

## *ATAB Summary 2008-2009*

1. ATAB carried out its role as a committee of the Office of the Provost based upon its Charge and Structure.

*The ATAB, a committee of the Office of the Provost, is the voice of the faculty in all matters related to academic technology. Toward that end, the ATAB will develop strategic plans for instructional and academic needs, ATAB will address concerns raised by the faculty and the ATAB will provide funding via the Academic Technology Fund for creative/innovative uses of technology by faculty. To implement this charge, the ATAB will partner with ITS and other technology providers to plan, implement, and evaluate academic technology initiatives.*

2. ATAB Membership as of September 2008.

- Stephanie Berzin, (Graduate School of Social Work)
- Michael Connolly (A&S, Slavic/Eastern Languages and FMRC)
- Evan Kantrowitz (A&S, Chemistry, Chair)
- Mary Ann Neary (Law School)
- Michael O'Leary (CSOM)
- Clare O'Connor, (A&S, Biology)
- Peter Olivieri (CSOM)
- Rita Owens (Office of the Provost)
- Alec Peck (LSOE)
- Edward Tallent (Libraries)
- Barbara Viechnicki (A&S, Dean's Office)
- Robin Wood (CSOM)

3. Subcommittees for 2008-2009

(a) The *Research Data Resource Policy Committee* was formed to deal with issues related to Research Data Storage and Backup. Requested by ITS (Barry Schaudt).

- Bob Gerrity (Library)
- Ernesto Livon-Grossman (Spanish Language and Literature)
- Gabor Marth (Bioinformatics)
- Mike Russell (LSOE)
- Maya Tamir (Psychology)

(b) The *High Performance Computing Committee* was formed to deal with issues related to the University Research Computer Cluster. Requested by ITS (Barry Schaudt).

- Jeffrey Chuang (Biology)

- Patricia Doherty (Institute of Science Research)
- Evan Kantrowitz (Chemistry)
- David Martin (Computer Science)
- Shannon Seitz (Economics)

(c) *Faculty Technology Contacts (FTCs)*. Under the leadership of Michael Connelly, an ATAB subcommittee, composed of FTCs, has monthly meetings to help provide communications between ATAB and the academic units. This subcommittee was very useful for ATAB, by providing information about problem issues in the academic units and providing academic units with updated IT information.

(d) *BCshare Working Group*. Under the leadership of Rita Owens and Evan Kantrowitz this ATAB subcommittee met to provide faculty input to the BCshare program. A report from the working group was submitted to ATAB on Feb. 4, 2009.

- Rita Owens (Provost Office)
- Evan Kantrowitz (A&S, Chemistry)
- Alec Peck (LSOE)
- Maya Tamir (A&S, Psychology)
- Michael Connolly (A&S, Slavic/Eastern Languages and FMRC)
- Peter Olivieri (CSOM)
- Crystal Tiala (Theater)

(e) *BC Portal Working Group*. Under the leadership of Rita Owens, this ATAB subcommittee met to gather faculty input on the beta version of the new BC Portal and make recommendations for possible changes to ITS. A report from the working group was submitted to ATAB on Feb. 4, 2009.

- Rita Owens (Provost Office)
- Tim Duket (A&S, Honors Program)
- Natasha Sarkisian (A&S, Sociology)
- Ann Spinney A&S, Music)
- Beth Clark (IDES)

4. ATAB put out a call in early September for Academic Technology Innovation Grants (ATIG) applications with a due date of Oct. 14, 2007. This call resulted in six proposals. Of these, four were considered appropriate.
5. Fall eTeaching Day (Nov. 7<sup>th</sup>). Rita and IDES arranged a special eTeaching Day around the visit of Phil Schiller BC'82, Apple Computer, Senior Vice President of Worldwide Product Marketing who gave the keynote address. In addition there were a number of breakout sessions for faculty use of technology.
6. Backup of Faculty and Staff Computers

The backup solution for Windows computers was rolled out by ITS in 2007-2008 and is now running using Iron Mountain as the provider. However, there have been a variety of issues that has prevented the rollout of a backup solution for the Mac computers. Many of the issues related to the providers not having enterprise level solutions functional. This Spring Iron Mountain provided BC with a backup solution that was acceptable. This system is now being rolled out to faculty and staff. IT will make a major push over during the summer for people on Campus and in the fall for others to setup this system on their machines.

