in occupations and professions with strong ties to local labor markets such as education, health care, and information technology" (Carnevale, Strohl and Smith, 2009, p. 29).

The chart in Appendix C lists 42 community colleges in 15 states offering baccalaureate degrees, many in applied areas (Community College Baccalaureate Association website). The most popular fields are Nursing, Education, Health Care, Business, Information Technology, and Public Safety.

In Florida, the community college baccalaureate movement is strongest. A recent count indicated that 19 of the state's 28 community colleges offer 111 baccalaureate degrees. Most are in education and nursing; however, there has been growth in the applied science programs such

as public safety management, fire science management, interior design, and project and acquisitions management (“Florida Analysis” of Florida’s Office of Program Policy Analysis, April, 2005).

The University of Wisconsin’s two-year colleges will soon offer limited bachelor of applied arts and sciences degrees to serve students in mostly rural areas (CCBA *Beacon*, Vol. 12, No. 2, Fall 2010). Three Texas community colleges offer degrees in applied fields aligned with demands of industries in their areas. Three of Hawaii’s community colleges have focused on applied degrees in business and information technology, computer electronic technology, and culinary arts.

### **Colleges with Applied Baccalaureates in Pennsylvania**

The principal example of an institution committed to applied baccalaureate options in Pennsylvania is the Pennsylvania College of Technology, a special mission affiliate of The Pennsylvania State University. Formerly Williamsport Technical Institute and part of the state’s community college sector, the Pennsylvania College of Technology offers certificate, associate and baccalaureate degree programs relating to more than 100 different career areas. Unique Bachelor of Science (B.S.) programs provide opportunities for students to develop their technical foundation skills and advance into management and specialty positions. As of fall 2010, the largest B.S. majors were: Network Specialist, Civil Engineering Technology, Construction Management, and Residential Construction Management.

### **Potential Baccalaureate Programs at Southeastern Pennsylvania Community Colleges**

Bucks County Community College, Community College of Philadelphia, Delaware County Community College and Montgomery County Community College currently offer a range of certificate and associate degree programs that are aligned with the major industry sectors of Southeast Pennsylvania. These four institutions already collaborate in several programmatic arenas.

First, our four colleges, in concert with one New Jersey community college and Drexel University, comprise the Collegiate Consortium for Workforce and Economic Development. Through the Consortium, we have for many years pooled our curriculum and human capital assets in providing a broad array of education and training to employers across our Greater Philadelphia Region.

Second, our four institutions have in place a longstanding commitment to “shared programs.” Each of the four colleges publishes in our respective catalogs unique programs in which our

sister institutions' students may enroll at our respective in-county tuition rates. This initiative has helped us to avoid duplicating small, expensive programs, yet still serve our prospective students with an even broader array of program choices.

Finally, all four colleges have numerous written articulation agreements in place with area 4-year colleges and universities. In some cases, these agreements were developed in tandem with all of the community colleges and the receiving 4-year institution. (Our common core to core agreement with Temple University serves as one example.)

Adding community college baccalaureate options will not replace existing transfer partnerships with senior colleges. We expect that current 2+2 models, co-located baccalaureate partnerships and distance learning prototypes will continue as baccalaureate pathways for our students. However, we believe the additional option of selected community college baccalaureate programs will position us to better serve the region and its residents in the decades to come.

Bucks County Community College, Community College of Philadelphia, Delaware County Community College and Montgomery County Community College envision offering a small set of complementary baccalaureate options over an initial period of five years. Each of these curricula will be built on existing associate degree programs. The choice of final degree offerings will be based on strength of program, employment opportunities in the field, access to the student and availability of the program across the region. Prospective programs include:

- American Sign Language/English Interpreting (Philadelphia)
- Automotive Technology (Montgomery)
- Computer Forensics (Bucks, Philadelphia)
- Culinary Arts (Montgomery)
- Health Information Technology/Health Informatics (Bucks, Delaware)
- Historic Preservation (Bucks)
- Hospitality Management (Montgomery)
- Nursing (Bucks, Delaware, Montgomery, Philadelphia)
- Respiratory Care Technology (Philadelphia)
- Sports Management (Bucks)

## **Student Interest**

In a preliminary survey conducted at Community College of Philadelphia, there appears to be strong student interest in the ability to complete a baccalaureate degree on campus. Of 293 students surveyed at our Northeast and Northwest Regional Centers during the fall 2010 semester, 241 (82%) responded with interest. The most popular majors cited were Nursing,

Education, and Business. Additionally, in annual alumni surveys, as well as ongoing student satisfaction surveys, a significant number of Community College of Philadelphia graduates and non-graduating former students have expressed a preference for the opportunity to complete a baccalaureate degree at the College.

### **Financial Resource Requirements**

Initial implementation of baccalaureate programs in the Southeast Pennsylvania region will see one to three baccalaureate curricula phased in at each of the four community colleges, respectively, over a period of five years. Based on analysis and data associated with community college baccalaureate implementation in Florida, we have developed the following assumptions regarding required financial resources.

- The size of baccalaureate program student population will be modest relative to the existing student body.
- Because the baccalaureate programs are extensions of current associate degree curricula, no new physical spaces will be required.
- Program development and supervision will be handled by existing vice presidents, deans and department heads.
- An Office of Baccalaureate Studies will be required to handle issues such as recruitment and admissions support, student services unique to the bachelor's degree student and miscellaneous administrative issues.
- Teaching strategies will be similar to ones employed in 100- and 200-level courses.
- Differential tuition charges can be used to offset costs associated with smaller classes and administrative support. Average community college baccalaureate tuition will fall below average state university tuition for baccalaureate programs.
- Any additional faculty hired to teach the needed upper-division courses will be paid at salary levels consistent with current faculty contracts.
- Teaching workloads for faculty teaching upper-division courses will be the same as in lower-division courses.
- Average class sizes in upper-division courses will likely average 15 as opposed to the current 21 in lower-division courses at our four institutions. As a result, direct instructional costs will be 40 percent higher.

- There will be no additional local sponsor or State funding in support of the colleges' move to offer baccalaureate programs.

