

Nursing Doctorate Study

Solutions to the
nursing faculty
shortage

Report and
Recommendations of
the CSU Nursing
Doctorate Advisory
Committee

California State University Nursing Doctorate Study

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Andrea Renwanz Boyle

Keith Boyum

Ann Hallum

Christine Hanson

Peggy Leapley

Judith Papenhausen

Lorie Roth

Michelle Thobaben

Barbara Thorpe

Beatrice Yorker

Research Consultant

Shannon E. Perry, RN, PhD, FAAN

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Doctoral Nursing Study Advisory Committee

CSU Campus Representatives

Andrea Renwanz Boyle, RN, DNS
Associate Professor, San Francisco State University School of Nursing
Academic Senate, CSU

Ann Hallum, PhD
Professor of Physical Therapy and Dean of Graduate Studies, San Francisco State University

Peggy Leapley, PhD, RN, APRN, BC
Chair and Professor of Nursing, CSU, Bakersfield

Judith Papenhausen, RN, PhD
Director, School of Nursing, CSU, San Marcos

Marshelle Thobaben, RN, PhD
Professor, Department of Nursing, Humboldt State University
Academic Senate, CSU

Barbara Thorpe, RN, MPH, EdD,
Associate Vice President, Research and Sponsored Programs, CSU, Channel Islands

Beatrice Yorker, RN, JD
Dean, College of Health and Human Services, Cal State LA

Chancellor's Office Representatives

Keith O. Boyum PhD
Associate Vice Chancellor, Academic Affairs

Christine Hanson, PhD
State University Dean, Academic Program Planning

Lorie Roth, PhD
Assistant Vice Chancellor, Academic Affairs

Research Consultant

Shannon E. Perry, RN, PhD, FAAN

Table of Contents

Background	6
Initial Questions	6
Methods.....	7
Advisory Committee Findings and Recommendations.....	7
State Needs: Unmet Demand for Nurses and Nursing Faculty	
Need for More Nurses.....	9
Nursing Faculty Shortage.....	9
Estimated Need for CSU and CCC Nursing Faculty.....	10
Profession-Driven Need: Elevating Advanced Practice Nursing Educational Standards	12
Advanced Practice Nurses.....	13
Student Demand for Doctoral Nursing Programs	14
Seeking Solutions to the Nursing Shortage	
Additional California Doctoral Programs	15
Interest in Teaching in Postbaccalaureate Nursing Programs.....	15
Options for Doctoral Nursing Programs	
Types of Doctoral Programs Considered for Addressing State Needs.....	16
Preferences of CSU and CCC Nursing Directors.....	18
Common Curricular Structure of DNP Programs	18
Possible Program Delivery Modes.....	19
CSU Institutional Capacity for Implementing Doctoral Programs	
Campus Interest and Readiness.....	20
Scale of Implementation.....	21
Campus Strengths.....	22
Challenges Identified.....	23
Faculty.....	23
Professional Requirements for Faculty Teaching in Nursing Programs.....	24
Faculty Recruitment and Retention.....	25
Student Costs.....	26
Space, Supplies and Equipment and Library.....	27
Partnerships.....	29
Collaboration as a Strategy for Implementation of Doctoral Programs.....	29
Accreditation.....	29
References	30
Website References.....	30
Persons Interviewed Re: Structure and Costs of Programs.....	31

List of Tables

Table 1. Full-Time and Part-Time Faculty Vacancies in CCC and CSU Programs.....	11
Table 2. CSU Need for Nursing Faculty within the Next 5 Years.....	12
Table 3. Interest in Pursuing a Doctoral Degree in Nursing.....	15
Table 4. Respondents Currently Teaching or Interested in Teaching: Overall and By Group.....	16
Table 5. Degree Preferred by CSU and CCC Nursing Directors.....	18
Table 6. First Preference for Course Delivery Mode.....	19
Table 7. Tuition/Fees in California Doctoral Nursing Programs.....	27
Table 8. Resources Needed to Launch a Doctoral Program (Reported by Deans/ Directors of Doctoral Nursing Programs Outside California.....	28
Table 9. Population Size, Target Sample, Number of Surveys Sent and Returned.....	35
Table 10. Gender of Sample of Those Indicating Gender: Overall and By Group.....	35
Table 11. Age of Sample of Those Providing Data: Overall and By Group.....	36

List of Appendices

Appendix A Needs Survey for Doctorate in Nursing in the California State University System.....	35
Appendix B Methodology for Determining Demand for Nursing Doctoral Programs.....	37
Appendix C Specifications of Doctoral Programs.....	42

Background

The State of California faces a nursing shortage and an inability to train sufficient nurses to meet current healthcare demands and projected demands in the future. Central to this issue is the shortage of nursing faculty. Presently, all eighteen California State University (CSU) “generic” (pre-licensure) baccalaureate nursing programs are impacted—that is, unable to admit more students—in part because there are not enough faculty available to meet the low student-to-faculty ratios required for nursing programs. This shortage exists beyond the CSU: Statewide, the California Board of Registered Nursing reported that in 2005-2006, nursing programs turned away 61.3% of qualified applicants because there was not sufficient capacity to teach those eligible students. While the CSU has added two new baccalaureate nursing programs (at the San Marcos and Channel Islands campuses) in the past two years, increasing the distribution of sites is only one approach to reaching more students. The California Board of Registered Nursing observed in their 2005-2006 *Annual School Report* that, “Without more faculty, RN programs will not be able to continue their expansion.” Complicating the situation, the current producers of nursing doctorates cannot supply the number of faculty needed. In California, only six universities offer doctoral nursing programs, the minimal level to qualify graduates for tenure-track faculty positions. Those existing programs are not expected to increase significantly the production of graduates, and not all who complete those programs will pursue careers in college-level teaching. A new, viable and affordable channel for educating future faculty must be pursued.

Adding to the state’s need for doctoral nursing programs, the American Association of Colleges of Nursing voted in 2004 to require a doctoral degree by 2015 for advanced practice nurse professions (including, for example, nurse practitioners, nurse anesthetists, and midwives, among others). It is expected that by 2015, the doctoral degree for advanced practice nurses will be required for licensure.

Initial Questions

Seeking solutions to the state’s nursing shortage, the CSU Office of the Chancellor, Division of Academic Affairs charged a research consultant and advisory committee with conducting a study and making recommendations on four basic questions related to the nursing faculty shortage:

- (1) Are there sufficient state needs and student demand to justify the creation of new professional nursing doctoral programs?
- (2) What would be the appropriate CSU doctoral degree for training future faculty and advanced practice nurses?
- (3) Could the CSU train its own nursing faculty by instituting doctoral nursing programs, other than the Ph.D.?
- (4) What is the CSU’s capacity for implementing professional nursing doctoral programs?

Methods

A variety of methods was used to explore the need and CSU capacity for establishing a doctoral program in nursing. An advisory committee was selected and met May 23, 2007 to discuss strategies for conducting the assessment. The consultant conducted an extensive literature review, surveyed directors of all associate degree programs in California and all CSU nursing programs, conducted email surveys of faculty in associate degree and CSU baccalaureate (and higher) degree nursing programs, surveyed by email the deans of all 108 schools of nursing that offer doctoral programs, interviewed by phone five deans of schools of nursing that offer doctoral programs and eight directors of nursing doctoral programs (and interviewed one by email), and she interviewed one business officer by telephone.

The consultant analyzed the study results, drafted a preliminary report, and discussed the initial findings with the advisory committee. Further consultation of the advisory committee contributed to this final report.

Advisory Committee Findings and Recommendations

Research conducted by the nursing study consultant, Dr. Shannon Perry, was framed and interpreted by the study's advisory board discussions. Conclusions and recommendations include:

Sufficient Demand and Societal Need exist for additional doctoral nursing programs in California, according to the research findings. To determine demand for a doctoral program in the CSU System, a stratified random sample of the 17,392 advanced practice nurses licensed in California was surveyed by mail. The return rate of 35% exceeded researchers' expectations and may reflect the significance that respondents associated with the survey topic. Of the 1,827 total surveys evaluated, 451 (24.7%) of the respondents indicated they would be interested in pursuing a doctoral degree in nursing. Of those interested, 86% would pursue the degree within 5 years and 14% within 10 years. Of the respondents, 424 (23%) are currently teaching in schools of nursing and 711 (42%) are interested in teaching.