7. During the year we heard reports and were asked for comments on:
  - Classroom support for beginning of classes
    - All reports indicated that from an AV viewpoint the beginning of classes went very smoothly this year.
  - Back to School for Faculty
  - Mac Backup problems and solutions
  - Conversion of WebCT to Blackboard Vista
  - Course Capture Pilot
  - ITS Status Report from Marian Moore
  - BCshare
  - The new BC Portal
  - The University Research Cluster
  - Virtual Computing – Implementation of the Citrix Server
  - The Faculty Technology Guide
  - Update on the reorganization of the TC for the Sciences in A&S
    - The formation of the TC Science Cluster
  - Switch over to Microsoft Exchange for Email and Calendar
  - Academic Data Security
  - University Core Systems
  - Update on the plans for BCCR
  - Classroom technology
  - Elimination of the Modem Pool
  - Importance of Course Capture as new innovative technology
8. ATAB put out a call for proposals in January for the second round of Academic Technology Innovation Grants (ATIG), with a due date of March 10, 2009. This call resulted in sixteen proposals. Of these, seven were considered appropriate.
9. ATIG Luncheon Program – A program was organized on Feb. 13, 2009 for two purposes: (i) to provide information about the ATIG process for faculty contemplating submitting an application for the Spring deadline, and (ii) to provide highlights of the projects from past recipients of the ATIG program. IDES prepared a video highlighting some of the previously approved ATIG projects ([see video](#))

10. Faculty Survey on Technology

The FTCs acting as a subcommittee of ATAB carried out a Faculty Survey of Technology. This survey was designed to determine what faculty needs are, what problems exist and what is working well. The survey was performed in the late spring and final results are being tabulated and summarized.

11. Improved Communications with ITS

ATAB believes that communications with ITS over this year has been outstanding. ITS has met with the executive committee of ATAB before each meeting to develop the agenda. Marian Moore has attended a number of meetings and provided valuable input.

12. Course Capture Recommendations.

Based upon the success of the course capture pilot this year, and the numerous innovative applications of course capture, ATAB was not satisfied with the limited number of rooms that could be upgraded this Summer due to the significant cut in the classroom AV budget. The ATAB therefore voted to use approximately \$40-45K of ATIG funds to increase the number of classrooms to be upgraded this summer. These funds should add an additional 3-6 new classrooms with course capture.

13. Faculty Technology Newsletters

In order to provide the faculty with up to date information about developments in academic technology ATAB sponsored a newsletter "Faculty Technology News" edited by Peter Olivieri. For more information, copies of the [February](#) and [May](#) Newsletters can be downloaded.

14. Based upon the Charge and Structure Document for ATAB the committee membership for 2009-2010 will be:

- Stephanie Berzin (GSSW)
- Michael Connolly (A&S, Slavic/Eastern Languages and FMRC)
- ***Evan Kantrowitz (A&S, Chemistry)\*\****
- Clare O'Connor (A&S, Biology)
- Peter Olivieri (CSOM)
- Rita Owens (Office of the Provost)
- ***Alec Peck (Chair, LSOE)\*\****
- ***Robert Signorile (A&S, Computer Science)\****
- Barbara Viechnicki (A&S, Dean's Office)
- ***Thomas Wall (University Libraries)\****
- Robin Wood (CSON)

\* New members of the committee, serving a three-year term.

\*\* Evan has stepped down as chair after 4 years and will be replaced by Alec.

## **Academic Technology Innovation Grants**

Fall 2007:

### **1. Seung-A Jin- Communications, A&S**

#### **“Experimenting with Socially Interactive Robots and Creating Human-Robot-Interaction Interfaces for Social Science Research and Teaching”**

The primary purpose of this project is to experiment with socially interactive robots for teaching about interactive media and to create Human-Robot-Interaction interfaces for social scientific research. This project aims to implement a “learning by doing” strategy for teaching in new media. Students will get valuable learning experience about (1) designing and conducting experimental research; (2) applying various theories to real research settings; and (3) building valid and reliable measures in social and psychological research. The ultimate goal is to relate to the strategic initiative of Boston College.

