DNAP NEASC SELF STUDY 2018

Degree Description

The Doctorate of Nurse Anesthesia Practice (DNAP) has two specializations, 1) an Entry-level program (80-86 credits over 36 months including summers) designed for licensed registered nurses entering with a BS degree to become certified registered nurse anesthetists (CRNAs) and 2) an Advanced Specialization (30-39 credits over 2 years with 1 summer) for master's level practicing CRNA's to become DNAP-prepared practitioners. Both specializations allow these individuals to expand their background in areas of biology and anesthesia specific to their discipline. The Entry-Level Program includes a mixture of on-ground and hybrid online courses, and the Advanced Specialization courses are hybrid-online (exception: if needed, Advanced Physical Health Assessment for Nurse Anesthesia is an on-ground course).

Central Connecticut State University collaborates with two hospital-based schools of nurse anesthesia, 1) the Nurse Anesthesia Program of Hartford and 2) the Yale-New Haven Hospital School of Nurse Anesthesia, both of which must maintain their own program accreditation through the Council on Accreditation (COA) of Nurse Anesthesia Educational Programs.

Appraisal: Implementation of DNAP

The following is the timeline of major events of the successful implementation of the DNAP:

- proposal for the DNAP received final approval from the CT legislature (June 5, 2015)
- the Board of Regents (BOR) for Higher Education approved licensure of the program (December 3, 2015)
- NEASC accreditation approval to offer DNAP was effective April 22, 2016.
- The Nurse Anesthesia Program of Hartford (NAPH) and Yale-New Haven Hospital School of Nurse Anesthesia (YNHHSNA) received initial COA approval to offer the DNAP during the COA June 1-3, 2016 meeting.
- Applicants to the DNAP: Entry-Level program were interviewed fall 2016 and matriculated Summer 2017. Applicants to the DNAP: Advanced Specialization were interviewed summer 2017 and matriculated Fall 2017.
    - First cohort of DNAP: Entry-Level was 16 students and the summer 2018 cohort will be 20 students.
        - First cohort: 8 (50%) CT residents; 8 Out-of-state (3-MA, 4-NY, 1 WI)
        - Second cohort: 9 (45%) CT residents; 11 Out-of-state (1-CA, 3-MA, 1-ME, 2-NJ, 1-NY, 1-RI, 1-UT, 1-VT)
    - First cohort of DNAP: Advanced Specialization was 8 students and we expect fall 2018 cohort to be 10 students.
        - First cohort: 8 (100%) CT residents
    - In the future NAPH and YNHHSNA may increase their enrollments so potential cohorts could range from 25-30 students.
    - To aid in the recruitment of students, advertising of the CCSU DNAP Programs was done through
        - New England Association of Nurse Anesthetists website
        - American Association of Nurse Anesthetists website
        - American Journal of Critical Care Nursing
        - In acute care hospitals around CCSU
- Progression of first cohorts through the program:

    - DNAP: Entry-Level -all have successfully completed the first summer, fall, and spring courses of the program;
    - DNAP: Advanced Specialization – hybrid on-line courses from fall 2017 and finished January 5-7, 2018; and two additional hybrid on-line courses were competed spring 2018
- The Nurse Anesthesia Program of Hartford had an on-site visit by the COA April 5-6, 2018 for its reaccreditation review.

Appraisal: Assessment of Learning Outcomes

The Department of Biology collects assessment data on all of its undergraduate and graduate programs and evaluates student evaluations of faculty members. An annual assessment report (based on data collected and analyzed) is written and submitted to the appropriate Dean. All biology faculty, as well as biology program coordinators, review the data and assessment report. The assessment report includes a section addressing changes to make improvements in the program or changes in the assessment process to better collect, analyze, and summarize data

The DNAP Program Learning Outcomes are based upon the competencies required by Council on Accreditation (COA) for Nurse Anesthesia Programs for the CRNA Practitioner at the Clinical Doctorate Level. The COA Standards for Accreditation of Nurse Anesthesia Programs help prepare graduates with competencies for entry into anesthesia practice. The entry-into-practice competencies for nurse anesthesia professional at the practice doctoral level are those required at the time of graduation to provide safe, competent, and ethical anesthesia and anesthesia-related care to patients for diagnostic, therapeutic, and surgical procedures. The COA practice doctorate standards address: (A) Conducting Institutions (A.1.-A.13), (B) Faculty (B.1.-B.20), (C) Students (C.1.-C.5), (D) Graduates (D.1.-D.51), (E) Curricula (E.1.-E.11), (F) Clinical sites (F.1.-F.9.), (G) Policies (G.1.-G.8), and (H) Evaluations (H.1.-H.2). Those Standards most directly applicable to courses in the DNAP: Entry-Level doctoral curriculum are Standards D and E. Those Standards most directly applicable to courses in the DNAP: Advanced Specialization doctoral curriculum are Standards D (D.14, D.23, D.26, D.31, D.32, D.33, D.35, D.40 to D.51) and E (E.1, E.3, E.5 to E.8). Upon completion of the DNAP: Entry-Level and the DNAP: Advanced Specialization graduates are expected to complete all of the Standard D Graduates and Standard E Curricula Standards; and the Institution and its Program and students must remain in compliance with all COA Standards (A-H). With regard to COA accreditation of programs, the hospital anesthesia programs are the conducting institution (Nurse Anesthesia Program of Hartford and Yale-New Haven Hospital School of Nurse Anesthesia) and CCSU is the degree granting institution. Although there are some of the COA Standards that are more specific to the conducting institution and the clinical setting, for many of the COA Standards, the hospital program of nurse anesthesia and CCSU share responsibility for compliance.

- COA Standard A Conducting Institution includes categories such as the governing, organizational relationships of the institution and academic unit, program administrators, and also include providing evidence of financial, physical, and learning resources, and class size.
- COA Standard B Faculty Standards includes standards for program administrators and faculty with regard to experience and educational credentials for teaching doctoral courses.
- COA Standard C Student Standards, (selection and admissions to the program and student participation and conduct);
- COA Standard D Graduate Standards are assessed in DNAP courses as well as in the clinical setting (Critical Thinking, Leadership and Professional Role). Other components of Standard D assessed in the clinical component of the program (Patient Safety, Perianesthesia Care).

- COA Standard E Curriculum Standards specify courses and course content for didactic courses and clinical experiences therefore there are shared responsibilities for the curriculum development and assessment. The hospital program of anesthesia has the primary responsibility for providing, monitoring, and assessing the clinical experiences that are required.
- COA Standard F Clinical Site Standards include clinical site resources, clinical supervision, and student time commitment and the hospital school of anesthesia has the primary responsibility for assessment and compliance with this standard.
- COA Standard G Policy Standards (record keeping, accuracy of information published about the program, nondiscrimination, and academic integrity); and
- COA Standard H Evaluation (evaluation of the students and faculty, student evaluation of didactic and clinical components of the program, outcome measures of academic quality, and utilization of evaluation data to make improvements).

The hospital programs of nurse anesthesia collect assessment data on the clinical practicum of the DNAP: Entry-Level Program and COA Standard F Clinical Site Standards, analyze results and send results to the COA based on the scheduled outlined by the COA. These hospital programs of nurse anesthesia provide evidence for that the program is meeting COA Standards A-H.

a. Learning O utcomes and Assessment of Outcomes for DNAP

i. Analyzes best-practice models for nurse anesthesia patient care management through integration of knowledge acquired from arts and sciences within the context of the scope and standards of nurse anesthesia practice.
ii. Undertakes complex leadership role and integrate critical and reflective thinking to facilitate intraprofessional and interprofessional collaboration.
iii. Uses evidence-based practice in clinical decision making, develop and assess strategies to improve patient outcomes and quality of care.
iv. Evaluates the impact of public processes on financing and delivery of healthcare.
v. Assesses and evaluates health outcomes in a variety of populations, clinical settings, and systems.
vi. Completes and disseminates scholarly work, demonstrating knowledge with an area of academic focus.
vii. Uses information systems/technology and evaluate clinical and research databases to support and improve patient care and healthcare systems.
viii. Demonstrates ability to advocate for health policy change to improve patient care and advance the specialty of nurse anesthesia.
ix. Analyzes healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community.
x. Demonstrates ethical decision-making; communicates and represents themselves in accordance with the Code of Ethics for CRNAs.

Assessment Methodology

During the initial planning for the DNAP, DNAP Program Assessment Points for Learning Outcomes (correlated with COA competencies) included assessment of portfolios in certain courses (BIO 740 and BIO 742), in Advanced Anesthesia Clinical Practicum I, II, and III; and assessment of the doctoral comprehensive exam, and doctoral capstone project. We are using Taskstream to manage assessment data and are therefore increasing the number of courses in which we can assess COA Standards. Currently, to aid in assessment of the DNAP Programs, Taskstream evaluation rubrics have been developed for course documents (portfolios, written papers, and presentation).

1. Evaluation rubrics are in place for the summer 2017 and fall 2017 courses below and Taskstream analyses of rubrics and reflections have been done.
    - BIO 517 Advanced Human Anatomy, Physiology, and Pathophysiology (course reflection, a component of the student portfolio)
    - CHEM 550 Basic Organic and Biological Chemistry (course reflection, a component of the student portfolio)
    - BIO 528 Advanced Pharmacology (rubric for article abstract)
    - BIO 725 Bioethics in Nurse Anesthesia (rubric for written paper)
    - BIO 740 Leadership in Nurse Anesthesia Education (rubrics for presentation, paper)
2. The next evaluation rubrics being added to Taskstream were for the spring 2018 semester and include
    - BIO 730 Human Factors and Patient Safety for Nurse Anesthetists
    - BIO 736 Evidence-based Practice and Biostatistics
    - ACP 733 Advanced Anesthesia Clinical Practicum
    - Doctoral Capstone evaluation rubrics
3. COA Standards (Graduate Standard, D) were also added to Taskstream. Next in Taskstream, COA Standards (Curricula, E. 2.2 Content) will be attached to each course rubric and the analyses completed.
4. Students in both programs have begun making portfolios in Taskstream.
5. A comprehensive exam will be used to assess overall performance in E.2.2 Content: Advanced physiology/pathophysiology. This exam will be administered for the first cohort in Spring 2020.

<u>Assessments Completed</u>

DNAP: Entry-Level students have completed 3 of 9 semesters (39 of 81 credits) in the Program and the DNAP: Advanced Specialization have completed 2 of 5 semesters (15 of 30 credits) in the Program. Assessment procedures are underway, and as of February, 2018 we have used Taskstream to assess

- <u>6 COA Standards</u> (5 of the 51 D Standards; and 1 of 11 E Standards) for the DNAP: Entry-Level Program; and
- <u>10 COA Standards</u> <u>(9 of the 19 required D Standards and 1 of 4 of required E Standards)</u> for the DNAP: Advanced Specialization Program.

For the DNAP: Entry-Level Specialization the range of scores for those Graduate Standards D assessed was 94.9% to 96.88%. For the DNAP: Advanced Specialization the range of scores for those Graduate Standards D assessed was 97.19% to 93.02%. The score for Curricula Standard E was 93.24%. Graduate Students at CCSU are expected to maintain grades of B or above, and the DNAP Program expects grades of B or higher (84% or higher) in all of the ANES courses and the 700-level courses in the DNAP Program.

The average assessment scores for most items were 93% or higher, indicating excellent performance The first semester score of 80.31% is part of the portfolio review, and that score is expected to increase as students' progress in their portfolio over the rest of the program. The Curricula E.2.2 scores for the DNAP: Entry-Level Specialization in which the score was based upon course reflections rather than course assignments for CHEM 550 and BIO 517. These scores based on course reflections will be reviewed to determine how that process of scoring differed from assessment of course assignments done in the other courses (BIO 528, 725, and 740). In addition, for the cohort of students matriculating summer of 2018, for the CHEM 550 and BIO 517courses that were assessed using course reflection we will add an assessment of course assignments.

DNAP: Entry-Level

COA Standard Assessed	Course(s)	Average score
Graduate Standard, D		
D.23. Use science-based theories and concepts to analyze new practice approaches	Advanced pharmacology (BIO 528)	96.88%
D. 30. Teach others	Advanced pharmacology (BIO 528)	96.88%
D.33. Adhere to the Code of Ethics for the certified registered nurse anesthetists	Bioethics in Nurse Anesthesia (BIO 725)	95.73%
D.34. Interact on a professional level with integrity	Advanced pharmacology (BIO 528) Bioethics in Nurse Anesthesia (BIO 725)	95.63%
D.35. Apply ethically sound decision-making processes	Bioethics in Nurse Anesthesia (BIO 725)	94.9%
Curricula, E		
E.2.2. Content: Advanced physiology/pathophysiology	Basic Organic and Biological Chemistry (CHEM 550) Advanced Human Anatomy, Physiology, and Pathophysiology (BIO 517) Bioethics in Nurse Anesthesia (BIO 725) Advanced Neuroscience (Bio 519) Advanced Pathophysiology and Applied Physiology (Bio 518) Immunology (Bio 530)	To be measured on comprehensive exam

DNAP: Advanced Specialization

COA Standard Assessed	Course(s)	Average score
Graduate Standard, D		
D. 30. Teach others	Leadership in Nurse Anesthesia Education (BIO 740)	93.78%
D.31. Integrate critical and reflective thinking in his or her leadership approach	Leadership in Nurse Anesthesia Education (BIO 740)	93.78%
D.32. Provide leadership that facilitates intra professional and interprofessional collaboration	Leadership in Nurse Anesthesia Education (BIO 740)	93.78%
D.33. Adhere to the Code of Ethics for the certified registered nurse anesthetists	Bioethics in Nurse Anesthesia (BIO 725)	93.75%
D.34. Interact on a professional level with integrity	Bioethics in Nurse Anesthesia (BIO 725)	95.16%

	Leadership in Nurse Anesthesia Education (BIO 740)	
D.35. Apply ethically sound decision-making processes	Bioethics in Nurse Anesthesia (BIO 725)	93.02%
D.40. Inform the public of role and practice of the CRNA	Leadership in Nurse Anesthesia Education (BIO 740)	97.19%
D.44. Analyze strategies to improve patient outcomes and quality of care	Leadership in Nurse Anesthesia Education (BIO 740)	97.19%
D. 48. Disseminate research evidence	Bioethics in Nurse Anesthesia (BIO 725) Leadership in Nurse Anesthesia Education (BIO 740)	94.78%
Curricula, E		
E.2.2. Content: Advanced physiology/pathophysiology	Bioethics in Nurse Anesthesia (BIO 725) Leadership in Nurse Anesthesia Education (BIO 740)	93.24%

SEE:

APPENDIX A: Competencies Required by Council on Accreditation of Nurse Anesthesia Programs for the CRNA Practitioner at the Clinical Doctorate Level and Correlation with DNAP Program Learning Outcomes

APPENDIX B: Competencies Required by Council on Accreditation for Nurse Anesthesia Programs for the CRNA Practitioner at the Clinical Doctorate Level and CCSU DNAP Courses Meeting Those Competencies

APPENDIX C: Evaluation Rubric Criteria for Comprehensive Exam, Capstone Project, Portfolio and Leadership in Anesthesia Course

APPENDIX D: Evaluation Rubrics Developed for Courses and Portfolio Documents Fall 2017 and Spring 2018

APPENDIX E DNAP Courses, COA Standards, and Course Outcomes

APPENDIX F Taskstream Reports for Assessment

<u>Appraisal:</u> Assurance that Clinical Practicum Advisors and Capstone Committee Advisors are in Sufficient Number and Appropriately Qualified

In the DNAP Programs, to adequately advise, supervise, and assess doctoral capstone projects and to ensure adequate clinical experiences, the total number of acceptances to the DNAP Programs will be based in part on having sufficient clinical experiences to meet the Council on Accreditation (COA) of Nurse Anesthesia Programs Standards and on having sufficient faculty to supervise doctoral capstone projects.

- As of January 1, 2018, we have 18 (rather than 13 as we had in 2016) doctorally prepared faculty who can act as Doctoral Committee Chairs plus 3 master's prepared certified registered nurse anesthetists who can act as Committee Members (2 of the 3 have doctoral degrees in progress).

- APPENDIX G List of Faculty Able to Serve as Chair or Members of DNAP Capstone Projects
- APPENDIX H Full-time, adjunct, and clinical faculty and courses taught

- APPENDIX I Curriculum Vitae of Faculty Teaching in DNAP

The hospital programs of nurse anesthesia collect assessment data on the clinical practicum portion of the DNAP: Entry-Level program, analyze results, and send results to the COA based upon a scheduled outlined by the COA.

The university coordinator of the DNAP programs and the directors of the hospital programs of nurse anesthesia meet annually to discuss assessment results and develop plans for program revision if needed.

Faculty

a. Faculty, New Faculty, and Allocation of Faculty Time

There are currently 7 full-time faculty (6 Ph.D.s, 1 DNAP) in the Department of Biology and one in the Department of Chemistry and Biochemistry who teach courses in or can serve on doctoral capstone committees in the DNAP: Entry-Level Program and DNAP: Advanced Specialization. There are 11 part-time faculty that are CRNAs or an anesthesiologist (8 of 11 are doctorally-prepared; of the 3 without doctorate degrees, 2 have doctoral degrees in progress) participating in the DNAP Programs.

Progress on faculty

1. A doctorally prepared CRNA was hired and started fall 2016 to help with preparations for the first cohorts that were admitted summer and fall 2017 and now teaches many of the new doctoral courses and helps recruit doctorally-prepared part-time faculty to teach in the DNAP program.
2. A faculty member specializing in physiology (Ph.D.) that will help teach lower and upper-level courses and serve on DNAP capstone committees has been hired and will start fall 2018.
3. Part-time CRNA faculty are being hired to team-teach some of the clinical courses in the DNAP Program that will be taught at CCSU rather than at the hospital as had been done with the M.S. Biological Sciences: Anesthesia Program.
4. Hiring of a second doctorally prepared CRNA to participate in doctoral capstone committee and aid in team-teaching other courses in the program has been approved and the search is in progress.

Eventually, the department will need to hire additional part-time faculty members to cover some lower-level courses. Six credits of reassigned time will be allocated for the program coordinator to manage the program. Faculty involved in doctoral students' research projects will be given appropriate reassigned time. In addition, the University is working to secure a number of graduate

assistantships to be awarded by the Department. Part-time faculty with CRNA degrees will be hired to serve on capstone committees.

Anesthesia Clinical Practicum (ACP) courses are taught by faculty at the hospital schools of nurse anesthesia, with the exception of sections of Advanced Anesthesia Clinical Practicum I, II, and III (ACP 733, ACP 734, ACP 735) for students in the DNAP: Advanced Specialization, which will be supervised by the newly hired doctorally prepared CRNA.

APPENDIX H Full-time, adjunct, and clinical faculty and courses taught

APPENDIX J Course Sequences in DNAP Programs

b. Academic Advising of Students and Advising of Doctoral Capstone Projects

Academic advising of DNAP students is done by a faculty member in the Department of Biology who is designated as the university Coordinator of the Nurse Anesthesia Program. Currently in the M.S. Biological Sciences: Anesthesia Program academic advising is done by that Coordinator and now that the master's level nurse anesthesia program has converted to the the DNAP that person will serve as the DNAP Program Coordinator and will advise the DNAP students. During the clinical practicum portion of the DNAP program, students will be advised by one of the program directors of the CCSU affiliated hospital schools of nurse anesthesia. The first cohort of DNAP: Entry-Level students starts their clinical practicum summer of 2018.

In BIO 745 Doctoral Capstone Project I, students will initially meet as a group to discuss the purpose of the capstone project and criteria that the project must meet, after which student will develop their capstone project proposal, including the literature review and methodology. This course will be team-taught by the new doctorally prepared CRNA and the DNAP Program Coordinator (or other designated biology faculty). In BIO 746 Doctoral Capstone Project II students work with their capstone advisor and committee members both individually and in small group meetings. If the capstone project is complete, the capstone defense occurs at the end of the Doctoral Capstone Project II. If the capstone project is not complete, then students enroll in BIO 747 Doctoral Capstone Project III each semester until the project is complete.

The DNAP Program Coordinator along with the Program Directors of the hospital schools of nurse anesthesia will assist students in establishing the doctoral capstone committee for their project. Each student's doctoral capstone committee consists at a minimum of two individuals who will guide and advise the student through the doctoral capstone project. The chair of the committee will have an earned doctorate and be a member of the CCSU Biology Department faculty. The second committee member should be a CRNA (with minimum of two years of experience), physician, or other professional. The second committee member is not required to have a doctoral degree or to be a member of the CCSU faculty. Individuals external to the University may be considered for doctoral capstone committee members with approval of the anesthesia advisor. The CSU-AAUP Collective Bargaining Agreement outlines evaluation criteria and categories for full-time teaching faculty and the criteria for evaluating each of these categories are the quality of the activity and keeping current in one's field. Scholarly activity is included in the Load Credit category for faculty receiving load credit for research. Scholarly activity is also included in the Creative Activity category where the expectation is that creative activity is "appropriate to one's field, such as delivering papers at professional conferences, production/performance of artistic works, research,

study, and publication". In addition, scholarly activity is in the Professional activity category that includes "attendance and participation in conferences and workshops, membership and service in appropriate professional organizations and other professional activities".

Library and Other Information Resources

Currently the library at CCSU includes the following databases specifically for the students in the existing programs:

a. Library Holdings

1. Scopus

Scopus is the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world's research output in the fields of science, technology, medicine, social sciences, and arts and humanities.

2. CINAHL with Full-Text

CINAHL with Full Text is a comprehensive source of full text for nursing & allied health journals, providing full text for more than 600 journals indexed in CINAHL. This authoritative file contains full text for many of the most used journals in the CINAHL index - with no embargo. Full-text coverage dates back to 1981.

3. Cochrane Collection Plus

Cochrane Collection Plus is the most comprehensive collection of databases from the Cochrane Library. The collection combines the NHS Economic Evaluation Database (NHS EED) and Health Technology Assessments (HTA) with the Cochrane Database of Systematic Reviews (CDSR), Database of Abstracts of Reviews of Effects (DARE), Cochrane Central Register of Controlled Trials and Cochrane Methodology Register.

4. MEDLINE

MEDLINE provides authoritative medical information on medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical sciences, and much more. Created by the National Library of Medicine, MEDLINE uses MeSH (Medical Subject Headings) indexing with tree, tree hierarchy, subheadings and explosion capabilities to search citations from over 4,800 current biomedical journals.

5. NLM Gateway

Search multiple National Library of Medicine databases, including Medline Plus, TOXLINE and PUBMED

6. PUBMED

PUBMED a service of the National Library of Medicine, provides access to over 11 million MEDLINE citations back to the mid-1960's and additional life science journals. PUBMED includes links to many sites providing full text articles and other related resources.

b. 2016 List of Library Resources Needed – funding set aside in 2015/2016 budget

- Anesthesiology
- Journal of Anesthesia* – access available from their home page without additional cost to university

- Anesthesia and Analgesia* – access available from their home page without additional cost to university
- Journal of the American Association of Nurse Anesthetists* – access available from their home page without additional cost to university
  *=one year embargo restriction to content is associated to this journal

c. Resources purchased since 2016:
- Anesthesiology Journal
- In 2017, $8,600 of library resources were purchased. Books used in the DNAP Programs and recommended by the National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA) have been purchased and place in the Reserved Room of the Library. When available through the publisher, books with electronic access have been order so that students can access these materials from off campus. Electronic access is especially important for those students in the DNAP: Advanced Program since their courses are hybrid on-line courses and they are not on campus full-time.

d. Planned additions for library during 2018:
   a. UpToDate, an electronic evidence-based clinical decision support resource from Wolters Kluwer use by clinicians worldwide.
   b. Continue to add resources from the NBCRNA list as they update their list and to add new editions.
   c. Continue to add texts and resources used by the700-level courses in the DNAP Programs.

e. Current Library Resources
   - Appendix K Library Resources

f. Other information resources

Through the CCSU library there is access to appropriate databases for literature review, interlibrary loan, technical support and off campus access, library instruction, and multiple mechanisms supporting research.

Physical and Technology Resources:

a. Technology Resources

The Connecticut State Colleges and University system supports the Learning Management Software, Blackboard Learn, which is used for classroom lectures and can support teaching of hybrid-online courses that will be used for some of the doctoral program courses, in addition to being used for electronic portfolios.

The Central Connecticut State University Instructional Design and Technology Resource Center (IDTRC) provides instructional design services, technology assistance, and training to faculty, staff, and students.

b. Physical Facilities

No additional clinical facilities are required. CCSU affiliated hospital schools of nurse anesthesia have clinical facilities currently being used for students in the M.S. Biological Sciences: Anesthesia Program and these facilities can also be used for the DNAP: Entry-Level Specialization Program. These affiliated hospital schools of nurse anesthesia also send students to additional facilities to meet required patient cases or for use as enrichment sites.

UPDATE:
Physical Facilities
Resources: A dedicated area within Copernicus Hall, the same building housing the Biology Department, that is needed for the DNAP Program is scheduled to be constructed over the summer of 2018 and will be available fall 2018. This area would have space for the current full-time doctorally prepared nurse anesthetist faculty member, a second full-time doctorally prepared nurse anesthetist, a physiologist that will help with DNAP courses and doctoral capstones, office space that could be shared by part-time faculty teaching in the DNAP Program, an area for DNAP students to congregate, and an area that could in the future house a part-time administrative assistant.

Five-Year Plans for DNAP

- Creation of a DNAP office and meeting center for students and faculty to communicate and study
- Creation of a highly skilled, engaged pool of DNAP faculty.
- Develop public showcase forum for publications and presentations by students and faculty.
- Increase in student enrollment. Important for advertising to aid in this endeavor.
    - Continue to advertise on websites of professional societies and American Journal of Critical Care Nursing
    - Develop brochure for DNAP Programs to aid in advertising program

DNAP APPENDIX

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APPENDIX A. Competencies Required by Council on Accreditation of Nurse Anesthesia Programs for the CRNA Practitioner at the Clinical Doctorate Level and Correlation with DNAP Program Learning Outcomes

Competency	Learning Outcomes
I. Competency Area: Biological Systems, Homeostasis and Pathogenesis a. Analyzes best-practice models for nurse anesthesia patient care management through integration of knowledge acquired from arts and sciences within the context of the scope and standards of nurse anesthesia practice. b. Uses a systematic outcomes analysis approach in the translation of research evidence and data in the arts and sciences to demonstrate they will have the expected effects on nurse anesthesia practice.	**LEARNING OUTCOME 1** Analyzes best-practice models for nurse anesthesia patient care management through integration of knowledge acquired from arts and sciences within the context of the scope and standards of nurse anesthesia practice.
III. Competency Area: Healthcare Improvement a. Uses evidence based practice to inform clinical decision making in nurse anesthesia. b. Evaluates how public processes impact the financing and delivery of healthcare. c. Develops and assesses strategies to improve patient outcomes and quality of care.	**LEARNING OUTCOME 3** Uses evidence-based practice in clinical decision making, develop and assess strategies to improve patient outcomes and quality of care. **LEARNING OUTCOME 4** Evaluates the impact of public processes on financing and delivery of healthcare.
IV. Competency Area: Practice Inquiry a. Demonstrates the ability to assess and evaluate health outcomes in a variety of populations, clinical settings, and systems. b. Demonstrates ability to disseminate research evidence. c. Completes a scholarly work that demonstrates knowledge within the area of academic focus.	**LEARNING OUTCOME 5** Assess and evaluates health outcomes in a variety of populations, clinical settings, and systems. **LEARNING OUTCOME 6** Completes and disseminates scholarly work demonstrating knowledge with an area of academic focus.
V. Competency Area: Technology and Informatics a. Uses information systems/technology to support and improve patient care and healthcare systems. b. Critically evaluates clinical and research databases used as clinical decision support resources.	**LEARNING OUTCOME 7** Uses information systems/technology and evaluate clinical and research databases to support and improve patient care and healthcare systems.
VI. Competency Area: Public and Social Policy a. Advocates for health policy change to improve patient care and advance the specialty of nurse anesthesia.	**LEARNING OUTCOME 8** Demonstrates ability to advocate for health policy change to improve patient care and advance the specialty of nurse anesthesia.
VII. Competency Area: Health Systems Management a. Analyzes the structure, function and outcomes of healthcare delivery systems and organizations. b. Analyzes business practices typically encountered in nurse anesthesia delivery settings. c. Analyzes risk management plans based on information systems to promote outcome improvement for the patient, organization and community	**LEARNING OUTCOME 9** Analyzes healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community.
VIII. Competency Area: Ethics a. Applies ethically sound decision- making.	**LEARNING OUTCOME 10**

b. Informs the public of the role and practice of the doctoral-prepared CRNA and represents themselves in accordance with the Code of Ethics for CRNAs. c. Fulfills the obligation as a doctoral-educated professional to uphold the Code of Ethics for CRNAs.	Demonstrates ethical decision-making; and communicates and represents themselves in accordance with the Code of Ethics for CRNAs.