The Doctor of Nursing Practice (DNP) is the Appropriate CSU Nursing Doctoral Degree, having been considered carefully along with the Doctor of Philosophy (PhD), Doctor of Nursing Science (DNSc), and Doctor of Education (EdD). The Committee recommends that the CSU seek legislative authorization to offer the DNP degree. The curriculum should be organized and implemented as a two-track DNP program. It is recommended that one specialization should be in nursing education, emphasizing curriculum and instruction, pedagogy, program evaluation or similar topics appropriate for preparing the graduate for a faculty position; and the second specialization should be in advanced practice nursing (for example: Nurse Practitioner, Nurse Midwife, or Clinical Nurse Specialist). This two-track approach would allow the CSU to prepare future faculty—the most pressing need—as well as advanced practice nurses, an anticipated future need. Current DNP programs in other universities range in length from 25 to 49 units, which is shorter than typical PhD and EdD nursing programs. It is believed that DNP programs would not compete with the PhD programs in California and would offer an alternative educational pathway for those individuals seeking a nursing doctorate.

The CSU Could Train Future Faculty through CSU Doctor of Nursing Practice degree programs that include curricular specializations nursing education. The committee recommends structuring the program to include clinically based research, curriculum design, nursing education, and pedagogy. Study results indicate that CSU nursing program directors recognize the DNP as one valid preparation pathway for their faculty, identifying the PhD and the DNP as the preferred terminal degrees for nursing faculty. California Community College nursing directors favored EdD preparation over DNP preparation for their faculty. Still, in response to the survey query, “If a Doctor of Nursing Practice (DNP) degree is implemented in California, would you hire someone with a DNP to teach in your program,” 25 directors of CCC nursing programs said “Yes” and 3 said, “No.”

The CSU has the Capacity to Implement Nursing Doctoral Degrees. Master’s degree programs are offered at 13 of the 19 CSU campuses with nursing programs. This graduate foundation provides strengths teaching theory, research, and advanced practice roles; expertise in grant writing and online and distance teaching; and research agenda, graduate research mentoring, and thesis advising.

Development of Doctor of Nursing Degrees is recommended to take place on each of the authorized campuses. It is recommended that the Chancellor establish an ad hoc CSU Nursing Doctorate Advisory Committee to develop systemwide standards and policies for doctoral nursing programs. Membership of the advisory committee should include representation from CSU faculty, nursing directors, deans of health and human services, and Academic Affairs staff.

Program Selection should be invited through an RFP for proposals requesting permission to plan a program and specializations. The Chancellor’s Office will evaluate the proposals’ descriptions of regional needs, campus resources, and student demand, and will select (most likely two) campuses that will be given permission to plan for implementation. Campuses should be encouraged to collaborate where that would make better utilization of resources for stronger regional service.

Small-Scale Initial Implementation. It is recommended that the CSU begin with two or three campuses offering both DNP specializations. Initial cohorts should be 10, and a minimum of 10 students per cohort should be admitted annually by each program. Future enrollments would be expected to respond to shifts in demand and resources. The programs should allow part-time study, with traditional and online delivery of courses.

State Needs: Unmet Demand for Nurses and Nursing Faculty

The Need for More Nurses

The United States is experiencing a nursing shortage that is expected to worsen as baby boomers age and increase their needs for health care. The nursing workforce is aging; the average age of a nurse today is 47 years and 55% of nurses intend to retire between 2011 and 2020 (www.annhealthcare.com/news.asp?ArticleID=15444). The American Hospital Association estimates that U.S. hospitals need 118,000 nurses to fill vacant positions (www.ahapolicyforum.org/ahapolicyforum/reports).

The California Strategic Planning Committee for Nursing (CSPCN) predicted the current and continued nursing shortage in California (Sechrist, Lewis, & Rutledge, 1999). They noted that factors that contributed to the nursing shortage in California included changes in the health care environment due to managed care that resulted in downsizing of the nursing work force, the aging of nurses, and an increased need for nurses with baccalaureate and higher degree preparation. In 1997, California ranked 50th in the nation in the number of registered nurses per 100,000 population (Moses, 1997). In its *2006 Survey of Registered Nurses*, the California Board of Registered Nursing reported that 45.5% of nurses with active California licenses are 50 years of age or older. Only 5% of California nurses hold a master's degree and 1% of California nurses hold a doctorate.

In California, there are 31 baccalaureate programs of which 19 are in CSU system schools, 9 RN completion programs with 3 in CSU system schools, 16 entry level master's programs with 8 in CSU system schools, and 83 associate degree programs in nursing (www.rn.ca.gov). There have been a number of partnerships developed between nursing colleges and universities and private entities to help expand capacity for nursing students and to strengthen the nursing workforce. Federal legislation has been introduced to provide grants to schools to hire and retain faculty, recruit students, purchase equipment and enhance laboratories, and expand the infrastructure in schools of nursing (www.aacn.nche.edu/Government). Other important legislation includes the Nurse Reinvestment Act, the Nurse Faculty Loan Program, and the Nurse Scholarship program.

Nursing Faculty Shortage

While nursing school enrollments have increased in basic baccalaureate programs, this increase is not enough to meet the projected demand for additional nurses. California's efforts to relieve the nursing shortage included opening 8 new pre-licensure nursing programs from 2004-2005 to 2005-2006 (one associate degree, two BSN, and five entry level master's programs). During this time, there was an increase in space for 1497 new student enrollments with the total enrollment of 10,989 students. In spite of this increase, 17,421 qualified applicants to California nursing programs were not accepted (<http://www.rn.ca.gov/schools/schools.htm#schoolrpt>) because of a shortage of clinical sites or an inadequate number of faculty. According to the American Association of Colleges of Nursing (AACN), U.S. nursing schools were not able to accept 41,683 qualified applicants in 2005 because of a shortage of nursing faculty (www.aacn.nche.edu/IDS).

In order to teach more nurses, additional nursing faculty are needed.

There was an increase of 278 California nursing faculty from 2005 to 2006. However, as of October, 2006, there were 192 vacant faculty positions. This 6.6% faculty vacancy rate is the highest reported in the past five years (<http://www.rn.ca.gov/schools/schools.htm#schoolrpt>). One aspect affecting the ranks of nursing faculty is that they are an aging population. The average ages of faculty with doctorates (at the levels of professor, associate professor, and assistant professor) are 57.9, 55.4, and 51.5 years, respectively (www.aacn.nche.edu/IDS). With an average retirement age of 62.5 years, a significant number of faculty are expected to retire within the next 10 years (www.us.elsevierhealth.com/product.jsp?isbn=00296554).

In their recruiting efforts, nursing schools compete with industry for nurses who hold advanced degrees. In its *2005-2006 Annual School Report*, the California Board of Registered Nursing reported that there were 2,710 nursing faculty in schools of nursing in California, 59.7% of whom work part time. The vacancy rate for faculty is 6.6%, with more full-time vacancies (9.9%) than part-time vacancies (5.2%) reported. In July, 2006, the AACN released a *Special Survey on Vacant Faculty Positions* indicating that there are 637 faculty vacancies in 329 nursing schools with baccalaureate and higher degree programs. Most of the vacancies were positions that require a doctoral degree (www.aacn.nche.edu/IDS), and too few applicants hold the required credentials (California Board of Registered Nursing *2005-2006 Annual School Report*).

Estimated Need for CSU and CCC Nursing Faculty

California Community Colleges offer associate degree nursing programs, while California State University schools offer baccalaureate and master's degree programs. Directors of CSU schools of nursing in California report 53 full time faculty and 33 part time vacancies (Table 1) and estimate that they will need 84-86 full time faculty and 127-154 part time faculty within the next five years (Table 2). Directors are anticipating a number of faculty retirements within the next few years.

Table 1. Full-Time and Part-Time Faculty Vacancies in CCC and CSU Programs

Faculty Vacancies and Faculty Needed	Total (n/program)		Combined Total
	CCC* N (range)	CSU N (range)	
Number of full-time faculty vacancies	26 (0-5)	27 (0-5)	53
Number of part-time faculty vacancies	12 (0-4)	21 (0-4)	33

The majority of faculty in CCC nursing programs are master's prepared.

