

**Division of Academic Affairs**  
**Technology Fee – Project Proposal**  
**2014**

*Proposal Deadline: Tuesday, January 21, 2014*

***Project Proposal Type***

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***Systemic Project***

*Projects proposed by operational units of the university (e.g., colleges, academic departments, Library, etc.) for instructional technology enhancements of unit-wide or university-wide scope.*

***Project Title***

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*Development of a Nursing Skills & Simulation Learning (NSSL) Center and Nursing eClassroom/Computer-Based Testing Center*

***Total Amount of Funding Requested***

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*\$175,000*

***Primary Project Coordinator***

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*Dr. Ermalynn Kiehl, Chair, Department of Nursing and  
Michael Dieckmann, Chief Information Officer*

**Division of Academic Affairs**  
**Systemic Project Proposal Template**  
**2014**

**Background:** Challenges facing healthcare educators are complex and require innovative methods to keep up with the demands required to prepare healthcare practitioners. Healthcare environments are complex, and they require highly sophisticated problem-solving and decision-making skills. Additionally, healthcare educators are confronted with a limited clinical placement sites, shortages of healthcare educators, diminished financial resources, and advancements in technologies in healthcare (Gantt, 2010).

According to the Institute of Medicine (2003), “Knowledge and skills in information and healthcare technology are critical to the delivery of quality patient care in a variety of settings. In the United States, university level nationally CCNE accredited Baccalaureate, Master’s, and Doctoral level nursing education programs are guided by “Essentials” documents which outline outcomes that are expected from each accredited nursing program.

The Essentials of **Baccalaureate** Education for Professional Nursing Practice (AACN, 2008) speak to the use of technology in *Essential IV: Information Management and Application of Patient Care Technology*, which requires knowledge and skills in information management and patient care technology, stating they are critical in the delivery of quality patient care. Student outcomes include (1) integrate knowledge and skills from information and patient care technologies to facilitate clinical decision making in the delivery of safe and effective care to patients in diverse settings, (2) uphold the ethical use of data and information to facilitate the delivery of nursing care, (3) use of technology and information systems for clinical decision-making computer skills that may include basic software, spreadsheet, and healthcare databases, (4) information management for patient safety, (5) regulatory requirements through electronic data monitoring systems, and (6) electronic health record/physician order entry, among others. *Essential III: Scholarship for Evidence Based Practice*, goes on to identify one way in which technology is applied, stating that professional nursing practice is grounded in the translation of current evidence into one’s practice. Specific student outcomes include (1) demonstrates understanding of how evidence is developed using the research process, and (2) integrates evidence, along with clinical judgment, interprofessional perspectives, and patient, family, or community preference into practice.

The Essentials of **Master’s** Education in Nursing (2011) *Essential IV: Informatics and Healthcare Technology* encompasses five broad areas (1) use of patient care and other technologies to deliver and enhance care, (2) communication technologies to integrate and coordinate care, (3) data management to analyze and improve outcomes of care, (4) health information management for evidence-based care and health education, and (5) facilitation and use of electronic health records to improve patient care.

The Essentials of **Doctoral** Education for Advanced Nursing Practice (2006). *Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care* indicates that DNP graduates are distinguished by their abilities to use information systems/technology to support and improve patient care and healthcare systems, and provide leadership within healthcare systems and/or academic settings. Knowledge and skills related to information systems/technology and patient care technology prepare the DNP graduate to apply new knowledge, manage individual and aggregate level information, and

assess the efficacy of patient care technology appropriate to a specialized area of practice. DNP graduates also design, select, and use information systems/technology to evaluate programs of care, outcomes of care, and care systems. Information systems/technology provide a mechanism to apply budget and productivity tools, practice information systems and decision supports, and web-based learning or intervention tools to support and improve patient care.