APPENDIX B. Competencies Required by Council on Accreditation for Nurse Anesthesia Programs for the CRNA Practitioner at the Clinical Doctorate Level and CCSU DNAP Courses Meeting Those Competencies

Competency	**DNAP course**
I. Competency Area: Biological Systems, Homeostasis and Pathogenesis a. Analyzes best-practice models for nurse anesthesia patient care management through integration of knowledge acquired from arts and sciences within the context of the scope and standards of nurse anesthesia practice. b. Uses a systematic outcomes analysis approach in the translation of research evidence and data in the arts and sciences to demonstrate they will have the expected effects on nurse anesthesia practice.	CHEM 550 Basic Organic and Biological Chemistry BIO 500 Seminar in Biology BIO 517 Advanced Human Anatomy, Physiology, and Pathophysiology BIO 518 Advanced Pathophysiology and Applied Physiology BIO 519 Advanced Neuroscience BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists BIO 528 Advanced Pharmacology BIO 530 Immunology BIO 598 Research in Biology BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 736 Evidence-based Practice and Biostatistics BIO 739 Advanced Topics in Pharmacology BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 510 Physics in Anesthesia ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum I ACP 735 Advanced Anesthesia Clinical Practicum III
II. Competency Area: Professional Role a. Demonstrates ability to undertake complex leadership roles in nurse anesthesia. b. Demonstrates ability to provide leadership that facilitates intraprofessional and interprofessional collaboration. c. Integrates critical and reflective thinking in leadership style. d. Demonstrates ability to utilize a variety of leadership principles in the management of situations.	BIO 725 Bioethics and Nurse Anesthesia BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 740 Leadership in Nurse Anesthesia Education BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology

	ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP 735 Advanced Anesthesia Clinical Practicum III
III. Competency Area: Healthcare Improvement a. Uses evidence based practice to inform clinical decision making in nurse anesthesia. b. Evaluates how public processes impact the financing and delivery of healthcare. c. Develops and assesses strategies to improve patient outcomes and quality of care.	BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists BIO 725 Bioethics and Nurse Anesthesia BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 736 Evidence-Based Practice and Biostatistics BIO 739 Advanced Topics in Pharmacology BIO 740 Leadership in Nurse Anesthesia Education BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III
	ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP 735 Advanced Anesthesia Clinical Practicum III

IV. Competency Area: Practice Inquiry a. Demonstrates the ability to assess and evaluate health outcomes in a variety of populations, clinical settings, and systems. b. Demonstrates ability to disseminate research evidence. c. Completes a scholarly work that demonstrates knowledge within the area of academic focus.	BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 736 Evidence-based practice and biostatistics BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology	

	ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP 735 Advanced Anesthesia Clinical Practicum III	
V. Competency Area: Technology and Informatics a. Uses information systems/technology to support and improve patient care and healthcare systems. b. Critically evaluates clinical and research databases used as clinical decision support resources.	BIO 525 Advanced Physical Health Assessment for Nurse Anesthetist BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 736 Evidence-Based Practice and Biostatistics BIO 739 Advanced Topics in Pharmacology BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP 735 Advanced Anesthesia Clinical Practicum III	
VI. Competency Area: Public and Social Policy a. Advocates for health policy change to improve patient care and advance the specialty of nurse anesthesia.	BIO 725 Bioethics and Nurse Anesthesia BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 740 Leadership in Nurse Anesthesia Education BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP735Advanced Anesthesia Clinical Practicum III	

VII. Competency Area: Health Systems Management a. Analyzes the structure, function and outcomes of healthcare delivery systems and organizations. b. Analyzes business practices typically encountered in nurse anesthesia delivery settings. c. Analyzes risk management plans based on information systems to promote outcome improvement for the patient, organization and community.	BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 740 Leadership in Nurse Anesthesia Education BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP735Advanced Anesthesia Clinical Practicum III	

VIII. Competency Area: Ethics a. Applies ethically sound decision- making. b. Informs the public of the role and practice of the doctoral-prepared CRNA and represents themselves in accordance with the Code of Ethics for CRNAs. c. Fulfills the obligation as a doctoral-educated professional to uphold the Code of Ethics for CRNAs.	BIO 725 Bioethics and Nurse Anesthesia BIO 730 Human Factors and Patient Safety for Nurse Anesthetists BIO 736 Evidence-based Practice and Biostatistics BIO 740 Leadership in Nurse Anesthesia Education BIO 742 Advanced Topics in Nurse Anesthesia BIO 745 Doctoral Capstone Project I BIO 746 Doctoral Capstone Project II BIO 747 Doctoral Capstone Project III ANES 500 Basic Principles of Nurse Anesthesia Practice ANES 501 Advanced Principles of Nurse Anesthesia Practice I ANES 502 Advanced Principles of Nurse Anesthesia Practice II ANES 510 Physics in Anesthesia ANES 515 Professional Aspects of Nurse Anesthesia Practice ANES 528 Anesthesia Pharmacology ANES 590 Clinical Correlation Conference ACP 730 Anesthesia Clinical Practicum I ACP 731 Anesthesia Clinical Practicum II ACP 732 Anesthesia Clinical Practicum III ACP 733 Advanced Anesthesia Clinical Practicum I ACP 734 Advanced Anesthesia Clinical Practicum II ACP735Advanced Anesthesia Clinical Practicum III

APPENDIX C. Evaluation Rubric Criteria for Comprehensive Exam, Capstone Project, Portfolio and Leadership in Anesthesia Course

Doctorate of Nurse Anesthesia Practice (DNAP)

	Exceeds Expectations	**Meets Expectations**	**Does Not Meet Expectations**	**Not Applicable**
LEARNING OUTCOME 1 – Analyzes best-practice models for nurse anesthesia patient care management through integration of knowledge acquired from arts and sciences within the context of the scope and standards of nurse anesthesia practice.	Analyze best-practice models for nurse anesthesia practice; exceeds knowledge expectations or exceeds integration of knowledge from arts and sciences.	Analyze best-practice models for nurse anesthesia practice; demonstrates knowledge of and integration of knowledge from arts and sciences.	Does not analyze best-practice models for nurse anesthesia practice; does not demonstrate knowledge of or integration of knowledge from arts and sciences.	
LEARNING OUTCOME 2 - Undertakes complex leadership role and integrate critical and reflective thinking to facilitate intraprofessional and interprofessional collaboration.	Demonstrates evidence of critical or reflective thinking that would facilitate intraprofessional and interprofessional collaboration needed to undertake complex leadership roles and shows evidence of taking on complex leadership roles.	Demonstrates evidence of critical of reflective thinking that would facilitate intraprofessional and interprofessional collaboration needed to undertake complex leadership roles.	Does not demonstrate evidence of critical or reflective thinking that would facilitate intraprofessional and interprofessional collaboration needed to undertake complex leadership roles.	
LEARNING OUTCOME 3 - Uses evidence-based practice in clinical decision making, develop and assess strategies to improve patient outcomes and quality of care.	Demonstrates multiple examples of using evidence-based practice in clinical decision making, developing and assessing strategies to improve patient outcomes and quality of care.	Demonstrates at least minimal requirements for using evidence-based practice in clinical decision making, developing and assessing strategies to improve patient outcomes and quality of care.	Does not demonstrate evidence of using evidence-based practice in clinical decision making, developing and assessing strategies to improve patient outcomes and quality of care.	
LEARNING OUTCOME 4 - Evaluates the impact of public processes on financing and delivery of healthcare.	Demonstrates multiple examples of evaluating the impact of public processes on financing and delivery of healthcare.	Demonstrates at least minimal requirements for evaluating the impact of public processes on	Does not demonstrate evidence of evaluating the impact of public processes on financing and delivery of healthcare.	

		financing and delivery of healthcare.	
LEARNING OUTCOME 5 - Assesses and evaluates health outcomes in a variety of populations, clinical settings, and systems; and complete and disseminate scholarly work demonstrating knowledge with an area of academic focus.	Demonstrates evidence of assessing and evaluating health outcomes in a variety of populations, clinical settings, and systems.	Demonstrates evidence of assessing and evaluating health outcomes in a variety of populations, clinical settings, and systems.	Does not demonstrate evidence of assessing and evaluating health outcomes in a variety of populations, clinical settings, and systems.
LEARNING OUTCOME 6 - Completes and disseminates scholarly work demonstrating knowledge with an area of academic focus.	Scholarly work is relevant to improving health care, thoroughly addresses significant concepts; presentation is clear, coherent, organized, and professional quality.	Scholarly work is relevant to improving health care, addresses most significant concepts; presentation is clear, coherent and organized.	Scholarly work is relevant to improving health care, minimally addresses concepts; presentation is not clear or coherent and is not well organized.
LEARNING OUTCOME 7 - Uses information systems/technology and evaluate clinical and research databases to support and improve patient care and healthcare systems.	Demonstrates a high degree of evidence of ability to use information systems/ technology and to evaluate clinical and research databases to support and improve patient care and healthcare systems.	Demonstrates evidence of ability to use information systems/ technology and to evaluate clinical and research databases to support and improve patient care and healthcare systems.	Does not demonstrate evidence of ability to use information systems/ technology or to evaluate clinical and research databases to support and improve patient care and healthcare systems.
LEARNING OUTCOME 8 -Demonstrates ability to advocate for health policy change to improve patient care and advance the specialty of nurse anesthesia.	Demonstrates multiple examples of ability to advocate for health policy change to improve patient care and advance the specialty of nurse anesthesia.	Demonstrates at least minimal requirements for advocating for health policy change to improve patient care and advance the specialty of nurse anesthesia.	Does not demonstrate evidence of ability to advocate for health policy change to improve patient care and advance the specialty of nurse anesthesia.

LEARNING OUTCOME 9 -Analyzes healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community.	Demonstrates evidence of ability to analyze healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community and demonstrates implementation of changes made as a result of their analyses.	Demonstrates evidence of ability to analyze healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community.	Does not demonstrate evidence of ability to analyze healthcare delivery systems, organizations, and risk management plans to improve outcomes for the patient, organization, and community.
LEARNING OUTCOME 10 - Demonstrates ethical decision-making; communicates and represents themselves in accordance with the Code of Ethics for CRNAs.	Demonstrates multiple examples of ethical decision-making and ability to communicate and represent themselves in accordance with the Code of Ethics for CRNAs.	Demonstrates at least minimal evidence of ethical decision-making and ability to communicate and represent themselves in accordance with the Code of Ethics for CRNAs.	Does not demonstrate evidence of ethical decision-making or of ability to communicate and represent themselves in accordance with the Code of Ethics for CRNAs.

APPENIX D Evaluation Rubrics Developed for Courses, Portfolio Items, and Doctoral Capstone Fall 2017 and Spring 2018

Central Connecticut State University
Doctor of Nurse Anesthesia Practice

Nurse Anesthesia Program of Hartford
Yale New Haven Hospital School of Nurse Anesthesia

Bio 725: Bioethics in Nurse Anesthesia

Rubric for Paper

	Exemplary 56-60	Satisfactory 51-55	Unsatisfactory 50 or below	Points
Summary/Critique	Thoughtfully and accurately interprets the major ethical concept from the book. Shows in-depth understanding, and application of major ethical underpinnings.	Identifies relevant ethical concepts, and conducts a clear analysis of the book.	Includes basic analysis of the book with minimal to no attempt at synthesizing information.	
Review of Literature	Provides sufficient and appropriate justification to support the bioethical issue using similar bioethical cases & ethical theory.	Provides limited justification to support the ethical issue using current ethical literature.	Provides minimal to no evidence to support the ethical issue.	
Theory	Accurately interprets the problem/issue within the ethical theory selected. Clearly identifies major constructs.	Limited interpretation of the theory selected or limited identification of major constructs.	Limited interpretation of the theory selected and limited identification of major constructs.	
Quality of information Grammar and spelling	Covers topic thoroughly, includes details that support the topic with appropriate AMA references. All grammar and spelling are correct.	Includes essential information, includes some supporting details.	Includes most essential information, details are limited.	

Organization	Well-organized and coherent, topics are in logical sequence, includes clear introduction and conclusions.	Organized, some topics are out of logical order, conclusions are generally clear.	Fails to organize the topic in a format that facilitates understanding.	
Comments				

BIO 725 Bioethics in Nurse Anesthesia Course Assessment based on COA standards:

- D.33 - Adhere to the Code of Ethics for the Certified Registered Nurse Anesthetist.
- D.35 - Apply ethically sound decision-making processes.
- E.2.2 – Content: Professional Role Development
- E.2.2 – Content: Ethical and Multicultural Healthcare

Bio 740: Leadership in Nurse Anesthesia Education
Rubric for PowerPoint and Oral Presentation

	Exemplary 38-40	Satisfactory 34-37	Unsatisfactory 33 or below	Points
Critical thinking	Thoughtfully and accurately interprets learning theory, shows in-depth understanding, and application of major ideas.	Identifies relevant learning theory, and conducts a clear analysis of the learning theory.	Includes basic analysis of the learning theory with minimal to no attempt at synthesizing information.	
Quality of information Grammar and spelling	Covers topic thoroughly, includes details that support the topic with appropriate AMA references. All grammar and spelling are correct.	Includes essential information, includes some supporting details.	Includes most essential information, details are limited.	
Organization	Well-organized and coherent, topics are in logical sequence, includes clear introduction and conclusions.	Organized, some topics are out of logical order, conclusions are generally clear.	Fails to organize the topic in a format that facilitates understanding.	
Visual design	Visually attractive, text is easy to read, colors enhance readability, graphics and special effects do not distract from understanding ideas	Visually appealing, clean layout, text is easy to read, graphics enhance understanding of ideas.	Text is hard to read, graphics or special effects distract from understanding.	
Oral presentation	Engages audience, speaks clearly, makes eye contact with	Understandable. Inconsistently makes eye contact with	Clear and understandable,	

	audience, fluid delivery, uses creative approach, and invites questions.	audience and invites questions.	uses limited delivery techniques. Reads from slides.	
Comments				

Bio 740: Leadership in Nurse Anesthesia Education
Rubric for Paper

	Exemplary 56-60	Satisfactory 51-55	Unsatisfactory 50 or below	Points
Problem Identification	Thoughtfully and accurately interprets learning theory, shows in-depth understanding, and application of major ideas.	Identifies relevant learning theory, and conducts a clear analysis of the learning theory.	Includes basic analysis of the learning theory with minimal to no attempt at synthesizing information.	
Review of Literature	Provides sufficient and appropriate evidence to support the issue or learning need.	Provides limited evidence to support the issue or learning need.	Provides minimal to no evidence to support the issue or learning need.	
Theory	Accurately interprets the problem/issue within the theory selected. Clearly identifies major constructs.	Limited interpretation of the theory selected or limited identification of major constructs.	Limited interpretation of the theory selected and limited identification of major constructs.	
Quality of information Grammar and spelling	Covers topic thoroughly, includes details that support the topic with appropriate AMA references. All grammar and spelling are correct.	Includes essential information, includes some supporting details.	Includes most essential information, details are limited.	
Organization	Well-organized and coherent, topics are in logical sequence, includes clear	Organized, some topics are out of logical order, conclusions are generally clear.	Fails to organize the topic in a format that facilitates understanding.	

	introduction and conclusions.			
Comments				

BIO 740 Leadership in Nurse Anesthesia Education Course Assessment based on COA standards:

- D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals.
- D.30 – Teach others
- D.31 - Integrate critical and reflective thinking in his or her leadership approach.
- D.32 - Provide leadership that facilitates intraprofessional and inter-professional collaboration.
- E.2.2 – Content. Ethical and Multicultural Healthcare
- E.2.2 – Content. Leadership and Management

Central Connecticut State University
Doctor of Nurse Anesthesia Practice

Nurse Anesthesia Program of Hartford
Yale New Haven Hospital School of Nurse Anesthesia

Bio 736 Evidence-based Practice & Biostatistics

Rubric for Article Redesign

	Exemplary	Satisfactory	Unsatisfactory	Points
Summary/Critique (10 points)	Thoughtfully and accurately interprets the major ethical concept from the book. Shows in-depth understanding, and application of major ethical underpinnings.	Identifies relevant ethical concepts, and conducts a clear analysis of the book.	Includes basic analysis of the book with minimal to no attempt at synthesizing information.	
Review of Literature (10 points)	Provides sufficient and appropriate justification to support the bioethical issue using similar bioethical cases & ethical theory.	Provides limited justification to support the ethical issue using current ethical literature.	Provides minimal to no evidence to support the ethical issue.	
Theory (10 points)	Accurately interprets the problem/issue within the ethical theory selected. Clearly identifies major constructs.	Limited interpretation of the theory selected or limited identification of major constructs.	Limited interpretation of the theory selected and limited identification of major constructs.	
Quality of information Grammar and spelling (10 points)	Covers topic thoroughly, includes details that support the topic with appropriate AMA references. All grammar and spelling are correct.	Includes essential information, includes some supporting details.	Includes most essential information, details are limited.	

Organization (10 points)	Well-organized and coherent, topics are in logical sequence, includes clear introduction and conclusions.	Organized, some topics are out of logical order, conclusions are generally clear.	Fails to organize the topic in a format that facilitates understanding.	
Comments				

BIO 736 Evidence Based Practice and Biostatistics Course Assessment based on COA standards:

- D.13: Apply knowledge to practice in decision making and problem solving
- D.14: Provide nurse anesthesia services based on evidence-based principles.
- D.23: Use science-based theories and concepts to analyze new practice approaches.
- D. 45: Analyze health outcomes in a variety of populations.
- D.46 - Analyze health outcomes in a variety of clinical settings.
- D.47 - Analyze health outcomes in a variety of systems.
- D.48 - Disseminate research evidence.
- E.2.2 – Content: Research
- E.2.2 –Content: Informatics
- E.2.2 – Content: Integration/Clinical Correlation

Bio 746 - Doctoral Capstone Evaluation Rubric

Legend	Unsatisfactory ≤ 83	Satisfactory 84-92	Exemplary ≥ 93	Points
Literature Review	- Project demonstrates a lack of foundational and relevant information from outside sources -Literature search is not adequately extensive -Use of unreliable sources is evident -Referencing does not adhere to AMA format	-Provides adequate foundational and relevant information from multiple sources (i.e. print, graphic, internet, computer databases) -Utilizes primary source references -Supports arguments with detailed evidence, citing valid sources of information as appropriate -Uses proper AMA format in referencing	-Acquires extensive and relevant information from multiple sources (i.e. print, graphic, internet, computer databases, experimentation) -Generates primary source information -Shows evidence that is both extensive and relevant in research processes and uses a variety of appropriate options to enhance report -Uses proper AMA format in referencing	/100
Organization and Structure of Information	-Does not adequately address the core problem statement -Fails to organize paper in a format that develops the overall integrity of the topic and its purpose	-Includes a well-defined core problem statement -Uses a range of appropriate strategies to address the core problem statement -Supplies pertinent facts and details to validate and/or support conceptualization of material	-Uses a wide variety of skilled methods to address the core problem statement in a substantive and meaningful manner -Provides extensive facts and details describing, supporting and analyzing the topic	/100
Analysis and Synthesis of Information	-Includes a basic analysis of the information with minimal to no attempt at synthesizing information into current project	-Conducts a clear analysis of gathered information -Proposes a finding that is interpretive or analytic	-Conducts a thorough analysis of information and synthesizes it into new knowledge and makes suggestions for future research - Proposes a finding that is interpretive, analytic, evaluative, and reflective	/100
Quality of Writing	-Displays obvious errors in control of the majority of aspects of grammar, syntax and punctuation that detract from the purpose and meaning of writing. Obvious typos/spelling errors -Lacks a clear introduction and/or conclusion -AMA format not evident in manuscript	-Demonstrates control of grammar, syntax, sentence construction, paragraph structure. Minimal to no typos or misspells -Uses appropriate methods of transitions including a clear introduction and conclusion -AMA format adhered to in manuscript	-Demonstrates exemplary control of grammar, paragraph structure, punctuation, sentence construction, usage and mastery of all aspects of writing process. No typos or misspells evident -Uses appropriate methods of transition and exhibits an awareness of the importance of precise word choice -Demonstrates a strong command and appropriate use of vocabulary	/100

APPENDIX E. DNAP Courses, COA Standards, and Course Outcomes

Course	**COA Graduate Standards (Standard D) or Curricular Standards (Standard E) Covered**	**Course Outcomes**
CHEM 550 Basic Organic and Biological Chemistry, 3 credits	E.2.2 – Content: Chemistry E.2.2 – Content: Biochemistry	At the completion of the course the student should demonstrate the ability to: 1. Identify and describe the chemical and physical properties of the major classes of organic molecules occurring in living systems 2. Explain acid-base concepts and enzyme kinetics as they relate to living systems 3. Explain the organic and biochemical basis of cellular metabolism
BIO 517 Advanced Human Anatomy, Physiology, Pathophysiology	E.2.1 – Advanced Physiology/Pathophysiology E.2.2 – Content: Anatomy	At the completion of the course the student should demonstrate the ability to: 1. Identify and describe the anatomy of the muscular, circulatory, nervous, respiratory, excretory and endocrine systems. 2. Explain the physiological mechanisms involved in the normal function of the muscular, circulatory, nervous, respiratory, excretory and endocrine systems. 3. Contrast the normal physiology with pathophysiology of the muscular, circulatory, nervous, respiratory, excretory and endocrine systems.

BIO 518 Advanced Pathophysiology and Applied Physiology	E.2.1 – Advanced Physiology / Pathophysiology E.2.2 – Content: Advanced Physiology / pathophysiology	At the completion of the course the student should demonstrate the ability to: 1. Discuss cardiac pathophysiology including but not limited to hypertension, coronary artery disease, valvular disorders, congenital heart disease; include diagnostic criteria, current medical and surgical treatment modalities. 2. Discuss pulmonary pathophysiology including but not limited to obstructive and restrictive diseases, pulmonary hypertension, ARDS, pneumonia, cancer; include diagnostic criteria, current medical and surgical treatment modalities. 3. Discuss hepatobiliary and gastrointestinal pathophysiology including but not limited to hiatal hernia, reflux, cancer, ulcer, colitis, cirrhosis, and GI obstructions; include diagnostic criteria, current medical and surgical treatment modalities. 4. Discuss renal pathophysiology including but not limited to acute kidney disease, chronic renal failure, and cancer; include diagnostic criteria, current medical and

		surgical treatment modalities. 5. Discuss neurologic pathophysiology including but not limited to dementia, stroke, TIA, brain and spinal cord injury and lesions, discuss intracranial pressure dynamics; include diagnostic criteria, current medical and surgical treatment modalities. 6. Discuss endocrine pathophysiology including but not limited to diabetes mellitus, hyper- and hypothyroidism, pheochromocytoma, hyper- and hypoparathyroidism, and acromegaly. 7. Discuss other pathophysiologic disorders including malignant hyperthermia, rhabdomyolysis, multiple sclerosis, amyotrophic lateral sclerosis, and myasthenia gravis.
BIO 519 Advanced Neuroscience	E.2.2 – Content: Advanced Physiology and Pathophysiology E.2.2 – Content: Acute and Chronic Pain	At the completion of the course the student should demonstrate the ability to: 1. Describe, identify, and explain the neuroanatomical systems related to perception, sleep, arousal, and memory. 2. Explain the neurophysiological basis of perception (including pain), sleep, arousal, and memory.

		3. Summarize the known biochemical actions of anesthetic agents and drugs of abuse in neurophysiology.
BIO 525 Advanced Physical Health Assessment	D.8 - Perform a comprehensive history and physical assessment D.15 - Perform a preanesthetic assessment before providing anesthesia services. D.16 - Assume responsibility and accountability for diagnosis. D.19 - Interpret and utilize data obtained from noninvasive and invasive monitoring modalities. D.25 - Utilize interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.27 - Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of inter-professional care. D.49 - Use information systems/technology to support and improve patient care. E.2.1 – Course: Advanced Health Assessment E.2.2 – Content: Advanced Health Assessment E.2.2 – Content: Radiology E.2.2 – Content: Ultrasound E.2.2 – Content: Informatics	Upon completion of this course, the nurse anesthesia student should be able to do the following: 1. Describe the role of the Certified Registered Nurse Anesthetist (CRNA) in the advanced physical health assessment process across the lifespan by eliciting a comprehensive health history while incorporating the bio-psychosocial, environmental, and cultural factors that enhance or impede an individual's health. 2. Develop competency in physical exam techniques for all body systems. 3. Demonstrate competency in documenting and verbally describing the findings of the comprehensive health history and physical examination in a format appropriate to accurate communication in the multi-disciplinary health care setting. 4. Analyze and interpret data gathered during the health assessment including accessing and interpretation of lab data and selected specialty examinations

		such as pulmonary function studies, chest X-rays, 12-lead EKGs, and cardiology studies. 5. Apply research findings related to health assessment.
BIO 528 Advanced Pharmacology	E.2.1 – Course: Advanced Pharmacology E.2.2 – Content: Advanced Pharmacology	At the completion of the course the student should demonstrate the ability to: 1. Discuss advanced pharmacologic concepts such as pharmacodynamics, pharmacokinetics, half-life, context sensitive half-time, tachyphylaxis, tolerance, anaphylaxis and anaphylactoid reactions. 2. Discuss the pharmacology, indications, contraindications, adverse effects and use of the following categories of anesthetic agents: opioids, benzodiazepines, anticholinergics, anticholinesterases, muscle relaxants, inhaled anesthetic agents, sympathomimetics, sedatives, tranquilizers, anti-emetics, local anesthetics and others. 3. Discuss other pharmacologic agents of importance to Nurse Anesthesia Practice such as antibiotics, chemotherapeutic drugs, anticoagulants, antithrombotics, antifibrinolytics, anti-inflammatories,

		antidepressants, antihypertensives and vasoactive agents.
BIO 530 Immunology	E.2.2 – Content: Advanced Physiology and Pathophysiology E.2.2 – Content: Genetics	At the completion of the course the student should demonstrate the ability to: 1. Describe the steps of inflammation and the cells, chemical mediators, and cell membrane receptors involved in migration of neutrophils or lymphocytes from blood vessels. 2. Compare and contrast: innate and adaptive immunity; active and passive immunity; humoral and cell-mediated immunity; and classical, alternate, and lectin complement pathways. 3. Discuss the major histocompatibility complex (MHC) antigens and genes including the roles of class I and class II MHC restriction of immune responses, restriction of killing, and rejection of transplanted organs or tissues. 4. List classes of and functions of immunoglobulins in antibody-mediated immune responses. 5. Outline the steps necessary to stimulate B cells for antibody production and T cells (TH and Tc cells) for cell-mediated responses, including cell-to-cell interactions and chemical mediators

		(cytokines) necessary for activation, proliferation and differentiation, and isotype switching in B cells. 6. Discuss the genetic basis for diversity in the specificity of antibody and the difference between germline DNA and mature B cell DNA that codes for antibody. 7. Explain the role of the cyclooxygenase and leukotriene pathways of arachidonic acid metabolism in inflammatory reactions and other immune responses. 8. Integrate information about inflammation, antibody-mediated and/or cell-mediated immune responses when discussing: a. hyperacute, acute, and chronic transplant rejection b. four major types of hypersensitivities c. defects in the immune system caused by HIV infection and the major symptoms of AIDS d. organ-specific and nonorgan specific (systemic) autoimmune diseases e. blood type incompatibilities; and hemolytic disease of the newborn

BIO 598 Research in Biology	E.2.2 – Content: Research E.2.2 – Content: Integration/Clinical Correlation	At the completion of the course the student should demonstrate the ability to: 1. Compare and contrast basic statistical techniques and research design common to research in the biological sciences, including measures of central tendency, t-tests, ANOVA, correlation analysis, regression analysis, and nonparametric statistics. 2. Interpret scientific results in published scientific papers. 3. Use computer software to apply proper statistical analyses to data sets 4. Prepare a written report that requires explanation of research design, organization of complicated data sets, proper analysis of data, interpretation of the results, and presentation of the results.
BIO 725 Bioethics in Nurse Anesthesia	D.33 - Adhere to the Code of Ethics for the Certified Registered Nurse Anesthetist. D.35 - Apply ethically sound decision-making processes. E.2.2 – Content: Professional Role Development E.2.2 – Content: Ethical and Multicultural Healthcare	At the completion of the course the student should demonstrate the ability to: 1. Identify the ethical problems and obligations that clinicians and patients face most frequently in health care. 2. Describe the history of these obligations and problems and see them as opportunities to enhance patient and family care.