Table 2. CSU Need for Nursing Faculty within the Next 5 Years

CSU Campus	Full Time	Part Time
<i>Northern California</i>		
Chico	5	5
East Bay	6	10
Humboldt	10	5
San Francisco	6	8
San Jose	8	30
Sonoma	2	4
TOTAL	37	62
<i>Central California</i>		
Bakersfield	6	5
Fresno	7	15
Sacramento	5	?
Stanislaus	6	?
TOTAL	24	20
<i>Southern California</i>		
Channel Islands	7	15
Dominguez Hills	10	10
Fullerton	13	5-7
Long Beach	15	40
Los Angeles	7	0
Northridge	2	2
San Bernardino	18	43
San Diego	6-8	10-20
San Marcos	6	2
TOTAL	84-86	127-154

Profession-Driven Need: Elevating Advanced Practice Nursing Educational Standards

The member institutions of the American Association of Colleges of Nursing (AACN) in 2004 “voted to move the current level of preparation necessary for advanced nursing practice from the master's degree to the doctorate level by the year 2015” (www.aacn.nche.edu). The advanced

practice associations have also endorsed this position, which has generated acceptance of the concept by schools of nursing, and a rapid national implementation of doctoral programs has followed. There are currently 29 DNP programs in the US, with 140 more schools in the planning stages.

This initiative, if enforced, will transform nursing educational needs in California, where there are 17,392 licensed advanced practice nurses. Of these, 2,325 are clinical nurse specialists, 12,787 are nurse practitioners, 1,026 are nurse-midwives, and 1,254 are nurse anesthetists. The California State University has trained many of these professionals and has the faculty and institutional resources to extend this service to the doctoral level. Of California's 23 California Board of Registered Nursing-(BRN) approved nurse practitioner programs, 10 are in the CSU system. Half of the state's BRN-approved nurse-midwifery programs are in the CSU, the system offers 8 of the 14 BRN-approved clinical nurse specialist programs (www.rn.ca.gov).

Public and private institutions with DNP programs have plans to phase out the advanced practice master's programs in time. Ten (53%) of CSU nursing programs currently have advanced practice master's programs (CSU Bakersfield, CSU Dominguez Hills, CSU Fresno, CSU Fullerton, CSU Long Beach, CSU Los Angeles, San Diego State University, San Francisco State University, San Jose State University, and Sonoma State University) and one (CSU Bakersfield) has a Clinical Nurse Leader program. It is expected that professional movement toward education at the doctoral level will impact these CSU programs. It will be necessary either to close the advanced practice master's programs; change them to Clinical Nurse Leader, Administration, or Education programs; or develop DNP programs and phase out the advanced practice master's programs.

Advanced Practice Nurses

Advanced practice nurses are those who have attained education and experience beyond the initial education and licensure to practice as a registered nurse. Four main categories of advanced practice nurses are clinical nurse specialists, nurse practitioners, nurse midwives, and certified registered nurse anesthetists. Those classified as advanced practice nurses usually have a master's degree in their specialty, national certification, and are licensed to practice in the state in which they practice. Their scope of practice exceeds that of the registered nurse. For example, clinical nurse specialists act as consultants for other nurses, nurse practitioners diagnose and prescribe, nurse midwives can deliver babies, and certified registered nurse anesthetists can administer anesthesia.

Clinical Nurse Specialists. Clinical nurse specialists (CNS) are registered nurses with advanced knowledge and skill and are experts in a clinical specialty. They provide direct nursing care and serve as consultants, educators, researchers, and administrators. They are usually master's prepared and have passed a national certifying examination. In California, they are licensed and need not have a master's degree.

Nurse Practitioners. Nurse practitioners (NP) are registered nurses with advanced nursing education (usually a master's degree) in the diagnosis and treatment of common medical conditions. They provide basic, non-emergency care, in both acute and chronic conditions, similar to that provided by physicians in family practice, urgent care centers, and health

clinics. NPs must be licensed by the state in which they practice, and have board certification in their area of practice.

Nurse Midwives. Nurse midwives (NM) are registered nurses who have completed additional training in midwifery, often at the master's level. They may also have national certification and must be licensed by the state in which they practice. They provide care during pregnancy, attend births, and provide care of the mother and baby after birth in the hospital, in clinics, or at home. They also provide family planning services.

Certified Registered Nurse Anesthetists. Certified registered nurse anesthetists (CRNA) are registered nurses who have advanced education in anesthesia; that is, providing preoperative care, administering anesthetics, and providing care following surgery. Their education is usually at the master's level and they must be licensed in the state in which they practice.

Student Demand for Doctoral Nursing Programs

To determine whether there was a demand for a doctoral program in the CSU System, a stratified random sample of the 17,392 advanced practice nurses licensed in California was surveyed by mail. The main purpose of the current survey was to assess interest in a doctoral program in nursing. The question did not specify the type of doctorate. Of the 1827 total surveys evaluated, 451 (24.7%) of the respondents indicated they would be interested, 454 (24.8%) respondents indicated they were uncertain they would be interested, 829 (45.3%) indicated no interest, 119 (6.5%) already have a doctoral degree, and 93 (5.1%) did not answer the question regarding interest in pursuing a doctoral degree.

The survey instrument was based on a needs survey for a doctor of nursing practice degree conducted by the University of Southern Maine which was modified based on suggestions of the Advisory Committee (Appendix A). The original survey was included in the toolkit developed by the American Association of Colleges of Nursing (AACN) (www.aacn.nche.edu/DNP/index.htm). This sample was selected because master's prepared nurses are the nurses most ready to pursue doctoral education. While there are master's prepared nurses in addition to those licensed for advanced practice, a mailing list exists only for those licensed for advanced practice.

The instrument was mailed to samples from each of the four groups of advanced practice nurses licensed in the state of California (clinical nurses specialists [CNS], nurse practitioners [NP], nurse midwives [NM], and certified registered nurse anesthetists [CRNA]), and also sent out via e-mail to directors of California Community College (CCC) associate degree nursing programs and directors of CSU nursing programs (baccalaureate and master's) (CSU) who were requested to forward the survey to their faculty. The following table shows the population sizes on record (according to the nursing license registration in the state of California), the target sample, the number of surveys sent out, and the number of surveys returned. There were follow-up questions for those who were interested in pursuing a doctoral degree. The responses to the questions are presented in Table 3 for all respondents who were interested or uncertain if they were interested, combined and separate. Of those interested, 86% would pursue the degree

within 5 years and 14% within 10 years. A limiting factor to interest in doctoral education is the age of the respondents. A number of respondents commented that they were interested in a doctoral degree but were too old to think of pursuing doctoral education.

Table 3. Interest in Pursuing a Doctoral Degree in Nursing

Interest in Doctoral Degree	Time Frame	Interested	Uncertain	Combined
Interested in pursuing a doctoral degree within:	5 years	324 (86%)	113 (75%)	437 (83%)
	10 years	51 (14%)	38 (25%)	89 (17%)
	Uncertain	54	171	225
	Missing	22	132	154

Seeking Solutions to the Nursing Shortage

Additional California Doctoral Programs

Existing doctoral nursing programs do not produce enough graduates to meet the need for doctorally prepared nursing faculty. There are currently 108 doctoral programs in nursing in the United States, but only six doctoral programs in California (Azusa Pacific University; Loma Linda University; University of California, Los Angeles; University of California, San Francisco; and University of San Diego all offer PhDs; while the University of San Francisco offers the first Doctor of Nursing Practice (DNP) programs in the state (www.usfca.edu/usfnews/news_stories/DNP.html)). The University of California, Davis, recently received \$100 million to start a school of nursing focusing on master's and doctoral education. Western University of Health Sciences in Pomona plans to start admitting students to a DNP program in January, 2008.

Interest in Teaching in Postbaccalaureate Nursing Programs

Respondents were queried about their interest in teaching. Of the respondents, 424 (23%) are currently teaching in schools of nursing and 711 (42%) are interested in teaching (see Table 4). For those 17% who wish to teach in a baccalaureate or higher degree program, a doctorate is desirable or necessary to pursue a tenure track position. Clinical faculty may have master's level preparation but work with doctorally prepared faculty who are the lead teachers in the courses.