The National Council of State Boards of Nursing (NCSBN) is currently conducting a landmark, national, multi-site longitudinal study of simulation use in nursing programs throughout the country. The study is designed to determine if there are differences in clinical competency, level of knowledge, and perception of how well learning needs are met. The study groups being compared are 1) nursing students who spend 10% or less of clinical time using simulation, 2) nursing students who receive 25% of clinical time using simulation and 3) nursing students who spend 50% of clinical time using simulation. Data collection for the study will conclude in December, 2014 (NCSBN, 2012). The results of this study will provide guidelines for determining the amount of simulation usage and for integrating simulation into the nursing curriculum.

**Systemic** proposals must provide the following information:

**1. Description of initiative/investment to enhance instructional technology.**

*Note:* This proposal is part of an overall project, being performed by ITS at the request and under the direction of the Provost, to renovate Building 37 and provide technology infrastructure needed to support the quality enhancement and enrollment growth of UWF's nursing programs. This proposal is thus a piece of a much larger facilities renovation project for Nursing, being conducted under the management of the CIO in his dual role as coordinator of university information technology and coordinator of space and facilities for the Division of Academic Affairs. In terms of this specific proposal, sections 1 – 5 have been written by the Department of Nursing to address the role of this technology within their department's strategic goals and plans. Sections 6 – 10 have been provided by ITS in the role of designing and managing the installation of the supporting instructional technology for this project. ITS wishes to thank the Department of Nursing for collaboratively involving us in this technology planning.

Because ITS is a joint author of this proposal, there will not be an independent ITS review of the proposal.

The purpose of the Nursing Skills & Simulation Learning (NSSL) Center project is to provide a safe and effective environment for students to demonstrate critical thinking and clinical decision making by applying appropriate interventions in patient care. The UWF Department of Nursing envisions a NSSL Center as a (1) state-of-the-art simulation lab which offers students the opportunity to experience complex select patient scenarios through use of simulated situations and (2) a free-standing computer lab designed for student & faculty training and development of knowledge and skills necessary to implement clinical informatics, such as EHRs. This lab would also provide the computer availability for ATI and specific course online testing.

Specific aims of establishing skills & simulation and computer laboratories include the following:

- a) supply graduate nurses who are better prepared for transition into a broad range of clinical areas.
- b) produce quality nurses with enhanced critical thinking abilities, communication skills and collaboration experiences.
- c) promote research and disseminate evidence-based practice standards for clinical practice and the use of simulation in healthcare education.
- d) demonstrate the value of collaboration between academic and healthcare institutions.
- e) develop and test models that health care educators can implement when using simulation to promote student learning.
- f) develop a cadre of healthcare educators who can use simulation in innovative ways to enhance student learning.
- g) maximize utilization of scarce resources: fiscal, technological, human, and clinical sites.
- h) recruit students into the profession and recruit professional nurses as clinical faculty.
- i) significantly facilitate learning that addresses the Joint Commission (2012) national patient safety goals.

## **2. Description of how initiative has a college/unit-wide or university-wide scope.**

**Scope:** The scope of this program will initially include all undergraduate pre-licensure nursing students across all levels of the upper division curriculum. The NSSL Center will be utilized to provide experiential learning experiences primary and acute care settings including medical-surgical nursing, obstetric nursing, mental health nursing, pediatric nursing, home health nursing, and community health nursing. The expectation is that the NSSL Center could provide space for local graduate students' for health assessment experiences, as well as facilities for DNP students' to hone their skills and gain experience in simulated experiences with undergraduate students.

The NSSL Center will have nine patient rooms. Simulated patient rooms would have high fidelity audio-video digital recording, projection, and remote-viewing capabilities. Four rooms will be occupied by high-tech mannequins that simulate symptoms, diseases, and conditions that nurses are likely to see in a real care setting. Specific patient care areas will include (1) an intensive care unit with a control room; (2) a pediatric specialty room and (3) maternal infant care room that would include a labor suite for care of mothers during and after birth and immediate care of her newborn. Three spaces would specifically serve as a skills laboratory and one space would serve as a primary care suite. A debriefing room will have two Smart Boards that will serve 1-2 student groups per simulation experience. Storage space will be allocated from existing space.