## **Accreditation**

The addition of selected baccalaureate options at our four community colleges represents a “Substantive Change” as defined by the Middle States Commission on Higher Education. Specifically, Middle States must give approval for “The addition of programs of study at a degree or credential level different from that which is included in the institution’s current accreditation” (Middle States Substantive Change Policy Statement, November 18, 2010).

Our four institutions believe that we shall have in place documentation that responds to all Substantive Change content requirements, including enrollment; finances; quality management controls; staffing plans for faculty, administration and student services; implementation timetable; and evaluation of implementation progress. The Middle States process will proceed concurrently with our request to the Commonwealth, as contained in this proposal.

In addition, several of the potential baccalaureate programs listed above are examples of curricula leading to licensed professions, each of which requires accreditation from a recognized entity in the profession (the National League for Nursing Accrediting Commission, for example). For those programs, the colleges will seek approval of a change in accreditation status, documenting full compliance with required standards and criteria.

## **Measures of Impact**

Within individual community colleges, impact will be measured in the number of students completing the baccalaureate and obtaining jobs in the field of study. The income levels of those graduates and their impact on the local and state economy is another important measure. .

Townsend (2005) recommends other areas of research to monitor the impact of the community college baccalaureate (CCB). She asks:

- What is the effect on the institutional mission, culture, finances, and workforce programs?
- How are transfer enrollments affected at four-year institutions?

- Is there a difference in the income levels and further educational attainment of community college baccalaureate graduates from those graduates of traditional four-year institutions?
- Is degree completion higher in states where the community college baccalaureate is offered?

## **Conclusion**

Community colleges are known for their innovation and agility in responding to the needs of the labor market and in providing access to a diverse population, many of whom would not otherwise have the opportunity for post-secondary education and the benefits that accrue both personally and financially. The community college baccalaureate will provide even greater access at less cost and will open the doors even wider to the benefits that come from an educated populace.

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DRAFT

Community  
College  
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*The Path to Possibilities.*

OFFICE OF ACADEMIC AFFAIRS  
**MEMORANDUM**

**TO:** Student Outcomes Committee of the Board  
**FROM:** Judith Gay  
**DATE:** January 26, 2012  
**SUBJECT:** Recognition of Sustained Academic Excellence

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In June 2008, The Board of Trustees approved standards and a procedure for the Recognition of Sustained Academic Excellence by the Board of Trustees. Based on those criteria, I am submitting the Dental Hygiene Program for consideration of this recognition. Dr. Curtis and I have reviewed information submitted by the Dean of Mathematics, Science and Health Careers, Dr. Mary Anne Celenza, and support Dr. Celenza's nomination of the Dental Hygiene Program.

c: Dr. Stephen M. Curtis

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OFFICE OF ACADEMIC AFFAIRS

1700 Spring Garden Street, Philadelphia, PA 19130-3991-215-751-8351-(Fax) 215-496-6188-  
<http://www.ccp.edu>

# Community College *of* Philadelphia

*The Path to Possibilities™*

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## Board of Trustees Recognition of Sustained Academic Excellence

1. The recognition is for programs or departments, not for individuals.
2. The recognition is externally validated, such as by certification examination outcomes.
3. The recognition is based on student outcomes.
4. The recognition is for consistent excellent performance for a period of not less than five years.
5. The standard of excellence reflects positive outcomes by at least 90% of the students.
6. The outcomes, over a five year period, reflect the accomplishments of at least 100 students.

### Procedure:

1. The responsible dean will nominate the program for consideration, supplying documentation that supports the belief that the program or department meets the criteria.
2. The Vice President for Academic Affairs and President of the College will review the recommendation and, if the review is affirmative, will make a recommendation that the Academic Affairs Committee of the Board recommend acceptance of the nomination to the Board of Trustees.
3. The decision of the Board of Trustees will be final.

### Recognition:

A citation identifying the program will be presented at a meeting of the Board of Trustees to program or department representatives.

All full and part time and program staff will be invited to a reception in honor of the program.

Appropriate media will be informed of the recognition.

Passed by the Board of Trustees on June 5, 2008

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## OFFICE OF ACADEMIC AFFAIRS

1700 Spring Garden Street, Philadelphia, PA 19130-3991·215-751-8351· (Fax) 215-496-6188·<http://www.ccp.edu>

**COMMUNITY COLLEGE OF PHILADELPHIA**  
**DIVISION OF MATHEMATICS, SCIENCE & HEALTH CAREERS**  
**MEMORANDUM**

**TO:** Judith Gay  
**FROM:** Mary Anne Celenza  
**DATE:** January 13, 2012  
**SUBJECT:** Sustained Academic Excellence – Dental Hygiene  
**Cc:** Deborah Rossi  
Theresa Grady

I would like to recommend the Dental Hygiene program for recognition in light of its sustained academic excellence. My request is based on the following

1. From 2004 to 2010 the program has had a consistent pass rate above the national average. For four of those seven years the pass rate was 100% on the licensing exam and was above 90% for the other three years. This includes a total of 138 students over a span of seven years.
2. The program continues to maintain high standards of academic excellence for students with very positive outcomes such as
  - a. Excellent Job Placement Results - 100% since 2007.
  - b. Increasing Student Retention Rates – since 2008 retention rates have increased by 12.5% and are currently above the requirements of the Commission on Dental Accreditation of the American Dental Association. In addition, Fall to Spring and Fall to Fall persistence rates consistently exceed the college-wide rate.

**Persistence Rates**

Academic Year	Fall to Spring		Fall to Fall	
	Dental Hygiene	College-Wide	Dental Hygiene	College-Wide
<b>2006</b>	90.4%	64.3%	80.7%	36.2%
<b>2007</b>	82.8%	64.2%	81.3%	35.0%
<b>2008</b>	85.7%	64.6%	82.2%	37.1%
<b>2009</b>	98.1%	64.8%	98.2%	38.5%
<b>2010</b>	91.8%	67.0%		

- c. Met or exceeded the thresholds for outcome measures as determined by the Commission on Dental Accreditation of the American Dental Association.