Table 4. Respondents Currently Teaching or Interested in Teaching: Overall and By Group

		CNS	NP	NM	CRNA	CCC	CSU	Total
Currently Teaching		136 (32%)	73 (17%)	57 (13%)	62 (15%)	56 (13%)	40 (9%)	424 (100%)
Interested in teaching	In an associate degree program	23 (16%)	19 (15%)	10 (11%)	9 (25%)	N/A	N/A	61 (15%)
	In a baccalaureate or higher degree program	125 (84%)	87 (85%)	54 (89%)	48 (75%)	N/A	N/A	314 (85%)
	In either type of program	148 (100%)	125 (100%)	88 (100%)	36 (100%)	N/A	N/A	397 (100%)

Options for Doctoral Nursing Study

Types of Doctoral Programs Considered for Addressing State Needs

At its meeting May 23, 2007, the Advisory Committee discussed the pros and cons of recommending to the CSU System each of the types of doctoral degrees: PhD, DNSc, EdD, and DNP. After significant discussion about the relative merits of the different degrees, the Committee concluded that although they supported the EdD, from their perspective the DNP was the most feasible option within the CSU System. Survey research supported that selection.

The doctoral degree offered by faculty in CSU schools must be based on their current strengths and interest. While nine of the directors of CSU schools indicated they preferred the PhD, implementation of a PhD program at this time within the CSU system is not warranted by the capacity of most of the schools. Neither is the DNSc, preferred by only 5 of the CSU directors, warranted. The research base including active programs of research and significant grant funding for research is too limited to support a research degree, PhD or DNSc, at this time.

Because 10 of the CSU nursing departments have nurse practitioner programs, the DNP is an appropriate degree to address the position of the AACN that the DNP be the terminal degree for advanced practice nurses by 2015. There will continue to be need for faculty with doctoral preparation at the PhD level. Nursing research must continue and many nurses aspiring to faculty positions are interested in the PhD with its focus on discovery of new knowledge.

Below are short descriptions of doctoral degrees available in nursing.

PhD Degree

The PhD is the appropriate degree for nursing faculty who are dedicated to advancing the science of nursing as well as teaching. Launching a PhD program requires faculty to be engaged in research and be successful in obtaining external funding to support that research. Because of their history of focusing on excellence in teaching and offering master's degrees largely focusing on advanced practice, faculty in schools of nursing in the CSU system have limited research productivity and experience in successfully obtaining significant grant funding for research. While this is changing, and a number of faculty in CSU schools have a research agenda and external funding, launching a PhD degree would require significant growth within the CSU schools of nursing before they would be ready to implement such a program. The PhD, as a research degree, does not directly prepare graduates for the faculty role although many of these graduates do assume faculty positions. Furthermore, implementing independent PhD programs within the CSU system would likely result in significant competition from UCLA, UCSF, USD, the new program at UC Davis, as well as Asuza Pacific and Loma Linda. While joint PhD programs with the University of California or private universities are possible, at least two previous attempts to initiate joint CSU/UC doctoral programs in nursing were unsuccessful.

DNSc Degree

The DNSc was developed as a practice degree but in actuality in all schools where it exists, it is a research degree comparable to the PhD. In most instances, the DNSc was implemented because it was politically expedient; graduate schools in those universities would not approve a PhD program in nursing, thinking at that time that there was not enough nursing science to warrant a PhD. (This thinking has been radically revised and PhD programs are approved in increasing numbers of universities and many DNSc programs have converted to PhD programs. For example, UCSF initially had a DNSc program; it has been converted to the PhD.)

EdD Degree

The EdD, as an advanced degree in education, is an attractive option for preparing faculty. Many current faculty in schools of nursing hold the EdD from a variety of institutions. Currently, there are only a few doctorates in nursing education in the US: the EdD in Nursing Education and Health Behavior offered by Teacher's College, Columbia University, and the DNS in Nursing Education and Leadership, Russell Sage College, Troy, NY, are two of this limited number. Other EdD programs focus on curriculum and instruction, or as the newly implemented EdD programs in the CSU System, educational administration. An EdD program focusing on nursing education and including such topics as pedagogy, curriculum and instruction, clinical instruction and supervision, simulation laboratories, use of technology, and online and distance educational modalities, would likely meet the needs of nursing faculty and would not compete with other doctoral programs in nursing in California.

DNP Degree

According to the American Association of Colleges of Nursing (AACN), there are 29 DNP (doctor of nursing practice) programs in the U.S. with 140 additional schools considering starting such programs. The DNP is designed for nurses who are interested in a terminal

degree in nursing *practice* (www.aacn.nche.edu). It is an alternative to a research-focused doctoral program. Some individuals with a DNP will seek to become educators. However, since the major focus of the educational program is on the area of practice specialization within the discipline and not the process of teaching, these nurses will need additional preparation in pedagogy. Additional preparation in teaching methodologies, curriculum design and development, and program evaluation may occur formally in course work during the DNP program. The DNP, as an advanced practice degree, would be attractive to advanced practice nurses among current CSU and CCC faculty and nurses in advanced clinical practice. A DNP would not compete with the PhD programs in California and would offer an alternative for those individuals seeking a doctorate.

Preferences of CSU and CCC Nursing Directors

In an email survey of directors of California Community College nursing programs and CSU schools of nursing, directors were asked: if a doctoral program were to be implemented in the CSU system, which degree should be implemented to prepare nursing faculty (respondents could check more than one option). The degrees preferred by CSU directors were the PhD and DNP. The degrees preferred by CCC directors were the EdD and DNP second. When the totals were combined, the EdD and the DNP were the preferred degrees (see Table 5). In response to the query, “If a Doctor of Nursing Practice (DNP) degree is implemented in California, would you hire someone with a DNP to teach in your program,” 25 directors of CCC nursing programs said “Yes” and 3 said, “No.”

Table 5. Degree Preferred by CSU and CCC Nursing Directors

Question	Program and N and % of Directors Responding	PhD	DNSc	EdD	DNP
If a doctoral program in nursing were to be implemented in the CSU system, what degree(s) do you think should be implemented to prepare nursing faculty?	CCC 28/90 (31%)	9 (32%)	10 (36%)	18 (64%)	12 (43%)
	CSU 19/19 (100%)	12 (63%)	5 (26%)	7 (37%)	10 (53%)
Total	47/110 (45%)	21 (45%)	15 (32%)	25 (53%)	22 (47%)

Common Curricular Structure of DNP Programs

Current DNP programs in other universities range in length from 24 to 49 units, shorter than typical PhD programs or EdD programs. Almost all programs surveyed outside California offer both full-time and part-time study (see Appendix C); some limit the number of years that the student can take to complete the degree. Many programs have online hybrid structures, pairing distance or online technology with limited on-campus participation (only once or twice a term). In a number of DNP programs, an additional professional fee or program fee is required to pay

for the costs of academic technology, making the tuition and fees for these programs higher than for an on-campus PhD program.

Master’s degrees preparing nurse practitioners are 36 to 54 units or more in length, which is longer than most other master’s degrees. In most instances, the DNP is a post master’s degree program, which for the nurse with a masters’ degree in an advanced practice specialty, allows the DNP to be completed in as few as 24 units (or in one calendar year). Some schools with post-master’s DNP programs have plans to expand their programs to include a BSN-to-DNP program option, which will require more units and longer completion times, up to 3 years of full-time study.

Most DNP programs typically require significant time spent in supervised practice in an advanced practice role, and it is suggested that the CSU DNP require a track with coursework to prepare students for the faculty role. As noted above in the description of the various doctoral programs, only a very few programs specifically prepare nursing faculty, even though many graduates of PhD and DNSc programs do seek teaching positions. In some doctoral programs minors or “cognates,” consisting of two or more courses, are available. These cognates may include curriculum and instruction, pedagogy, program evaluation or similar topics appropriate for preparing the graduate for a faculty position. However, these courses are not required for graduation, and graduates may obtain faculty positions with no formal instruction in the faculty role.

In those settings where the DNP is implemented, nursing faculty would already have experience with supervising students in advanced practice roles. For DNP students, significant time in advanced clinical practice will be required. This necessitates locating mentors in practice settings to supervise the students. The culminating or capstone experience will be implementation of evidence-based practice, designing protocols, or other instances of advanced practice beyond that acquired in their master’s programs.

Possible Program Delivery Modes

Reflecting the fact that the majority of advanced practice nurses are working, 50% of those responding to the question of preference for course delivery preferred online and limited in-person classroom course delivery (Table 6). This must be combined with a significant amount of time in supervised practice in an advanced role.