		3. Use a case method approach in planning, deliberating, and resolving ethical problems or conflict. 4. Evaluate the services within an organizational ethics program and how to participate in these services.
BIO 730 Human Factors and Patient Safety for Nurse Anesthetists	D.1 – Be vigilant in the delivery of patient care. D.2 - Refrain from engaging in extraneous activities that abandon or minimize vigilance while providing direct patient care (e.g., texting, reading, emailing, etc.). D.4 - Protect patients from iatrogenic complications. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.29 - Transfer the responsibility for care of the patient to other qualified providers in a manner that assures continuity of care and patient safety. E.2.2 – Content: Research E.2.2 – Content: Professional Role Development E.2.2 – Content: Integration/Clinical Correlation	At the completion of the course the student should demonstrate the ability to: 1. Discuss contemporary research in terms of its applicability to patient safety issues and concerns that occur in the setting of patient care. 2. Demonstrate confidence in being an evidence-based advocate of patient safety. 3. Assess the meaning and utility of the construct “patient safety.” 4. Engender a “culture of safety” within the workplace. 5. Apply patient safety constructs to actual practice. 6. Demonstrate the ability to analyze critical incidents using root cause analysis methods. 7. Appraise the worth of the “blunt end / sharp end” model as it applies to the consideration of patient safety. 8. Evaluate the use of simulation as an integral part of anesthesia crisis resource management.

BIO 736 Evidence-based Practice and Biostatistics	D.13: Apply knowledge to practice in decision making and problem solving D.14: Provide nurse anesthesia services based on evidence-based principles. D.23: Use science-based theories and concepts to analyze new practice approaches. D. 45: Analyze health outcomes in a variety of populations. D.46 - Analyze health outcomes in a variety of clinical settings. D.47 - Analyze health outcomes in a variety of systems. D.48 - Disseminate research evidence. E.2.2 – Content: Research E.2.2 –Content: Informatics E.2.2 – Content: Integration/Clinical Correlation	At the completion of the course the student should demonstrate the ability to: 1. Determine the appropriate statistics to answer research questions and hypotheses. 2. Demonstrate use of correct and appropriate formulas and computations of descriptive, inferential, and correlational methods using statistical analysis software such as SPSS. 3. Apply descriptive, inferential, and correlational methods to solve practical problems encountered in behavioral, social science, and medical research. 4. Compare and contrast statistical and practical significance of research results among populations, clinical settings and systems. 5. Evaluate, critique and discuss the statistical analyses in current anesthesia literature.
BIO 739 Advanced Topics in Pharmacology	D.13 - Apply knowledge to practice in decision making and problem solving. D.14 - Provide nurse anesthesia services based on evidence-based principles. D.17 - Formulate an anesthesia plan of care before providing anesthesia services. D. 23 - Use science-based theories and concepts to analyze new practice approaches.	At the completion of the course the student should demonstrate the ability to: 1. Establish intra-operative pain management techniques as part of the anesthesia plan taking into consideration patient factors including pharmacogenetics, prior opioid exposure, surgical

	E.2.1 Course: Advanced Pharmacology E.2.2: Content: Advanced Pharmacology E.2.2 – Content. Genetics E.2.2 – Content. Acute and Chronic Pain Management E.2.2 – Integration/Clinical Correlation	and environmental factors. 2. Design acute post-surgical pain management including but not limited to use of opioids, non-steroidal anti-inflammatories, local anesthetics, and NMDA antagonists. 3. Synthesize chronic pain management including but not limited to non-opioid medications and regional blocks. 4. Develop anesthesia techniques for various patient problems and co-morbidities such as PONV, delayed emergence, malignant hyperthermia, and pseudocholinesterase deficiency. 5. Describe the impact of genetics on pharmacokinetics and pharmacodynamics of various agents. 6. Integrate current anesthesia literature into anesthesia care planning.
BIO 740 Leadership in Nurse Anesthesia Education	D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.30 – Teach others D.31 - Integrate critical and reflective thinking in his or her leadership approach. D.32 - Provide leadership that facilitates intraprofessional and inter-professional collaboration.	At the completion of the course the student should demonstrate the ability to: 1. Describe significant characteristics of adults as learners in the classroom and clinical environment. 2. Analyze factors that promote and inhibit adult learning with a focus on multicultural and generational factors.

	E.2.2 – Content. Ethical and Multicultural Healthcare E.2.2 – Content. Leadership and Management Standard B.17 - Core CRNA program faculty, including the program administrator, assistant program administrator, and course directors, have formal instruction in curriculum, evaluation, and instruction	3. Compare and contrast characteristics of effective clinical instruction in nurse anesthesia. 4. Assess the utility of selected teaching/learning theories and methods for classroom and clinical instruction in nurse anesthesia. 5. Develop effective teaching strategies pertinent to nurse anesthesia education, and continuing education for CRNAs. 6. Evaluate various technologies to enhance adult learning. 7. Develop and evaluate course curriculum. 8. Analyze current and future trends in nurse anesthesia education. 9. Demonstrate leadership and management techniques that facilitate intraprofessional and inter-professional collaboration.
BIO 742 Advanced Topics in Nurse Anesthesia	D.38 - Provide anesthesia services to patients in a cost-effective manner. D.40 - Inform the public of the role and practice of the CRNA. D.41 - Evaluate how public policy making strategies impact the financing and delivery of healthcare. D.42 - Advocate for health policy change to improve patient care. D.43 - Advocate for health policy change to advance the specialty of nurse anesthesia.	At the completion of the course the student should demonstrate the ability to: 1. Analyze the issues behind current health policy developments. 2. Follow currents trends in epidemiology using national data bases and their relation to health care policy. 3. Monitor current quality measures and their relation to patient outcomes.

	D.44 - Analyze strategies to improve patient outcomes and quality of care. D.49 - Use information systems/technology to support and improve patient care. D.50 - Use information systems/technology to support and improve healthcare systems. D.51 - Analyze business practices encountered in nurse anesthesia delivery settings. E.2.2 Content: Professional Role Development E.2.2 Content: Leadership and Management E.2.2 Content: Business of Anesthesia/Practice management E.2.2 Content: Health Policy E.2.2 Content: Healthcare Finance E.2.2 Content: Informatics	4. Define the concept of "big data". 5. Examine and develop possible strategies for influencing health policy. 6. Understand the conditions required for health policies to be enacted into law. 7. Evaluate political, economic, business and health care issues impacting nurse anesthesia practice. 8. Present cogent arguments for health policy change. 9. Discuss the various aspects of the US health care delivery system from select theoretical frameworks as they translate into practice with emphasis on models of anesthesia delivery. 10. Use theories to design, influence, and implement health care policies that frame health care financing, anesthesia practice regulation, access, safety, quality, and efficacy; employing leadership skills to meet the challenges of an increasingly complex discipline. 11. Analyze and synthesize relevant scientific literature about the effects of changing health care reforms on the organization and delivery of anesthesia services. 12. Advocate for health policy change to improve patient care.

		13. Advocate for health policy change to advance the specialty of Nurse Anesthesia
BIO 745 Doctoral Capstone Project I	D.13 - Apply knowledge to practice in decision making and problem solving. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.30 – Teach others D.31 - Integrate critical and reflective thinking in his or her leadership approach. D.32 - Provide leadership that facilitates intra-professional and inter-professional collaboration. D.34 - Interact on a professional level with integrity. D.44 - Analyze strategies to improve patient outcomes and quality of care. D.48 - Disseminate research evidence. E.2.2 Content: Research E.2.2 Content: Professional Role Development E.2.2 Content: Informatics E.2.2 Content: Integration/Clinical Correlation	Course Outcomes: At the completion of the course the student should demonstrate the ability to: 1. Reflect on events that have shaped your professional practice to identify an interest for a capstone project. 2. Conduct a literature search to develop the capstone proposal. 3. Identify areas where intra-professional and inter-professional collaboration is applicable.
BIO 746 Doctoral Capstone Project II	See BIO 745	At the completion of the course the student should demonstrate the ability to: 1. Refine the proposal as needed. 2. Develop and submit the final capstone project including a deliverable such as poster, paper, journal article,

		educational program, or tool for use in practice. 3. Demonstrate clinical expertise in an area of nurse anesthesia practice through project deliverable.
BIO 747 Doctoral Capstone Project III	See BIO 745 and BIO 746	See BIO 745 and BIO 746
ANES 500 Basic Principles of Nurse Anesthesia Practice	D.4 - Protect patients from iatrogenic complications. D.12 – Maintain ACLS and PALS D. 20 – Calculate, initiate and manage fluid and blood component therapy. E.2.1 Courses: Basic Principles E.2.2 Content: Basic Principles E.2.2 Content: Physics E.2.2 Content: Ultrasound E.2.2 Content: Anesthesia Equipment E.2.2 Content: Integration/Clinical Correlation	At the completion of the course the student should demonstrate the ability to: 1. Perform a preoperative history and physical and plan an anesthetic that minimizes the perioperative morbidity and mortality associated with various comorbidities and surgical procedures. 2. Apply the goals of IVF replacement and blood component therapy to calculate and plan IV fluid and blood component therapy, including indications, contraindications, and adverse effects. 3. State the standard for monitoring hemodynamics, temperature, and audible alarm usage in the operating room. 4. Identify the components of the anesthesia machine using the supply-processing-delivery-disposal model; include the high, intermediate, and low pressure systems. 5. Assess acid-base disturbances by

		evaluating: pH, p_aCO_2, and HCO_3^- and differentiate between acute and chronic respiratory compensation and anion gap and non-anion gap acidosis. Suggest management and treatment options for acid-base disturbances. 6. Discuss critical information required for a safe transition of care or "hand off" to another anesthesia provider or the PACU nurse. 7. Identify a patient's level of comfort using pain scores or the visual analog scale; identify the harmful effects of unrelieved pain. Identify common PACU issues and management, including pain, postoperative nausea and vomiting, hemodynamic instability, and respiratory distress. State the criteria of the Aldrete score required for discharge from the PACU. 8. Identify the anatomy and physiology of the airway, including developmental anatomy. Compare and contrast the Mallampati classification system and the Cormack and Lehane grading system. Discuss basic airway equipment. 9. Discuss the indications, contraindications, use of ultrasound and side

		effects for major regional anesthesia and peripheral nerve blocks.
ANES 501 Advanced Principles of Nurse Anesthesia Practice I	D.3 – Conduct a comprehensive equipment check D.4 – Protect patients from iatrogenic complications. D.5 - Provide individualized care throughout the perianesthesia continuum. D.6 - Deliver culturally competent perianesthesia care D.7 - Provide anesthesia services to all patients across the lifespan D.9 - Administer general anesthesia to patients with a variety of physical conditions. D.10 - Administer general anesthesia for a variety of surgical and medically related procedures. D.11 - Administer and manage a variety of regional anesthetics. D. 13 – Apply knowledge to practice in decision-making and problem solving. D.14 - Provide nurse anesthesia services based on evidence-based principles. D.17 - Formulate an anesthesia plan of care before providing anesthesia services. D.18 - Identify and take appropriate action when confronted with anesthetic equipment-related malfunctions. D.19 - Interpret and utilize data obtained from noninvasive and invasive monitoring modalities. D. 20 – Calculate, initiate and manage fluid and blood component therapy. D.21 - Recognize, evaluate, and manage the physiological responses coincident to the provision of anesthesia services.	At the completion of the course the student should demonstrate the ability to: 1. Perform a comprehensive anesthesia machine check; identify an anesthetic equipment failure/malfunction and resolve the issue. Apply basic principles of physics to flow, resistance, heat, electricity, pressure, volume and safety. 2. Plan and discuss the anesthetic (general, regional, MAC) for a variety of comorbidities and surgical procedures, including cardiac, thoracic, pediatric, obstetric, neurologic, vascular, gynecologic, urologic, and ophthalmic using evidence-based principles. 3. Interpret and apply data from noninvasive and invasive monitoring technology to guide patient care and outcomes. 4. Discuss critical information required for a safe transition of care or “hand off” to another anesthesia provider or the PACU nurse. 5. Apply the goals of IVF replacement and blood component therapy to calculate, initiate and manage fluid and blood

	D.22 - Recognize and appropriately manage complications that occur during the provision of anesthesia services. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.29 - Transfer the responsibility for care of the patient to other qualified providers in a manner that assures continuity of care and patient safety. E.2.1 Course: Basic and Advanced Principles E.2.2 Content: Basic and Advanced Principles E.2.2 Content: Physics E.2.2 Content: Anesthesia Equipment	component therapy, including indications, contraindications, and adverse effects. 6. Understand the principles of radiology, radiologic safety and ultrasound; demonstrate practical understanding of radiologic studies e.g. chest x-ray, CT scan or thorax, magnetic resonance imaging of thorax, spine, central nervous system; and ultrasound as applied to vascular and neurologic imaging. 7. Recognize, evaluate, and manage the physiological responses coincident to the provision of anesthesia services. 8. Recognize and appropriately manage complications that occur during the provision of anesthesia services. 9. Use science-based theories and concepts to analyze new practice approaches.
ANES 502 Advanced Principles of Nurse Anesthesia Practice II	Continuation of ANES 501 See ANES 501	See ANES 501
ANES 515 Professional Aspects of Nurse Anesthesia Practice	D.1 – Be vigilant in the delivery of patient care. D.2 - Refrain from engaging in extraneous activities that abandon or minimize vigilance while providing direct patient care (e.g., texting, reading, emailing, etc.). D.27 - Respect the dignity and privacy of patients while	At the completion of the course the student should demonstrate the ability to: 1. State the AANA Standards of Care, Scope of Practice and Code of Ethics for the Certified Registered Nurse Anesthetist and

	maintaining confidentiality in the delivery of inter-professional care. D.28 - Maintain comprehensive, timely, accurate, and legible healthcare records. D.29 - Transfer the responsibility for care of the patient to other qualified providers in a manner that assures continuity of care and patient safety. D.33 - Adhere to the Code of Ethics for the Certified Registered Nurse Anesthetist. D.34 - Interact on a professional level with integrity. D.35 - Apply ethically sound decision-making processes. D.36 - Function within legal and regulatory requirements. D.37 - Accept responsibility and accountability for his or her practice. D.39 - Demonstrate knowledge of wellness and chemical dependency in the anesthesia profession through completion of content in wellness and chemical dependency E.2.2 – Content: Professional Role Development E.2.2 – Content: Chemical Dependency and Wellness	apply these principles to actual practice. 2. Identify the differences in Scope of Practice between RN and APRN licensure; state the requirements for APRN licensure in CT. 3. Discuss AANA current Practice Guidelines and Position Statements including but not limited to ethical decision making, social media, patient confidentiality, HIPAA, documentation. 4. Discuss critical information required for a safe transition of care or “hand off” to the PACU or ICU nurse. 5. Define the incidence of substance abuse and chemical dependency in the anesthesia profession; list causative and preventive factors; discuss issues related to return to practice. 6. Identify stressors in personal and professional life; discuss wellness concepts. 7. Define and discuss concepts e.g. professionalism, responsibility, accountability, integrity and vigilance. 8. Discuss the AANA as the professional organization, including its history, role, advocacy and benefits of membership. 9. Identify the critical components of the anesthesia record and

		other medical-legal documentation; demonstrate accurate, timely and legally defensible charting. 10. Discuss the business of anesthesia including reimbursement, liability insurance, licensure, credentialing, contracts, anesthesia management companies, and various practice settings
ANES 528 Advanced Anesthesia Pharmacology	E.2.1 Course – Advanced Pharmacology E.2.2 – Content: Advanced Pharmacology E.2.2 – Chemistry	At the completion of the course the student should demonstrate the ability to: 1. Discuss in detail the chemical structure, pharmacokinetics, pharmacodynamics, indications, contraindications and doses of intravenous induction agents, and adjuvant drugs e.g. neuromuscular blocking agents, opioids, benzodiazepines, butyrophenones, anticholinergics, anticholinesterases, local anesthetics. 2. Discuss the clinical use of opioids, benzodiazepines, sedatives, and muscle relaxants in infusions and TIVA techniques. 3. State the stages of anesthesia and the physiologic alterations associated with each stage. 4. Discuss theories of narcosis and the associated physiologic alterations.

		5. Discuss in detail the uptake, distribution and clinical use of inhaled anesthetic agents. 6. Compare and contrast various methods of induction of anesthesia. 7. Delineate the continuum of sedation from light sedation through general anesthesia; analyze the pros and cons of various levels of sedation. 8. Discuss in detail the clinical use of muscle relaxants and reversals.
ANES 590 Clinical Correlation Conferences	D.13 - Apply knowledge to practice in decision making and problem solving. D.17 - Formulate an anesthesia plan of care before providing anesthesia services. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.30 - Teach others. D.34 - Interact on a professional level with integrity. D.48 - Disseminate research evidence. E.2.2 – Content: Integration/Clinical Correlation	At the completion of the course the student should demonstrate the ability to: 1. Plan, research and formally deliver an approved anesthesia related topic to an anesthesia provider audience utilizing visual aids such as PowerPoint. 2. Participate in anesthesia clinical conferences with colleagues. 3. Present selected current anesthesia literature to colleagues regarding an anesthesia topic of interest in a group setting. 4. Present an interesting patient case to colleagues in a group setting, and explain applicable evidence-based science to the plan of care.
ACP 730, 731, 732 Anesthesia Clinical Practicum I, II, III	D.1 – Be vigilant in the delivery of patient care. D.2 - Refrain from engaging in extraneous activities that abandon or minimize vigilance	At the completion of the course the student should demonstrate the ability to: 1. Assemble, test, and operate needed

	while providing direct patient care (e.g., texting, reading, emailing, etc.). D.3 - Conduct a comprehensive equipment check. D.4 - Protect patients from iatrogenic complications. D.5 - Provide individualized care throughout the perianesthesia continuum. D.6 - Deliver culturally competent perianesthesia care D.7 - Provide anesthesia services to all patients across the lifespan D.8 - Perform a comprehensive history and physical assessment D.9 - Administer general anesthesia to patients with a variety of physical conditions. D.10 - Administer general anesthesia for a variety of surgical and medically related procedures. D.13 - Apply knowledge to practice in decision making and problem solving. D.14 - Provide nurse anesthesia services based on evidence-based principles. D.15 - Perform a preanesthetic assessment before providing anesthesia services. D.17 - Formulate an anesthesia plan of care before providing anesthesia services. D.18 - Identify and take appropriate action when confronted with anesthetic equipment-related malfunctions. D.19 - Interpret and utilize data obtained from noninvasive and invasive monitoring modalities. D.21 - Recognize, evaluate, and manage the physiological responses coincident to the provision of anesthesia services.	equipment for anesthesia administration. 2. Identify and take appropriate action when confronted with anesthetic equipment-related malfunctions. 3. Interpret pertinent laboratory and diagnostic studies. 4. Assume responsibility and accountability for diagnosis in collaboration with healthcare team. 5. Formulate an anesthetic care plan responsive to age, physiological, emotional, intellectual and cultural variables as well as the surgical procedure. 6. Implement a variety of anesthetic techniques and agents. 7. Administer anesthesia to patients across the lifespan. 8. Administer anesthesia to patients with a variety of pathology undergoing a variety of surgical procedures including emergency and trauma. 9. Administer a variety of general, regional, and monitored anesthesia care anesthetic techniques. 10. Manage anesthesia administration from induction through emergence. 11. Manage blood and fluid therapy.

	D.22 - Recognize and appropriately manage complications that occur during the provision of anesthesia services. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.25 - Utilize interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.27 - Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of inter-professional care. D.28 - Maintain comprehensive, timely, accurate, and legible healthcare records. D.29 - Transfer the responsibility for care of the patient to other qualified providers in a manner that assures continuity of care and patient safety. D.33 - Adhere to the Code of Ethics for the Certified Registered Nurse Anesthetist. D.34 - Interact on a professional level with integrity. D.35 - Apply ethically sound decision-making processes. D.36 - Function within legal and regulatory requirements. D.37 - Accept responsibility and accountability for his or her practice.	12. Monitor a wide range of patient parameters as indicated by patient condition and surgical procedure. 13. Anticipate, recognize and appropriately respond to peri-operative anesthetic complications. 14. Maintain a comprehensive, legal record. 15. Use universal precautions and infection control measures specific to the practice of nursing anesthesia. 16. Provide patient advocacy and promote patient safety. 17. Apply knowledge to practice in decision-making and problem solving. 18. Use theory and scientific principles to guide clinical practice. 19. Utilize interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families 20. Collaborate verbally, nonverbally and in writing with other health care providers in peri-operative anesthesia delivery, pain management, and critical care services. 21. Function within appropriate legal requirements as a

	D.38 - Provide anesthesia services to patients in a cost-effective manner. D.40 - Inform the public of the role and practice of the CRNA. D.49 - Use information systems/technology to support and improve patient care.	registered professional nurse, accepting responsibility for his/her practice. 22. Promote and participate in activities and continuing education that improve anesthesia care and his/her own practice. 23. Integrate research findings into practice. 24. Integrate ethical principles into clinical practice. 25. Administer culturally competent nurse anesthesia care. 26. Interact on a professional level with integrity. 27. Assume active participation in the resuscitative team and maintain BLS, ACLS and PALS certification. 28. Use information systems and technology to support and improve patient care and healthcare outcomes.
ACP 733, 734, 735 Advanced Anesthesia Clinical Practicum I, II, III	D.14 - Provide nurse anesthesia services based on evidence-based principles. D.23 - Use science-based theories and concepts to analyze new practice approaches. D.26 - Utilize interpersonal and communication skills that result in the effective inter-professional exchange of information and collaboration with other healthcare professionals. D.31 - Integrate critical and reflective thinking in his or her leadership approach.	1. Reflect on professional practice and document activities related to practice such as clinical hours, education, management, leadership and other related professional pursuits 2. Prepare a written, publication-quality, case-study documenting an evidence-based approach to management of an anesthesia-related topic with potential for

	D.32 - Provide leadership that facilitates intra-professional and inter-professional collaboration. D.35 – Apply ethically sound decision making processes. D.40 – Inform the public of the role and practice of the CRNA	submission for publication. 3. Evaluate personal achievement of doctoral program objectives through written reflections. 4. Complete a professional Curriculum Vita in anticipation of doctoral degree completion. 5. Completion of a minimum of 600 hours of clinical or related practice by the completion of the ACP courses [for Advanced Specialization students only]. 6. Completion of minimal case numbers and clinical hours as delineated by COA by the completion of all 6 ACP courses [for entry-level students only]. 7. Be eligible to sit for the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA) certification exam in accordance with policies and procedures of the certifying body (for entry-level students only).

Appendix F. Taskstream Reports for Assessment

Report : Performance by Standards Report
Report Generated by Taskstream
DRF Template(s) : CCSU DNAP Entry Level Template
Program(s) : DNAP (Entry Level) Class of 2020
Date Range : Evaluations completed between: 08/28/2017 - 01/31/2018
 # Authors: 16 Authors matched search criteria
Report Generated : Friday, February 02, 2018

Indicator: 2. 2. Content: Advanced Physiology/Pathophysiology (120 contact

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Analysis **Folio Area:** Didactic Phase: Chem 550 Reflection (Summer 1) **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=3.38/4 (84.38%)	
Analysis **Folio Area:** Didactic Phase: Bio 517 Reflection (Summer 1) **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=1.88/3 (62.50%)	
Theory **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=56.44/60 (94.06%)	
Average of 3 Criterion Averages		**80.31%**	

Standard: 23.Use science-based theories and concepts to analyze new practic

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Critical thinking **Folio Area:** Didactic Phase: Bio 528 Article Abstract **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=19.38/20 (96.88%)	
Average of 1 Criterion Average		**19.38/20 (96.88%)**	

Standard: 30.Teach others.