**2009-2011 Program Outcomes**

Category of Outcomes	Dental Hygiene Program Outcomes			Commission Standard
	2009	2010	2011	
Entering Class	32	32	32	N/A
Graduates with an Associates Degree in Dental Hygiene	23	23	27	N/A
Retention	71.8%	71.8%	84.3%	80%
Pass National DH Board Exam	94.4%	91.3%	100%	75%
Pass NERB Slide Exam	95.4%	96%	100%	80%
Pass NERB Clinical Exam	100%	96%	100%	80%
Employed as a Licensed Dental Hygienist 9 months after graduation	100%	100%	100%	80%

3. The program also has maintained strong, strategic liaisons with area dental agencies which have resulted in recent curriculum revisions that include vital information and skills necessary for future student success in their dental hygiene career. The most recent curriculum revision (2011) has included a course which will educate and train students in the administration of local anesthesia.
4. The faculty have also worked with Corporate Solutions to offer non-credit workshops for current practicing dental hygienists in the administration of local anesthesia. At the completion of the 32 hour course participants are eligible to apply for a Pennsylvania Local Anesthesia permit from the Pennsylvania State Board of Dentistry. The workshop has successfully run twice (Fall 2010 and Spring 2011).
5. The dental hygiene faculty has also worked with Corporate Solutions to offer graduating dental hygiene students the opportunity to take the Northeast Regional Board Examinations (NERB) for Dental Hygienists at Community College of Philadelphia. This initiative has been successfully offered in August 2010 and August 2011.
6. The dental hygiene faculty and students have participated in Sealant Saturday since 2003. Sealant Saturday is a state wide community volunteer event in conjunction with the Pennsylvania Dental Hygiene Association (PDHA) where dental sealants, which are a thin, clear coating, are placed on the occlusal surfaces of the primary teeth to help in the prevention of decay. This effort began in 2003 and to date has a total donated value of services of \$961,033. The Dental Hygiene Program at the college has been involved since the beginning and has

donated approximately \$4,000 each year in treatment services which include dental sealants, nutritional education and oral hygiene care to the community.

7. The last successful accreditation site visit (Spring 2009) resulted in the renewal of accreditation for the Dental Hygiene program until 2016 with no further reporting requirements.

Thank you for your consideration of this request.

**MEETING OF THE BUSINESS AFFAIRS COMMITTEE  
OF THE BOARD OF TRUSTEES  
Community College of Philadelphia  
Wednesday, February 22, 2012 – 11:45 A.M.**

**Present:** Mr. Jeremiah White, Jr. (Chair), presiding; Mr. Matthew Bergheiser (Vice Chair), Ms. Varsovia Fernandez, Mr. Gil Wetzal, Dr. Stephen M. Curtis, Ms. Jody Bauer, Mr. Gary Bixby, Dr. Thomas R. Hawk, and Mr. James P. Spiewak

**AGENDA – PUBLIC SESSION**

**(1) 2011-12 Fiscal Year Budget Status Report (Information Item):**

Dr. Hawk and Mr. Spiewak provided an overview of the College's budget status for fiscal year 2011-12. Attachment A contains the handout provided to the Committee at the meeting. The College began the fiscal year with a projected use of carry-over funds equal to \$2.40 million. A combination of changes in enrollment projections and expense reductions has reduced the projected use of carry-over funds to a slightly lower level of \$2.35 million.

Enrollments to date for the fiscal year are slightly below the budgeted level. Summer II enrollments were higher than budgeted, but fall and spring enrollments were lower. Overall, credit FTEs are currently projected to be 130 FTEs or 1.7 percent lower than budgeted.

Tuition revenues are down by \$789,372 as a result of the fall and spring enrollments being slightly below budget. In addition, the net revenue contribution from contracted Business and Industry programs and other non-credit programs is projected to be \$257,000 less than budgeted based upon revenue generated the first half of the year.

There is currently no change expected in 2011-12 State operating funding. Dr. Curtis noted that unlike the other publically-funded Pennsylvania higher education institutions, the community colleges did not receive a mid-year funding reduction. City operating revenues will be \$290,557 higher than budgeted based upon a staff decision to reduce capital expenditures for the year, and the fact that only one lease payment will be made in fiscal 2012 for the West Regional Center expansion.

Offsetting the impact of the decline in revenues, are a range of actions which have reduced projected expenditures for the year. Several vacant administrative and classified/confidential positions were frozen at mid-year to increase the amount of lapsed salary dollars. Where possible, the use of part-time staff and overtime has been reduced. Overall, planned salary expenditures have been reduced by \$320,000.

Fringe benefit expenses are lower due in part to lower-than-budgeted medical payments in the self-insured medical program and greater-than-budgeted rebates in the

pharmacy drug program. Overall, the fringe benefit budget is currently projected to be \$464,755 less than budgeted.

Utility costs are projected to be \$160,000 less than budgeted. This reflects both favorable temperature conditions and the major institutional impact that the wide range of green energy-saving infrastructure changes implemented by the College over the past five years have had on institutional utility budgets. Mr. Spiewak observed that the College was spending less on electricity than it did four years ago in spite of the significant expansion of space and increased use of technology.

Insurance costs are higher than budgeted as a result of larger-than-anticipated deductible payments associated with prior years' claims. These stem from several slip and fall events. In response to a question, staff responded that the budget for legal expenses was believed to be adequate to cover the costs associated with negotiations. Overall, expenses are currently projected to be \$994,055 less than originally budgeted for the year.

Mr. White asked if further improvements in the budget status could be anticipated. Dr. Hawk responded that completely eliminating the shortfall was not possible. The budget was developed with virtually no flexibility and the possibility for significant year-end savings is limited. A critical concern is the impact that a potential work stoppage would have on summer enrollments. Summer is an important opportunity to generate additional net revenues for the College. Lower summer enrollments could result in the need to increase the use of carry-over funds.

## **(2) Insurance Broker RFP (Action Item):**

Discussion: The College's contract with the current insurance broker, Willis of PA, expires June 30, 2012. Willis has served as the College's insurance broker since July 1, 2007. An RFP process was used to solicit proposals for the College's insurance broker services for a three-year period of time, with two option years commencing July 1, 2012.

The following services are expected to be provided by the insurance broker:

- Marketing of the College's insurance program to include analysis of all risk financing alternatives.
- Preparation of insurance coverage specifications and assistance with preparing underwriter applications.
- Assistance in establishing insurable values.
- Issuance of Certificates of Insurance and Automobile ID cards as required. Obtaining motor vehicle reports on drivers as required.
- Periodic reports and meetings including an annual stewardship report.
- Loss control and engineering services as required.