Table 6. First Preference for Course Delivery Mode

First preference for course delivery		Interested	Uncertain	Combined
	Traditional in-person classroom	159 (35%)	169 (37%)	328 (36%)
Online and limited in-person classroom	225 (50%)	201 (44%)	426 (47%)	
Distance delivery with 2-way audio and visual	21 (5%)	18 (4%)	39 (4%)	
Online only	38 (8%)	38 (8%)	76 (8%)	
Other	3 (.7%)	3 (.7%)	6 (1%)	
Missing	5 (1%)	25 (6%)	30 (3%)	
	Total	451 (50%)	454 (50%)	905 (100%)

Of 426 responding to the question of what day they preferred for classes, (reported in order of preference) 138 (32%) preferred Saturday, 90 (21%) preferred Monday, 62 (15%) preferred Tuesday, 59 (14%) preferred Friday, 43 (10%) preferred Wednesday, and 34 (8%) preferred Thursday. For preference of when the courses were delivered, 190 (42%) ranked as number one, a one day block including evenings. Ranked as number two by 76 (17%) was a 3 day block every 3 to 4 weeks. Evening 5:30 pm to 9 pm was ranked number one as the preferred time of day for class offerings by 100 (22%) respondents, late afternoon by 36 (8%), combined day and evening by 28 (6%), and daytime 8 am to 2:30 pm by 25 (5.5%). This indicates a clear preference for evening classes.

While full-time study ensures that there will be a shorter time to degree with the availability for entering the workforce, many nurses are married females who work to help support families; it would be difficult for them to be full-time students. Online offerings may enable more students to be full-time students.

CSU Institutional Capacity for Implementing Doctoral Programs

Campus Interest and Readiness

In the internet survey, directors of the 19 CSU schools of nursing were asked if they and their faculty would be interested in implementing a doctoral program in their school/department. Of the respondents, 10 (53%) said yes; five (26%) said no; one director indicated she would be willing to be part of a collaborative approach and another was interested in a joint doctorate to produce an EdD; one indicated she would be interested “in the future,” one indicated “maybe” and one indicated that she was “unsure.” Only 13 (68%) of the schools have master’s programs, which should be established before implementing a doctoral program on a campus.

The following CSU campuses display substantial current strength such that campus presidents and the CSU central administration should consider establishing doctoral programs on those campuses:

Bakersfield (graduate program, interest, NP program, expertise in distance learning)

Dominguez Hills (graduate program, interest, NP program, expertise in distance learning)

Fresno (graduate program, NP program, interest, administrative support, Central California Center for Excellence in Nursing, expertise in distance learning)

Long Beach (large program, graduate program, NP program, interest, expertise in distance learning)

Los Angeles (graduate program, NP program, interest, expertise in distance learning)

Sacramento (graduate program, NP program, interest, expertise in distance learning, experience with joint program [NP program with UC Davis])

San Diego (graduate program, NP program, interest, expertise in distance learning)

San Francisco (graduate program, NP program, interest, expertise in distance learning)

San Jose (graduate program, NP program, interest, expertise in distance learning)

Nursing departments indicating that they are not ready for early development of doctoral programs:

- Channel Islands** (too new, inadequate faculty numbers, no master's program)
- Chico** (by own assessment, inadequate numbers of faculty and resources)
- East Bay** (not interested)
- Fullerton** (plan for the future)
- Humboldt** (no graduate program)
- Northridge** (no graduate program)
- San Bernardino** (no graduate program)
- San Marco** (no graduate program)
- Sonoma** (not sure they are interested)
- Stanislaus** (not sure they are interested)

Scale of Implementation

California is a large state, and programs in various parts of the state are desirable eventually, in order to serve nurses who are place-bound because of family or work obligations. While research indicates initial interest and institutional capacity, it is suggested that a slow implementation may serve the state well, with perhaps two or three campuses implementing programs initially. The following should be considered in determining initial implementation planning:

- (1) 10 CSU schools of nursing have indicated an interest in implementing a doctoral program in nursing,
- (2) 324 advanced practice nurses licensed in California have reported their interest in pursuing doctoral study within the next five years,
- (3) 166 of those interested in doctoral study reside in northern California and 279 reside in southern California,
- (4) most of the doctoral programs surveyed admit 10-12 students per cohort, although two programs are admitting approximately 100 students in their first cohort, and
- (4) there is a dearth of doctoral nursing programs in central California.

If the AACN recommendation for doctoral preparation becomes a reality for advanced practice nurses, CSU campuses with master's programs in advanced practice must either (1) implement a doctoral program and phase out the master's program or (2) keep the master's level courses and collaborate with CSU campuses offering DNP program. In the AACN vision, schools of nursing will offer the master's degree to prepare clinical nurse leaders, and the DNP will be offered to prepare advanced practice nurses. In that case, discussions should take place regarding long-term plans to phase out CSU advanced practice master's programs. An eventual need for closures or transformations will depend on student demand, professional requirements, and accreditation standards, which may affect 10 of the CSU nursing departments (CSU Bakersfield, CSU Dominguez Hills, CSU Fresno, CSU Fullerton, CSU Long Beach, CSU Los Angeles, San Diego State University, San Francisco State University, San José State University, and Sonoma

State University). CSU Bakersfield is the only CSU campus that presently has a master's degree preparing the Clinical Nurse Leader (CNL).

Campus Strengths

Asked, "What strengths could you and your faculty and your school/department bring to doctoral education in the CSU system?," departments cited the following strength:

- Desire to implement a doctoral program
- Qualified, credentialed doctorally prepared faculty with strengths in teaching, curriculum development, program development, clinical expertise; some faculty who are very strong in clinical practice (FNPs)
- Content expertise in theory, research, advanced practice roles; some faculty are well known researchers and have received ongoing grant funding for research projects
- Strengths in research, grant writing, community service, a strong background and commitment to equity and social justice and work with diverse student groups
- Research and nursing theory are very strong courses in the current graduate program; extensive use of videostreaming in the graduate program.
- Student body who wants to have affordable doctoral program available to them
- Strong applied research agenda
- Currently teach epidemiology which is included in most DNP programs. Currently supervise Master's theses so have experience in assisting students with the research process
- University support by President, Provost, & Dean evidenced by establishment of Central California Center for Excellence in Nursing
- Diversity of faculty to serve as role models for diverse students
- Community support related to both clinical placements and financial assistance
- Research capacity on the campus and in the community
- Strong advanced practice clinical programs
- Established nurse educator track and courses
- An interest in establishing another doctoral option for nursing in this community.
- Exceptional expertise in nursing management, nursing education, and nurse practitioner
- One director chaired the doctoral program at Boston University and has served on more than 30 doctoral dissertation committees
- Many faculty have expertise in teaching online or using distance education.

One respondent suggested that their faculty would be interested in creating a joint doctorate with the College of Education to produce an EdD with a focus on nursing education and clinical evaluation and clinical simulation.

In response to the question, "What expertise would your faculty bring to mentoring doctoral students?" directors cited research and advanced clinical expertise, experience in working with and mentoring graduate students, strong research programs, expertise in online teaching and distance education, faculty success with publications and writing, experience in teaching doctoral students in other settings, and strengths in teaching.

Challenges Identified

CSU campuses identified these challenges that would likely be faced in planning and implementing doctoral nursing programs:

- Fiscal issues; financial/release time support for faculty to develop doctoral programs; financial resources, recruitment of faculty, low faculty salaries; may require diversion of resources and faculty from our other graduate programs
- Numbers of qualified faculty, space, and support from administration due to fiscal implications; resources for ongoing support for doctoral programs
- Lack of a number of well-qualified faculty to teach; current faculty teaching loads.
- Research activities need to be supported, at least initially, till funding is achieved.
- Inadequate resources (money, library holdings, etc.) for doctoral program in nursing
- Inadequate space on campus; academic infrastructure must change (policies, rooms, equipment) to support different model
- Working collaboratively poses its own unique challenges both on campus (we have a College of Education) and across CSU campuses
- Legislative restrictions on CSU mission; legal issues about doctoral degree-granting institutions in California; level of experience in offering doctoral programs at CSUs; working out policies and procedures for doctoral programs as a campus and a department including faculty performance standards
- Increasing pressure/objection from other practice disciplines seeking to offer doctorates

Faculty

The terminal degree; i.e., a doctorate, preferably in nursing, is required for faculty to teach in a CSU doctoral nursing program, and a minimum of five full-time faculty with the appropriate terminal degree is required to implement any CSU graduate program. In addition, the nursing faculty collectively must have expertise in scholarly endeavors, teaching, clinical expertise, research expertise, expertise in research utilization and evidence-based practice, experience in supervising and mentoring graduate students, facility in fostering community partnerships, knowledge of the community and resources available, and track records of publishing in scholarly journals, presenting at professional meetings, participating in professional associations, and community service. These faculty can be augmented by other master's prepared faculty who oversee clinical practice.