## **3. Description of project alignment with UWF Strategic Plan.**

Technology is transforming education and it is critical that the faculty and the students integrate the advanced technologies and advanced teaching and learning methods that empower students and to prepare themselves for the future. The following table is presented to show alignment of this project with UWF strategic directions.

Strategic Direction	Priority	Translation to Nursing Education
Strategic Direction 2: Distinctive Teaching, Scholarship, Research, and Professional Contributions	UWF Priority 2.1. Respond to the changing needs of the region, state, and nation by investing strategically to support innovative instruction and high-quality, relevant, and distinctive academic and research programs.	The faculty in the DON are enthusiastic for the opportunity to bring skills, simulation, & healthcare informatics innovation into nursing education.
	UWF Priority 2.2. Recruit, support, retain, and recognize dedicated, high-quality faculty who advance the mission, vision, and values of the University.	With governing bodies in nursing specifically addressing the use of information technology, nursing faculty have an expectation that advanced technologies are available for their use in high quality nursing programs.
	UWF Priority 2.3. Build a vibrant culture of scholarship and research that aligns with UWF's strengths and capacities and supports UWF's mission, vision, and values.	Advanced technologies at the DON will provide availability for faculty to build a culture of scholarship in their individual areas of research expertise both internally within UWF and with national and international colleagues.
Strategic Direction 3: Valued Partnerships: Community Engagement and Service	UWF Priority 3.1. Develop, cultivate, assess, and sustain a network of mutually beneficial community partnerships.	Two of the local hospital systems have recently initiated discussion of how they might work with us in simulation in both intraprofessional and interprofession ways.
Strategic Direction 4: Sustainable Institutional Excellence	Priority 4.1: Support and sustain the high-quality services and infrastructure needed to achieve identified UWF priorities.	Sophisticated skills, simulation, and computer labs will improve the nursing ability to maintain the highest quality services to both students and community partners..
	UWF Priority 4.3. Maximize the acquisition and deployment of resources, and strategically align and integrate planning, budgeting, assessment, and continuous improvement efforts	As the DON moves toward reaccreditation in 2016, advanced technology will improve ability to collect and maintain aggregate student assessment data r/t continuous quality improvement.

#### 4. Description of benefits provided.

It is clear that simulation is of benefit in preparing student nurses for practice in a wide variety of clinical situations. Simulation provides a safe learning environment that helps learners to develop the ability to establish priorities, make decisions, take appropriate action, and work successfully as part of a team (Booth & McMullen-Fix, 2012). Simulation also offers students the opportunity for immersion in complex medical conditions such as exacerbation of COPD, asthma, acute renal failure, and head trauma (Jeffries, 2007). Currently the National Council of State Boards of Nursing is conducting a landmark, national, multi-site, longitudinal study of simulation use in

prelicensure nursing programs throughout the country to exploring the role, percentage of simulated experiences, and impact on clinical competency.

**5. Description of how success/impact will be measured.**

The simulation process will include formative and summative evaluations. Evaluations will focus on nursing competencies, clinical judgment, critical thinking skills and student, faculty, and employer satisfaction. Clinical judgment will be evaluated using the Lasater Clinical Judgment Rubric (2007). Currently a Graduate Assistant is completing an integrative literature review on existing successful program from which we can identify current best practice and benchmark.