- Participation in monthly Safety Committee meetings.
- Ensuring that all underwriters provide loss runs, as appropriate. Providing summarization of loss runs by category and dollar level.
- Assistance in the performance of risk identification, consideration of risk financing alternatives and the analysis of loss data.
- Assisting with any insurance company audits, retrospective ratings or other premium adjustment calculations.
- Assistance in reviewing and updating an internal Risk Management Manual and an annual Risk Management Program.
- Assistance in reviewing contracts for unwanted assumption of risk.
- Claims assistance.

The College's broker contract is structured to be on a fee basis with no brokerage commissions paid to the broker at the time the College's insurance is procured. This prevents a potential conflict of interest during the insurance purchase process.

Mr. Spiewak explained that proposals were solicited from seven firms including two minority-owned firms. There were four responses to the RFP. Firms providing responses were: Willis of PA, Arthur J. Gallagher Risk Management Services, Inc., PK Financial Group, and Aon.

The proposed fees for services by the four firms were as follows:

	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>Three Year Total</u>
Willis of PA	\$50,000	\$50,000	\$50,000	\$150,000
Arthur J. Gallagher	\$58,000	\$59,740	\$61,532	\$179,272
PK Financial Group	\$65,000	\$65,000	\$65,000	\$195,000
Aon	\$56,500	\$56,500	\$56,500	\$169,500

Attachment B provides an analysis of the firms' proposals and the justification for staff's recommendation to award the contract to Willis.

Mr. White commented on the continuing difficulty that the College has had in identifying minority-owned firms to provide professional services to the College. Mr. Spiewak explained that PK Financial was a minority-owned firm. However, their small size (less than ten professional employees), lack of significant experience working with higher education, and higher proposed fees led staff to conclude that contracting with them to provide broker service would not be in the College's best interest.

Action: Mr. Wetzel moved and Mr. Bergheiser seconded the motion that the Committee recommend to the full Board that the College be authorized to enter into a three year contract with Willis of PA, commencing July 1, 2012 with an annual fee of \$50,000 in each of the three contract years. The motion passed unanimously.

**(3) Lease of Indigo Press (Action Item):**

Discussion: The College has been leasing a Kodak NexPress 2100 digital press since March of 2007. This equipment has allowed Business Services to produce high quality, four-color, commercial grade marketing materials (posters, brochures, program descriptions, informational pamphlets). Prior to the acquisition of the NexPress, a large amount of this work was outsourced to commercial offset print houses. Significant budget savings has occurred by bringing this work in-house.

During the past few months, staff from Business Services along with the College's Director of Communications, undertook a comprehensive review of potential replacement equipment. The requirements for the replacement equipment include the following:

- the ability to do variable data printing
- produce 3 million copies per year (250,000 per month)
- print at a minimum speed of seventy (70) pages per minute
- accept paper up to 12 inches by 18 inches
- ability to print 80# and 100# cover stock
- be able to accept various layouts as designed by the College's Office of Communications
- ease of use for Business Services staff
- ability to print institutional marketing colors

Two models each of equipment manufactured by Hewlett Packard, Xerox and Kodak were investigated. In addition to the requirements listed above, the equipment was evaluated based upon copy quality, color production capabilities, reliability, cost of operation, and cost of equipment.

The Xerox equipment was eliminated from consideration because these units are four-color presses that lack red toner stations or spot color stations, and thus cannot produce the College's marketing colors as required by the Office of Communications. Staff members were also concerned about the durability of the Xerox equipment in the context of the heavy paper stock often used by the College. In addition, the Xerox equipment is more expensive than the recommended equipment. The Kodak units reviewed met all of the requirements noted above. However, the costs of the Kodak units were significantly higher than the cost of the unit being replaced. Mr. Spiewak noted that staff are also concerned about the financial condition of the Kodak Company and how that might impact future maintenance and supply replenishment.

The HP Indigo 5500 is the replacement unit recommended by staff. As with the Kodak units, the HP units met all of the requirements. In comparison to the Kodak

units, the HP Indigo 5500 has a purchase price less than the Kodak units and has significantly lower maintenance costs and consumable costs. The HP unit uses liquid ink which more closely matches the look and feel of an offset printed image. The equipment also increases the color options from five to seven allowing for the matching of more individual colors. The copy quality of the HP Indigo 5500 units was deemed to be outstanding and the best of all the units reviewed. Based upon its price and quality, HP has captured 51 percent of the world market for this type of digital press. The following table provides a comparison of both purchase price and operating costs of the current Kodak NexPress unit and the recommended HP Indigo 5500 unit. The HP Indigo press will save the College \$75,516 per year over the cost of using the current equipment.

	<b>Monthly</b>	<b>Annual</b>	<b>5 year Totals</b>
<b>Current Expenses</b>			
<b>NexPress</b>			
Lease	\$6,600	\$79,200	\$396,000
Service	\$3,950	\$47,400	\$237,000
Consumables	\$8,600	\$103,200	\$516,000
Totals for NexPress	\$19,150	\$229,800	\$1,149,000
<b>Proposed Expenses</b>			
<b>Indigo 5500</b>			
Lease	\$6,157	\$73,884	\$369,420
Service	\$1,700	\$20,400	\$102,000
Consumables	\$5,000	\$60,000	\$300,000
Totals for Indigo 5500	\$12,857	\$154,284	\$771,420
<b>Savings</b>	<b>\$6,293</b>	<b>\$75,516</b>	<b>\$377,580</b>

Mr. Spiewak explained that assuming competitive lease rates, the College will lease directly from HP. This will allow the College to terminate the lease prior to lease expiration if the College enters into an acquisition agreement for another HP digital press. This potentially permits the College to upgrade to another unit should technology changes make this desirable.

Action: Mr. Bergheiser moved and Mr. Wetzel seconded the motion that the Committee recommend to the full Board that staff enter into a five year lease for an HP Indigo 5500 digital color press effective July 1, 2012. The motion passed unanimously.