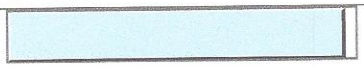
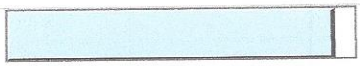
Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Critical thinking **Folio Area:** Didactic Phase: Bio 528 Article Abstract	16 of 16 (100%)	**Avg.**=19.38/20 (96.88%)	

DRF Template: CCSU DNAP Entry Level Template			
Average of 1 Criterion Average		**19.38/20 (96.88%)**	

Standard: 33.Adhere to the Code of Ethics for the Certified Registered Nurs

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Summary/Critique **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=57.44/60 (95.73%)	
Average of 1 Criterion Average		**57.44/60 (95.73%)**	

Standard: 34.Interact on a professional level with integrity.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Critical thinking **Folio Area:** Didactic Phase: Bio 528 Article Abstract **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=19.38/20 (96.88%)	
Review of Literature **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=56.63/60 (94.38%)	
Average of 2 Criterion Averages		**95.63%**	

Standard: 35.Apply ethically sound decision-making processes.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Summary/Critique **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=57.44/60 (95.73%)	
Theory **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Entry Level Template	16 of 16 (100%)	**Avg.**=56.44/60 (94.06%)	
Average of 2 Criterion Averages		**56.94/60 (94.90%)**	

AVERAGE FOR ALL CRITERIA		**91.15%**	

Report: Final Scores for Folio Area: Didactic Phase; Bio 725 Ethics Book Review

Report Generated by Taskstream

DRF Template: CCSU DNAP Entry Level Template

Used in Program: DNAP (Entry Level) Class of 2020

 # Authors: 16 Authors matched search criteria

Report Generated: Friday, February 02, 2018

Author	Final Score Max = 300	Rubric: Bio 725 Paper Rubric					Average Rubric Score	Last Submission Date
		Criterion 1 Summary/Critique	Criterion 2 Review of Literature	Criterion 3 Theory	Criterion 4 Quality of information Grammar and spelling	Criterion 5 Organization		
BVGLS-433311	274.00	53.00	54.00	58.00	54.00	55.00	54.80	12/20/2017
CGQZU-433323	264.00	55.00	51.00	53.00	51.00	54.00	52.80	12/06/2017
DYUYG-433308	275.00	55.00	58.00	52.00	55.00	55.00	55.00	12/06/2017
GARIL-433325	282.00	58.00	56.00	52.00	58.00	58.00	56.40	12/06/2017
GBVGB-433321	291.00	58.00	58.00	59.00	58.00	58.00	58.20	12/29/2017
JVKJT-433304	288.00	57.00	55.00	58.00	59.00	59.00	57.60	01/06/2018
KTVLX-433312	97.00	58.00	58.00	58.00	59.00	59.00	58.40	01/17/2018
LCARP-433314	288.00	58.00	58.00	58.00	58.00	56.00	57.60	01/07/2018
OSKJX-433305	291.00	60.00	59.00	54.00	59.00	59.00	58.20	01/07/2018
PVDDI-434013	296.00	60.00	60.00	58.00	59.00	59.00	59.20	12/29/2017
PVXQT-433319	293.00	59.00	60.00	58.00	57.00	59.00	58.60	01/07/2018
RVEKE-433309	291.00	58.00	57.00	58.00	59.00	59.00	58.20	12/07/2017
UHEZV-433410	289.00	60.00	52.00	59.00	58.00	60.00	57.80	12/29/2017
VSBHU-433317	94.00	58.00	59.00	57.00	52.00	55.00	56.20	01/15/2018
XUQUL-433324	288.00	57.00	58.00	58.00	57.00	58.00	57.60	12/06/2017
ZXEES-433303	265.00	55.00	53.00	53.00	51.00	53.00	53.00	01/05/2018
AVERAGE FOR GROUP	260.38	57.44	56.63	56.44	56.50	57.25	56.85	

Report : Performance by Standards Report
Report Generated by Taskstream
DRF Template(s) : CCSU DNAP Advanced Specialization Template
Program(s) : DNAP (Advanced Specialization) Class of 2019
Date Range : Evaluations completed between: 08/28/2017 - 01/31/2018
 # Authors: 8 Authors matched search criteria
Report Generated : Friday, February 02, 2018

Indicator: 2. 2. Content: Advanced Physiology/Pathophysiology (120 contact

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Review of Literature **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=55.88/60 (93.13%)	
Theory **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=55.38/60 (92.29%)	
Problem Identification **Folio Area:** Didactic Phase: Bio 740 Abstract **DRF Template:** CCSU DNAP Advanced Specialization Template	7 of 8 (87.5%)	**Avg.**=18.43/20 (92.14%)	
Theory **Folio Area:** Didactic Phase: Bio 740 Leadership Paper **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=54.88/60 (91.46%)	
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 5 Criterion Averages		**93.24%**	

Standard: 30.Teach others.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Theory **Folio Area:** Didactic Phase: Bio 740 Abstract **DRF Template:** CCSU DNAP Advanced Specialization Template	7 of 8 (87.5%)	**Avg.**=17.86/20 (89.29%)	
Problem Identification	8 of 8 (100%)		

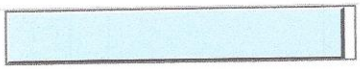
Folio Area: Didactic Phase: Bio 740 Leadership Paper **DRF Template:** CCSU DNAP Advanced Specialization Template		**Avg.**=54.88/60 (91.46%)	
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Oral presentation **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 4 Criterion Averages		**93.78%**	

Standard: 31.Integrate critical and reflective thinking in his or her leade

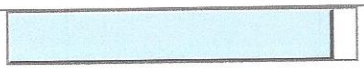
Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Theory **Folio Area:** Didactic Phase: Bio 740 Abstract **DRF Template:** CCSU DNAP Advanced Specialization Template	7 of 8 (87.5%)	**Avg.**=17.86/20 (89.29%)	
Problem Identification **Folio Area:** Didactic Phase: Bio 740 Leadership Paper **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=54.88/60 (91.46%)	
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Oral presentation **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 4 Criterion Averages		**93.78%**	

Standard: 32.Provide leadership that facilitates intraprofessional and inte

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Theory **Folio Area:** Didactic Phase: Bio 740 Abstract **DRF Template:** CCSU DNAP Advanced Specialization Template	7 of 8 (87.5%)	**Avg.**=17.86/20 (89.29%)	

Problem Identification **Folio Area:** Didactic Phase: Bio 740 Leadership Paper **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=54.88/60 (91.46%)	
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Oral presentation **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 4 Criterion Averages		**93.78%**	

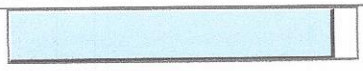
Standard: 33.Adhere to the Code of Ethics for the Certified Registered Nurs

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Summary/Critique **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=56.25/60 (93.75%)	
Average of 1 Criterion Average		**56.25/60 (93.75%)**	

Standard: 34.Interact on a professional level with integrity.

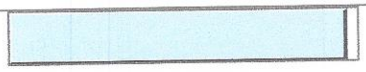
Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Review of Literature **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=55.88/60 (93.13%)	
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 2 Criterion Averages		**95.16%**	

Standard: 35.Apply ethically sound decision-making processes.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Summary/Critique	8 of 8 (100%)		

Folio Area: Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template		**Avg.**=56.25/60 (93.75%)	
Theory **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=55.38/60 (92.29%)	
Average of 2 Criterion Averages		**55.81/60 (93.02%)**	

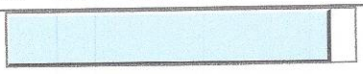
Standard: 40.Inform the public of the role and practice of the CRNA.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 1 Criterion Average		**38.88/40 (97.19%)**	

Standard: 44.Analyze strategies to improve patient outcomes and quality of

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Critical thinking **Folio Area:** Didactic Phase: Bio 740 PWPT and Oral Presentation **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=38.88/40 (97.19%)	
Average of 1 Criterion Average		**38.88/40 (97.19%)**	

Standard: 48.Disseminate research evidence.

Rubric Criteria	Authors evaluated	Results for Group	Graph (avg. for group) 0% 20% 40% 60% 80% 100%
Review of Literature **Folio Area:** Didactic Phase: Bio 725 Ethics Book Review **DRF Template:** CCSU DNAP Advanced Specialization Template	8 of 8 (100%)	**Avg.**=55.88/60 (93.13%)	
Review of Literature **Folio Area:** Didactic Phase: Bio 740 Abstract **DRF Template:** CCSU DNAP Advanced Specialization Template	7 of 8 (87.5%)	**Avg.**=19.29/20 (96.43%)	
Average of 2 Criterion Averages		**94.78%**	

AVERAGE FOR ALL CRITERIA		**94.06%**	

APPENDIX G. List of Faculty able to serve as Chair or Members of DNAP Capstone Projects (alphabetical) (As of January 1, 2018)

Faculty	Credential	Number of capstone projects	
		Chair	member
1. Ann Bassett	CRNA, MS		3
2. Carmen Brown	CRNA, DNAP	2	
3. Marianne Cosgrove	CRNA, DNAP	5	2
4. Christina Feller	CRNA, (DNP May 2018)	?3	3
5. Kelly Gorski	CRNA, DNAP	?2	3
6. Alyson Hart	CRNA, DNP		3
7. Karen Hurd	CRNA, DNP		3
8. Mark Jackson	PhD	5	2
9. Jeremiah Jarrett	PhD	2	
10. Sadie Marjani	PhD	2	
11. Peter Osei	PhD	2	
12. Ashley Phillips	CRNA, DNAP	?3	3
13. Rachel Rachler	CRNA, DNAP	5	2
14. Holly-May Robins	CRNA, MBA, DNAP	2	
15. Ruth Rollin	PhD	5	2
16. Erin Ryan	CRNA, DNAP	2	
17. Misty Scoggins	CRNA, DNAP	3	
18. David Spector	PhD	2	
19. Stephanie Stewart	CRNA, MS		3
20. Terri Williams	CRNA, DNAP	5	2
21. José Alberto Rodriguez	CRNA, DNP	5	2
Total		42 ?50	33

University requires doctorally prepared faculty to be Capstone Committee Chairs. Committee Members (Second readers) may have master's degrees.
We'll have:

10 entry-level SRNAs in Hartford's program
10 entry-level SRNAs in Yale's program
Up to 10 completion degree CRNAs from Hartford and Yale
30 capstone projects/year

As of 2018, we have 18 doctorally prepared faculty who can act as Committee Chairs plus 3 masters prepared Committee Members.

There are 5 people who will handle the majority of work as Committee Chairs:
Academic Coordinators: 1. Ruth Rollin, PhD; 2. Mark Jackson, PhD; Program Directors: 3. Terri Williams, DNAP; 4. Marianne Cosgrove, DNAP; 5. Rachel Rachler CCSU CRNA DNAP
Each of these 5 people will take *up to* 5 capstone projects per year as chair plus *up to* 2 as committee member (second reader). Other doctorally prepared faculty and CRNAs can take either 2 or 3 depending on their area of expertise.

With the numbers of master's prepared people, we have enough for committee members.

APPENDIX H. Full-time, adjunct, and clinical faculty and courses taught

Faculty	**Status: FT or PT**	**Degree, specialization; institution awarding degree**	**Proposed course assignments**
Ruth Rollin Anesthesia Program Coordinator 21 years	FT	Ph.D. Physiology, Colorado State University; Post-doctoral Research, University North Carolina	BIO 530 Immunology; BIO 517 Advanced Human Anatomy, Physiology, and Pathophysiology; BIO 745, 746, 747, Doctoral Capstone Project I, II, III; Comprehensive Exams
Mark Jackson Anesthesia Program Co-Coordinator 1.5 years	FT	Ph.D. Neuroscience, University of Texas-Dallas; Postdoctoral Research, Psychiatry, Yale University School of Medicine	BIO 517 Advanced Human Anatomy, Physiology, and Pathophysiology; BIO 519 Advanced Neuroscience; BIO 745, 746, 747 Doctoral Capstone Project I, II, III; Comprehensive Exams;
Jeremiah Jarrett	FT	Ph.D. Biology, Tufts University	BIO 598 Research in Biology; BIO 736 Evidence-based Practice and Biostatistics (team-taught) Doctoral Capstone Project I, II, III
Peter Osei	FT	Ph.D. Nutrition, University of Tennessee	BIO 500 Seminar in Biology; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
David Spector	FT	Ph.D. Animal Behavior, University of Massachusetts-Amherst	BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Sadie Marjani	FT	Ph.D. Animal Science, University of Connecticut; Post-doctoral Associate, University of Connecticut; Post-doctoral Fellow: Yale University and Yale University School of Medicine	BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Rachel Rachler	FT	CRNA; DNAP, Virginia Commonwealth University	BIO 528 Advanced Pharmacology (team taught); BIO 518 Advanced Pathophysiology and Applied Physiology (team-taught); BIO 535 Bioethics in Nurse Anesthesia (teach taught); BIO

			740 Leadership in Nurse Anesthesia Education (team-taught); BIO 733, 734,735 Advanced Anesthesia Clinical Practicum I, II for DNAP: Advanced Specialization; BIO 736 Evidence-based Practice and Biostatistics (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Proposed new doctorally-prepared CRNA for 2nd or 3rd year of program	FT	DNAP or DNP	Participate in teaching of 700-level courses and doctoral capstone committees in DNAP Program
Proposed new physiologist, Expected to start Fall 2018	FT	Ph.D.	BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Terri Williams	Program Director of affiliated Nurse Anesthesia Program of Hartford; PT - CCSU	CRNA; DNAP, Virginia Commonwealth University	BIO 730 Human Factors and Patient Safety for Nurse Anesthetists (team-taught); BIO 740 Leadership in Nurse Anesthesia Education (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III; Comprehensive Exams; ANES 502 Advanced Principles of Nurse Anesthesia Practice II (team-taught); ANES 590 Clinical Correlation Conference; Anesthesia Clinical Practicum (ACP) 730, 731, 732, 733, 734, 735 for DNAP: Entry-Level; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Marianne Cosgrove	Program Director of affiliated Yale-New Haven Hospital School of Nurse Anesthesia ; PT - CCSU	CRNA; DNAP, Virginia Commonwealth University	BIO 730 Human Factors and Patient Safety for Nurse Anesthetists (team-taught); BIO 736 Evidence-based Practice and Biostatistics (team-taught); BIO 739 Advanced Topics in Pharmacology (team-taught); ANES 590 Clinical Correlation Conference

			BIO 745, 746, 747 Doctoral Capstone Project I, II, III; Comprehensive Exams; Anesthesia Clinical Practicum (ACP) Anesthesia Clinical Practicum (ACP) 730, 731, 732, 733, 734, 735 for DNAP: Entry-Level; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Christina Feller	Assistant Program Director of affiliated Nurse Anesthesia Program of Hartford; PT - CCSU	CRNA; DNP, Quinnipiac University expected May 2018	ANES 528 Advanced Anesthesia Pharmacology (team-taught); BIO 745, 746, 747, 748 Doctoral Capstone Project I, II, III,IV; BIO 728 Advanced Topics in Pharmacology (team-taught); Anesthesia Clinical Practicum (ACP) 730, 731, 732, 733, 734,735 for DNAP: Entry-Level; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Ashley Philips	Assistant Director of affiliated Yale-New Haven Hospital School of Nurse Anesthesia; PT - CCSU	CRNA; DNAP, Virginia Commonwealth University	BIO 739 Advanced Topics in Pharmacology (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III; Anesthesia Clinical Practicum (ACP) 730, 731, 732, 733, 734, 735 for DNAP: Entry-Level; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Stephanie Stewart	PT	CRNA; M.S. Biological Sciences: Anesthesia, Central Connecticut State University; DNP, Quinnipiac University expected 2019	BIO 528 Advanced Pharmacology (team-taught); ANES 500 Basic Principles of Nurse Anesthesia Practice (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III;
Kelly Gorski Gutauskas	PT	CRNA; DNAP, Texas Wesleyan University	BIO 518 Advanced Pathophysiology and Applied Physiology (team-taught); ANES 500 Basic Principles of Nurse Anesthesia Practice (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III

Misty Scoggins	PT	CRNA; DNAP, Virginia Commonwealth University	BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists (team-taught); ANES 515 Professional Aspects of Nurse Anesthesia Practice; BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Kristen Martinez	PT	FNP, CRNA; M.S. Biological Sciences: Anesthesia, Central Connecticut State University; MSN, Family Nurse Practitioner, Thomas Jefferson University	BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III
David Van Es	PT	M.D., Anesthesiologist	ANES 501 Advanced Principles of Nurse Anesthesia Practice I (team-taught)
Calin Calabrese	PT	CRNA; M.S. Biological Sciences: Anesthesia, Central Connecticut State University	ANES 500 Basic Principles of Nurse Anesthesia Practice (team-taught); ANES 501 Advanced Principles of Nurse Anesthesia Practice I (team-taught); BIO 745, 746, 747 Doctoral Capstone Project I, II, III
Natalie Berardesca	PT	CRNA; M.S. Biological Sciences: Anesthesia, Central Connecticut State University; DNAP – expected 2019	ANES 528 Advanced Anesthesia Pharmacology (team-taught)

Appendix I Curriculum Vitae of Faculty Teaching in DNAP

CURRICULUM VITAE

RUTH E. ROLLIN

Professor
Department of Biology
Central Connecticut State University
New Britain, CT 06050

EDUCATION

Institution	Degree	Date Awarded	Major
Colorado State University	Ph.D.	1984	Physiology
Wright State Univ. (Ohio)	M.S.	1978	Physiology
Ashland University (Ohio)	B.S.	1974	Biology

PROFESSIONAL EXPERIENCE

Institution	Title	Specialties
Central Connecticut State University	Professor, 1996-present Associate Professor, 1991-1996 Assistant Professor, 1986-1991	Physiology/Immunology
Univ. of North Carolina at Chapel Hill	Postdoctoral Fellow, 1984-1986	Epithelial Transport
Colorado State University	Grad. Research Assistant, 1981-1984	Physiology
Ohio Northern University	Instructor, 1978-1981	Physiology/Anatomy/ Biology
Wright State University	Grad. Teaching Assistant, 1976-1978	Physiology/Biology

Courses taught at CCSU

Most recent courses
BIO 318 Anatomy and Physiology I
BIO 319 Anatomy and Physiology II
BIO 413 Human Physiology Laboratory
BIO 414 Human Disease
BIO 530 (416) Immunology
BIO 517 Human Anatomy, Physiology, and Pathophysiology (Summers)

Other courses
BIO 111 Introductory Biology
BIO 112 Introductory Biology Laboratory
BIO 113 Laboratory Experience in Biology
BIO 333 Endocrinology
BIO 417 Immunology Laboratory
BIO 412 Human Physiology

RESEARCH AND CREATIVE ACTIVITY

Research with students

2008-2009

BIO 390 Special Problems in Biology- Kidney function in *shorn* and Sprague Dawley rats

George DellaRose

Khyati Patel

2007-2008

BIO 390 Special Problems in Biology- Kidney function in *shorn* and Sprague Dawley rats

Kimberly Baptiste

Elysia Cerreta

Hui-Chih Cheng

Jacquelyne Dalczynski

Dietzie Medena

Nathan Rodriguez

2006-2007

BIO 390 Special Problems in Biology - Kidney function in *shorn* and Sprague Dawley rats

Khayti Patel

Alyssa Duclos

Khristan Cooper

Thomas Boateng

BIO 491 Advanced Studies in Biology

Samantha Lavertu - Kidney function in *shorn* and Sprague Dawley rats

2005-2006

BIO 390 Special Problems in Biology

Samantha Lavertu - Kidney function in *shorn* and Sprague Dawley rats

2004-2005

BIO 390 Special Problems in Biology

Maliha Nafees - Kidney function in *shorn* and Sprague Dawley rats

2003-2004

BIO 599 Thesis in Biology

Katja Gist. Title: Physiological Characterization of the *Shorn* (shn) mutation in rats.(thesis advisor)

2000-2001

Katja Gist - Oxygen consumption and metabolic rate in *shorn* and Sprague Dawley rats

1999-2000

Katja Gist - Oxygen consumption and metabolic rate in *shorn* and Sprague Dawley rats

Charlene Desline - Oxygen consumption and metabolic rate in *shorn* and Sprague Dawley rats

1998-1999

Brian Wagner - Oxygen consumption of hairless rats

Daisy Rosado - Oxygen consumption of hairless rats

Michael Phaneuf - Oxygen consumption and metabolic rate of hairless rats

Brian Wagner - Oxygen consumption and metabolic rate of hairless rats

1997-1998

Marzuka Khan - Effects of drugs on absorption from the large intestine

1996-1997

Roxanne Levesque - Effects of drugs on absorption from the large intestine
Kristen Close - Effects of drugs on absorption from the large intestine

Advising and Supervision of Students' Literature Research Projects, Internships, and Theses

2016-2017

BIO 599 Thesis

December, 2017. Sarah Jane Yang – Care of the Patient with Spontaneous Intracerebral Hemorrhage (sICH) during Hyperacute, Acute, and Subacute Periods (3 credit thesis; thesis advisor)
May, 2017. Kristen Hasler – Diagnosis of Gestational Diabetes Mellitus (3 credit thesis; thesis advisor)
January, 2017. Walaa A. Alrifai – Combined Disorders of Heart and Kidney: Heart and Kidney Link (3 credit thesis; thesis advisor)

BIO 390 Research Experience II

-Maria Flejter – Interventions to slow progression of myopia in children
-Angelie Hannon – The impact of gestational diabetes mellitus on the mother and offspring

BIO 391 Internship in Biology

-Nicholas Presta – Shadowed physical therapist; Paper topic: Multiple sclerosis.

2014-2015

BIO 599 Thesis

December, 2015. Linh Duong – Comparative Analysis of protocols used in Testing Effects of High Oxygen Culture Conditions on 5-methylcytosine (5mD) and 5-hydroxymethylcytosine (5hmC) Content in Differentially Methylated Regions (DMR) of Imprinted Genes in Bovine in vitro fertilized (IVF) Blastocyts (3 credit thesis; second reader)

BIO 391 Internship in Biology

-Jessica Tuczapski – Shadowed pediatrician in office setting; Paper topic: Cystic fibrosis
-Prapti Desai – Shadowed nurse in general practice clinic; Paper topic: Type II diabetes mellitus

2013-2014

BIO 599 Thesis

December, 2013. Julia Millay – Anesthetic Considerations for the Patient with Diabetes Mellitus Periods (3 credit thesis; thesis advisor)
September, 2013. Shanilla Noorani – Transfusion-Related Acute Lung Injury: History, Anesthetic Implications, and Management Periods (3 credit thesis; thesis advisor)

BIO 390 Research Experience II

-Johnathan Choptij – An in-depth look at corticosteroid treatments for spinal cord injuries and alternative treatment methods

BIO 391 Internship in Biology

-Marcus Deinstadt – Shadowed emergency room physician and a pediatrician

2012-2013

BIO 390 Research Experience II

-Sarah Norris – Designer Babies. The Past, Present, and Future Technologies of Testing for Genetic Disorders
-Katarzyna Plona – Role of Immune System in Solid Organ Transplantation: Immunosuppression current therapies and future approaches

-Lauren Suraci – Advances in Breast Cancer Risk Factors

BIO 391 Internship in Biology

-Angelique Bergado – Shadow cardiologist and learn about hospital pharmacies; Paper topic: Atrial Fibrillation and Pharmaceuticals. Differences in Anticoagulants (2 credit)

-Bonnie Mullally – Internship at physical therapy clinic; Paper topic: Physical Therapy's Evolution of Modalities (2 credit)

2011-2012

BIO 599 Thesis

May, 2012. Erin Smith – Are Certain Risk Factors Associated With Obesity More Prevalent in and Detrimental to African-American Women as Opposed to European-American Women? (3 credit thesis; thesis advisor)

May, 2012. Cynthia Baeza – Oxytocin Deficiencies in Autism Spectrum Disorders: A Review of the Involvement of Oxytocin in the Etiology of Autism and its Possible Therapeutic Benefits (3 credit thesis; second reader)

BIO 390 Special Projects in Biology

Olufunke Abebayo – Gastric Cancer

Shannon Homkovics – Alternative Holistic Medicine

BIO 391 Internship in Biology

Nicolette LaChance – Internship with Surgical Group

2010-2011

BIO 599 Thesis

December, 2010. Margaret Guerrera – The Effects of Hyperoxia on the Lungs of Very Low Birth Weight Infants (3 credit thesis; thesis advisor)

December, 2010. Marie Oge-Nerette - Comparison of Percutaneous Coronary Intervention and Coronary Artery Bypass Graft Surgery in Treating Single and Multi-Vessel Heart Disease (3 credit thesis; thesis advisor)

BIO 390

Brenden Orsi – Pancreatic Islet Cell Transplantation as a Treatment for Type I Diabetes Mellitus

2008-2009

BIO 599 Thesis

October, 2008. Victoria Gagnon - Obstructive Sleep Apnea Syndrome and Associated Health Risks (3 credit thesis; thesis advisor)

BIO 391 Internship in Biology

Erica Lagueux – Internship in dental office

Mahmoud Mahmoud – Internship in dental clinic

BIO 390 Special Problems in Biology

Christel Chase – Vaccines for cervical cancer

2007-2008

BIO 599 Thesis in Biology

Dec., 2007. Katherine Pazdrak - A Critical Analysis of Obesity and its Anesthetic Considerations (3 credit thesis; thesis advisor)

April, 2008. Kathyrn Phoenix – The Role of Activation of AMP-dependent Kinase (AMPK) in Endothelial Cell Proliferation. (3 credit thesis; thesis advisor)

May, 2008. Ronda M. Overdiek - A Comparison of the Incidence and Degree of Postoperative

Myalgia and Muscle Fasciculations Associated with Dose and Duration of Succinylcholine Administration (3 credit thesis; thesis advisor)

May, 2008. Arbella von Walstrom - A Comparison of Cocaine Addiction Models Based on an Integration of Behavioral, Anatomical, and Neurochemical Studies: A Review of Proposed Mechanism on Why Drug Addicts Stay Addicted (3 credit thesis; second reader)

BIO 390 Special Problems in Biology

Rebecca Wiesner - Effects of Food Restriction on Kidney Function

Elysia Cerreta, Jacquelyne Dalcynski, Dietzie Medina, Nathaniel Rodriguez -Effects of Food Restriction on Kidney Function

Kimberly Baptiste and Sajel Lala - Urinary crystals in shn/shn rats

SCI 453 Environmental Interpretation Internship

Nicole Twardy – Internship at Sessions Woods Nature Center

2006-2007

BIO 491 Advanced Studies in Biology

Shannon Hinkle - Kidney Function (3 credits)

BIO 499 Undergraduate Thesis in Biology

Shannon Hinkle - Kidney Failure; Research at Boston Medical Center

BIO 590 Focused Study in Advanced Biology

Victoria Gagnon - Diabetes

BIO 599 Thesis in Biology

April, 2007. Leigh Archambeau - Effects of Pets on Human Health (3 credit thesis; second reader)

2005-2006

BIO 390 Special Problems in Biology

Jennifer Tassy - Histocompatibility Testing for Transplant Matching

BIO 391 Internship in Biology

Timothy Chapados - Comparison of blood glucose in patients undergoing surgery (Hartford Hospital)

2004-2005

BIO 390 Special Problems in Biology

Shawn Mullen - Teaching Life Science to Third and Fourth Grade Students and the Connecticut Common Core of Learning

2003-2004

BIO 599 Thesis in Biology

Brad Biskup - Title: Increases in strength increases functionality in the elderly (3 credit; second reader)

2002-2003

BIO 599 Thesis in Biology

Robert Russo - Title: Muscle fiber recruitment (3 credit thesis; thesis advisor)

2001-2002

BIO 390 Special Problems in Biology

Namakula Rose Edwards - Kidney Damage

BIO 599 Thesis in Biology

Aug., 2002. Barbie Kelly - Title: A comparison of ondansetron and dolasetron in the prevention and treatment of post-operative nausea and vomiting in outpatient anesthesia

(3 credit thesis; second reader)

Publications and Presentations (many with students):

Gist, K., C. Delesline, T. King, and R. Rollin. Comparison of oxygen consumption and basal metabolic rate of hairless and hairy Sprague Dawley rats. Eastern Colleges Science Conference. 2001.

Gist, K.., T. King and R. Rollin. Comparison of O_2 consumption and basal metabolic rates of hairless mutant *shorn* rats (shn/shn) and hairy wild type Sprague Dawley rats (+/+). CCSU Research Day, May 2000.

Delesline, C., T. King, and R. Rollin. Comparison of O_2 consumption and basal metabolic rates of hairless and hairy progeny of backcross (shn/shn x +/+) F1 x shn/shn rats. CCSU Research Day, May 2000.

Wagner, B., M. Phaneuf, D.Rosado, T. King, and R. Rollin. O_2 consumption and basal metabolic rates in *shorn* and Sprague Dawley rats. Eastern Colleges Science Conference. 1999.