### **2. Amy Frappier/John Ebel- Geology, A&S**

#### **“A Wireless BC Weather Station for Teaching and Outreach”**

We propose to install a wireless weather station on the roof of O’Neill Library for 24-hour acquisition of local weather data. Real-time weather data will be made available to the BC community and wider public through a dedicated website and monitor display to be installed in Devlin Hall. Weather data acquired by the station will be archived on a website for use in BC courses and by the wider BC community and public.

### **3. Stephen Bruner/Goran Krilov, Evan Kantrowitz- Chemistry, A&S**

#### **“Centralized Storage and Dissemination of Scientific Data”**

We propose to develop a system for the easy storage, retrieval and annotation of primary scientific data generated by department equipment such as, but not limited to, mass spectrometers (MS), nuclear magnetic resonance spectrometers (NMR), X-ray crystallography detectors, and chromatography systems. The system will be designed for automated uploading of data to a central database. Individual researchers, group members or faculty advisors would have access to download these data. Researchers would have access to appropriate processing software either located centrally on a cluster, or locally on their own workstation.

### **4. Sheila Gallagher- Fine Arts, A&S**

#### **“Creating Opportunities to Support the Development and Exhibition of Video Art and Web Based Media in the Fine Arts Classroom and Museum Environment”**

Digital Imaging, web-based media, video art and video installation are at the forefront of contemporary art practice and a mainstay of museum exhibitions. The proposed project seeks to address some of the pressing technology and curriculum needs of the Fine Arts Department through the creation of a new video art class and the acquisition of technology and equipment which would be jointly used by students and faculty in the Studio Art Department, Art History Department, Film Studies and The McMullen Museum to develop and exhibit video art as well as supplemental digital and web –based media in conjunction with an interdisciplinary course, exhibition and catalog examining an important collection of Civil War era drawings.

#### **5. Michael Barnett/Kate McNeil, Eric Strauss- LSOE**

##### **“Interdisciplinary and Innovative Technology Tools Designed to Enhance Learning”**

I propose to develop and implement a series of innovative simulations and animations to support students at Boston College in learning how to use technology to solve and interpret problems across disciplines. This project leverages existing resources such as the tablet PC lab that was recently received through a grant by the Hewlett Packard Foundation. Specifically, eight different but inter-related educational technology tools will be developed through this work ranging from the use of established technologies such as Microsoft Excel to new technologies such as augmented reality tools. The target courses for this work are GE182 and ED546. Other courses that will benefit and have committed to using the tools are BI445 and ED109.

#### **6. Evan Kantrowitz- Chemistry, A&S**

##### **“3D Visualization for Teaching and Research”**

Acquire autostereoscopic equipment for teaching and research in biochemistry, chemical biology and structural biology. Autostereoscopic flat panel displays use an innovative technology which allows a group of students or researcher to view three-dimensional (3D) images without the use of extremely expensive 3D shutter glasses. This new technology provides the opportunity for small learning groups or a number of researchers to collaborate on trying to understand how the complex molecules in the cell function.

#### **7. Robin Wood- CSON**

##### **“Using Virtual Reality Simulation to Enhance Critical Thinking in the Nursing Laboratory”**

The purpose of this project is to enhance critical thinking and clinical decision-making among CSON students through the use of high-fidelity simulation models in the Nursing Laboratory. This educational goal will be met by adding three virtual reality training models (adult, pediatric and infant) to the standard training models presently in constant

use in our nursing lab. The technology will be used to address two existing problems: 1) increasing CSON enrollments with no increase in faculty numbers and 2) need for significantly enhanced exposure of nursing students to complex health problems in diverse populations.

Spring 2008:

**8. Clare O'Connor- Biology, A&S**

**“Integration of Computer-Based Tools for the Measurement and Analysis of Physiological Function into Advanced Laboratory Classes”**

The Biology Department proposes to introduce new computer-based exercises dealing with various aspects of cardiovascular, neuromuscular and respiratory physiology into upper-division physiology laboratory classes. The Department has selected a commercially available system that is robust, intuitive and adaptable to different computer platforms. The system comes with a wide range of activities that will allow the course instructors to update and refine laboratory exercises as needed. The equipment will provide students with hands-on experience in monitoring physiological functions.