**6. Detailed description of resources required including hardware and software requirements and personnel costs (faculty compensation is not an allowed cost).**

As part of the renovation of Building 37 to meet the instructional needs of the Nursing program, there are three major instructional technology facilities planned:

- Building 37, room 109 is being equipped as a ***combined eClassroom/computer-based testing facility***, with standard eClassroom components in a dual-projector mode as well as student computer workstations for each student. Total student capacity will be 48. This room will be used by Nursing as a classroom and in addition will be the testing center for the majority of Nursing certification examinations which are now delivered in computer-based format. It is hoped that, when not used by Nursing, this room would be available to other programs for computer-based testing activities. Funding for the computers for this room is being provided by a private donor. This proposal requests the eClassroom components and supporting technology to serve the room. This facility accounts for \$54,000 of the requested technology fee funding.
- Building 37, room 118 is being equipped as a six-bed ***skills laboratory*** for hands-on instruction using patient simulators. The patient simulators, beds, and other hands-on simulation equipment are being provided by Nursing. This proposal requests funding for the viewing and recording equipment, specialized for these simulators, that will be used in the instructional process. This facility accounts for \$96,000 of the requested technology fee funding.
- Building 37, room 112 is being equipped as a ***debriefing classroom*** where instructors will view and review in a classroom setting the activities occurring in the skills laboratory, using the model where a portion of the students are working in the skills laboratory while the other portion are viewing and learning from the other group's activities. (Or, alternatively, the instructor can subsequently review and debrief a group on their lab performance using a recording of their lab activities.) The debriefing room is designed based on concepts and technology that has been tested in the ITS Model Classroom in Building 79. This facility accounts for \$25,000 of the requested technology fee funding.

A breakdown of components and costs of each of these facilities is provided in the tables below. There are no personnel costs associated with this request, all requested funding is purely for equipment, installation services, and technical support/warranty agreements.

**Table 1: Room 109, eClassroom/Computer-Based Testing Facility, and Common Network Infrastructure for All Affected Rooms**

<b>Item</b>	<b>Cost</b>
Dual-projection eClassroom technology per UWF standards	\$43,519.80
Dell Optiplex 7010 computer for instructor podium	\$1,045.25
VGA Cables	\$100.00
2 8-port network switches for instructor podium	\$200.00
2 Cisco 48-port power-over-ethernet network switches at \$4500 each	\$9,000.00
<b>Total:</b>	<b>\$53,865.05</b>

**Table 2: Room 118, Skills Laboratory**

<b>Item</b>	<b>Cost</b>
Fixed KBPort recording station with cameras and microphones infrastructure fixed in six simulation bays	\$37,750.00
KBPort mobile recording cart, no cameras	\$18,000.00
KBPort mobile recording cart with cameras and microphones, for use in existing simulation rooms 119, 120A, 120B	\$23,995.00
Three-year extended hardware and technical support (beyond year 1)	\$16,611.00
<b>Total:</b>	<b>\$96,356.00</b>

**Table 3: Room 112, Debriefing Classroom**

<b>Item</b>	<b>Cost</b>
Two Smartboards and supporting infrastructure	\$17,830.99
Two instructor computers, one per Smartboard, Dell Optiplex 9020 mini tower	\$2,371.30
<b>Total:</b>	<b>\$20,202.29</b>

<b>Sub Total:</b>	<b>\$170,423.34</b>
<b>Contingency (hopefully not needed):</b>	<b>\$4,576.66</b>
<b>Total Request:</b>	<b>\$175,000.00</b>

**7. Proposed timeline.**

As noted, the instructional technology requested in this proposal is embedded in a larger facilities renovation project. The construction phase of that project is scheduled to begin in April 2014, with completion prior to the start of Fall Term 2014. Within that schedule, at the appropriate time installation of the eClassroom and Debriefing Classroom equipment will be performed by Technical Innovations, UWF’s standard contractor for eClassrooms. Installation of the KBPort simulation equipment in the Skills Laboratory will be performed by the vendor.

**8. Plan for sustainability beyond conclusion of funding from technology fee, if applicable.**

The eClassroom and debriefing room equipment is being purchased with standard UWF warranties. A three-year extended technical support and maintenance contract for the KBPort skills lab equipment is included in this proposal.

ITS will work with the technology fee committee to add the eClassroom and the debriefing classroom to the cyclical renewal funding model for classrooms.