Brown, L.D., T. Huynh, H. Ogedegbe, R. Rollin. Rectal absorption of acetaminophen in fed vs. fasted rats. Eastern Colleges Science Conference. 1996.

Crooks, S., C. Henry-Smith, H. Ogedegbe, and R. Rollin. Effects of rectal administration of methohexital on the absorption of acetaminophen from the rectum. Eastern Colleges Science Conference. 1995.

Turner, J, C. Henry-Smith, H. Ogedegbe, and R. Rollin. Acetaminophen absorption via rectal mucosa following rectal administration of methohexital. Eastern Colleges Science Conference. 1995.

Cabrera, Y., D. De Nuccio, and R. Rollin. Effects of rectal administration of water on the absorption of acetaminophen from the rat rectum. Eastern Colleges Science Conference. 1993.

Secor, E., H. Ogedegbe, D. De Nuccio, and R. Rollin. Effects of rectally administered methohexital, a pediatric anesthetic induction agent, on the absorption of acetaminophen. Eastern Colleges Science Conference. 1993.

Rollin, R.E. and A.R. Johnson. Tetracycline effects on disaccharidase activities in the small intestines of young adult and older adult rats. Federation of American Societies for Experimental Biology Journal 5:A1239, 1991.

Johnson, A.R. and R.E. Rollin. Effects of tetracycline on disaccharidase activity in aged rats. Eastern Colleges Science Conference. BIO-29, 1990.

Cote, C. and R.E. Rollin. Effects of oral tetracycline on intestinal mucosal weights, protein, and disaccharidase activities of young and aged rats. Eastern Colleges Science Conference. 1991.

Lepke, D., K. Bunting, and R.E. Rollin. Effects of 1% methohexital, an anesthetic induction agent, and

sterile water on rat rectal mucosa. Eastern Colleges Science Conference. 1991.

Rollin, R.E. Effects of different tetracycline regimens on disaccharidase activity in the rat small intestine. Federation of American Societies for Experimental Biology Journal 4:A474, 1990.

McQueeney, M.A. and R.E. Rollin. The effects of tetracycline on maltase and sucrase activities in the small intestine of cecectomized rats. Eastern Colleges Science Conference. BIO-01, 1990.

Damroth, K. and R.E. Rollin. Tetracycline-induced malabsorption in the rat small intestine. Eastern Colleges Science Conference. BI-02, 1989.

Henley, W.N., R.E. Rollin, and A. Tucker. Hypoxic moderation of systemic hypertension: a role for volume receptors? Federation Proceedings 46:1092, 1987.

Rollin, R.E., K.N. Mero, P.B. Kozisek, and R.W. Phillips. Diarrhea and malabsorption associated with therapeutic levels of antibiotics. Absorptive and clinical changes. American Journal of Veterinary Research 47:987-991, 1986.

Rollin, R.E., M.J. Fettman, and R.W. Phillips. Age-related changes in oral carbohydrate tolerance in healthy neonatal calves. American Journal of Veterinary Research 47:1583-1585, 1986.

Rollin, R.E., H. Martens, R.A. Giannella, and D.W. Powell. Indomethacin-enhanced secretory responses in rabbit ileum. Federation Proceedings 44:1743, 1985.

Martens, H., N.A. Tobey, R.E. Rollin, H.M. Berschneider and D.W. Powell. Role of arachidonic acid metabolism in the stimulus-secretion coupling of intestinal secretion. Gastroenterology 88:1490, 1985.

Mero, K.N., R.E. Rollin, and R.W. Phillips. Malabsorption due to selected oral antibiotics. Veterinary Clinics of North America: Food Animal Practice 1:581-588, 1985.

Fettman, M.J. and R.E. Rollin. Antimicrobial alternatives for calf diarrhea: iron chelators or competitors. Journal of the American Veterinary Medical Association 187:746-748, 1985.

Rollin, R.E., K.N. Mero, K. Levine, M. Morita, and R.W. Phillips. Antibiotic induced malabsorption syndromes. Federation Proceedings 43:688, 1984.

Rollin, R.E., K.N. Mero, K. Levine, M. Morita, and R.W. Phillips. Antibiotic-induced malabsorption syndromes: absorptive function. Federation Proceedings 42:1049. 1983.

Mero, K.N., R.E. Rollin, M. Morita, K. Levine, and R.W. Phillips. Antibiotic-induced malabsorption syndromes: mucosal alterations. Federation Proceedings 42:1049, 1983.

Rollin, R.E., K. Levine, K.N. Mero, M. Morita, and R.W. Phillips. Structural and functional changes seen in chloramphenicol-induced malabsorption in calves. XIIth World Congress on Disease of Cattle. The Netherlands. Proceedings 1:247-251, 1982.

Sernka, T.J., and R.E. Rollin. Carrier-mediated transport of ethanol through gastric mucosa in rats. Nutrition Reports International 21:739-744, 1980.

Rollin, R.E., E.D. Jacobsen, and T.J. Sernka. Gastric mucosal transport and metabolism in hyperosmotic solutions. Nutrition Reports International 20:787-797, 1979.

Sernka, T.J., R.E. Rollin, and C.H. Tseng. Gastric mucosal structure and surface ultrastructure in hyperosmotic solutions. Nutrition Reports International 20:799-804, 1979.

Rollin, R.E., C.H. Tseng, E.D. Jacobsen, and T.J. Sernka. Effects of hyperosmotic dextrose solution on Na transport, urea permeability and fine structure of isolated rat gastric mucosa. Federation Proceedings 37:697, 1978.

Grants

2008-2009 AAUP/University Research Grant. Title: Kidney function in mutant hairless rats and normal Sprague Dawley rats. $1815.
2008-2009 Faculty Student Grant. Title: Differential diagnosis of diabetes insipidus in older female hairless mutant rats (shn/shn) and Sprague Dawley rats (hairy wildtype). Student: George DellaRose. $372.
2008 Dean's Initiative Research Initiative. Title: Kidney function in mutant hairless rats and normal Sprague Dawley rats. $1108.
2004-2005 AAUP/University Research Grant. Title: Characterization of kidney function in hairless rats. $3192.
2004-2005 CCSU Faculty-Student Research Grant. Student: Maliha Nafees. Title: Characterization of kidney function in hairless rats. $364.
1999-2000 AAUP/University Research Grant. Title: Characterization of *shorn* rats and Sprague Dawley rats: oxygen consumption, basal metabolic rates, histology, and blood chemistry. $4000.00.
1997-1998 AAUP/University Research Grant with Cheryl Watson. Title: Adrenaline receptor mediated regulation of cardiac electrocardiograms via protein tyrosine kinase. $3991.00.
1996-1997 AAUP/University Research Grant. Title: Effects of rectal administration of the anesthetic induction agent, methohexital and its different solvents, on absorption from the rat rectal mucosa. $3998.00.
1995-1996 AAUP/University Research Grant. Title: Effects of rectal administration of the anesthetic induction agent, methohexital and its different solvents. $3439.00

DEPARTMENTAL SERVICE

Activities in the Department of Biology

-Department Chair 2000-2006
-Coordinator, M.S. Biological Sciences: Anesthesia Program, 1996-present
-Co-Coordinator, M.S. Biological Sciences: Anesthesia Program, 1995-1996
-Oral Comprehensive Exam Committee for M.S. Biological Sciences: Anesthesia Program (20-35 students/year), 1993-present
-Coordinator of BIO 112 Introductory biology laboratory. 1992-1998
-Committees

Departmental Evaluation Committee. 1991-1995, 1996- 2009
Chair: 1991 -1995, 1996-2000
Graduate Studies Committee. 1986-2005, 2012- present
Chair: 1992-2000
Curriculum Committee. 2005-2011
Planning and Budget Committee. 1989-1990, 1992-1993, 1994-1996
Search Committee: Physiologist, 1996-1997
Search Committee: 2002-2003 two searches
Search Committee: Ecologist 2003-2004
Search Committee: Physiologist 2005-2006
Search Committee: Physiologist
Search Committee: Physiologist 2011-2012
Search Committee: Doctorally-prepared CRNA 2016
Search Committee: Physiologist 2017-2018

-Faculty Advisor to Biology Department Graduate Student Association. 1988-2006

UNIVERSITY SERVICE

Committees

Curriculum Committee
-Alternate, 1992-1996; 2011-2017
-Member, 2007- 2011

Graduate Studies Committee. 1987-1992, 1996-1998
-Scholarship Subcommittee. 1987-1989
-Appeals Subcommittee. 1989-1992, 1996-1998
-Alternate to GSC 1994-1996

Pre-Health Professions Committee 2006-present
Aid in interviewing and writing letters of recommendation for students applying to professional schools (medical, dental, veterinary, and others)

Institutional Animal Care and Use Council (IACUC), 1988-present.
-Chair, 1992-present
Chair Activities:
IACUC meetings and inspections required a minimum of every 6 months
Initial review of Teaching/Research Protocols
Administer required Animal Care and Training Workshop for students and faculty working with vertebrate animals in teaching or research
Prepare Semiannual Reports on IACUC meetings and facilities inspections for CCSU Institutional Official
Prepare Annual Reports on IACUC meetings and inspections for the Office of Laboratory Animal Welfare (OLAW) at National Institutes of Health (NIH)
Prepare CCSU's Animal Welfare Assurance for OLAW, revised every 4 years; last revision accepted February, 2013

- Subcommittee for Review of Teaching/Research Protocols, 1989-present

Served on the Science Discipline Review Team for Tunxis Community College for review of the curriculum of the Science Discipline. Reviewed the Science Department 2009 Discipline Self Study, prepared suggestions and comments for the Review Team, and participated in the formal meeting of the Science Discipline Review Team on February 20, 2009.

-Market Adjustment Committee, Spring 2010

-Summer Curriculum Grant Review Committee, 1994,1995,1996,1997
-Special Assessment Team for Faculty Review, 1995-1996
-Misconduct in Research and Scholarly Activity Committees, 1995, 1996
-Assistant to Dean of School of Arts and Sciences, 1996-1997

AWARDS

2015 Dean's Outstanding Service Award
2006 University Distinguished Service Award

PROFESSIONAL ACTIVITY

Educational member, New England Assembly of School Faculty, Advisory Board for Directors of Schools of Nurse Anesthesia in New England, New York, and New Jersey. 1996-present.

Regional Advisory Committee – Includes Directors of Nurse Anesthesia of Hartford, Yale-New Haven Hospital of Saint Raphael School of Nurse Anesthesia, and Memorial Hospital of Rhode Island School of Nurse Anesthesia; and Ruth Rollin university coordinator of MS Biological Sciences: Anesthesia Program. Discussions about updates from the American Association of Nurse Anesthetists and how they impact the education of nurse anesthetists for CT and across the US.

Administration of the Medical College Admission Examination at CCSU
Room Supervisor, 1986-1992
Test Center Supervisor 1992-2006
In 2007, the exam changed to computer administration at special sites.

Conduct 2-3 workshops per semester for middle school students on Testing Physical Fitness and Effects of Weightless in Space on the Body for Partners in Science - CCSU Science Horizons Program and for Connecticut Pre-Engineering Program. 1990-1995.

NSF Young Scholars/Science Horizons for ninth grade high school students. 1-2 Workshops each summer program, 1993-1996.

Out-of-state Reviewer for Biology Program of Natural and Earth Sciences Department. Worcester State College, March 1994.

Professional Organizations

American Physiological Society
1986-present

Sigma Xi, The Scientific Research Society,
Hartford Chapter. 1987-2002
Chapter Secretary, 1989-1992
Chapter President-Elect/Program Chair, 1992-1993
Chapter President, 1993-1994

Workshops and Conferences

September 2015. NEASF Faculty Development Workshop. Topics: Teaching Across Generations; How do we address generational differences in the clinical setting? A Clinical Case Approach. Mystic, CT.

April 2014. NEASF Faculty Development Workshop. Topics: The Importance of Professionalism: Fostering Development in the Next Generation of Nurse Anesthesia Students; and The DNAP: What's in it for Me: Demystifying the Clinical Doctorate for Practicing CRNs. Mystic, CT.

September 24, 2011. NEASF Faculty Development Workshop. Topics: Becoming All You Can Be as a Clinical Faculty Member; and Everything the Clinical Preceptor Needs to Know About Computer Adaptive Testing. Mashantucket, CT.

August 4-5, 2011. American Association of Nurse Anesthetists Workshop: The Nuts and Bolts of Developing a Professional Doctoral Degree Offering. Presented by the Council on Accreditation of Nurse Anesthesia Education. Boston, MA.

September 13, 2008. NEASF Faculty Development Workshop. Topics: Application of Best Evidence into Nurse Anesthesia Curriculum; and Reflective Teaching and Learning in the Nurse Anesthesia Curriculum. Sturbridge, MA.

February 21-23, 2008. AANA Assembly of School Faculty Meeting; included Deans' Luncheon (Invitation only) Topic: Doctoral Competencies, Clinical Competencies: Where Do We Stand? Newport Beach, CA.

September 8, 2007. NEASF Faculty Development Workshop. Topics: Simulation-based Learning: How Can it Impact Nurse Anesthesia Education; and Doctoral Preparation Update. Sturbridge, MA.

Community Involvement

Volunteer with Our Companions Domestic Animal Shelter (non-profit organization). Help with fostering animals prior to their adoption; assist with adoption clinics.

2008-2010. Board Member and volunteer for Compassionate Care Animal Center, a non-profit group whose goal is to establish a veterinary clinic that can provide low cost veterinary care for animals for individuals with low income. Participate in board meetings (4-6 times per year), low-cost spay/neuter

clinics (offered once a month on Sundays), low-cost rabies clinics (offered four times in the spring and once or twice during the fall), information dissemination, and fund-raising activities.

2007. Volunteered Low-cost Spay/Neuter Clinics for cats with Central Connecticut Cat Project – post-surgical recovery monitoring

Curriculum Vitae

Mark Edward Jackson, Ph.D.

Professor
Department of Biology
Co-Coordinator of Nurse Anesthesia
Central Connecticut State University, New Britain, CT 06050

EDUCATION

Institution	Degree	Dates	Major
University of Texas at Dallas	Ph.D.	1997	Neuroscience
University of Texas at Arlington	B.S.	1986	Mathematics

PROFESSIONAL EXPERIENCE

Central Connecticut State University	Professor	2017-Present
Central Connecticut State University	Associate Professor	2011-2017
Central Connecticut State University	Assistant Professor	2006-2011
University of Pittsburgh	Research Assistant Professor	2003-2006
Yale University Medical School	Research Assistant Professor	2001-2003
Yale University Medical School	Postdoctoral Fellow	1999-2001
Stony Brook University	Postdoctoral Fellow	1997-1999

Awards

CCSU School of Engineering, Science, and Technology Outstanding Service Award	2017
CCSU Excellence in Teaching Honor Roll	2016-2017
CCSU Excellence in Teaching Honor Roll	2015-2016
CCSU Excellence in Teaching Honor Roll	2014-2015
CCSU Excellence in Teaching Semi-Finalist	2011-2012
CCSU Excellence in Teaching Honor Roll	2008-2009
National Alliance for Research in Schizophrenia and Depression Young Investigator Award	2002
National Research Service Fellowship, Yale University Medical School	1999
National Research Service Fellowship, State University of New York at Stony Brook	1997-1998
University of Texas at Dallas Regents Fellowship, Program in Cognition and Neuroscience	1992-1997
United States Air Force Air Medal for Meritorious Achievements in Aerial Combat during Persian Gulf War	1991
United States Air Force Aerial Achievement Medal for Meritorious Achievements in Aerial Flight	1990
John L. Hart Award for Exceptional Leadership in United States Air Force Pilot Training	1987
Daughters of the American Revolution Award for Outstanding Leadership in Air Force ROTC and Service to the Community	1986

External Grants

Inhibitory Control of Prefrontal Cortex (3rd year renewal).	
National Institutes for Health. $30,000	2011-2012
Inhibitory Control of Prefrontal Cortex (renewal).	
National Institutes for Health. $30,000	2010-2011
Inhibitory Control of Prefrontal Cortex.	
National Institutes for Health. $30,000	2009-2010
Cellular Basis of Cortico-Limbic Interactions.	
NARSAD, Young Investigator Award $60,000	2002-2004

CCSU Internal Grants

CCSU University Research Grant	
Title: "Short-term neurosteroid actions of progesterone in the crayfish ventral nerve ganglion": $5000	2017-2018
CCSU University Research Grant	
Title: "Hydrocortisone modulation of GABAergic neurons that regulate adaptation in the Crayfish MRO proprioceptor": $4054	2016-2017
AAUP Curriculum Development Grant	
Title: "Enhancements to Bio 122 General Biology II; Developing a narrative of biology": $1200	2015-2016
CCSU University Research Grant	
Title: "Neurosteroid modulation of synaptic plasticity in the crayfish neuromuscular system": $4500	2015-2016
CCSU Student/Faculty Grant (with Tuong Ngu)	
Title: Long-term potentiation in lateral giant motor neuron in crayfish in presence of stress hormone $485	2014-2015
CCSU Student/Faculty Grant (with Tuong Ngu)	
Title: Neurophysiological interaction between the stress neurohormones corticosterone and serotonin in the crayfish abdominal ganglion $474	2014-2015
AAUP Curriculum Development Grant	
Title: "Enhancements to online version of Bio 290, Biology Research Methods I": $1200	2014-2015
CCSU Faculty Research Grant	
Title:" Corticosteroid modulation of serotonergic neurons in the crayfish tail-flick reflex circuit": $4400	2014-2015
CCSU Faculty Research Grant	
Title: "Neurosteroid modulation of inhibitory synapses in the Crayfish neuromuscular preparation": $5000	2013-2014
AAUP Curriculum Development Grant	
Title: "Developing case studies for Human Disease Course": $1200	2013-2014
CCSU Faculty Research Grant	
Title: "Mapping Somatosensory Responses in the Garter Snake Brain": $4350	2009-2010
CCSU Faculty Research Grant	
Title: Computational modeling and Neurophysiology of Neural Oscillations": $2680	2008-2009
Arts and Sciences Deans Research Initiative	
Title: Neurophysiology in Reptiles and Rodents	2008

Student/ Faculty Research Grant
Title: "Mapping somatosensory responses in the snake brain": $500 2007-2008
CCSU Faculty Research Grant
Title: "Corticosterone modulation of the rat prefrontal cortex and amygdala" $5000. 2007-2008

CCSU University Service

University Curriculum Committee 2007-present
University Curriculum Chair (2012-2016)
Vice-Chair University Curriculum Committee (2016-2018)
Chair General Education Subcommittee (2016-2017)
Chair of General Education Subcommittee (2011-2012)
Secretary of Arts and Sciences Subcommittee (Spring 2010)
Faculty Senate 2012-present
Faculty Senate Committee on Constitution and Bylaws 2017-2018
NEASC Accreditation Review, undergraduate programs subcommittee chair 2016-2018
University Planning and Budget Committee 2017-2020
General Education Revision Implementation Committee 2012-present
General Education Assessment Steering Committee 2013-present
Graduate School Online Task Force Committee 2013-present
Faculty Senate Ad Hoc committee on online education 2013
ConnSCU Steering Committee for Transfer Articulation Plan 2012-2013
ConnSCU Biology Pathway Committee for Transfer Articulation Plan 2012-present
Academic Integrity Committee 2010-2012
Chair of Committee (2011-2012)
University Animal Care and Use Committee 2008-present
NEASC 5th year interim review committee 2012-2013
Termination Hearing Committee 2016-present
University Promotion and Tenure Committee 2013-2014
Graduate School Online Task Force Committee 2013-2015
TAP Framework Implementation and Review Committee 2017-present

Service Activities in the Department of Biology

Department Promotion and Tenure Committee 2017-present
Search Committee: Anatomy and Physiology 2017-2018
Search Committee: Anesthesia DNAP 2015-2016
Co-coordinator: Anesthesia Program 2015-present
Oral Comprehensive Exam Committee for Nurse Anesthesia MS students 2007-present
Lab Coordinator: Bio 122 General Biology II Labs 2011-present
TAP Biology Pathway 2013-present
Department Graduate Student Committee 2011-2014t
Departmental Curriculum Committee 2006-present
Departmental Planning, Budget and Assessment Committee 2008-2011
Department Sabbatical Leave Committee 2007- present
Student Faculty Committee 2006-2011
Department Technology ad hoc Committee 2008
Search Committee for Physiology Assistant Professor 2007
Search Committee for Biology Assistant Professor 2013
Search Committee for Physiologist Assistant Professor 2012

Professional Activities

Connecticut Chapter of the Society for Neuroscience (Guidance Council)	2008-present
Society for Neuroscience (Member)	1992-present
New York Academy of Sciences (Member)	1997-present
American Association for the Advancement of Science (member)	1997-present
Peer reviewer for European Journal of Neuroscience	2004-present
Peer reviewer for Journal of Neuropsychopharmacology	2005-present
Peer reviewer for Journal of Neurochemistry	2005-present
Textbook Reviewer for Wiley Publishing	2009
Textbook Reviewer for Pearson Benjamin Cummings	2009

Community Activities

Board of Directors, Hope After Loss (Non-Profit organization)	2014-present
Veterans of Foreign Wars, Seymour, Ct Post	2009-present
Conducted science activities in local Elementary Schools	2007-present
Conducted seminars for public-school children for Partners in Science program	2007-present
Southington Junior High School science fair judge	2007-present

Courses Taught

Bio 599 Thesis	2006-present
Bio 590 Focused Study in Advanced Biology	2006-present
Bio 519 Advanced Neuroscience (*formerly Bio 540*)	2007-present
Bio 517 Anatomy, Physiology, and Pathophysiology	2007-present
Bio 500 Seminar	2007
Bio 491 Advanced Studies in Biology	2009
Bio 490/540 Neuroscience Methods	2008
Bio 414 Human Disease	2007-present
Bio 391 Internship in Biology	2008-present
Bio 390 Biology research Experience II	2006-present
Bio 333 Endocrinology	2008-present
Bio 331 Neurobiology	2007-present
Bio 319 Anatomy and Physiology Lab	2010
Bio 211Concepts in Biology Lab	2006
Bio 122 General Biology II Lecture and Lab	2007-present
Bio 113 Laboratory Experience in Biology	2006-present
Bio 111 Introductory Biology	2006-present

Peer-Reviewed Journal Articles

Totah, N. K., M. E. Jackson, et al. (2012). "Preparatory Attention Relies on Dynamic Interactions between Prelimbic Cortex and Anterior Cingulate Cortex." *Cereb Cortex*. 23(3):729-738

Baeg E, Jackson ME, Jedema, H, and Bradberry CW (2009) Orbitofrontal and Anterior Cingulate Cortex Neurons Selectively Process Cocaine-Associated Environmental Cues in the Rhesus Monkey. *Journal of Neuroscience.* 29(37):11619-11627

Jackson ME and Moghaddam B (2006) Distinct patterns of plasticity in prefrontal cortex neurons that encode slow and fast responses to stress, *European Journal of Neuroscience*, 24:1702-1710.

Homayoun H, Jackson ME, and Moghaddam B (2005) Activation of metabotropic glutamate 2/3 receptors reverses the effects of NMDA receptor hypofunction on prefrontal cortex unit activity in awake rats. *Journal of Neurophysiology*, 93(4): p. 1989-2001

Moghaddam B and Jackson ME (2004) Effect of stress on prefrontal cortex function, *Neurotoxicity Research*, 6(1):1-6

Jackson ME, Homayoun H, and Moghaddam B (2004) NMDA receptor hypofunction produces concomitant firing rate potentiation and burst activity reduction in the prefrontal cortex. *Proceedings of the National Academy of Science*, 101: 8467-8472.

Jackson, ME and Moghaddam B (2004) Stimulus-specific plasticity of prefrontal cortex dopamine neurotransmission. *Journal of Neurochemistry*, 88:1327-1334.

Moghaddam B and Jackson ME (2003) Glutamatergic animal models of schizophrenia, *Annals of the New York Academy of Sciences*, 1003:131-137

Jackson ME, Frost AS, and Moghaddam B (2001) Stimulation of prefrontal cortex at physiologically relevant frequencies inhibits dopamine release in the nucleus accumbens. *Journal of Neurochemistry*, 78:1-5.

Jackson ME and Moghaddam B (2001) Amygdala regulation of nucleus accumbens dopamine output is governed by the prefrontal cortex. *Journal of Neuroscience*, 21:676-681.

Gnadt JW, Jackson ME, and Litvak O (2001) Analysis of the frequency response of the saccadic circuit: System behavior. *Journal of Neurophysiology*, 86:724-739.

Jackson ME, Litvak O, and Gnadt JW (2001) Analysis of the frequency response of the saccadic circuit: Numerical simulations. *Neural Networks*, 14:1357-1376.

Jackson ME and Gnadt JW (1999) Numerical simulation of nonlinear feedback model of saccade generation circuit implemented in the LabView graphical programming language. *Journal of Neuroscience Methods*, 87:137-145.

Jackson ME and Cauller LJ (1998) Neural activity in SII modifies sensory evoked potentials in SI in awake rats. Neuroreport, 9(15):3379-3382.

Jackson ME and Cauller LJ (1997) Evaluation of simplified compartmental models of reconstructed neocortical neurons for use in large-scale simulations of biological neural networks. *Brain Research Bulletin*, 44(1):7-17.

Book Chapters

Jackson ME and Cauller LJ (1999) Towards the function of reciprocal corticocortical connections: computational modeling and electrophysiological studies. In: Oscillations in Neural Systems (Levine DS, Brown VR, Shirey eds.), New York: Lawrence Erlbaum Publishers.

Paul K, Jackson ME, Patterson JM, and Cauller LJ (1998) Presence of a chaotic region between subthreshold oscillations and rhythmic bursting in a simulation of interconnected thalamocortical relay and reticular neurons: dependence of chaos on inhibitory synaptic conductances from reticular neurons. Computational Neuroscience (Bower, JM ed.), San Diego, CA: Academic Press.

Jackson ME and Cauller LJ (1996) Dynamical analysis of spike trains in a simulation of dynamically connected "chaoscillators": Dependence of spike pattern fractal dimension on strength of feedback connections. Computational Neuroscience (Bower, JM ed.), San Diego, CA: Academic Press.