**9. Robert Signorile- Computer Science, A&S**

**“Computing with Robots: Using Robots to introduce logic and computing for all students”**

A Core-level course that offers the opportunity to program a personal robot will arouse students' interest and stir their imaginations. There has been significant recent research indicating that studying robotics provides a level of excitement attractive to all students, but especially for women and minorities. The prospect of working with a robot could help to motivate all types of students who might not otherwise be attracted to a discipline that is often seen as the preserve of the "nerd". In this project, I am requesting funds to purchase 15 personal robots and programming assistance for use in a Boston College core course on computing.

**10. Kathy Lee/ Chris Wood, Cindy Bravo- Romance Languages, A&S**

**“Spanish Language and Culture Proficiency via the InterLangua Videoconferencing Program”**

One of the goals of a world language course is to provide a curriculum and supplementary learning resources to assist learners in attaining higher linguistic proficiency and a broader insight into the culture of the country/countries where the target language is spoken. Providing students opportunities outside of the classroom to participate in real-life conversations with native speakers is essential to the realization of proficiency goals. Through the use of new communications technology, the proposed project represents such an opportunity. In twelve, one-hour InterLangua sessions over



twelve weeks, students enrolled in three Spanish language courses, as well as School of Nursing students learning medical Spanish in preparation for a service trip to Nicaragua, will speak with, see and hear over the Internet in full-motion video conference a personal tutor living and working in Guatemala.

### **11. Ernesto Livon-Grosman- Romance Languages, A&S**

#### **“Recording History and Popular Culture: The Case of Social Banditry”**

The main objective of this long-term project is to produce video recordings of popular culture in South America in order to include them into the courses I teach on contemporary Latin American culture in the Department of Romance Languages and Literatures. Another integral part of the project is to include students in the editing process as part of the film courses I have been teaching at Boston College. My current project focuses on the relationship between banditry and politics in the mid-nineteen sixties in Argentina. The goal is to reconstruct, through interviews and archival materials the life of Isidro Velázquez, an Argentine bandit who, following the likes of Robin Hood, for almost a decade robbed and extorted money from the wealthy landowners of the Northeast of Argentina in order to redistribute it among the poorest peasants in the region.

### **12. Michael O’Leary/ Greg Stoller, Rick Spinello, Dick Keeley, Beth Clark- Organizational Studies, CSOM**

#### **“Course Capture Pilot for the Carroll School of Management”**

The digital capture and distribution of course lectures has come to be seen as pedagogically useful in CSOM. Despite its utility, however, digitally distributing lectures has not spread widely throughout the department for one major reason: the production time involved. This pilot would test out/compare two course capture systems that make producing and sharing lecture presentations in digital format easy for instructors. These systems allow instructors to easily capture the audio, video and presentation materials used during a class and publish the combined materials into a storage location like Blackboard Vista or iTunes U.

### **13. Peter Olivieri- Information Systems, CSOM**

#### **“EagleEyes II : Exploring the Next Steps in Human/Computer Interaction”**

This project, “EagleEyes II : Exploring the Next Steps in Human/Computer Interaction” will seek to augment the existing EagleEyes system by incorporating brainwave analysis and feedback into the controlling of the computer cursor on the screen, and as a means of simulating a mouse click.

### **14. Belle Liang- LSOE**

### **“GenerationPulse Global Classroom”**

This project extends the purpose of online social networking to social outreach and education. A prototype for GenerationPulse, launched two years ago, successfully enabled hundreds of students to engage with youth displaced by Hurricane Katrina through a mutual, online exchange of writing and art. ATIG would provide critical seed money for catapulting GenerationPulse to the next level by achieving three related goals: 1) pilot a methodology to connect BC students with youth in the underdeveloped world, specifically, Africa; 2) advance the GenerationPulse website to allow the next level interactivity; 3) develop GenerationPulse as a service-learning laboratory.

### **15. Robin Wood- CSON**

#### **“Fidelity of virtual reality training in CSON”**

The purpose of this project is to customize space in Cushing Hall (Simulation Room) with equipment approximating a patient hospital room for use with virtual reality training models (adult SimMan and infant SimBaby). The training models (manikins) were funded by ATIG support in 2007-08. Virtual reality technology in CSON is being implemented to prepare students in large clinical courses across our undergraduate, graduate and nurse anesthesia programs for critical care practice. High-fidelity simulation requires realistic settings where learners can suspend disbelief and practice skills in an environment as close to reality as possible. Therefore, actual hospital equipment must be available for scenario practice exactly as students would find it in hospital settings. Installation of media hardware for real-time and delayed scenario debriefing as students practice with the manikins is a critical need. Scenarios are useful practice only when faculty/student debriefing of recorded scenarios occurs immediately following the scenario enacted. Faculty Simulation Training is needed to optimize full use of the models in diverse clinical courses for students with wide variations in clinical experience. CSON clinical faculty members have been identified whose interest in high-fidelity simulation assures long-term investment in the technology for course use. They will complete the two-day Faculty Simulation Training as well as a two-day onsite simulator Assembly and Programming course previously purchased from the manikin vendor.