**(4) Update on Construction Projects (Information Item):**

Mr. Bixby provided a short summary of the continuing progress being made on the Bonnell and Mint Building projects. The Mint Ground floor construction is essentially

complete except for the Security Office suite. Once final finishing details and lock issues are addressed, Enrollment Services staff will begin moving into the space over the next few weeks.

The northern end of the Bonnell renovation is scheduled for completion as of mid-April, and the remainder of the Bonnell project is scheduled to be completed by September.

**(5) Future Directions in CCP Technology (Information Item):**

Mr. White introduced this item by noting that at the January 2012 Committee meeting, the Committee approved a large expenditure on the College's technology infrastructure upgrade. As part of the January Committee discussion, a series of questions were asked about how the planned investment fit into future directions for technology at the College. Ms. Bauer was asked to come to the February meeting to provide an overview of the College's long-term vision for technology which would help the Board to better understand the nature of the future investments that would be required. In response to this request, Ms. Bauer presented an overview of future directions for the College in the use of technology in support of teaching and learning. A copy of her presentation is provided in Attachment C.

The presentation focused both on the long-term vision for the use of technology at the College, as well as the steps being taken at the present time to advance the achievement of that vision. In commenting on the technology vision, Ms. Bauer emphasized that the College's approach to the delivery of technology is rooted in the mission of the institution and the diversity of the students that come to the institution. Because the students arrive with widely varying technology skill sets and differing amounts of access to technology, the College has to provide technology options for students that start where they are both with respect to skills and technology access. Technology planning at the College is fully integrated with the College's other planning efforts including academic, enrollment management, facilities, and the over-arching Strategic Master Plan. The College's vision for technology is intended both to respond to and inform planning in other areas of the College.

Ms. Bauer explained that the College's evolving use of technology is totally integrated with the development of the College's physical facilities. College facility planning recognizes the need to have a technology infrastructure in place within its facilities that supports current and future uses of technology, and also responds to the fact that the use of technology is transforming the nature of classrooms and laboratories that will be built in the future. Ms. Bauer discussed the importance that technology plays in communications both within the instructional setting and outside the classroom. Effective use of technology is essential to successful communication with external constituents. External expectations are that the College will become increasingly more sophisticated in its use of technology as a communication tool.

To emphasize the diversity of student needs with respect to access and effective use of technology, Ms. Bauer distributed information which showed the median family

income and Pell grant status of CCP students compared to other peer institutions including Community College of Allegheny County, Harrisburg Area Community College, and Montgomery County Community College. The lower economic status of the students clearly emphasizes the importance of ensuring that there is access to technology on campus for those individuals who will not have the needed personal resources to acquire access to essential new technologies.

Ms. Bauer discussed several key challenges associated with achieving the College's technology vision. These challenges include addressing the wide variances in computer skills that exist among faculty and staff; and the generational gap which exists between those under the age of 25 who have had life-time exposure to technology and older individuals who have had to migrate to technology as it became available. A key challenge is enabling universal access to technology throughout the campus through the expanding wireless environment. The rapid shift to the use of hand-held devices for accessing technology makes this essential. Professional development for faculty and staff is essential to closing the technology gaps that exist among employees, and between employees and students. Changing technologies require evolving and expanding resources for the support and management of technology resources. Over time, some major e-learning trends will greatly reshape the College's technology resources. Students are expressing a stronger preference for digital textbooks and e-readers as opposed to hard-copy materials. Distance education is becoming increasingly an expectation for larger percentages of students, and virtually all faculty members are adopting technology-based learning-management approaches in their classes. Students are expecting, and increasingly using, a personalized on-line learning environment. Technology use is moving from PC-based technologies to portable, mobile technology devices. Over time, this will transform the nature of physical spaces that the College will have to provide its students and staff.

Ms. Bauer reviewed a range of current high-priority projects associated with technology that are underway to strengthen the College's achievement of its technology vision. (See Attachment C.)

The Committee discussed the importance of understanding the longer-term vision for technology at the College as a basis for reacting to and approving recommendations for technology investments being made by staff. Mr. White observed that the infrastructure investment, approved by the Board at the February meeting, was clearly essential to moving forward on the achievement of the College's longer-term vision for technology. The Committee recommended that Ms. Bauer give updating reports on directions being taken in technology on a regular basis to the Business Affairs Committee.

**(6) Next Meeting Date**

The next meeting of the Committee is scheduled for Wednesday, March 21, 2012 at 9:00 A.M.

TRH/lm  
Attachments  
BAC\0212MINS.DOCX

# **ATTACHMENT A**

**2011-12 BUDGET STATUS REPORT  
As of February 22, 2012**

Community College of Philadelphia  
Enrollment Information (FTEs) for Fiscal Year 2011-2012

	Actual FY 10-11	Budgeted FY 11-12	Actual FY 11-12	Actual FY 12 vs Actual FY 11	% Variance	Actual FY 12 vs Budgeted FY 12	% Variance
<b><u>CREDIT</u></b>							
Summer 2	1,921	1,921	1,978	56	2.93%	57	2.95%
Fall	13,550	13,550	13,467	(83)	-0.61%	(83)	-0.61%
Spring	13,706	13,710	13,476	(230)	-1.68%	(234)	-1.71%
Summer 1	3,005	3,000					
<b>Credit Year-to-date Totals - Annual FTEs</b>	<b>16,091</b>	<b>16,090</b>		<b>(128)</b>	<b>-1.66%</b>	<b>(130)</b>	<b>-1.69%</b>
<b><u>NONCREDIT</u></b>							
Summer 2	99	99	82	(17)	-17.17%	(17)	-17.17%
Fall	858	861	761	(97)	-11.31%	(100)	-11.61%
Spring	776	705	626	(150)	-19.33%	(79)	-11.21%
Summer 1	295	265					
<b>Noncredit Year-to-date Totals - Annual FTEs</b>	<b>1,014</b>	<b>965</b>		<b>(132)</b>	<b>-13.02%</b>	<b>(98)</b>	<b>-10.16%</b>