Conference Abstracts

Ngu T, Mangini D, and Jackson, ME (2014) Corticosterone modulation of the crayfish neuromuscular system. *Society for Neuroscience Abstracts. 44:828.01.*

Jackson, ME (2010) Improved extraction of oscillatory events in nonstationary local field potentials by wavelets. *Society for Neuroscience Abstracts. 40:616.8*

Totah NKB, Jackson ME, and Moghaddam, B (2010) Local field potential and single-unit activity in the rat medial prefrontal cortex and anterior cingulate cortex during a sustained attention task. *To be presented at the 2nd Biennial Schizophrenia International Research Conference, Florence, Italy, April 2010.*

Force, E and Jackson, ME (2009) Mapping the Snakeunculus: Somatosensory-Evoked Responses in the Garter Snake Brain. *Society for Neuroscience Abstracts. 35:83.11*

Force, E and Jackson, ME (2008) Mapping Somatosensory-Evoked Responses in the Garter Snake Brain. *Society for Neuroscience Abstracts. 34:78.3*

Baeg E, Jackson ME, Jedema, H. and Bradberry CW (2008) Differential representation of the reward value of cocaine cues in orbitofrontal cortex and striatum during cocaine self-administration and extinction. *Society for Neuroscience Abstracts 34:159.8*

Jackson ME, Homayoun H, and Moghaddam B (2007) Prefrontal cortex and dorsal striatum dynamically interact during instrumental conditioning. *Society for Neuroscience Abstracts 33:839.6*

Baeg E, Jedema, H., Jackson ME, Liu S, and Bradberry CW (2007) Cellular responses in striatum, orbitofrontal and anterior cingulate cortex during cocaine self-administration in rhesus monkeys. *Society for Neuroscience Abstracts 33:610.25*

Jackson ME, Homayoun H and Moghaddam B (2006) Dynamic interaction between prefrontal cortex and striatal neurons during appetitive instrumental responding. *Society for Neuroscience Abstracts 32:264.13*

Baeg E, Liu S, Jackson ME, and Bradberry CW (2006) Single-unit activity during cocaine self-administration in anterior cingulate, orbitofrontal cortex, and associational striatum of the rhesus monkey. *Society for Neuroscience Abstracts 32:485.4*

Jackson ME and Moghaddam B (2005) Glucocorticoid receptor activation disrupts oscillatory interactions between prefrontal cortex and hippocampus: unit activity and local field potential recordings in awake rats. *Society for Neuroscience Abstracts 31:*

Jackson ME and Moghaddam B (2004) Plasticity of prefrontal cortex response to stress: Ensemble single-unit recording in awake rats. *Society for Neuroscience Abstracts 30:781.14*

Jackson ME, Homayoun H and Moghaddam B (2003) NMDA antagonist treatment disrupts temporal patterns of spontaneous spike trains in rat prefrontal cortex. *Society for Neuroscience Abstracts 29:940.14*.

Mubbashar S., Jackson ME, and Moghaddam B (2003) Effects of sustained mild activation of the amygdala on prefrontal cortical regulation of accumbal dopamine release. *Society for Neuroscience Abstracts 29:722.19*.

Homayoun H, Jackson ME and Moghaddam B (2003) NMDA receptor antagonist MK801 produces cortical hyperactivity in awake rats. *Presented at the New York Academy of Sciences Conference on Glutamate and Disorders of Cognition and Motivation, New Haven, CT, April 2003.*

Homayoun H, Jackson ME, and Moghaddam B (2002) Effect of systemic administration of NMDA receptor antagonist MK801 on neuronal firing in the prefrontal cortex of awake rats. *Society for Neuroscience Abstracts 28:291.6*

Jackson ME and Moghaddam B (2001) Effects of sequential basolateral amygdala stimulation and restraint stress on dopamine release in the prefrontal cortex and nucleus accumbens of the freely moving rat. *Society for Neuroscience Abstracts 27:177.17*

Cauller LJ, Jackson ME (2001) Widespread cortical interactivity during somatosensory activation in behaving rats. *Society for Neuroscience Abstracts 27:49.18*

Jackson ME, Moghaddam B (2000) Amygdala regulation of nucleus accumbens dopamine output is governed by the prefrontal cortex. *Society for Neuroscience Abstracts 26:764.9*

Jackson ME, Gnadt JW (1998) Testing assumptions of the interrupted saccade paradigm: reset of the neural integrator. *Society for Neuroscience Abstracts 24:163.14*

Gnadt JW, Jackson ME (1998) Colliding saccades for the step and frequency responses in the monkey: interference patterns. *Society for Neuroscience Abstracts 24:163.13*

Jackson ME, Gnadt JW (1998) Frequency response of the saccade generation circuit in primates: resonant frequency. *Presented at the Neural Control of Movement 8th annual meeting, Key West, Fla., April 1998.*

Patterson JM, Jackson ME, Paul K, Cauller LJ (1997) Simulations of coupled neural chaoscillators within anatomically realistic thalamo-cortical and corticocortical reentrant networks encompassing dynamics on multiple time scales: the role of physiologically asymmetric connectivity. *Society for Neuroscience Abstracts 23:399.2.*

Patterson JM, Jackson ME, Paul K, Cauller LJ (1997) Analysis of coupled chaoscillators embedded within thalamo-cortical and cortico-cortical reentrant loops encompassing dynamics on multiple time scales. *Presented at Computational Neuroscience Meeting, Big Sky, Montana, July 1997*.

Jackson ME, Cauller LJ (1996) Modulation of temporal dynamics of spontaneous and evoked unit activity in rat SI by pharmacological activation of homotopic SII. *Society for Neuroscience Abstracts 22:538.13.*

Jackson ME, Cauller LJ (1995) Non-linear dynamics of neocortical spontaneous field potentials during anesthetized and awake states in chronically implanted rats. *Society for Neuroscience Abstracts 21:57.10*.

Jackson ME, Cauller LJ (1994) Anesthesia-sensitive components of the SI neocortical response to forepaw stimulation in chronically implanted rats. *Society for Neuroscience Abstracts 20:57.10.*

Patterson J, Jackson ME and Cauller LJ (1994) Analysis of "funny" behavior in simulation of inhibitory/excitatory reciprocal connections between simplified computational models of reconstructed neocortical neurons. *Presented at Dynamical Neuroscience Workshop. Boca Raton, Fl*.

Jackson ME, Cauller LJ (1993) Simplified computational models of neocortical neurons for use in anatomically realistic network simulations of interareal cortical oscillations. *Society for Neuroscience Abstracts 19:44.7.*

Presentations

Central Connecticut State University Neuroscience Club
Title: "Graduate Careers in Neuroscience" April 2014

Western Connecticut State University
Title: Schizophrenia, Brain Oscillations, and inhibition (or lack thereof) Feb 2011

Connecticut State University Faculty Research Conference
Title: Oscillatory phase-locking between the local field potential and single unit activity in the rat medial prefrontal cortex during a sustained attention task Apr 2010

Central Connecticut State University, Biology Department Seminar Series
Title: Schizophrenia, Brain Oscillations, and Inhibition (or lack thereof) Apr 2010

Central Connecticut State University, Biology Department Seminar Series
Title: Stress and the Brain — Nov 2006

Central Connecticut State University, Biology Department Seminar Series
Title: Stress and the Prefrontal Cortex — May 2006

Center for the Neural Basis of Cognition Retreat, Greensburg, PA.
Title: Stress and the Prefrontal Cortex. — June 2006

Synaptic Pharmaceuticals, Paramus, NJ.
Title: Cortico-Limbic Interactions During Stress. — Apr 2004

University of Pittsburgh.
Title: Cortico-Limbic Interactions During Stress. — Apr 2003

Yale University Medical School.
Title: Prefrontal Cortex Regulation of Nucleus Accumbens Function. — Oct 2001

University of Texas Health Science Center at San Antonio.
Title: Reverse Engineering of the Primate Saccadic Circuit. . — May 1999

University of Connecticut Health Science Center.
Title: Reverse Engineering of the Primate Saccadic Circuit. — Apr 1999.

State University of New York at Stony Brook.
Title: Dynamics of Cortical Connections. — May 1997

University of Texas at Arlington, The Metroplex Institute for Neural Dynamics
Title: Dynamics of Cortical Connections. — Apr 1996

University of Texas at Dallas.
Title: Chaotic Dynamics in the Study of the Brain. — Dec 1995

University of Texas at Dallas. Metroplex Institute for Neural Dynamics
Title: Simplification of Computational Neuron Models for use in Biologically Realistic Neural Networks. — Dec1994

Workshops Attended and Specialized Training

Invertebrate Electrophysiology, Ithaca NY	Jan 2014
AAC&U Institute on General Education and Assessment , Burlington, VT	June 2013
AAC&U Network for Academic Renewal Conference, Boston, MA	Feb 2013
CCSU Student Learning Colloquium: Writing Across the Curriculum	May 2011
D-Designation Workshop, CCSU	Oct 2010
CCSU Student Learning Colloquium: Hybrid Course Designs	May 2010
Society for Neuroscience Short Course: Rhythms of Neocortex, Chicago, IL.	Oct 2009
Teaching Neuroscience Workshop, Society for Neuroscience, Chicago, IL.	Oct 2009
CCSU Student Learning Colloquium: Teaching with Technology	Dec 2008
Teaching Neuroscience Workshop, Society for Neuroscience, Washington D.C.	Nov 2008
Teaching Neuroscience Workshop, Society for Neuroscience, Washington D.C.	Nov2005
Teaching Workshop: Designing Learning Centered Syllabus	Nov 2005
Teaching Workshop: Making Learning Active for You and Your Students	Oct 2005
Teaching Workshop: Developing a Course, University of Pittsburgh	Sep 2005

Teaching Workshop: Teaching for Creative Thinking, University of Pittsburgh	May 2005
Teaching Workshop: Teaching with Web-Based Electronic Blackboard. University of Pittsburgh	Apr 2005
Grants 101: Professional Grant Proposal Writing Workshop, Carnegie Mellon University	Mar 2005
Statistical Analysis of Neuronal Data Workshop, Pittsburgh Super Computer Center. Pittsburgh, PA.	May 2004
New York Academy of Sciences Conference on Glutamate and Disorders of Cognition and Motivation, New Haven, CT.	Apr 2003.
New York Academy of Sciences Conference on The Self, New York, NY.	Sep 2002.
Dynamical Neuroscience Workshop. Orlando, FL.	Nov 2002.
Marine Biological Laboratory, Rapid Electrochemical Measurements in Biological Systems, Woods Hole, MA.	May 2000.
Society for the Neural Control of Movement Meeting. Key West, FL.	Apr 1998.
Dynamical Neuroscience Workshop. Washington, D.C.	Nov 1996.
Fourth Annual Computational Neuroscience Meeting Monterey, California.	Jul 1995.
Metroplex Institute for Neural Dynamics Workshop on Cortical Oscillations.	May 1994.
Dynamical Neuroscience Workshop. Boca Raton, FL.	Nov 1994.

Jeremiah N. Jarrett, Ph.D.
Associate to the Dean
School of Engineering, Science, and Technology
Professor, Department of Biology
Central Connecticut State University
New Britain, CT 06050-4010

Telephone: (860) 832-2648
Fax: (860) 832-2594
email: jarrettj@ccsu.edu

EDUCATION

Ph.D. Tufts University, Medford, MA. 1997 - Biology
M.S. University of Massachusetts at Boston. 1990 - Biology
B.S. University of Massachusetts at Boston. 1987 - Biology

PROFESSIONAL EXPERIENCE

2017-present Associate to the Dean - School of Engineering, Science, and Technology - Central Connecticut State University
Responsibilities: Course scheduling, faculty load, curriculum, adjunct faculty contracts, in a school with 11 departments, 131 full-time and 154 part-time faculty, and 71 undergraduate and graduate degree programs including the Doctorate of Nurse Anesthesia Practice.

2012-present Coordinator - CSCU Center for Education and Research at Outer Island
Responsibilities: Collaborate with partners from Southern CT State University and U.S. Fish and Wildlife Service to deliver education, outreach, and research programs on Outer Island, Stoney Creek, CT. Serve as a voting member on the Outer Island Advisory Board. Advertise for, interview, and hire docents who live and work on Outer Island during the summer season. Manage an annual budget of approximately $30,000.00.

2007-present Professor - Biology Department, Central Connecticut State University

2006-2012 Chairperson - Biology Department, Central Connecticut State University
Responsibilities: Course scheduling, faculty load, curriculum, adjunct faculty contracts, facilities, in a department with 13 full-time and 6 part-time faculty. Represent department at undergraduate and graduate open houses and awards ceremonies. Managed an annual budget of $70,000.00.

2003-2007 Associate Professor - Biology Department, Central Connecticut State University

1997-2002 Assistant Professor - Biology Department, Central Connecticut State University

1995-1997 Instructor - Biology Department, University of Massachusetts at Boston

1991-1995 Instructor - Biology, Massasoit Community College, Brockton, MA

1990-1992 Coordinator, College-Middle School Science Partnership Program, Massachusetts College of Pharmacy and Allied Health Sciences
Responsibilities: Coordinate with Middle School administrative staff and teachers to deliver inquiry based science modules for inner-city students.

1990 Science Instructor, Urban Scholars Middle School Program, University of Massachusetts at Boston

ACADEMIC HONORS

2001 Member of Project Kaleidoscope Faculty for the 21st Century (F21)
2001 Nominated for the CCSU Excellence in Teaching Award
2000 Semifinalist for the CCSU Excellence in Teaching Award
1990 Program Award for Outstanding Achievement, Biology, University of Massachusetts at Boston
1990 Bettina Harrison Teaching Award, Biology, University of Massachusetts at Boston

RESEARCH AND CREATIVE ACTIVITY

PUBLICATIONS

Diederich, C. M., **J.N. Jarrett**, O.R. Chaparro, C J Segura, S.M. Arrelano, and J.A. Pechenik. **2011.** The effects of short-term salinity stress on pre- and post-metamorphic growth, survival, and development in three calyptraeid gastropods. **Journal of Experimental Marine Biology and Ecology 397:** 94-105.

Tapia, F.J., C. DiBacco, **J.N. Jarrett,** and J. Pineda. **2010.** Vertical distribution of barnacle larvae at a fixed nearshore location in southern California: Stage-specific and diel patterns. **Estuarine, Coastal and Shelf Science 86:** 265-270.

Jarrett, J. N. 2009. Predator induced defense in the barnacle *Chthamalus fissus*. Journal of Crustacean Biology. **Journal of Crustacean Biology 29**: 329-333.

Jarrett, J.N. 2008. Inter-population Variation in Shell Morphology of the Barnacle, *Chthamalus fissus*. **Journal of Crustacean Biology 28**: 16-20.

Jarrett, J.N. 2003. Seasonal variation in larval condition and postsettlement performance of the barnacle *Semibalanus balanoides*. **Ecology 84:** 384-390**.**

Pechenik, J.A., **J.N. Jarrett**, and J. Rooney. **2002**. Relationships between larval nutritional experience, larval growth rates, juvenile growth rates, and juvenile feeding rates in the prosobranch gastropod *Crepidula fornicata.* **Journal of Experimental Marine Biology and Ecology 280:** 63-78.

Jarrett, J.N. 2000. Temporal variation in early mortality and growth of an intertidal barnacle. **Marine Ecology Progress Series 204**: 305-308.

Pechenik, J.A., D. Wendt, and **J.N. Jarrett**. **1998**. Larval experience influences postlarval growth, development, and survival in vertebrate and invertebrate animals. **Bioscience 48**: 901-910.

Jarrett, J.N. **1997**. Temporal variation in substrate specificity of Semibalanus balanoides cyprids. **Journal of Experimental Marine Biology and Ecology** 211: 103-114.

Jarrett, J.N. and J.A. Pechenik. **1997**. Cyprid quality and juvenile growth capacity vary during the recruitment season for the intertidal barnacle Semibalanus balanoides. **Ecology 78**: 1262-1265.

Jarrett, J.N., M.B. Cutler, J.P. Ebersole, and W.G. Hagar. **1993**. Seasonal variation in pH and alkalinity and recruitment of sunfish populations. **Freshwater Biology 30**:409-417.

Publication citations - 545 (Scopus), 687 (Google Scholar)

EXTERNAL FUNDING

2012-present Outer Island Foundation – Annual funding to support research, education, and outreach at Outer Island, Stewart B. McKinney Wildlife Sanctuary, US Fish and Wildlife Service, Branford, CT. ($12,000 to $32,000 annually)

2008-2010 U.S. Dept. of Agriculture – Cooperative State Research, Education, and Extension Service "Recovering the Economic Viability of the Connecticut Oyster Fishery: A Research and Education Collaboration" (2008-38921-19417). $278,834.00 ($65,000 sub-award)

2006 Unification of Teacher Preparatory Programs Mini Grant - To develop a field and inquiry-based coastal ecology course for pre- and in-service teachers. ($9,000.00)

2000-2006 National Science Foundation (NSF) - Project in Biocomplexity entitled "Nearshore-Offshore Hydrodynamics and Population Ecology" (OCE – 0083976). In collaboration with Dr. Jesus Pineda, Woods Hole Oceanographic Institute. $3,060,140.00 ($199,000.00 sub-award)

1998-2002 Fund for the Improvement of Post-Secondary Education (FIPSE) - U.S. Dept. of Education. Project Director - Explore development of an integrated science, mathematics, and technology course for non-science, elementary education majors at CCSU. ($199,000.00)

CSCU RESEARCH FUNDING

2017 CSU-AAUP University Research Grant-The Role of Population Connectivity in the Recovery of Overfished Populations of the Sea Cucumber *Holothuria mexicana* in the Caribbean
2016 CSU-AAUP University Research Grant-The Biology and Ecology of the Commercially Harvested Sea Cucumber, *Holothuria mexicana*, along the Belize Barrier Reef
2015 CSU-AAUP University Research Grant-The Biology and Ecology of the Commercially Harvested Sea Cucumber, *Holothuria mexicana*, along the Belize Barrier Reef
2014 CSU-AAUP University Research Grant-The barnacle *Chthamalus dalli* – its southern limit and evidence of defensive plasticity in response to two predatory snails
2013 CSU-AAUP University Research Grant- The Impact of Limited Gene Flow on Adaptive Evolution of Spine Morphology in a Predatory Snail
2012 CSU-AAUP University Research Grant-Reciprocal selection for defensive and offensive plasticity between a barnacle prey and two species of predatory snail.

2011 CSU-AAUP University Research Grant-Population Structure and Phylogeography of the Barnacle *Chthamalus fissus*
2010 CSU-AAUP University Research Grant-Coevolution of Prey Defensive Morphology and Predator Feeding Structures
2009 CSU-AAUP University Research Grant-Defensive Strategies and Larval Settlement Cues of the Barnacle *Chthamalus fissus*
2008 CSU-AAUP University Research Grant-Geographic Variation in Induced Defense of a California Barnacle
2007 CSU-AAUP University Research Grant-Advantages and Disadvantages to Predator Induced Changes in Barnacle Morphology (Continuation)
2006 CSU-AAUP University Research Grant-Advantages and Disadvantages to Predator Induced Changes in Barnacle Morphology
2005-2003 CSU-AAUP University Research Grant-Competition for food among planktonic larvae of marine invertebrates
2001 CSU-AAUP University Research Grant-Short-term Fluctuations in Salinity: Effects on Invertebrate Planktonic Larvae
2000 CSU-AAUP University Research Grant-Short-term Fluctuations in Salinity: Effects on Invertebrate Planktonic Larvae
1999 CSU-AAUP University Research Grant-Short-term Fluctuations in Salinity: Effects on Invertebrate Planktonic Larvae
1998 CSU-AAUP University Research Grant-Physiological Ecology of Larval Settlement

CSCU SUMMER CURRICULUM GRANTS AND FACULTY–STUDENT RESEARCH GRANTS

2013 Development of Investigative Laboratories Using PASCO Data Acquisition Equipment
2012 Application of molecular techniques to examine population genetics of the barnacle *Chthamalus fissus*
2012 Development of molecular ecology/evolution Laboratories for BIO 200
2011 Incorporating GIS into the Biology Curriculum
2010 A Seamless Introductory Biology Curriculum
2009 Development of a Marine Shellfish Aquaculture course at CCSU
2004 CCSU Faculty-Student Research Grant. The use of a fluorescent marker in the study of Competition for food among planktonic larvae of marine invertebrates
2002 Summer Curriculum Grant. Inquiry based learning in a Marine Invertebrate Zoology Laboratory
2000 Summer Curriculum Grant. Active Learning in Marine Biology: student development of case studies
2000 Summer Curriculum Grant. Developing Laboratories for BIOLOGY 202
1999 Summer Curriculum Grant. Active Learning in an Introductory Biology Course Using Case Studies
1998 CCSU Faculty-Student Research Grant. The influence of larval age and energy reserves on settlement behavior, metamorphic success, and juvenile performance of the barnacle Semibalanus balanoides

CSU FACULTY DEVELOPMENT GRANTS

2011 Delivering an invited research presentation in the Symposium on the Biology of Barnacles at the Society of Integrative and Comparative Biology Annual Meeting, South Carolina
2010 Chautauqua Short Course – Coastal Ecosystems of Belize
2009 Presenting at Society for Integrative and Comparative Biology Annual Meeting 2009

2005 Research and Educational Collaboration with the Smithsonian Tropical Research Institute
2004 Training in Field Techniques for Collecting, Preserving, and Identifying Marine Invertebrate Larvae
2004 Foundation-Building Faculty Retreat for the Department of Biological Sciences with Dr. Jack Tessier
2004 Seminar Series in Biology: Integration of Biological Disciplines with Dr. Barbara Nicholson

TEACHING

COURSES TAUGHT AT CCSU

Biology 111	- Introductory Biology
Biology 113	- Lab Experience in Biology
Biology 121FYE	- General Biology I Lecture and Laboratory
Biology 122	- General Biology II Laboratory
Biology 200	- General Biology III Lecture and Laboratory
Biology 211	- Concepts in Biology Lecture and Laboratory
Biology 290	- Biology Research Experience I
Biology 390	- Biology Research Experience II
Biology 410	- Ecological Physiology
Biology 421	- Marine Invertebrate Biology Lecture and Laboratory
Biology 490	- Study in Biology
Biology 491	- Advanced Problems in Biology
Biology 490/540	- Benthic Marine Ecology
Biology 490/540	- Marine Invertebrate Larval Biology
Biology 490/540	- Analysis and Interpretation of Biological Data
Biology 508/509	- Coastal Ecology Lecture and Laboratory
Biology 515	- Foundations of Ecology
Biology 171/471/571	- Marine Ecosystems of Belize (Course Abroad)
Biology 598	- Research in Biology (Biostatistics)
EDSC 435	- Secondary Student Teaching Supervision

UNIVERSITY AND DEPARTMENTAL SERVICE

UNIVERSITY and Ad Hoc COMMITTEES

2016 – present	University Promotion and Tenure Committee
2011	University Master Planning Committee
2010 – 2014	Arts and Sciences Research Reassign Time Advisory Committee
2006 – 2008	University Academic Standards Committee
2000 – 2001	Graduate Studies
1997 – 2006	School of Education and Professional Studies Governance Council
1998 – 2000	Faculty Senate

DEPARTMENT COMMITTEES AND ASSIGNMENTS

2006 – 2012	Department Chairperson
1999 – 2006, 2010 - present	Coordinator - Biology Secondary Education Program
1999 – 2006, 2010 - present	Curriculum Committee
1999 – 2006, 2010 - present	Graduate Committee
1997 – 2006, 2010 - present	Planning/Budget/Assessment Committee
1997 – 2006, 2011 - present	Coordinator BIO 211 laboratories

PROFESSIONAL ACTIVITY

INVITED SEMINARS/PRESENTATIONS

2012 University of Central Florida, Biology Department - Predator induced defensive plasticity in the barnacle *Chthamalus fissus*: are all populations the same?
2012 University of Hawaii, Biology Department - Costs and benefits of alternative defensive morphologies and population variation in phenotypic plasticity of the barnacle *Chthamalus fissus*
2011 Belize Marine Tropical Research and Education Center - Phenotypic Plasticity in the Genus *Chthamalus*
2006 Tufts University Biology Department Seminar - Predator Induced Plasticity in Operculum Morphology of the Barnacle *Chthamalus fissus*
2006 Connecticut Association of Biology Teachers – Darwin Day 2006
2005 Central Connecticut State University. Biology Dept. Seminar: Adaptive significance of phenotypic plasticity in marine invertebrates
2005 Woods Hole Oceanographic Institute. Biology Dept. Seminar: Connections between life stages: The impact of larval experience on post-metamorphic performance
2005 University of Massachusetts at Boston. The Impact of competition and salinity stress on performance of marine invertebrate larvae
2001 Central Connecticut State University. Larval ecology and recruitment dynamics
2000 FIPSE/LAAP Project Directors' Annual Meeting, San Diego, CA. Improving science and mathematics experiences of future elementary level teachers
1999 Northeastern University Marine Science Center, MA. The impact of larval experiences on metamorphosis and juvenile performance
1997 Woods Hole Oceanographic Institute. Variation in cyprid substratum specificity and cyprid physiological quality among daily cohorts of the barnacle Semibalanus balanoides
1997 Harbor Branch Oceanographic Institute, Fort Pierce, FL. The influence of larval organic content on metamorphic success and juvenile performance in the barnacle *Semibalanus balanoides*

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (* indicates CCSU student author)

2017 Jarrett, J. N., *Dean, N. The Influence of Defensive Plasticity and Predation on the Northern Limit of *Chthamalus fissus*. Association for the Study of Limnology and Oceanography
2016 Jarrett, J. N., *Dean, N. Molecular Phylogeography and Population Structure of a Belize Sea Cucumber. International Coral Reef Symposium
2015 Jarrett, J. N. Population Structure of the snail Mexacanthina lugubris lugubris in Northern Baja California and Southern California. Benthic Ecology Meetings

2014 Jarrett, J. N.; *Bouchard, B.; *Rybczyk, A.; *Grace, K.; *Riordan, C. Investigation of Cirral Plasticity in Conic and Bent Morphs of the Barnacle, *Chthamalus fissus*, in La Jolla, California, USA. Benthic Ecology Meeting

2013 Jarrett, J.N., D. Carlon and E. Golden*. Population Structure of the barnacle, *Chthamalus fissus*. Benthic Ecology Meeting

2012 Jarrett, J.N., Phenotypic Plasticity in the Genus *Chthamalus*. Barnacle Symposium at the Society for Integrative and Comparative Biology Annual Meeting

2011 Jarrett, J.N., Coevolution of morphology for a predatory snail and its barnacle prey in southern California. Benthic Ecology Meeting

2010 Jarrett, J.N.; Buehler*, Alexandra; Camacho*, John; Dupuis*, Jennifer; Mirando*, Gregory Costs and benefits of alternative morphologies and population variation in phenotypic plasticity of the barnacle *Chthamalus fissus.* Benthic Ecology Meeting

2009 Jarrett, J.N. Variation in shell spine morphology among populations of the snail, *Mexacanthina lugubris*. American Society of Limnology and Oceanography International Meeting

2008 S. Leone* and J.N. Jarrett. Predator induced plasticity in barnacle shell morphology. Benthic Ecology Meeting

2008 Jarrett, J.N., J. Dupuis*, and A. Leinheiser*. Variation in predator induced plasticity among populations of the barnacle, *Chthamalus fissus*. American Society of Limnology and Oceanography International Meeting

2006 Jarrett, J.N., and C. Blair*. Phenotypic Plasticity in operculum morphology of the barnacle *Chthamalus fissus* and an alternative strategy to avoid predation. American Society of Limnology and Oceanography

2005 Jarrett, J.N., C. Blair*, and R. Koganemaru*. A comparison of growth, survival, and reproductive output of the barnacle, *Chthamalus fissus*, from sites in Southern California and Northern Baja California. American Society of Limnology and Oceanography

2005 Jarrett, J.N. and C. Blair*. Growth, survival, and size-specific reproduction of the barnacle, *Chthamalus fissus*, in Southern California and Baja California. Benthic Ecology Meetings

2004 Jarrett, J.N., J. Pineda, and C. DiBacco. Complexity in Marine Benthic Population Dynamics

2003 Fusco, K.* and J.N. Jarrett. The impact of competition on larval growth of the gastropods, *Crepidula fornicata and C. Plana*. Benthic Ecology Meeting

2003 LaBrack*, J. and J.N. Jarrett. Shell selection behavior of the hermit crab, *Pagurus longicarpus*. Benthic Ecology Meeting

2002 Jarrett, J.N., G. Russell*, M. O'Driscoll*, and D. Sullivan*. Impact of short-term salinity fluctuations on larvae of *Crepidula fornicata* and *C. plana*. SICB Annual Meeting

2001 Craine, T. and J.N. Jarrett. *Integrated Science and Mathematics*. Annual meeting of NCTM (National Council of Teachers of Mathematics)

2001 Craine, T. and J.N. Jarrett. *Integrated Science and Mathematics*. Annual meeting of ATOMIC (Association of Teachers of Mathematics in CT)

2000 Kozlowski, A., J.N. Jarrett, and T. Craine. *Integrated Science and Mathematics*. Northeast Regional Meeting of the American Chemical Society

2000 Craine, T. and J.N. Jarrett. *Population Interactions and Related Rates.* Project Kaleidoscope Workshop "Bridges in Undergraduate Education: Connecting Mathematics and Partner Disciplines", West Point, June 2000

2000 Pineda, J., H. Caswell, M. Neubert, M. Lopez, A. Pares-Sierra, A. Scotti, J.N. Jarrett, C. DiBacco, and A. Solow. Complexity in Marine Benthic Population Dynamics. Fall Meeting of the American Geophysical Union in San Francisco, CA

2000 Jarrett, J.N. and G. Russell*. Impact of Short-Term Salinity Fluctuations on Larvae of *Crepidula fornicata* and *C. Plana.* Benthic Ecology Meetings, University of North Carolina, Wilmington, NC

1999 Jarrett, J.N. Temporal variation in metamorphic success and early recruitment of Semibalanus balanoides. Benthic Ecology Meetings, Baton Rouge, LA

1998 Jarrett, J.N. Variation among daily cohorts of the barnacle Semibalanus balanoides cyprid organic content, metamorphic success, and juvenile performance. SICB, Annual Meeting, Boston, MA

1997 Jarrett, J.N. The influence of cyprid energy content on metamorphic success and juvenile growth for the barnacle Semibalanus balanoides. Benthic Ecology Meetings, Portland, ME

1996 Pechenik, J.A., J. Rooney, and J.N. Jarrett. Temporary food limitation during larval development influences larval and juvenile growth rates of the gastropod Crepidula fornicata. SICB, New Mexico

1996 Jarrett, J.N. and J.A. Pechenik. Variation in cyprid and juvenile quality among daily cohorts of the barnacle Semibalanus balanoides. Benthic Ecology Meetings, University of South Carolina

1995 **Jarrett, J.N.** Seasonal variation in larval substrate selectivity of the barnacle Semibalanus balanoides. Larval Biology Meetings, Harbor Branch Oceanographic Institution, Florida

PROFESSIONAL ORGANIZATION MEMBERSHIP

Ecological Society of America
American Society of Limnology and Oceanography
The Oceanography Society
The Crustacean Society
International Society for Reef Studies

PEER REVIEW ACTIVITIES

Review manuscripts for the following journals:

- Estuarine, Coastal, and Shelf Science
- Integrative and Comparative Biology
- Marine Ecology Progress Series
- Journal of Experimental Marine Biology and Ecology
- Marine Biology
- Marine Ecology
- Functional Ecology
- Proceedings of the Royal Society of London B Series
- Journal of the Marine Biological Association of the UK
- Crustacean Biology
- Scientia Marina (International Journal of Marine Science)

Reviewed grant proposals for the following agencies:

- South Carolina Department of Natural Resources
- National Estuarine Research Reserve
- United States National Science Foundation
- Natural Environment Research Council, UK

Judge for Oral and Poster Presentations

Benthic Ecology Meeting 2010, 2011, 2015 and SICB Annual Meeting 2012

Session Chair

Benthic Ecology Meeting 2015

External Reviewer for Professional Assessment

2010 Biology Department, Georgia Southern University – Provided professional assessment of candidate being considered for promotion to Associate Professor and for tenure.