In virtually all of the doctoral programs surveyed, faculty teach across the curriculum; they are not assigned only to the doctoral program. This is appropriate also for the CSU programs. Only a few of the doctoral programs surveyed had hired new faculty to implement their doctoral programs. Most deans shifted resources from the advanced practice master's program to the advanced practice doctoral programs (DNP). Those deans had plans to phase out the master's programs over the next 3 to 5 years while increasing the number of students in the DNP programs.

Several CSU campuses have faculty with the appropriate research, education, and experience, and desire to support a doctoral program. For example, San José State has 15 doctorally prepared faculty, CSU Bakersfield has six doctorally prepared faculty, two of whom are nurse practitioners, CSU Long Beach has a strong applied research agenda, and many doctorally

prepared nursing faculty, San Francisco State has many faculty with doctoral preparation, and San Diego State has research capacity on the campus and in the community, strong advanced practice clinical programs, and an established nurse educator track and courses. Faculty implementing doctoral programs will need to assure flexibility of class days and times to accommodate working nurses; this will be essential to providing online delivery of classes.

Professional Requirements for Faculty Teaching in Nursing Programs

Doctor of Nursing degree preparation would meet or exceed the nursing profession's requirements for nursing faculty. The master's degree is the highest degree *required* by the California Board of Registered Nursing to teach in a postbaccalaureate degree program. The Board does not regulate doctoral education. However, in the university setting, there are higher expectations. To be on the tenure track, for example, the terminal degree (usually a doctorate) is required. Clinical faculty positions (non-tenure track) are often filled by part-time, master's prepared nurses.

AACN Guidelines

In a draft Position Statement, AACN proposed the following guidelines to meet the demand for high quality faculty in baccalaureate and graduate nursing programs:

- Nursing faculty need to meet the university standards for rank within the academy. Faculty should hold the terminal degree. Faculty with primary responsibility for didactic courses will have doctoral preparation (*the type of degree is not specified*).
- The mix of faculty expertise, roles, and responsibilities may vary according to the mission of the academic program. The ratio of full and part time faculty needs to be sufficient to accomplish program outcomes.
- Nursing program administrators should encourage and support their non-doctorally prepared faculty to pursue doctoral study through the multiple educational opportunities available.
- Nursing courses will be taught by faculty with graduate-level specialty educational preparation and advanced expertise in the areas of content they teach. Doctorally prepared faculty have overall responsibility for all nursing courses.
- All doctoral programs should make available courses in educational methods and pedagogies, and provide teaching experiences that include mentoring and supervision for those graduates who will be involved in an academic role.

(AACN, August 6, 2007)

California Board of Registered Nursing

In Title 16. California Code of Regulations, 1425. Faculty – Qualifications and Changes, faculty members shall possess the following qualifications:

- A nurse faculty member appointed on or after the effective date of these regulations shall hold a valid, active license issued by the board.
- The registered nurse director of the program shall have:
 - (1) A Master's or higher degree from an accredited college or university which includes course work in nursing, education or administration;

- (2) A minimum of one year's experience in an administrative position;
- (3) A minimum of two years' experience teaching in pre- or post-licensure nursing programs;
- (4) At least one year's experience as a registered nurse providing direct patient care; or
- (5) Equivalent experience and/or education, as determined by the board.
- The registered nurse assistant director shall meet the education requirements set forth in subsection (b)(1) above and the experience requirements set forth in subsections (b)(3) and (b)(4) above or such experience as the board determines to be equivalent.
- An instructor shall meet the following requirements:
 - (1) Those set forth in subsections (b)(1) and (b)(4) above; and
 - (2) Completion of at least one year's experience teaching courses related to nursing or a course which includes practice in teaching nursing.
- An assistant instructor shall have:
 - (1) A baccalaureate degree from an accredited college which shall include courses in nursing, or in natural, behavioral or social sciences relevant to nursing practice;
 - (2) At least one year's continuous, full time experience in direct patient care practice as a registered nurse.
- A clinical teaching assistant shall have had at least one year's experience, within the previous five years, as a registered nurse providing direct patient care.

Faculty Recruitment and Retention

Salary is a significant obstacle in recruiting and retaining nursing faculty, with a great disparity existing between salaries in clinical practice and those in nursing education. While a master's prepared nurse practitioner earns an average annual salary of \$72,480, master's prepared faculty at all ranks earn an average of \$55,712 (www.tnpj.com; www.aacn.nche.edu/IDS). Nurse educators earn 76% of what faculty in other disciplines earn (National League for Nursing and the Carnegie Foundation Preparation for the Professions Program, August 29, 2007), and nursing faculty salary are often outstripped by what postbaccalaureate nurses can earn in industry.

According to the **HotJobs.com**, in 2007 hospital staff nurses in the United States earned an average of \$59,061 yet with some additional education, nurses can increase their earning potential. Some examples of roles that generally require education beyond the basic level include: Clinical Nurse Specialists averaged \$76,209; Nurse Anesthetists averaged \$134,820; Nurse Practitioners averaged \$77,886; Head Nurses averaged \$80,824; Nurse Educators (hospital-based) averaged \$67,142; Nursing Faculty averaged \$62,743; Nursing Supervisors averaged \$71,000; and Chief Nursing Officers averaged \$167,387.

(<http://nursing-education-tn.org/c7.htm>, accessed August 31, 2007)

Retention is made difficult by similar factors: nurses leave faculty positions because of non-competitive salaries, age, relocation, and job dissatisfaction.

Student Costs

None of the existing doctoral program administrators contacted was able to provide an estimate of the cost of educating a doctoral student; however, there was a general belief that it costs no more per year to educate a doctoral student than it does a master's student. Total degree program cost for educating a doctoral student is more because the program is longer than a master's program. The majority of doctoral programs that were surveyed admit students in cohorts of 10 to 12 students the first year and reach their ideal cohort size of 25 by year three. The universities that have initiated DNP programs are finding a great demand for the degree. To maximize use of resources within the CSU system, a minimum of 10 students in a cohort should be admitted each year by each program with growth in numbers as the demand and resources dictate.

In the surveyed programs, virtually all doctoral students receive some financial aid. HRSA traineeships (which require a grant proposal prepared by faculty) are available through schools of nursing. While most of the monies are directed to master's education, 10% can be allotted to doctoral students. Students can obtain financial aid from a variety of other sources, for example: T-32 predoctoral training grant support for two years, individual NRSAs for up to three years, American Cancer Society pre-doctoral fellowships, and support from employers. Many of the doctoral programs provide tuition support for doctoral students through university funding, private donations, and graduate assistantships (teaching assistantships and research assistantships). Employers participate in tuition reimbursement in exchange for continued employment. Several doctoral programs surveyed indicated that none of their PhD students paid tuition for the first two years.

The seven deans and directors of doctoral programs who were interviewed also discussed financial considerations associated with doctoral education. The majority of nursing programs charged the same amount for tuition as was required of other doctoral students. In two instances, the DNP students were charged a program fee or a professional fee and paid more than other doctoral students; others have a fee to cover the cost of courses taught through distance education. Traineeships, teaching assistantships, and research assistantships were available for students.

Tuition and fees vary depending on whether the program is in a public or a private university and the length of the program (see Table 8 for costs of California programs). Many programs have the option for full time or part time study acknowledging the reality that many of the students must work. Doctoral programs vary in length from 3 to 4 years of full time study and up to 7 years for part time study.