**Community College of Philadelphia  
Operating Budget Projections  
as of February 22, 2012**

	<u>Original Budget</u>	<u>Current Projection</u>	<u>Change</u>
<b><u>REVENUES</u></b>			
Student Tuition and Fees	\$73,634,082	\$72,497,438	(\$1,136,644)
Commonwealth of Pennsylvania	28,251,906	28,251,906	0
City of Philadelphia	17,796,985	18,087,542	290,557
Other Income	<u>1,938,666</u>	<u>1,838,166</u>	<u>(100,500)</u>
<b>TOTAL REVENUES</b>	<b>\$121,621,639</b>	<b>\$120,675,052</b>	<b>(\$946,587)</b>
<b><u>EXPENSES</u></b>			
Salaries, net of Lapsed Funds	\$73,839,803	\$73,519,803	(\$320,000)
Fringe Benefits	30,552,426	30,087,671	(464,755)
Other Expenses	19,492,124	19,282,824	(209,300)
Student Financial Aid	<u>135,000</u>	<u>135,000</u>	<u>0</u>
<b>TOTAL EXPENSES</b>	<b>\$124,019,353</b>	<b>\$123,025,298</b>	<b>(\$994,055)</b>
<b>OPERATING BUDGET STATUS prior to recording the \$5,928,516 GASB 45 post-retirement expense accrual.</b>	<b><u>(\$2,397,714)</u></b>	<b><u>(\$2,350,246)</u></b>	<b><u>\$47,468</u></b>

Community College of Philadelphia  
 Operating Budget Projection  
 as of February 22, 2012

	Original Budget	Current Projection	Change
<b>OPERATING REVENUES</b>			
State Funding	\$28,036,906	\$28,036,906	\$0
State Lease funding	215,000	215,000	0
<b>Total State Revenues</b>	<b>28,251,906</b>	<b>28,251,906</b>	<b>0</b>
Tuition - Credit Students	59,777,182	58,987,810	(789,372)
Technology Fee	11,197,800	11,091,500	(106,300)
Net Contribution from: Contracted Noncredit Instruction; Other Noncredit Instruction; Adult Community Noncredit Instruction	702,000	445,000	(257,000)
Course Fees	3,417,000	3,406,528	(10,472)
Student Regulatory Fees	886,800	847,000	(39,800)
Tuition Adjustments - Student Receivable Write-offs, Collection Costs, Credit Card Costs & Senior Citizen Discount	(2,346,700)	(2,280,400)	66,300
<b>Total Student Tuition &amp; Fees</b>	<b>73,634,082</b>	<b>72,497,438</b>	<b>(1,136,644)</b>
City Operating Funds	17,796,985	18,087,542	290,557
Investment Income	780,000	780,000	0
Vocational Education Funding	250,500	200,000	(50,500)
Indirect Costs, Administrative Allowances	350,000	300,000	(50,000)
Parking Proceeds & Miscellaneous Income	558,166	558,166	0
<b>Total Other Income</b>	<b>1,938,666</b>	<b>1,838,166</b>	<b>(100,500)</b>
<b>TOTAL OPERATING REVENUES</b>	<b>\$121,621,639</b>	<b>\$120,675,052</b>	<b>(\$946,587)</b>

Projection based upon same level of activity for remainder of year as experienced for Summer and Fall, 2011.

Increase in City funds available for operating purposes due to: only 1 debt service payment during this fiscal year for the fit-out of new space at the West Regional Center and reduction in capital spending.

Community College of Philadelphia  
Operating Budget Projection  
as of February 22, 2012

	<u>Original Budget</u>	<u>Current Projection</u>	<u>Change</u>
<b>OPERATING EXPENSES</b>			
<b>Salaries</b>			
Full-Time Administrative Salaries	15,249,995	15,249,995	
Less: Projected Lapsed Salaries	(800,000)	(900,000)	
Net Full-Time Administrative Salaries	14,449,995	14,349,995	(100,000) Additional savings due to mid-year freeze on hirings.
Full-Time Faculty Salaries	28,927,371	28,927,371	
Less: Projected Lapsed Salaries	(200,000)	(200,000)	
Net Full-Time Faculty Salaries	28,727,371	28,727,371	0
Full-Time Classified Salaries	10,670,207	10,670,207	
Less: Projected Lapsed Salaries	(600,000)	(625,000)	
Net Full-Time Classified Salaries	10,070,207	10,045,207	(25,000)
<b>Subtotal - Full-Time Salaries</b>	<b>53,247,573</b>	<b>53,122,573</b>	<b>(125,000)</b>
Part-Time & Overload Credit Salaries	11,086,985	10,886,985	(200,000)
Summer Credit Instruction	4,254,934	4,394,934	140,000
Part-Time & Overload Non-Credit Salaries	395,859	310,859	(85,000)
All Other Salaries	4,404,452	4,354,452	(50,000)
Early Retirement Incentive Payments	450,000	450,000	0 This budget line could be impacted as a result of negotiations. A one-time special retirement incentive may entice more employees to retire.
<b>Subtotal - Other than Full-Time Salaries</b>	<b>20,592,230</b>	<b>20,397,230</b>	<b>(195,000)</b>
<b>Total Salaries</b>	<b>73,839,803</b>	<b>73,519,803</b>	<b>(320,000)</b>
<b>Fringe Benefits</b>			
Medical Program	19,871,042	19,185,042	(686,000) Projected costs are lower due to claims experience and higher than budgeted rebates from the pharmacy drug program.
Retirement	5,537,075	5,675,000	137,925
FICA	2,844,433	2,988,000	143,567
Tuition Remission	635,166	633,218	(1,948)
Group Life	372,000	357,408	(14,592)
Unemployment Compensation	377,654	330,000	(47,654)
Workers' Compensation	320,468	367,811	47,343
Unused Vacation	225,138	200,138	(25,000)
Disability Premium	282,000	263,604	(18,396)
Forgivable Education Loan	87,450	87,450	0
<b>Total Fringe Benefits</b>	<b>30,552,426</b>	<b>30,087,671</b>	<b>(464,755)</b>

Community College of Philadelphia  
 Operating Budget Projection  
 as of February 22, 2012