2009 The Integrative Oceanography Division at Scripps Institution of Oceanography – Provided professional assessment of candidate being considered for promotion to Associate Scientist.

SPECIALIZED TEXTBOOK REVIEWS

2008 Starr/Evers/Starr's Biology Today and Tomorrow, 3rd Edition. Created content for the Instructor's Resource Manual.

2008 Pearson's Middle Grades Science (2011 release). Reviewer of content.

2005 Triola and Triola, *Biostatistics for the biological and health sciences*. Pearson/Addison Wesley Publishers, NY.

2003 Ruppert, Fox, and Barnes, Invertebrate Zoology. Thomson/Brooks/Cole Publishers, CA.

WORKSHOPS ATTENDED

2008 The American Council on Education Department Leadership Program
2007 2007 Academic Chairpersons Conference
2006 New England Educational Assessment Network Workshop, University of Massachusetts, Amherst
2002 CCSU Chemical Safety and hazardous Waste Management and Emergency Response Training Course
2001 NCATE workshop hosted by CCSU School of Education and Professional Studies, January 17, 2001
2000 Project Kaleidoscope (PKAL) Conference - Keystone, Colorado - Education reform
2000 CT State Department of Education workshop on CMT and CAPT
2000 Teacher Portfolio Workshop, School of Education, Central Connecticut State University, January 2000
1998 Student Oriented Science Workshop. Center for Science and Mathematics Teaching, Tufts University,
-1999 December 4-5, 1998 and March 19, 1999
1998 New England Science Faculty Enhancement Collaborative, Summer Institute II. Hampshire College
1998 Academic Advising Workshop, CCSU – April 16, 1998
1997 CCSU Grants Workshop, CCSU – October 31, 1997
1997 Faculty Computer Workshop, CCSU – October 17, 1997
1997 The Beginning Educator Support and Training Program, CCSU. July 21-23, 1997

COMMUNITY ACTIVITIES

2016-present Board of Trustees, Simsbury Land Trust
2006-2011 Coach, Simsbury Soccer Club
2004-2010 Coach, Simsbury Youth Hockey

SADIE L. MARJANI

Central Connecticut State University
Department of Biology
1615 Stanley Street, New Britain, CT 06050
Tel: (860) 832-2678; Email: sadie.marjani@ccsu.edu

EDUCATION

Ph.D., Animal Science, May 2007
University of Connecticut (UConn), Storrs, CT

M.S., Animal Science, December 2004
University of Connecticut, Storrs, CT

B.S., *Summa Cum Laude*, Agriculture: Option in Integrated Animal Systems, May 2001
California State University, Chico, (CSUC) Chico, CA

PROFESSIONAL EXPERIENCE

Associate Professor Sept. 2017 – Present
Central Connecticut State University, Department of Biology

Assistant Professor Aug. 2012 – Sept. 2017
Central Connecticut State University, Department of Biology

Research Scientist Feb. 2012 – Aug. 2012
University of Connecticut, Department of Animal Science
PI: Dr. X. Cindy Tian

Postdoctoral Fellow Sept. 2009 – Sept. 2011
Yale University School of Medicine, Department of Genetics
PI: Dr. Sherman Weissman

Postdoctoral Fellow Oct. 2007 – Sept. 2009
Yale University, Department of Molecular, Cellular and Developmental Biology
PI: Dr. Michael Snyder

Postdoctoral Associate May 2007 – Sept. 2007
University of Connecticut, Department of Animal Science
PI: Dr. Xiangzhong (Jerry) Yang

Graduate Research Assistant Aug. 2001 – May 2007
University of Connecticut, Department of Animal Science
Advisor: Dr. X. Cindy Tian

Research Assistant Sept. 1999 – Aug. 2001
California State University, Chico, College of Agriculture
Advisor: Dr. Cynthia A. Daley

TEACHING EXPERIENCE

Assistant/Associate Professor: Central Connecticut State University (CCSU), Fall 2012 – Spr. 2018
BIO 403/503: Human Reproductive Biology, Fall 2012, 2013, 2014, 2015, 2016, 2017
BIO 404/504: Epigenetics in Development and Disease, Fall 2015, 2016, 2017
BIO 490/540: Embryology and Biotechnology, Spring 2016, 2017
BIO 490/540: Personalized Medicine (online), Summer 2017
BIO 200: Integrative Biology Laboratory, Fall 2012 – Spring 2018
BIO 318: Anatomy and Physiology I Laboratory, Fall 2012, 2013, 2014, 2015, 2016, 2017
BIO 319: Anatomy and Physiology II Laboratory, Spring 2013, 2014, 2015, 2016, 2017, 2018
BIO 333: Endocrinology, Spring 2013, 2014, 2015, 2016, 2017, 2018
BIO 390: Biology Research Experience II, Fall 2013, Spring 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018
BIO 491: Advanced Problems in Biology, Spring 2014, Fall 2015, Fall 2016, Fall 2017
BIO 590: Focused Study Advanced Biology, Spring 2016
BIO 591: Independent Research Project Advanced Biology, Fall 2014

Instructor: UConn, Fall 2010
ANSC 3121: Principles of Animal Genetics

Co-Instructor: UConn, Fall 2006
ANSC 229: Animal Embryology and Biotechnology

Graduate Teaching Assistant: UConn
ANSC 229: Animal Embryology and Biotechnology, Fall 2005
ANSC 217: Principles of Animal Genetics, Fall 2004
ANSC 219: Reproductive Physiology, Spring 2004
ANSC 125: Behavior and Training of Domestic Animals, Spring 2002

Undergraduate Mentoring
Marjani Laboratory, CCSU

- Jesse Alldredge, Ashley Adjei, Anna Bertoldo, Alexis Tolley, and Vincent Thoren. Expression of *TET1* in bovine in vivo and cloned blastocysts. BIO 390 – Fall 2017
- Savannah Pare. Expression of *MACROH2A* in bovine in vivo and cloned blastocysts. BIO 491 – Fall 2017
- Daniel Sigma, Michelle Seeds, Sasha Caro, Stessann Morrison and Victoria Czajkowski. Expression of *TRIM28* in bovine in vivo and in vitro derived blastocysts. BIO 390 – Spring 2017
- Savannah Pare, Nicole Dean, Sara Page, Yvana Estrada, Caroline Ferriera and Amanda Berman. Expression of *TRIM28* and *ZFP57* in bovine in vivo and in vitro fertilized blastocysts. BIO 390 – Fall 2016
- Adrian Rodriguez. Expression of *TET3* in mouse 2-cell in vivo and IVF embryos. BIO 491 – Fall 2016
- Audra Kohm, Kaitlyn Bellinger and Adrian Rodriguez. Expression of *TET1* in bovine in vivo and in vivo derived blastocysts. BIO 390 – Spring 2016.
- Jasmina Uvalic, Joseph Walsh, Jacob Jones, Margaret Young, Stephanie Evora and Ahmad Hassan. Expression of *TET1* and *TET2* in bovine in vivo and IVF blastocysts. BIO 390 – Fall 2015.
- Brandon Mendes, Ahmad Hassan, Rebecca Zapf-Pedraza and Kelsey Charest. Expression of *TET1* and *TET2* in bovine in vivo and IVF blastocysts. BIO 390 – Spring 2015.

- Whitney Grumley, Juliane Marks and Rachel Ricci. Expression of *Tet* genes in mouse IVF and in vivo preimplantation embryos. BIO 390 and BIO 491, Fall 2013 – Spring 2014.
- Kayla Crowley, Jenny Diaz, Stanley Dombrowski, Azra Sejfic. Expression of *Pcg7* in mouse IVF and in vivo preimplantation embryos. BIO 390, Spring 2014.
- Candace Croteau. Effects of Trichostatin A treatment on gene expression of cloned mouse 2-cell and blastocyst stage embryos. BIO 390, Spring 2014.

Graduate Thesis

Linh Duong: Comparative analysis of protocols used in testing effects of high oxygen culture conditions on the 5-methylcytosine (5mC) and 5-hydroxymethylcytosine (5hmC) content in differentially methylated regions (DMR) of imprinted genes in bovine *in vitro* fertilized (IVF) blastocysts. Fall 2015.

Guest Lectures

- **ANSC 3323/5621:** Animal Embryology and Biotechnology, "Mitochondrial Inheritance and Somatic Cell Nuclear Transfer," UConn, 2016
- **ANSC 3323/5621:** Animal Embryology and Biotechnology, "Xenotransplanation, Applications of Transgenesis and Targeting," UConn, 2014
- **ANSC 229**: "Determining Bovine Embryo Gene Expression Utilizing cDNA Microarrays" UConn, 2003-2006.
- **ANSC 229**: "All About Clones," UConn, Fall 2007, 2009.
- **PLSC 246**: "Animal Biotechnology," UConn, Fall 2007, 2009.
- **ANSC 1001**: "Animal Biotechnology," UConn, Fall 2009, 2010.
- **MED 5418**: "Somatic Cell NT," UConn Health Center, Fall 2009, 2010.

Relevant Professional Development

- **Course BBS 877,** "Theory and Practice of Scientific Teaching I," Center for Scientific Teaching at Yale, Fall 2010.
- **Seminar series** "Responsible Conduct of Research," Yale, June 2009.
- **Course** "Scientific Writing," Yale, May 2009.
- **Seminar series** "Mentoring the Next Generation of Scientists," Yale, June 2008.
- **Seminar series** "Preparing Future Science Faculty," Yale, February 2008.
- **Course EDCI 326-02** "Teaching and Learning Fundamentals Seminar Series" UConn, Institute for Teaching and Learning, Fall 2006.
- **Course EDCI 326-01** "Teaching and Learning Fundamentals" UConn, Institute for Teaching and Learning, Fall 2005.

SELECTED HONORS AND AWARDS

1st place, IETS Student Competition, IETS Annual Conference, Orlando, FL, 2006
Department of Animal Science Graduate Student Award, UConn, 2005
Sigma Xi Scientific Research Society, 2001
The Honor Society of Phi Kappa Phi, 2001
Golden Key International Honor Society, CSUC, 2000
Lt. Robert Merton Rawlins Merit Award, CSUC, 2000
Hadden Scholarship, Youth Foundation, 1997-2001
American Academy of Achievement Honor Delegate, Baltimore, MD, 1997

Grants:
Faculty Research Grant, CCSU, 2014-2015, 2015-2016, 2016-2017, 2017-2018
Curriculum Development Grant, CCSU, Summer 2013, 2015, 2017
Dean's Research Initiative Grant, CCSU, 2013
NIH R21, Co-investigator, PIs: Xinghua Pan and Sherman Weissman, 2010-2012
NIH NSRA postdoctoral fellowship, September 2009-2011
NIH NRSA Training Grant, October 2008-September 2009
US-Egypt Joint Science and Technology grant - junior scientist, PI. X. Cindy Tian, 2005
Doctoral Dissertation Fellowship, UConn, 2004
CSUC Research and Creativity Grant, 2000 and 2001

ACTIVITIES AND LEADERSHIP

Leadership/Service:
- **Member:** Committee on Academic Advising, CCSU, 2016-2018
- **Member:** Academic Standards Committee, CCSU, 2015-2017
- **Member:** Institutional Animal Care and Use Council, CCSU 2014-present
- **Member:** Curriculum Committee, Dept. of Biology, CCSU 2014-2018
- **Chair:** Student-Faculty Committee, Dept. of Biology, CCSU 2012-2018
- **Member:** Planning, Budget and Assessment Committee, Dept. of Biology, CCSU 2013-2015, 2016-2018
- **Member:** Ad hoc Committee for program review, Dept. of Biology, CCSU 2013
- **Member:** Summer School Committee, Dept. of Biology, CCSU 2012-2016
- **Co-founder and Chair:** IETS trainee group (Morulas) steering committee, 2010-2011
- **Co-founder and Member:** Postdoctoral Advisory Committee, Yale 2008-2011
- **Co-founder and Treasurer:** Animal Science Graduate Student Assoc., UConn 2004-2006

Publication preparation and review:
- Prepared and edited manuscripts for X. Cindy Tian, X. Yang, Michael Snyder and Xinghua Pan.
- Reviewer for *BMC Research Notes*, *Cellular Reprogramming, Journal of Animal Science, PLoS One* and *BMC Genomics*
- Editor for the journal *Single Cell Biology* (2014-2017)

Professional affiliations:
- Connecticut Association of Biology Teachers, 2015-present
- American Association of University Professors, 2012-present
- International Embryo Technology Society (IETS), 2001-present

INVITED TALKS

"Gene Expression and Epigenetic Profiles of the Early Bovine Embryo." Western Connecticut State University, Danbury, CT 2016.

"Embryonic Gene Expression Profiling Using Microarray Analysis." International Embryo Technology Society Annual Conference, January 3-7. San Diego, CA, 2009.

"The Potential of Stem Cells." Institute for Science Instruction and Study, Southern Connecticut State University, New Haven, CT, 2008-2011.

"Global Gene Expression Profiling of Bovine Cloned Embryos." California State University, Chico, 2008.

"Nuclear Reprogramming in Cloned Bovine Pre-implantation Embryos." University of Illinois, Urbana-Champaign, IL, 2007.

"Expression Profiling of Single Bovine Embryos Reveals Significant Effects of *In Vitro* Maturation, Fertilization and Culture." IETS Student Competition at Annual Conference, Orlando, FL, 2006 (awarded 1st place).

PUBLICATIONS

Peer-reviewed journal articles:

Lin Han*, Hua-Jun Wu*, Haiying Zhu, Kun-Yong Kim, **Sadie L. Marjani**, Markus Riester, Ghia Euskirchen, Xiaoyaun Zi, Jennifer Yang, Jasper Han, Michael Snyder, In-Hyun Park, Rafeal Irizarry, Sherman M. Weissman, Franziska Michor, Rong Fan and Xinghua Pan. Bisulfite-independent analysis of CpG island methylation enables genome-scale stratification of single cells. (2017) *Nucleic Acids Res.* doi: 10.1093/nar/gkx026. *denotes co-first authors.

Zongliang Jiang, Patrick Harrington, Ming Zhang, **Sadie L. Marjani**, Joonghoon Park, Lynn Kuo, Csaba Pribenszky and Xiuchun Cindy Tian. Effects of High Hydrostatic Pressure on Expression Profiles of In Vitro Produced Vitrified Bovine Blastocysts. (2016) *Scientific Reports.* 6:21215.

Zongliang Jiang, Hong Dong, Xinbao Zheng, **Sadie L. Marjani**, David M. Donovan, Jingbo Chen, Xiuchun Cindy Tian. mRNA Levels of Imprinted Genes in Bovine In Vivo Oocytes, Embryos and Cross Species Comparisons with Humans, Mice and Pigs. (2015) *Scientific Reports.* 5:17898.

Xinghua Pan, Russell E. Durrett, Haiying Zhu, Yoshiaki Tanaka, Yumei Li, Xiaoyuan Zi, **Sadie L. Marjani,** Ghia Euskirchen, Chao Ma, Robert H. LaMotte, In-Hyun Park, Michael P. Snyder, Christopher E. Mason, and Sherman M. Weissman. Two methods for full-length RNA sequencing for low quantities of cells and single cells. (2013) *Proc. Natl. Acad. Sci. USA* 110(2):594-9.

Le Jiang, **Sadie L. Marjani**, Marcelo Bertolini, Gary B. Anderson, Xiangzhong Yang and X. Cindy Tian. Indistinguishable transcriptional profiles between *in vivo*- and *in vitro*-produced bovine fetuses. (2011) *Molecular Reproduction and Development.* 78(9):648-50.

H. A. Adams, B. R. Southey, R. E. Everts, **S. L. Marjani**, X. C. Tian, H. A. Lewin, S. L. Rodriguez-Zas. Transferase activity function and system development process are critical in cattle embryo development. (2011) *Functional & Integrative Genomics.* 11(1):139-50.

Vincent M. Bruno, Zhong Wang, **Sadie L. Marjani**, Ghia M. Euskirchen, Jeffrey Martin, Gavin Sherlock, Michael Snyder. Comprehensive annotation of the transcriptome of the human fungal pathogen *Candida albicans* using RNA-seq. (2010) *Genome Research.* 20(10):1451-8.

Joonghoon Park, **Sadie L. Marjani**, Liangxue Lai, Melissa Samuel, David Wax, Steven R. Davis, Richard S. Bruno, Randall S. Prather, Xiangzhong Yang, X. Cindy Tian. Altered Gene Expression Profiles in the Brain, Kidney, and Lung of Deceased Neonatal Cloned Pigs. (2010) *Cellular Reprogramming.* 12(5):589-97.

Sadie L. Smith, L-Y. Sung, R.E. Everts, R. Page, B. Henderson, F. Du, T.L. Nedambale, S. Rodriguez-Zas, J-P. Renard, H.A. Lewin, X. Yang & X. C. Tian. Global Gene Expression Profiling of Single Bovine Embryos Uncovers Significant Effects of *In Vitro* Maturation, Fertilization and Culture. (2009) *Molecular Reproduction and Development.* 76(1):38-47.

Li-Ying Sung, Shaorong Gao, Hongmei Shen, Hui Yu, Yifang Song, **Sadie L. Smith**, Ching-Chien Chang, Kimiko Inoue, Lynn Kuo, Jin Lian, Ao Li, X. Cindy Tian, David P. Tuck, Sherman M. Weissman, Xiangzhong Yang and Tao Cheng. Differentiated cells are more efficient than adult stem cells for cloning by somatic cell nuclear transfer. (2006) *Nature Genetics* 38:1323-1328.

T. Suteevun, R. Parnpai, **S. L. Smith,** C-C. Chang, X. Yang & X. C. Tian. Epigenetic Characteristics of Swamp Buffalo Cloned and *In Vitro* Fertilized Embryos. (2006) *J. Anim. Sci.* 84:2065-2071.

T. Suteevun, **S. L. Smith**, S. Muenthaisong, X. Yang, R. Parnpai and X. C. Tian. Anomalous mRNA levels of Chromatin Remodeling Genes in Swamp Buffalo (*Bubalus bubalis)* Cloned Embryos. (2006) *Theriogenology* 65:1704-1715.

Sadie L. Smith, R. E. Everts, X. C. Tian, F. Du, L-Y. Sung, S. Rodriguez-Zas, B-S. Jeong, J-P. Renard, H. A. Lewin, & X. Yang. Global Gene Expression Profiles Reveal Significant Nuclear Reprogramming by the Blastocyst Stage after Cloning. (2005) *Proc. Natl. Acad. Sci. USA* 102:17582-17587.

X. C. Tian, C. Kubota, K. Sakashita, Y. Izaike, R. Okano, N. Tabara, C. Curchoe, L. Jacob, Y. Zhang**, S. Smith**, C. Bormann, J. Xu, M. Sato, S. Andrew, and X. Yang, Milk and Meat Compositions of Bovine Clones. (2005) *Proc. Natl. Acad. Sci. USA* 102:6261-6266.

Peer-reviewed review articles and book chapters:

Wanjun Zhu*, Xiaoyan Zhang*, **Sadie L. Marjani**, Shixiu Wu, Xinghua Pan. Next-Generation Molecular Diagnosis: Single-Cell Sequencing from Bench to Bedside. (2016) *Cellular and Molecular Life Sciences*. doi:10.1007/s00018-016-2368-x. *denotes co-first authors.

Xiaoyan Zhang, **Sadie L. Marjani**, Zhaoyang Hu, Sherman Weissman, Xinghua Pan, Shixiu Wu. Single-Cell Sequencing for Precise Cancer Research: Progress and Prospects. (2016) *Cancer Research.* 76(6):1305-12.

X. Cindy Tian and **Sadie L. Marjani**. "Epigenetics of Cloned Preimplantation Embryos of Domestic Animals." Livestock Epigenetics. West Sussex, UK: WILEY-BLACKWELL, 2012.

Li-Ying Sung, **Sadie L. Marjani,** Tomokazu Amano, Xiangzhong Yang and X. Cindy Tian. "Somatic Cell Nuclear Transfer and Derivation of Embryonic Stem Cells." Methods in Stem Cell Medicine and Bioengineering. Norwood, Massachusetts: ARTECH HOUSE, INC., 2009.

Sadie L. Marjani, Daniel Le Bourhis, Xavier Vignon, Yvan Heyman, Robin E. Everts, Sandra L. Rodriguez-Zas, Harris A. Lewin, Jean-Paul Renard, Xiangzhong Yang and X. Cindy Tian. Embryonic gene expression profiling using microarray analysis. (2009) *Reproduction, Fertility and Development.* 21(1): 22-30.

Xiangzhong Yang and **Sadie L. Smith**. ES cells derived from cloned embryos in the monkey – a jump toward human therapeutic cloning. (2007) *Cell Research* 17:969-970.

Xiangzhong Yang, **Sadie L. Smith**, X. Cindy Tian, Harris A. Lewin, Jean-Paul Renard, Teruhiko Wakayama. Nuclear reprogramming in cloned embryos and its implications for therapeutic cloning. (2007) *Nature Genetics* 39:295-302.

Tian XC, **Smith SL**, Zhang SQ, Kubota C, Curchoe C, Xue F, Yang L, Du F, Sung L-Y, Yang X. "Nuclear reprogramming by somatic cell nuclear transfer – the cattle story." Reproduction in Domestic Ruminants VI. Juengel JL, Murray JF and Smith MF (eds). Nottingham, UK: Nottingham University Press. 2007 327-340.

Abstracts:

Zongliang Jiang, Jiangwen Sun, **Sadie L. Marjani**, Hong Dong, Xinbao Zheng, Jinbo Bi, Jinbo Chen and Xiuchun Cindy Tian. A catalog of reference genes with high, medium and low levels of expression during bovine in vivo pre-implantation development. (2017) *Reproduction, Fertility and Development*. 29(1): 173.

Zongliang Jiang, Patrick Harrington, Ming Zhang, **Sadie L. Marjani**, Joonghoon Park, Lynn Kuo, Csaba Pribenszky and Xiuchun Cindy Tian. Effects of high hydrostatic pressure on expression profiles of in vitro produced vitrified bovine blastocysts. (2016) *Reproduction, Fertility and Development*. 28(1 & 2): 32.

S. L. Marjani, M. G. Carter, L-Y. Sung, K. Inoue, S. Rodriguez-Zas, L. Wang, H. Yu, H. Shen, T. Cheng, X. Yang & X. C. Tian. Effects of Trichostatin A treatment on gene expression of cloned mouse 2-cell and blastocyst stage embryos. (2014) *Reproduction, Fertility and Development*. 26(1):135.

Le Jiang, **Sadie L. Marjani**, Marcelo Bertolini, Harris A. Lewin, Gary B. Anderson, Xiangzhong Yang and X. Cindy Tian. Indistinguishable transcriptional profiles between *in vivo*- and *in vitro*-produced bovine fetuses. (2010) *Reproduction, Fertility and Development*. 22(1):297.

L.Y. Sung, Chih-Jen Lin, Jie Xu, **Sadie L. Marjani**, Hongmei Shen, Hui Yu, Tao Cheng, Xiangzhong Yang and X. Cindy Tian. Trichostain A treatment improves the reprogramability of donor cells from the haematopoietic lineage by somatic cell nuclear transfer. (2009) Society for the Study of Reproduction.

Sadie L. Smith, Daniel Le Bourhis, Xavier Vignon, Yvan Heyman, Harris A. Lewin, X. Cindy Tian, Jean-Paul Renard, and Xiangzhong Yang. Global gene expression profiles of bovine cloned embryos with differing developmental competencies: the Good, the Bad and the Ugly. (2007) Society of the Study of Reproduction.

Xiangzhong Yang, **Sadie L. Smith**, X. Cindy Tian, Harris A. Lewin, Jean-Paul Renard and Teruhiko Wakayama. Nuclear reprogramming of cloned embryos - implications for therapeutic cloning. (2007) StemCONN Hartford, CT.

Sadie L. Smith, Li-Ying Sung, Robin E. Everts, Raymond Page, Boyd Henderson, Fuliang Du, T.L. Nedambale, Sandra Rodriguez-Zas, Jean-Paul Renard, Harris A. Lewin, Xiangzhong Yang & X. Cindy Tian. Expression Profiling of Single Bovine Embryos Reveals Significant Effects of *In Vitro* Maturation, Fertilization and Culture. (2006) *Reproduction, Fertility and Development*. 18(1,2):111.