Table 7. Tuition/Fees in California Doctoral Nursing Programs

University	Private/ Public	Units/Credits	Tuition/Fees Program Cost
Azusa Pacific University PhD	Private	64 semester units	\$750/unit \$48,000
Loma Linda University PhD	Private	95 quarter units	\$555/unit \$1500 for books, supplies, equipment \$54,225
University of California, Los Angeles PhD	Public	84 quarter units	\$2,988,50/quarter \$35,856 (for 12 qtrs)
University of California, San Francisco PhD	Public	24 units minimum	~\$7,000/year ~\$28,000
University of San Diego PhD	Private	48 units minimum	\$1115/unit \$53,520

Space, Supplies and Equipment and Library

Seven deans and directors of existing nursing doctoral programs were interviewed and queried about accommodations that were needed to implement the newest doctoral program in their school (see Table 9). Some additional space for doctoral students (cubicles for research assistants, a doctoral lounge, computer lab) was needed in some instances; in other instances, they used current space. One program doubled the space for the clinical simulation laboratory; one program increased the number of clinics from two to five; the rest used office space already available. Supplies and equipment were needed to update the computer lab, including purchasing some software and computers and printers. Library holdings were reported to be sufficient in most instances, especially when the school was located in a medical center or health science center. One school received grants for augmenting library holdings.

In the CSU, needs for augmentation should be considered individually. For those schools with master's programs, the library is likely to need only minimal augmentation. A student lounge should be provided, as well as a computer lab if one does not already exist in that setting. Statistical consultation must be provided, and statistical software packages must be available in the computer lab. Many doctoral programs hold classes on evenings and weekends, which makes existing classroom space adequate. Depending on the school, the clinical simulation laboratory space may need to be augmented.

**Table 8. Resources Needed to Launch a Doctoral Program
(Reported by Deans/Directors of Doctoral Nursing Programs Outside California)**

University	Accommodations			Library
	Office space	Lab space	Supplies/ Equipment	Needed augmentation?
Arizona	Cubicles for RAs, increased research space, data analysis	Double space for clinical simulation lab	No	No; they are in a health science center
Drexel	Doctoral lounge/ Computer lab	No	No	Slight
Kentucky	Student “research area”	1000 sq ft	Grad computer lab; update equipment periodically	No; use medical center library
Massachusetts (Lowell)	Student office is available	Lab space is available	Software PCs and printers	Unsure
Minnesota State University	Existing graduate program	Added none	Added none	Didn’t need to; have access to MN State System
Purdue	None	1000 sq ft; 2 clinics to 5 clinics	None	As requested; have Fuld Grant and HRSA grants
Tennessee (Memphis)	None—already had PhD program in place with a cadre of faculty at the doctoral level			No; academic health science center

Partnerships

Some CSU schools have formed partnerships for existing programs, and others could be pursued. For example, San Francisco State and Sequoia Hospital and Cañada College, both in Redwood City, are collaborating. The College provides classroom space; the hospital provides funding for faculty, and clinical sites; SFSU provides faculty and courses and the degree.

Collaboration as a Strategy for Implementation of Doctoral Programs

Seven directors of collaborative doctoral programs outside California were interviewed. They described various reasons for collaborating. In some instances, one institution did not have authority to offer the doctorate. In other instances, it was the only way to obtain approval. Most also saw collaboration as a way to conserve and share resources. In some of the collaborations, the schools have since relaxed the closeness of collaboration and function independently. One group of four state universities used a consortium to control competition and to pool resources. Faculty are shared; classes are taught on each campus. All of the schools use some online or distance technology to teach classes. This necessitates having the same platform for online classes in all the participating schools. In some instances, admissions and graduations are from one school; in other instances, each school admits and graduates students.

Accreditation

As the CSU campuses are WASC accredited, any doctoral degree awarded by the CSU will be granted by a regionally accredited university. The American Association of Colleges of Nursing (AACN) has said that accreditation for a DNP will be (but is not currently) available through the Commission on Collegiate Nursing Education (CCNE). The National League for Nursing Accrediting Commission (NLNAC) will likely follow the lead of the CCNE in accrediting DNP programs. When the move to doctoral preparation for advanced practice nursing occurs, state licensing authorities will also have to approve the programs as they currently do master's level advanced practice nursing programs. AACN reports that "CCNE will continue to strive to assure congruence among the standards for accreditation of nurse midwifery, nurse anesthesia, and DNP programs" (<http://www.aacn.nche.edu/DNP/DNPFAQ.htm>).

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Persons Interviewed Re: Structure and Costs of Programs

Telephone Interviews

Michael Dreher, DNSc, RN
Director of Doctoral Nursing Program
Drexel University School of Nursing and Health
Philadelphia, PA

Keville Frederickson, EdD, RN, FAAN
Professor and Director Research and Scholarship
Department of Nursing, Lehman College
Bronx, NY

Donna Hathaway, PhD, RN, FAAN
Dean and Professor
University of Tennessee Health Science Center
Memphis, TN

Marjorie Isenberg, RN, DNSc, FAAN
Dean and Professor
University of Arizona
Tucson, AZ

Kathleen Long, RN, PhD, FAAN
Dean and Professor, College of Nursing
University of Florida
Gainesville, FL

Karen Minton
Business Officer
University of Kentucky
Lexington, KY

Julie Novak, PhD, RN, FAAN
Professor and Head
Purdue School of Nursing
West Lafayette, IN

Sue Thomas, RN, PhD, FAAN
Assistant Dean for PhD Program
University of Maryland
Baltimore, MD

Email Correspondence

Lin Zhan, PhD, RN, FAAN
Director, Doctoral Program
University of Massachusetts, Lowell
Lowell, MA

Persons Interviewed Re: Collaboration
Carol Hall Ellenbecker, RN, PhD
Director of Doctoral Program
University of Massachusetts, Boston
Boston, MA

Keville Frederickson, EdD, RN, FAAN
Professor and Director Research and Scholarship
Lehman College, Bronx, NY

Janet Giedt, PhD, RN, Professor and Chair
TCU (Tri College University) Graduate Nursing Program (existed for 5 years; agreement ended
June 30, 2007).
Minnesota State University
Moorhead, MN

Patricia Holden Hucton
Associate Dean, Denton Campus
Texas Womens University
Denton, TX

Barbara Johnston, PhD, RN, CNE
Associate Dean Graduate Programs
Texas Tech University
Lubbock, TX

Rose Porter, PhD, RN
Dean and Associate Professor
University of Missouri, Columbia
Columbia, MO

Katherine (Kit) Smith, PhD, APRN, BC
Associate Dean
University of Missouri, Kansas City
Kansas City, MO

Appendix A

Needs Survey for Doctorate in Nursing in the California State University System

The California State University System is conducting this needs assessment for a proposed Doctorate in Nursing degree program. This survey should take only 15 minutes of your time. Please complete and return the survey in the addressed envelope no later than August 10, 2007. Thank you for taking time to complete this important survey.

1. *Zip code of current residence.* _____

2. *Check all education programs completed.*
 Diploma in nursing
 Associate degree in nursing
 Baccalaureate in nursing
 Baccalaureate in another field
 Master's degree in nursing
 Master's degree in another field (please specify what field) _____
 Doctoral degree in nursing (please specify what degree) _____
 Doctoral degree in another field

3. *Mark all advanced practice educational programs completed.*
 Nurse practitioner (NP)
 Clinical nurse specialist (CNS)
 Certified nurse midwife (CNM)
 Certified registered nurse anesthetist (CRNA)

4. *If you are master's prepared in nursing and not an NP, CNS, CNM, or CRNA, please briefly describe the focus of your master's program (e.g., administration, education).*

5. *Are you currently enrolled in a master's degree in nursing or post-master's certificate program in nursing?* Yes No

6. *If you are not in a graduate program and you are considering pursuing a graduate degree in nursing, which area of interest most appeals to you?*

 Advanced practice nursing (NP, CNS, CNM, CRNA)
 Clinical nurse leader (see www.aacn.nche.edu/CNL/index.htm)
 Education
 Leadership/Management
 Other (please specify) _____

7. *Do you currently teach in a nursing academic program?* Yes No

If yes, what kind of program?
 LVN program
 Associate Degree program
 Baccalaureate or higher degree program (master's or doctorate)

Appendix B

Methodology for determining demand for nursing doctoral programs

The target sample sizes were determined based on the population sizes and a desire to have a 95% confidence level and a 5% error rate for the sample estimates. The number of surveys sent out was determined based on an assumed return rate of 25%, in order to get the target sample. Based on the returns and maintaining a 95% confidence level, the computed error rates for the stratified samples are 3.7%, 4.4%, 4.2%, and 4.5%, in the order presented in the table. In addition to the returns provided in the table below, there were 65 surveys returned in the mail as undeliverable with no forwarding address, 26 surveys returned with a forwarding address that was out of state (re-sent), and 38 surveys returned with a forwarding address that was in state (re-sent). This means that a total of 129 out of 5014 (approximately 2.6%) mail out surveys were returned due to incorrect information in the license registration database. The return rate of 35% exceeded the expectations of the researchers and may reflect the significance attached to the topic of the survey by the respondents (see Table 10).