	<u>Original Budget</u>	<u>Current Projection</u>	<u>Change</u>	
<u>Facility Expenses</u>				
				Lower than budgeted cost for
Utilities	2,602,706	2,442,706	(160,000)	electricity and natural gas.
Contracted Security	1,237,000	1,237,000	0	
Contracted Cleaning	1,211,011	1,211,011	0	
				Increase related to required
All Other Facility Expenses	1,723,865	1,908,865	185,000	major repairs: Mint Courtyard roof, Gym floor, parking lot sealing and sidewalk.
<b>Total Facility Expenses</b>	<b>6,774,582</b>	<b>6,799,582</b>	<b>25,000</b>	
<u>All Other Expenses</u>				
				Business Services' items that
Leased Equipment & Software	4,176,920	4,131,920	(45,000)	were on lease/purchase contracts were not replaced since they are still fully operational.
Catalogs and Advertising	1,360,201	1,360,201	0	
Supplies-Pool	1,329,116	1,329,116	0	
Contracted Services	1,006,034	956,034	(50,000)	
Consultant	752,300	752,300	0	
Maintenance & Repairs	637,511	587,511	(50,000)	
Postage	540,150	500,150	(40,000)	
				Insurance costs higher than
Insurance	559,950	685,650	125,700	budgeted and large number of unexpected deductible payments related to defense costs of claims initiated in prior years.
Legal Fees	200,000	200,000	0	
Other Expenses	2,155,360	1,980,360	(175,000)	
<b>Total All Other Expenses</b>	<b>12,717,542</b>	<b>12,483,242</b>	<b>(234,300)</b>	
<b>King Scholarship</b>	<b>135,000</b>	<b>135,000</b>	<b>0</b>	
<b>TOTAL OPERATING EXPENSES</b>	<b>\$124,019,353</b>	<b>\$123,025,298</b>	<b>(\$994,055)</b>	
<b>OPERATING BUDGET STATUS prior to recording</b>				
<b>the \$5,928,516 GASB 45 post-retirement</b>				
<b>expense accrual.</b>				
	<u>(\$2,397,714)</u>	<u>(\$2,350,246)</u>	<u>\$47,468</u>	

# **ATTACHMENT B**

**BACKGROUND INFORMATION ON THE PROCESS AND CRITERIA  
USED TO DEVELOP THE RECOMMENDATION TO AWARD A THREE  
YEAR CONTRACT TO WILLIS FOR INSURANCE BROKER SERVICES  
EFFECTIVE JULY 1, 2012**

**BACKGROUND INFORMATION ON THE PROCESS AND CRITERIA USED TO  
DEVELOP THE RECOMMENDATION TO AWARD A THREE YEAR CONTRACT TO  
WILLIS FOR INSURANCE BROKER SERVICES EFFECTIVE JULY 1, 2012**

The College's contract with the current insurance broker, Willis, expires June 30, 2012. Although staff are very satisfied with the services provided by Willis, this professional service had not been subject to a bid process since 2007. An RFP process was used to solicit proposals for the College's insurance and risk management services for a three-year period beginning with the services required for the College's July 1, 2012 insurance renewal date. Proposals were requested from: Marsh Inc., Aon Inc., Arthur J. Gallagher Risk Management Services, Willis of Pennsylvania, Inc., PK Financial Group, Exude Benefits, and Maran Corporate Risk Associates. Proposals were received from Aon, Gallagher, Willis and PK Financial Group.

The proposals were reviewed by a committee consisting of Tom Hawk (VP for Planning & Finance), Jill Weitz (In-House Counsel & VP, Human Resources), Agnes Trummer (HR Associate Director Employee Benefits), Marsia Henley (Purchasing Manager) and Jim Spiewak (Assistant VP, Budgets & Financial Services). In evaluating the proposals and the subsequent interviews, the committee members utilized the selection criteria outlined in the RFP: (1) ability to meet specified qualifications; (2) quality of responses to requested services; (3) cost of services (4) experience with higher education clients; (5) credentials of firm and proposed account team members; (6) evidence of continued commitment to account; (7) references; (8) the firm's higher education insurance market understanding and access, and the ability to benchmark and assess insurance coverages and limits; (9) the firm's understanding of risk issues and risk trends in higher education; (10) the ability of the firm to support the College's efforts to develop a comprehensive enterprise risk management plan; and (11) the firm's willingness and capacity to support the College's current risk management initiatives.

After reviewing the proposals presented by the four firms, committee members agreed that the three strongest proposals were from Aon, Gallagher and Willis. However, the committee agreed to invite all four firms for the interview process since PK Financial Group's proposal did adequately address the critical components of the RFP. All four firms made acceptable presentations and provided assurances that they could meet the minimum service expectations required by the College. However, as a result of the interview process, the committee members felt there were important differences among the firms with respect to both cost and the quality and level of services that could be provided.

The costs also varied, with the incumbent, Willis, proposing the lowest cost structure and PK Financial Group proposing the highest costs.

Insurance Broker Costs

<u>FY</u>	<u>Aon</u>	<u>Gallagher</u>	<u>Willis</u>	<u>PK Financial</u>
2012-13	\$ 56,500	\$ 58,000	\$ 50,000	\$ 65,000
2013-14	56,500	59,740	50,000	65,000
2014-15	56,500	61,532	50,000	65,500
Three Year Cost	\$169,500	\$179,272	\$150,000	\$195,000

Overall Evaluation

	<u>Aon</u>	<u>Gallagher</u>	<u>Willis</u>	<u>PK Financial</u>
Meet specified Qualifications	yes	yes	yes	yes
Quality of responses to requested services	good	excellent	excellent	good
Experience with higher education clients	good	very good	very good	weak
Credentials of firm and account team	excellent	excellent	excellent	good
Evidence of commitment to account	good	good	good	good

The committee asked all the firms a number of questions in order to better assess their capabilities and responsiveness. All firms were asked the same questions and there was considerable dialogue that took place between the committee members and the broker firms during the interview process. As a result of the proposal review and interview process, the committee unanimously agreed that the College would be best served by Willis. The points below support the committee's recommendation of Willis.

- The quality of all firms' responses to the RFP in concert with their answers to questions during the interview process, indicated that, for the most part, they understood the service needs of the College; understood the risk factors impacting higher education in general, and CCP in particular; and had the willingness and capacity to support the College's current risk management initiatives and could support an enterprise risk management exercise. The level that each team understood the risk trends in higher education and their individual involvement in insurance industry and higher education organizations and associations was varied, but it appeared all had a commitment to stay abreast of evolving higher education risk management issues.