Fall 2008:

### **16. Joe Nugent- English. A&S**

#### **‘The Virtual Flaneur: Constructing an Urban Sensescape’**

The goal of this project is to create a collaborative mapping tool that will enable students to re-imagine and construct a specific historical moment or era. It will be designed to encourage direct exploration of course content for, initially, historical and literary texts, but potentially for content from disciplines across the university. Its object is to construct an application that will draw on the student’s creativity and put his or her affinity with the world of virtual reality to work in the pursuit of learning and scholarship.

**17. Michael Barnett/Eric Strauss- LSOE**

**“Next Generation of Geographic Information Technologies in Support of Student Learning”**

We will develop a user-friendly, web-based GIS software package that can be used at both the college and the high school level to support students in evaluating the health of their own urban ecosystem. We have partnered with American Forests, one of the leaders in GIS application development, to develop this next generation GIS software package. This software package will be the first of its kind to leverage GIS along with computational modeling techniques to engage students in calculating the ecological and economic value of urban green space.

**18. Alexis Anderson/Maritza Karmely/Paul Tremblay, Alan Minuskin Lynn Barenberg- Law School**

**“Legal Advocacy Bureau's Audio/Video Capture and Digital Annotation/Editing”**

The purpose of this project is to provide digital recording of student lawyer-client meetings coupled with a video/audio tagging application and editing software that would allow clinical faculty at Boston College Law School’s Legal Advocacy Bureau to analyze and annotate law student video/audio performances.

**19. Debbie Rusch- Romance Languages, A&S**

**“Stress-Free Accents”**

We propose working with a computer programmer to design a website that will not only provide students with clear and concise explanations of the rules, but also provide the capacity to hear how words are pronounced through interactive exercises. The website could be used by students at all levels (beginner through advanced) at Boston College and beyond as a tool for reviewing and practicing the rules of accentuation in Spanish.

Spring 2009:

**20. Evan Kantrowitz- Chemistry, A&S**

**“Stereoscopic Visualization of Biological Macromolecules in the Classroom School/Department:**

Acquire a 3D computer projection system for classroom teaching in biochemistry, chemical biology and structural biology. Up until recently, it has been nearly impossible to utilize stereoscopic 3D projection in the classroom. Recently, Lightspeed, Inc. has introduced their new DepthQ WXGA HD 3D video projector, which is affordable, high quality, portable and versatile. This projector can be moved from one classroom to

another providing the ability to utilize 3D presentations in a number of the courses in our department. This new innovative technology provides the opportunity for an entire class to take advantage of a 3D learning experience.

## **21. Paula Mathieu- English, A&S**

### **“The Writing Fellows Virtual Collaboration Space”**

The most fundamental component of the Boston College Writing Fellow program is the verbal and written dialogue that takes place between a student and a writing fellow as they discuss ways to develop and improve the student’s writing. Our primary goal with this project is to technologically support and preserve the collaboration between the student and the Writing Fellow. This interaction has immediate value to the student and the instructor of the course. The record of that interaction has longer term value to the directors of the Writing Fellow program as we seek to improve the program and document its efficacy in strengthening the writing capabilities of Boston College undergraduates. No other university Writing Fellow program has developed such technological support for their program, and this is an opportunity for the Boston College program to become a leader in the technological support of student writing development.

## **22. John Ebel- Geology, A&S**

### **“Creation of a Web-Based Database of Historic Earthquake Information For Northeastern North America”**

In this project, a database of information on historic (pre-instrumental) earthquakes in northeastern North America will be created and posted on the web for interrogation by researchers worldwide. The database will consist both of primary source reports of earthquakes from documents such as newspapers, diaries, government reports, etc. and of estimated source parameters, such as the origin time, epicenter, magnitude, maximum intensity, etc. for each earthquake. Seismologists and engineers who carry out seismic hazard analyses need as much information as possible about historic earthquakes, and this will be the first web-based, queriable database for northeastern North America that will include both primary information and source information derived from those primary sources. Undergraduate students will help input the primary earthquake information in the database and will work with Prof. John Ebel to make the earthquake source parameter estimations. Thus, this project will create a new research tool based on the latest technology and at the same time it will provide a unique research experience for undergraduate students interested in earthquakes.