The Department of Nursing will seek to implement lab fees to enable ongoing maintenance and support agreements on the simulation lab equipment, beyond the four years covered in this proposal.

**9. Resource matching commitments from other organizations/sources (identify organization and amounts), if applicable.**

This instructional technology in this proposal is part of a larger collaborative project to renovate and equip Building 37 to support the current state-of-the-art in Nursing instruction and certification testing. Various sources are contributing to this project, among them:

- The Division of Academic Affairs has funded \$283,360 of associated renovations to Building 37 to accommodate this instructional technology.
- The Department of Nursing has secured private donations of approximately \$50,000 to fund the computers in the eClassroom/testing center.

Both the ITS and Facilities Planning departments are committing significant staff resources to this project.

**10. Individual responsible for reporting and accountability, along with contact information.**

Accountability for the technology fee funds and their use consistent with this proposal will be borne by:

Michael Dieckmann, CIO  
Ext. 2558  
MichaelDieckmann@uwf.edu

Accountability for successful implementation of this instructional technology in the Nursing program to achieve the envisioned student learning outcomes is held by:

Dr. Ermalynn Kiehl, Chair, Department of Nursing  
Ext. 7761  
ekiehl@uwf.edu

## Attachment #1: Example Current and proposed implementation

### University of West Florida Department of Nursing Nursing Skills & Simulation Learning Center (NSSL)

Purpose: Simulation is a clinical setting that allows the student to freely explore the critically thinking mind; their own, and the other minds of the group including the instructor.

Red: Planned simulation experiences & hours

NSSL Center <i>Undergraduate</i> Student Activity Current (purple) & Planned for 2014-2015 (rose)			
Juniors Fall	Juniors Spring	Seniors Fall	Seniors Spring
Foundations (6 hrs) <ul style="list-style-type: none"> <li>• Introduction to Simulation</li> <li>• Hypoglycemia</li> <li style="color: red;">• Add non-complex asthma, fluid &amp; electrolyte imbalance, lower leg fracture, moderate rx to antibiotic (12 hrs)</li> </ul>	Med/Surg II (8 hrs) <ul style="list-style-type: none"> <li>• Storytelling Scenario</li> <li>• Fluid &amp; Electrolyte Imbalance</li> <li>• Lower Leg Fracture</li> <li>• Moderate Reaction to Antibiotic</li> <li>• COPD</li> <li>• CAD</li> <li style="color: red;">• Add neuro, moderately-complex asthma &amp; hypoglycemia (24 hrs)</li> </ul>	Maternal Newborn (4 hrs) <ul style="list-style-type: none"> <li>• Cesarean Birth</li> <li style="color: red;">• Add fetal monitoring, preeclampsia, PPH, fetal demise, &amp; adoption (12 hrs)</li> </ul>	M/S III (8 hrs) <ul style="list-style-type: none"> <li>• Mild Asthma</li> <li>• Compartment Syndrome</li> <li>• Fluid &amp; Electrolyte Imbalance</li> <li>• Cardio Pulmonary Arrest</li> <li style="color: red;">• Add pulmonary embolism &amp;, acute myocardial infarction (12 hrs)</li> </ul>
	Mental Health (8 hrs) <ul style="list-style-type: none"> <li>• Therapeutic Techniques</li> <li>• Spiritual Needs</li> <li style="color: red;">• Add depression, anxiety, bipolar disorder, &amp; end-of-life communication</li> </ul>	Family/Community (2 hrs) <ul style="list-style-type: none"> <li>• Introduction to Simulation</li> <li style="color: red;">• Add pediatrics (12 hrs)</li> </ul>	Management and Leadership (8 hrs) <ul style="list-style-type: none"> <li>• Storytelling Scenario</li> <li>• Opioid Intoxication</li> <li>• Postop Bowel Obstruction-Spiritual Needs</li> <li>• COPD-O2 Therapy</li> <li style="color: red;">• Add L&amp;M scenarios (12 hrs)</li> </ul>

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