- Of all the firms, Willis represents the highest number of local higher education clients. Locally, they serve Delaware County Community College, Montgomery County Community College, Villanova University, Lehigh University, Alvernia University, Moravian University, University of the Arts, Delaware Valley College, and the Pennsylvania Academy of the Fine Arts. They are also the insurance broker for Community College of Allegheny County which is serviced from their Pittsburg office. Aon has a large number of higher education clients but none of these clients are served from the Philadelphia office. Gallagher also has a large number of higher education clients including Peirce College and Lafayette College. These two clients, and Westmoreland County Community College and Butler County Community College are serviced through their Johnstown, PA office. CCP would also be serviced through their Johnstown, PA office. Although PK Financial Group had several local non-profit clients, Lincoln University is their only higher education client. Aon, Willis and Gallagher all have a higher-education-practice group. Both Gallagher and Willis have representatives that are on the broker advisory committee of United Educators. Gallagher is also a member of the PSBA broker advisory committee.
- The committee was satisfied with the credentials of all four firms as well as with the qualifications of the proposed account team members. Aon, Willis and Gallagher are all in the top five largest insurance brokers in the U.S. PK Financial, by contrast, is a small local firm with less than ten professionals.
- Based upon the firm's answers to committee members' questions concerning planning an enterprise risk management exercise, the committee felt that all firms had the local and/or national expertise to assist the College in developing a comprehensive enterprise risk management plan. However, the approaches recommended by Aon and PK Financial were less comprehensive than the approaches recommended by Willis and Gallagher.
- The proposed costs for the three-year period of the contract are as follows: Willis - \$150,000; Aon - \$169,500; Gallagher - \$179,272; PK Financial - \$195,000. Aon proposed additional fees for training initiatives that the others would offer at no cost.

After completing the review process, staff are recommending that the three year contract be awarded to Willis. The individuals on the proposed Willis team have worked on the College account for several years and have demonstrated their ability to fully meet the College's insurance procurement and risk management needs. Willis' three year cost was substantially lower, and the Committee believed their proposed approach to managing the account was most responsive to the College's needs.

# **ATTACHMENT C**

**HOW CCP'S LEADERSHIP IN TECHNOLOGY  
UNDERPINS LEARNING AT THE COLLEGE  
NOW AND IN THE FUTURE**

**PRESENTATION BY JODY BAUER, CIO  
FEBRUARY 22, 2012**

# How CCP's Leadership in Technology Underpins Learning at the College Now and in the Future

Community  
College  
of Philadelphia

## Technology Vision

### State-of-the-Art Technology Platform to Support Teaching & Learning...

- that is rooted in the diversity of the learning needs of our student population
- that complements the Facilities Master Plan
- that is flexible, allowing the College to remain current
- that enhances communication for both internal and external constituents
- that builds for the future while responding to financial realities

## Planning

- ▶ The technology vision is driven from the strategic planning process. This process defines the institutional priorities.
  - Strategic Plan 2008–2012
  - Academic Master Plan 2010–2013
  - Enrollment Management Plan 2008–2012
  - Facilities Master Plan 2003–2013
  - Technology Plan 2009–2012

## Comparison to Other Institutions

	CCP	CACC	HACC	MCCC
Median Family Income*	19,029	N/A	32,208	31,202
Unduplicated Headcount**	29,034	33,031	32,768	21,502
FTE Enrollment **	16,568	19,006	18,888	12,044
Pell Grant Recipients **	14,960	10,712	11,161	4,307
Total Pell Grant \$ (millions) **	\$46.9	\$33.6	\$32.4	\$13.4
Average Pell Grant **	\$3,185	\$3,141	\$2,909	\$3,123
Campuses	4	4	5	2
# of Workstations ***	5,000	5,000	6,000	2,600
# IT Help Desk FTEs	4	4***	10***	5***

*Data from Pennsylvania Commission for Community Colleges, as follows:*

*\* 2011–12 FASFA*

*\*\* 2010–11 enrollment year*

*\*\*\* data from September 2010 survey*

## **Supporting Our Diverse Students**

**Can only be accomplished through a pluralistic approach.**

- ▶ Students come to the College through different levels of experience and exposure to technology.
- ▶ Engaging in a 'bottom-up' approach to providing technology will ensure we are serving all students.

## **Challenges to Our Goals**

- ▶ The growing importance of digital literacy and lack of digital literacy preparation among faculty.
- ▶ The preparation of faculty & staff through training.
- ▶ The need to ensure technology is ubiquitous.
- ▶ The need to challenge the traditional barriers to the adoption of new technology.
- ▶ The pressure to evolve new ways of supporting and managing digital resources.

## **e-Learning Trends**

- ▶ **Digital textbooks & e-readers** will become the standard of the near future - textbook leasing
- ▶ **Ramping Up Distance Education** - real-time communication, providing out-of-class supplements
- ▶ **Personalized on-line learning environment** - interactive technology
- ▶ **The use of more mobile & tablet technology** - "mobile revolution" - matching apps to objectives of the course
- ▶ **IT tools & programs** will become even more tightly integrated with all student touch points

## **Efforts Identified as Strategic Priorities**

**DegreeWorks** - Student degree audit add-on to Banner - Support students' academic planning process and educational goals through real-time and on-line tools.

**Learning Management System RFP** - Goal is to yield an increased feature set and more robust tools to meet future demand and availability for all courses.

## **Efforts Identified as Strategic Priorities**

**Website Redesign** – Improve the user communication and prepare for future mobile apps.

**Infrastructure Upgrade** – Provide increased bandwidth to handle the demand of teaching & learning.

**Increase the number of Smart Classrooms.**

## **Efforts Identified as Strategic Priorities**

**Scholarship Processing application**

**Revision of the College's Fundraising application**

**Implementation of Resource25**

**Implementation of the Colonial One-Card**

**Migration to Active Directory**

## **Connecting Back**

**In supporting digital immigrants & digital natives  
our challenges become our opportunities for  
growth.**

**We are prepared and engaged to meet these  
challenges.**

## ***Questions?***