## **23. Michael Naughton- Physics, A&S**

### **“The Boston College Integrated Sciences Virtual Cleanroom Project”**

The goal of the Boston College Integrated Sciences Virtual Cleanroom Project is to make the new nanofabrication cleanroom facility even more accessible and provide a unique learning environment for students, interested staff and faculty, and prospective students and faculty. We propose to upgrade computer network connection speeds in the cleanroom facility and in the seminar room in Higgins Hall from the standard 100 Mbps to up to 1 Gbps, or to implement a new Cleanroom-Higgins network pending consultation with information technology services. Using virtual network computing (VNC) software, we will remotely connect to the computers operating equipment within the cleanroom from the seminar room in Higgins Hall. The enhanced network connection speeds will allow seamless remote operation of the equipment in the cleanroom. This is particularly important for the electron, ion and scanning probe microscopes where interactions with live video are required.

#### **24. Ernesto Livon-Grosman- Romance Languages, A&S**

##### **“Recording History and Popular Culture: The Case of Social Banditry”**

The main objective of this long-term project is to produce video recordings of popular culture in South America in order to include them into the courses I teach on contemporary Latin American culture in the Department of Romance Languages and Literatures. Video recording not only constitutes a way of collecting data for my research but also in itself it is one of the formats in which I publish and distribute the results of my research. Another integral part of the project is to include students in the editing process as part of the film courses I have been teaching at Boston College. The present request is to expand the project I started on July 2008 by acquiring the technology that will allow me to edit the recorded material. This request will complete the technological needs of the project allowing me to fully integrate the editing process with the hands on component of my courses and work on the post-production stage of the project.

#### **25. Alec Peck- LSOE**

##### **“Digital History Project: How does a society respect and honor diversity and at the same time create a common bond?”**

The overall purpose of this technology grant is to collaborate with the teachers and students at St. Columbkille Partnership School, which is jointly owned and operated by Boston College and the Archdiocese of Boston, on a community-wide initiative, Digital History project. The Digital History project will explore the theme of immigration through the overarching question, How does a society respect and honor diversity and at the same time create a common bond? One of the Lynch School’s overarching goals is to prepare professional, collegial teachers who are committed to social justice education. St. Columbkille Partnership School shares this mission and works to deepen students’ connections to the community. Technology initiatives in K-12 schools are often disconnected from the curriculum. Teachers are exposed to technology through stand-alone professional development sessions that focus on the technical aspects of a particular

tool. Teachers, as a result, struggle to successfully integrate technology into particular lessons and units. By collaborating with Facing History and using well-designed curricula, the Digital History team can focus on embedding technology into teachers' and students' classroom experiences. We plan to achieve these goals through the implementation of a Digital History project that combines high-quality curriculum material, from critically acclaimed Facing History, with pedagogy-rich professional development to facilitate student-generated digital works.

## **26. Mary Colleen Simonelli- CSON**

### **“Incorporating High-Fidelity Simulation in Childbearing Nursing Curriculum”**

The purpose of this project is to introduce learning by simulation into the undergraduate Childbearing clinical course. The grant will be used to purchase the obstetrical high-fidelity simulation models (Birthing Noelle and Newborn Hal) as well as equipment necessary to create a realistic obstetrical hospital environment. It is well documented that human simulation provides a unique teaching modality that fosters transference of theoretical knowledge gained in the classroom to real-life situations without jeopardizing patient safety. Complex disease processes often complicate routine pregnancies and require nurses to make swift, accurate assessments and implement timely interventions. To develop these skills, nursing students will learn in scenarios that evoke realistic patient responses and allow for learner trial and error without sacrificing efficient and safe delivery of patient care. High-fidelity simulation will enhance—not replace—clinical coursework, allowing CSON Childbearing faculty to provide quality education, meet the demands of increasing enrollment, and develop the next generation of nurses as competent and valuable members of the health care team.