Table 9. Population Size, Target Sample, Number of Surveys Sent and Returned

Nurse Educational Level	Population	Target Sample	Surveys Sent	Number of Surveys Returned (Actual return rate)
CNS	2,325	330	1320	547 (41%)
NP	12,787	373	1492	487 (33%)
NM	1,026	280	1026	356 (35%)
CRNA	1,254	294	1176	341 (29%)
Total mail surveys	17,392	1277	5014	1,731 (35%)
CCC	Unknown*	Unknown*	Unknown*	56
CSU	Unknown*	Unknown*	Unknown*	40

*The surveys were forwarded by the directors of the programs; the researcher did not inquire about the number of faculty to whom the survey was forwarded.

The following three tables present the overall numbers in relation to the gender (Table 11), age (Table 12), and race (Table 13) of respondents, as well as the numbers by the six groups. The proportion of males responding (11%) exceeds the percentage of nurses in the U.S. who are male (6%) (Table 11).

Table 10. Gender of Sample of Those Indicating Gender: Overall and By Group

	CNS	NP	NM	CRNA	CCC	CSU	Total
Female	511 (95%)	454 (96%)	349 (98%)	212 (63%)	51 (96%)	36 (90%)	1613 (90%)
Male	26 (5%)	21 (4%)	6 (2%)	126 (37%)	2 (4%)	4 (10%)	185 (10%)
Transgender				1 (.2%)	1 (2%)		2 (.1%)
Missing	10 (2%)	12 (2%)	1 (.3%)	2 (.6%)	2 (4%)	0 (0%)	27 (1%)

The respondents were slightly older, on average, than the mean age (47 years) of nurses in the U.S. Of the sample, 55% were 50 years old or older. The vast majority of these nurses have master's degrees and are thus more highly educated than the average staff nurse (Table 12).

Table 11. Age of Sample of Those Providing Data: Overall and By Group

Age	CNS	NP	NM	CRNA	CCC	CSU	Subtotal and % of overall
20-29	20 (4%)	6 (1%)	8 (2%)	5 (1%)	3 (5%)	2 (5%)	44 (2%)
30-39	92 (17%)	95 (20%)	54 (15%)	67 (20%)	3 (5%)	5 (13%)	316 (17%)
40-49	125 (23%)	115 (24%)	87 (24%)	110 (32%)	19 (34%)	9 (23%)	465 (25%)
50-59	201 (37%)	172 (35%)	154 (43%)	112 (33%)	24 (43%)	19 (48%)	682 (37%)
60+	98 (18%)	85 (17%)	49 (14%)	44 (13%)	6 (11%)	5 (13%)	287 (16%)
Missing	11 (2%)	14 (3%)	4 (1%)	3 (.9%)	1 (2%)		33 (2%)
Total	547 (30%)	487 (27%)	356 (19%)	341 (19%)	56 (3%)	40 (2%)	1827 (100%)

In California, 56% of the population is classified as belonging to a minority group while only 16.3% of the sample were so classified (Tables 13 and 14). The categories of race used were those designated by the Federal Government. Hispanic and some other designations are classified as ethnicity and were not included. In retrospect, Hispanic should have been included. The data in relation to Hispanic may be underreported as Hispanic was not a category on the survey and those identifying themselves as Hispanic wrote in their responses.

Appendix C Specifications of Doctoral Programs

School/ University Degree Offered	Year Round		Full time/ Part time		Length of program post master's (minimum)	Length of program (years)		Attrition rate	Average annual tuition/fees (resident) <i>[some totals were calculated based on 6 units/semester]</i>		Total cost of program <i>[some totals based on unit cost X total units]</i>
	Yes	Cognates/ elective only in summer	FT	PT		Units/Credits	Course-work		Candi-dacy/ Disser-tation	%	
University of Alabama, Birmingham PhD	x		x	x	65	2.5	2	20	12,000		36,000-40,000
Arkansas for Medical Sciences PhD	x		x	x	66	Up to 9 years		10	5,000		varies
Azusa Pacific* PhD	x		x		60	4		23	11,250	45	45,000
Boston College* PhD		x	x	x	46	3-7		5	11,640 (6 fellowships; can fund for 2 yrs)		50,000
Colorado DNP	x		x		41-49	2		Too soon to tell	5,125 + \$100 online course fee	2565	25,030

Columbia PhD			x		40	Depends on dissertation		15	Tuition pd by school		Depends
DRNP	x		x		40	2		0	26,000		Depends on financial need
Duke* PhD			x		54	4-5		1 student	29,340 but fully funded	7162	221,008 (without funding)
Duquesne* PhD	x		x	x	57	2-4	1-2	1.83	15,744		49,856
East Carolina PhD		x	x	x	54	3.5-5		5.7	6,000		20,000
Florida Atlantic PhD	x		x	x	63	4		25	6,344		32,750
Georgia State PhD	x		x	x	60	3	1.5	8	6,285		17,836
Hawaii at Manoa PhD	x			x	47	4		2/yr	8,154		21,291
Johns Hopkins* PhD	x		x	x	52	4-5		No data available	30,960		Most students receive funding
Kansas PhD	x		x	x	65	3		Don't know	7,243	10	20,364
Kentucky PhD		x	x	x	49	2	1	<5	7,670	500	16,142

Louisiana State PhD	x		x	x	60	2	2-3	Don't know	3,753	834	9,174 + dissertation
Loyola* PhD	x		x	x	64	2 to 2.5	1	<5	740	220	35,000
Marquette* PhD		x	x	x	51	2	1	3 students	800		40,800
Massachusetts, Lowell PhD		x	x	x	60	3-4		9.6	3,570	5574	30-40,000
Medical University of South Carolina PhD	x		x	x	70	4-5		5	6,500		90,000
Minnesota State DNP	x		x		36	2			23,400		30,000
Missouri (Columbia) PhD	x		x	x	46	5		20	5400	500	27,600
Missouri (Kansas City) PhD DNP	x		x	x	61	3		20-25	1721	299	17,500
	x		x	x	25	2		Too new	1721	299	7,173
Nebraska PhD		x	x	x	68	4		47	4,379	400	25,000-50,000
Nevada, Las Vegas PhD	x		x	x	53	3-4		1 student	2067 \$15/cr for distance ed		9,129
Ohio State	x	x	x	x	90 Quarter	4-5		30	14,000		50,000

PhD											
Pennsylvania* PhD			x	x	39	4-5		Very low	36,000		72,000+
Pittsburgh* PhD DNP	x		x	x	60			10	26,931		Scholarships, TA, RA
					80			Too new			
Purdue DNP	x		x	x	43-51	2-3		2	Provided		5000 (books and fees)
Rochester* PhD		x	x	x	60	2		23	988 per credit	1500	63,780
Tennessee DNP	x		x		39	2		7.59	7,940		15,880
Texas, Austin PhD		x	x	x	50+	3-4		5	8,000		25,000
Texas, San Antonio PhD	x		x	x	35 + cognates	2			2,678		5355+
Uniformed Services PhD	x		x	x	86	3-6		40	0		0
University of California, SF			x		Do not use	4		10	10,605		53,025
Villanova* PhD	x		x	x	52	<5		4	9,360		40,560+
Virginia PhD	x	x	x	x	46	2	2	10	Full scholarship		1485/semester Research fee

DNP			x	x	38	2		Too soon to tell	11,265 (may be TA)		22,530
Virginia Commonwealth PhD	x		x	x	60	2	+ dissertation	<1	Fully funded except for dissertation credits		Fully funded except for dissertation credits
Wayne State PhD	x		x	x	82	4	+	1-2	13,057		52,000
West Virginia PhD	x			x	55	4	+	26.9	3,204		14,685

*Private university