T. Suteevun, **S. L. Smith**, S. Muenthaisong, X. Yang, R. Parnpai, X.C. Tian. Expression of chromatin remodeling genes in cloned and IVF swamp buffalo embryos. (2005) Proceedings of the 2nd Asian Reproductive Biotechnology Conference. Pp. 97-99. Bangkok, Thailand.

MARIANNE S. COSGROVE

CRNA, DNAP, APRN

EDUCATION

1979 - 1980 **Fairfield University** Fairfield, CT
Major: Biology

1980 - 1984 **Salve Regina University** Newport, RI
Major: Nursing; Minor: Biology
BS awarded June, 1984

1988 - 1990 **Central Connecticut State University** New Britain, CT
Major: Biology/Anesthesia
MS awarded May, 1993

Yale New Haven Hospital
School of Nurse Anesthesia
(formerly Hospital of St. Raphael School of Nurse Anesthesia) New Haven, CT
Clinical Internship in Nurse Anesthesia
Diploma awarded October, 1990
Certified January, 1991

2009-2011 **Virginia Commonwealth University** Richmond, VA
Major: Doctor of Nurse Anesthesia Practice
DNAP awarded May, 2011
2013-present *Major: Ph.D. in Health Related Sciences: Nurse Anesthesia (Ph.D.(c) June, 2015; projected date of dissertation completion December, 2019)*
A.D. Williams Doctoral Award, Fall Semester, 2014; Spring Semester 2016

PROFESSIONAL EXPERIENCE

October 1990 - present Yale New Haven Hospital
New Haven, CT

Staff Certified Registered Nurse Anesthetist (CRNA)
Formerly Hospital of St. Raphael/Anesthesia Associates of New Haven, P.C.; transition to YNHH on April 1, 2014. Responsibilities include anesthetic care of the client during the perioperative period, as well as didactic and clinical instruction at the Hospital of St. Raphael School of Nurse Anesthesia. Member of the Anesthesia Subcommittee to the Pharmacy, past airway consultant to the hospital's "254" (code blue) team and anesthesia liaison and support member for the Women's Center for Breast Health. Anesthesia services rendered at the St. Raphael campus of Yale New Haven Hospital, New Haven, CT and at the Hamden Surgical Center (2000-'09), Hamden, CT.

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E-MAIL marianne.cosgrove@yale.edu

April 2013 - present Yale New Haven Hospital School of Nurse Anesthesia
New Haven, CT

Program Director

Formerly Hospital of St. Raphael School of Nurse Anesthesia. Responsibilities include oversight of all operations of a nurse anesthesia program including interview of applicants, management and evaluation of student clinical experiences (on and off-site), continual review and refinement of curriculum, exams, and care plans, delivery of didactic lectures, clinical precepting, student mentoring and counseling and all ongoing administrative functions.

April 2014 - present Yale University
Yale Medical Group
New Haven, CT

Instructor (clinical and didactic)

January 2014 – present International Student Journal of Nurse Anesthesia

Contributing Editor

July 2005 - present Core Concepts Anesthesia Review, LLC
Madison, CT

Business founder, co-owner and lecturer

Review course designed to ready the Student Registered Nurse Anesthetist for the National Certification Exam and to provide the CRNA with a review of basic and advanced anesthetic principles. Live reviews given at various anesthesia programs; ongoing practice examinations and "Question of the Day" administered via website at www.ccanesthesiareview.com.

September 2011 – January 2014 Virginia Commonwealth University
Richmond, Virginia

Teaching Assistant

Biostatistical Methods for Health-Related Sciences (ALHP 760-002). Responsibilities include grading exams and projects, curriculum development and support/instruction via distance education for students enrolled in VCU's Doctor of Nurse Anesthesia Practice (DNAP) program.

December 1994 – April 2014 Yale New Haven Hospital
New Haven, CT

Staff CRNA - Obstetrical Service

Responsibilities include anesthetic care of the parturient. Proficient in the administration of spinal, epidural and combined spinal-epidural anesthesia. Shifts taken on a per diem basis.

July 2006 – April 2013 Hospital of St. Raphael School of Nurse Anesthesia
New Haven, CT

Assistant Program Director

Responsibilities included support of HSRSNA's Program Director in all operations of the anesthesia school as aforementioned.

July and August 1997 Anesthesia Associates of New Haven, P.C.
New Haven, CT

Acting Coordinator-Acute Pain Service (APS)

Responsibilities included care and follow-up of patients on the APS. Techniques for pain control included use of patient controlled analgesia (PCA), continuous lumbar epidurals, intermittent lumbar and thoracic epidural narcotics, and intrathecal narcotics.

September 1993 – December 2005 Central Connecticut State University
New Britain, CT

Adjunct Faculty/Lecturer-Department of Biology

Instructor in Pharmacology (BIO 528).

May 1987 - May 1988 Yale New Haven Hospital
New Haven, CT

Staff Registered Nurse (RN)-Operating Room

Responsibilities included proficiency as both a circulating RN and scrub technician.

May 1985 - May 1989 Yale New Haven Hospital
New Haven, CT

Staff RN-Newborn Special Care Unit

Responsibilities included care of acutely and chronically ill newborns and their families, preceptor for new staff members, charge nurse (nights), and membership on the Neonatal Transport Team. *Shifts taken on a per diem basis from 5/87-5/89 while employed in the YNHH OR and during the didactic portion of anesthesia program to maintain skills.*

October 1984 - May 1989 Yale New Haven Hospital
New Haven, CT

Childbirth Educator-Perinatal Education Program

Instructed expectant clients about the process of labor and delivery, Lamaze and relaxation techniques, and basic infant care skills.

August 1984 - May 1985 Yale New Haven Hospital
New Haven, CT

Staff RN-Obstetric Service

Responsibilities included care of postpartum clients and their newborns. Charge responsibilities undertaken as needed for both day and night shifts.

June - August 1983 Yale New Haven Hospital
New Haven, CT

Student Clinical Assistant-Obstetric Service

Summer clinical internship designed to acclimate the student nurse to the role of the R.N. Included all aspects of patient care excluding administration of medications.

June - August 1982 Yale New Haven Hospital
New Haven, CT

Nurse Aide-Ambulatory Services

Responsibilities included assisting the MD and the RN in the care of the outpatient clinic client. Clinics included Primary Care (adult and pediatric), Renal, Rheumatology, GI, Allergy, Personnel Health, OB-GYN, and Plasmapheresis.

PROFESSIONAL HONORS AND AWARDS

February 1986

Inducted into Sigma Theta Tau-The International Honor Society of Nursing - Delta Mu Chapter at the Yale School of Nursing

January 1989

Recipient of the Central Connecticut State University Graduate Student Academic Scholarship

October 1990

Recipient of the Agatha Hodgins C.R.N.A. Memorial Award for the outstanding Graduate Nurse Anesthetist

Recipient of the Roche Nurse Anesthesia Award for academic excellence in the anesthesia program.

October 1997

Recipient of the Hospital of St. Raphael School of Nurse Anesthesia Faculty Appreciation Award

March 2011

Inducted into the Golden Key International Honour Society – VCU Chapter

CERTIFICATIONS

Certified by the Council on Certification of Nurse Anesthetists

January 1991 - present (renewed biennially; exp 2018)

Certified by the American Heart Association in Basic Life Support (BLS)
March 1982 - present (renewed biennially; exp 2019)
Certified by the American Heart Association in Advanced Cardiac Life Support (ACLS)
October 1995 - present (renewed biennially; exp 2019)
Certified by the American Heart Association in Pediatric Advanced Life Support (PALS)
April 2008 – present (renewed biennially; exp 2019)
Certified in Reiki I
March 2008
Certified in Reiki II
August, 2008
Certified by Collaborative Institutional Training Initiative (CITI)
June 2010 – present (renewed biennially; exp 2017)
Certified by the Institute for Healthcare Improvement (IHI) in Patient Safety
December 2013
PS 100: Introduction to Patient Safety
PS 101: Fundamentals of Patient Safety
PS 102: Human Factors and Safety
PS 103: Teamwork and Communication
PS 104: Root Cause and Systems Analysis
PS 105: Communicating with Patients after Adverse Events
PS 106: Introduction to the Culture of Safety

PROFESSIONAL ASSOCIATIONS

The American Association of Nurse Anesthetists-Member #41348
The Connecticut Association of Nurse Anesthetists
The New England Assembly of School Faculty
Secretary: March 2015 – March 2017
Chair: March 2017 - Present

PUBLICATIONS

Cosgrove, MS. Anesthesia for the Adult Patient with an Unrepaired Congenital Cyanotic Heart Defect: A Case Report. *AANA J*. 2012; 80(3):197-203.

Cosgrove, MS. Operative care of obstetric patients. *Crit Care Nurs Clin N Am*. 2015; 27(1): 89-103. http://dx.doi.org/10.1016/j.cnc.2014.10.003

Cosgrove, MS. Infection control in the operating room. *Crit Care Nurs Clin N Am*. 2015; 27(1): 79-87. http://dx.doi.org/10.1016/j.cnc.2014.10.004

Reilly, C. Tracheal injury after lobectomy and DLT. *Int Student J of Nurse Anesthesia*; Vol 15; Issue 3, Fall 2016. Faculty mentor.

PRESENTATIONS

Post-operative Pulmonary Edema.
Connecticut Society of PeriAnesthesia Nurses (CSPAN), New Haven, CT; March 2009;
Connecticut Association of Nurse Anesthetists (CANA), Meriden, CT; March 2014.

Planes to Patients: Embracing a Culture of Safety.
Connecticut Society of PeriAnesthesia Nurses (CSPAN), Hartford, CT; March 2011.

The Experience of the Student Registered Nurse Anesthetist: Do We Need Stress Reduction Curriculum in our Anesthesia Programs? Poster presentation of pilot research study findings at the American Association of Nurse Anesthetists National Convention, Boston, MA; August 2011.

Use of the Laryngeal Mask Airway. Hospital of St. Raphael Department of Cardiology; July 2012.
Airway on Demand. Preceptor at Difficult Airway Workshop (supraglottic devices, channel scope, cricothyrotomy lab; Syndaver intubations). Yale New Haven Hospital; March 2013, April, November 2014.

Use of the syringe pump/Delivery of propofol via continuous infusion. Yale New Haven Hospital Department of Oral and Maxillofacial Surgery, August, 2013; May, 2016.

Klippel-Feil Syndrome: A Case Report. Student mentor (Ruth Hammerschmidt, RN); Poster presentation at the American Association of Nurse Anesthetists Annual Congress, Orlando, FL; August, 2014.

Post-obstructive Pulmonary Edema
Neonatal Surgical Emergencies
Nurse Anesthesiology Faculty Associates (NAFA)
Williamsburg, VA, November, 2013
Hilton Head, SC, May, 2014

Making Do With What's Left: The Impact of Drug Shortages on Anesthesia Practice
Anesthesia for the Patient with Hepatic Disease
Nurse Anesthesiology Faculty Associates (NAFA)
Williamsburg, VA, November, 2014
Orlando, FL, December, 2014

Anesthetic Agents and Adjuvants
Yale New Haven Hospital – St. Raphael Campus Perioperative Staff RN in-service; February, 2015.

Making Do With What's Left: The Impact of Drug Shortages on Anesthesia Practice
Connecticut Association of Nurse Anesthetists (CANA), Norwich, CT; March, 2015.

Molloy, B., Watson, C., Stone, K., French, C., Vaughn, D., Cosgrove, M., Marando, R. *Perioperative Cosopt for Rising Intraocular Pressure During Steep Trendelenburg Surgery.* Poster presentation at the Yale New Haven Hospital Joseph Zaccagnino Patient Safety and Clinical Quality Conference, Bridgeport, CT; May, 2015.

Physiologic Changes of Pregnancy
Pediatric Cardiac Anomalies
Anesthesia for the Patient with Metastatic Disease
Nurse Anesthesiology Faculty Associates (NAFA)
Hilton Head, SC, May, 2016

Planes to Patients: Embracing a Culture of Safety
Yale New Haven Hospital Advanced Practice Provider (APP) Symposium; October, 2016

Local Anesthetics, Toxicity and Intralipid 20%
Yale New Haven Hospital – St. Raphael Campus Labor and Delivery Staff RN in-service; November, 2016
YNHH St. Raphael Campus Perioperative Staff RN in-service; May, 2017

Anesthesia for the Cancer Patient
Connecticut Association of Nurse Anesthetists (CANA), Cromwell, CT; March, 2017
Lewis Anesthesia for CE: Updates in Anesthesia, Meriden, CT; June, 2017

Management of One-lung Ventilation
Middlesex Anesthesia Department Grand Rounds, Middletown, CT; June, 2017

Certified Registered Nurse Anesthetists: History to Present Day
National Student Leadership Conference (NSLC) at Yale University, New Haven, CT; June and July, 2017

Diversity CRNA Information Session Faculty panel member; Simulated epidural preceptor
Drexel University, Philadelphia, PA; November, 2017

Supraglottic Devices: LMA vs. iGel.
MH Update: Use of Ryanodex.
Yale New Haven Hospital Department of Oral and Maxillofacial Surgery; January, 2018.

RESEARCH PROJECTS

A Preventive Intervention for Rising Intraocular Pressure in Steep Trendelenburg Position Surgical Patients: Development of the Molloy/Bridgeport Anesthesia Associates Observation Scale-An Observation Study. Site Investigator, Yale New Haven Hospital - St. Raphael Campus, New Haven, CT (Initial study 10/2011-8/2012; Phase II [Chemosis Observation Study] 8/2012-2017).

PERSONAL

D.O.B. February 17, 1962
Licensure: RN - E46770 (CT)
APRN - 000164 (CT)
Controlled Substance - 18995 (CT)
DEA - MC1035028
NPI – 1912960451

REFERENCES

Available upon request

Revised – January 2018

Terri S. Williams
269 Tremont Street
Newington, Connecticut 06111
tswcrna@gmail.com
Phone: (860) 539-2625

OBJECTIVE

To transition the Nurse Anesthesia Program of Hartford an entry level doctoral program.

EDUCATION

Virginia Commonwealth University, Richmond, Virginia
Doctor of Nurse Anesthesia Practice, August 2015

Central Connecticut State University, New Britain, Connecticut
Master of Science in Biology: Nurse Anesthesia, October 2003

The University of Connecticut, Storrs, Connecticut
Bachelor of Science in Nursing, May 1986

ADMINISTRATIVE EXPERIENCE

Nurse Anesthesia Program of Hartford
Hartford Hospital
Program Director; May 2016 to present

- Formulates and maintains an educational program consistent with current anesthesia practices and procedures to meet the school objectives and secure and maintain professional accreditation through the Council on Accreditation of Nurse Anesthesia Educational Programs (COA). With input from appropriate committees, develops and annually reviews school policies.
- Provides leadership for the faculty. Delegates responsibility to selected faculty members for teaching, supervising and other school business. Evaluates instructor's effectiveness and teaching methods.
- Participates in teaching and/or oversees the didactic courses, oral comprehensive exams and capstone projects.
- In consultation with IAA Board of Directors, prepares and administers school budget.
- In cooperation with the CCSU's Academic Coordinator and Regional Advisory Committee plans curriculum content and sequence, prepares schedules, and coordinates clinical and academic instruction and rotation of students through various clinical areas.
- Oversees clinical assignments of students.

- Advises and counsels students during end of semester evaluations and at other times as needed.
- Maintains a record system indicating credit hours of academic instruction and clinical experience, grades for each student. Prepares periodic reports concerning school activities, progress, and achievement of students.
- Advises conducting institution of future needs for continued growth, improvement and maintenance of standards. Recommends physical facilities which are essential to fulfillment of the school objectives.
- Attends and represents the school at professional and educational meetings. Keeps current with state, regional and national nurse anesthesia-related matters.
- Coordinates and maintains clinical rotation sites.

TEACHING EXPERIENCE

Central Connecticut State University
New Britain, CT
Part-Time Faculty; August 2017 to present

- Adjunct Faculty in the Biology Department
- Didactic teaching of entry level SRNAs and Advanced Specialization (CRNAs enrolled in the doctoral completion program)
- Capstone Chair
- Course leader for Anesthesia Clinical Practicum (ACP 730, 731, 732) for entry level SRNAs
- Course leader for Advanced Anesthesia Clinical Practicum (ACP 733, 734, 735) for entry level SRNAs
- Course leader for ANES 590 Clinical Correlation Conference
- Member of the DNAP Curriculum Committee

Nurse Anesthesia Program of Hartford
Hartford Hospital
Assistant Program Director; October 2013 to May 2016

- Assisting the program director
    - Interview of potential nurse anesthesia students
    - Clinical education and evaluation of nurse anesthesia students
    - Primary resource for SRNAs to evaluate and present current educational and/or research material to peers/colleagues in an hour long seminar
    - Curriculum design, course descriptions, course outcomes, and course objectives in collaboration with faculty from Central Connecticut State University, the Nurse Anesthesia Program of Hartford and the Yale New Haven Hospital School of Nurse Anesthesia
    - Completion of application for the Doctorate in Nurse Anesthesia Practice to the Council on Accreditation

- Didactic teaching of SRNAs regarding basic principles of anesthesia
    - Monitoring
    - Acid/base balance
    - Fluid and electrolyte balance and transfusion therapy
    - Spinal and epidural anesthesia
    - Peripheral nerve blocks
- Didactic teaching of advanced principles of anesthesia
    - Chart reviewing, documentation, and care planning
    - Anesthesia machines
    - Anesthesia care for diagnostic and therapeutic procedures
    - Local anesthetics
    - Neuromuscular blocking agents, cholinesterase inhibitors, anticholinergic agents
    - Advanced care planning
    - Policy issues in the state of Connecticut and nationally
    - Certification, licensure, and recertification

New Britain School of Nurse Anesthesia
New Britain General Hospital
Certified Registered Nurse Anesthetist; October 2003 to October 2013

- Didactic teaching of SRNAs regarding basic principles of anesthesia
    - Monitoring
    - Acid/base balance
    - Fluid and electrolyte balance and transfusion therapy
    - Spinal and epidural anesthesia
    - Peripheral nerve blocks
- Didactic teaching of advanced principles of anesthesia
    - Chart reviewing, documentation, and care planning
    - Anesthesia machines
    - Anesthesia care for diagnostic and therapeutic procedures
    - Local anesthetics
    - Neuromuscular blocking agents, cholinesterase inhibitors, anticholinergic agents
- Assisting the program director and assistant program director
    - Interview of potential nurse anesthesia students
    - Clinical education and evaluation of nurse anesthesia students
    - Participation in the evaluation committee

CLINICAL EXPERIENCE

Hartford Anesthesiology Associates
Hartford Hospital
Certified Registered Nurse Anesthetist; October 2013 to present
Per Diem Certified Registered Nurse Anesthetist; September 2006- August 2009

- Provide anesthesia services in obstetrics, ambulatory surgery, main operating room, and non-operating room areas such as endoscopy, x-ray, CT scan, MRI

New Britain Anesthesia
New Britain General Hospital
Bradley Memorial Hospital
Certified Registered Nurse Anesthetist; October 2003 to October 2013

- Provide anesthesia services in obstetrics, ambulatory surgery, main operating room, and non-operating room areas such as endoscopy, x-ray, CT scan, MRI, intubations in the emergency room, intensive care unit, and nursing units as well as responding to cardiac arrests throughout the hospital

Hartford Hospital
Cardiothoracic Intensive Care Unit
Staff Nurse; October 2000 to May 2002

- Primary and coprimary nurse responsible for the care of patients immediately after cardiac surgery responsible for ventilator weaning, vasopressor titration, inotrope titration, and vasodilator therapy according to hemodynamic parameters, respiratory parameters, and blood gas interpretation
- Validated in advanced critical care modalities (i.e. intra-aortic balloon pump, ventricular assist device, Heartmate)

Hartford Hospital
Medical Intensive Care Unit
Registered Nurse; January 1992 to October 2000

- Primary, coprimary, and associate nurse in medical critical care validated in advanced critical care modalities (i.e. jet ventilation, CVVH, Minnesota tube) with the responsibility to educate patients and their families about illness, disease, treatment plans, and healthcare choices
- Clinical Level III Registered Nurse and resource nurse responsible for orientation of new staff (registered nurse, support technicians), clinical education of student nurses, and an active participant in the unit based quality assurance program
- Staff scheduler responsible for meeting staffing needs 24 hours a day 7 days per week

Hartford Hospital
Collaborative Practice Medical Unit
Registered Nurse; June 1986 to January 1992

- Primary and coprimary nurse responsible for the education of patients and families about illness, disease, treatment plans, and healthcare choices
- Clinical Level III Registered Nurse and resource nurse responsible for the orientation of new staff (registered nurse, support technicians) and clinical education of student nurses
- Active participant in the unit based quality assurance program

PROFESSIONAL DEVELOPMENT

Basic Life Support
Advanced Cardiac Life Support
Pediatric Advanced Life Support

ACTIVITIES

- Member American Association of Nurse Anesthetists (AANA)
- Member of Connecticut Association of Nurse Anesthetists (CANA)
    - Secretary of CANA August 2016 to present
- Member of the Assembly of School Faculty (ASF)
- Member of the New England Assembly of School Faculty (NEASF)
    - Treasurer of NEASF Spring 2016 to present
- Item Writer for the National Board of Certification and Recertification of Nurse Anesthetists (NBCRNA)
    - Fall 2017 to present

Curriculum Vitae

Christina M Feller, CRNA
Home Address: 110 W Main St Chester CT 06412
Contact Mobile: (210) 478-1382
Email: christina.feller@gmail.com

Education

Quinnipiac Doctor of Nursing Practice Program August 2016-Present, estimate graduation May 2018

Diploma in Nurse Anesthesia, Hospital of Saint Raphael School of Nurse Anesthesia New Haven, CT
May 2009-October 2011

Masters of Science in Biology, Central Connecticut State University New Britain, CT
May 2009 – October 2011

Bachelors of Science in Nursing, University of Texas Health Science Center at San Antonio, San Antonio TX
January 2003-December 2004

Professional Experience

- Assistant Director Nurse Anesthesia Program of Hartford October 2016-Present
- Certified Registered Nurse Anesthetist for Integrated Anesthesia Associates Hartford, CT
  January 2012-Present
- Nurse Anesthesia School of Hartford Clinical Faculty, Main OR and Obstetrics 2015-Present
- Clinical Faculty for Nurse Anesthesia Program at Hartford for Obstetric Anesthesia 2012-2015
- Quinnipiac Doctoral Program Clinical Coordinator January 2016-October 2017
- Graduate Registered Nurse Anesthetist for Woodland Anesthesiology Hartford, CT
  November 2011-March 2013
- Travel Nurse: Yale New Haven Hospital and Sloan Kettering Hospital, ICU Float Pool, Neuro ICU, Nutrition. January 2008-May 2009
- Charge Nurse of Post Anesthesia Care Unit and Circulator at San Antonio Orthopedic Institute
  June 2007-December 2007
- Registered Nurse Neurosurgical and Surgical Trauma Intensive Care Unit, University Hospital, San Antonio TX- January 2005-June 2007

Licensure and Certification

National Board of Certification and Recertification of Nurse Anesthetists
State of Connecticut Advanced Practice Registered Nurse
State of Connecticut Controlled Substance Registration for Practitioner
State of Connecticut Registered Nurse
Advanced Cardiac Life Support
Basic Life Support
Sigma Theta Tau International Nursing Honor Society

ASHLEY L. PHILLIPS, CRNA, DNAP, APRN

1121 Georges Hill Road, Southbury, CT 06488 | (203)228-0630 | ashley.phillips@yale.edu

EDUCATION

Virginia Commonwealth University, Richmond, VA
Doctor of Nurse Anesthesia Practice **2015-2017**

Central Connecticut State University, New Britain, CT
Yale-New Haven Hospital School of Nurse Anesthesia, New Haven, CT
(Formerly Hospital of Saint Raphael School of Nurse Anesthesia)
Master of Science in Biology, Anesthesia **2008-2010**

Western Connecticut State University, Danbury, CT
Bachelor of Science in Nursing **2002-2006**
Graduated Magna Cum Laude
Inducted into Sigma Theta Tau International Nursing Honor Society – Kappa Alpha Chapter

AWARDS

Student of the Year for Academic and Clinical Excellence in Nurse Anesthesia **2010**

LICENSURE AND CERTIFICATIONS

CT RN #78833	**exp. 2018**
CT APRN #4585	**exp. 2018**
National Board of Certification & Recertification for Nurse Anesthetists #85144	**exp. 2020**
American Heart Association Basic Life Support	**exp. 2018**
American Heart Association Advanced Cardiac Life Support	**exp. 2018**
Institute for Healthcare Improvement (IHI) in Patient Safety	**2015**

PROFESSIONAL EXPERIENCE

Yale-New Haven Hospital School of Nurse Anesthesia, New Haven, CT **2016-present**
Assistant Program Director
Responsibilities include administration and management of operations of a nurse anesthesia educational program in coordination with the Program Director. Participation in the interviewing of applicants, refinement of examinations, ongoing evaluation of SRNAs, clinical precepting and mentoring, lecturing, and ongoing administrative responsibilities.

Yale-New Haven Hospital School of Nurse Anesthesia, New Haven, CT **2016-present**
Simulation Lab Coordinator
Responsibilities include development, refinement, and evaluation of simulation scenarios for SRNAs. Management of in situ clinical simulation experiences including oversight of SRNAs as well as faculty simulation lab members and technical support staff. Proficient in the process of simulation debriefing.

Yale Medical Group/Yale University, New Haven, CT **2014-present**
Staff CRNA
Responsibilities include the perioperative anesthetic care and management of pediatric and adult patients. Regular clinical preceptor to SRNAs as well as lecturer for the Yale-New Haven School of Nurse Anesthesia.

Anesthesia Associates of New Haven, P.C., New Haven, CT **2011-2014**
Staff CRNA
Responsibilities included the perioperative anesthetic care and management of pediatric and adult patients. Regular clinical preceptor to SRNAs as well as lecturer for the Yale-New Haven School of Nurse Anesthesia.

Hospital of Saint Raphael, New Haven, CT **2006-2009**
Registered Nurse – Medical Intensive Care Unit
Responsibilities included the care of critically ill adult patients, as well as charge nurse responsibilities and preceptorship of nursing students and new ICU nurses.

Danbury Hospital, Danbury, CT **2004-2006**
Patient Care Technician – Emergency Department
Provided advanced cardiac life support to critically ill adult and pediatric patients in a busy level II emergency department as well as assisted with various medical and minor surgical procedures. Responsible for the accurate and timely measurement and recording of vital signs.

PROFESSIONAL MEMBERSHIPS

American Association of Nurse Anesthetists (AANA)
Connecticut Association of Nurse Anesthetists (CANA)
New England Assembly of School Faculty (NEASF)
Sigma Theta Tau International Nursing Honor Society

References

Marianne S. Cosgrove, CRNA, DNAP, APRN
Program Director – Yale-New Haven School of Nurse Anesthesia
1450 Chapel Street – MOB #216
(203) 789-3351

Alan F. Ruskis, MD
Division Chief – Department of Anesthesiology
Yale Medical Group/Yale University
1450 Chapel Street
New Haven, CT 06511
(203)789-3538

James H. Farmer, MD
Assistant Professor of Anesthesiology – Department of Anesthesiology
Yale Medical Group/Yale University
1450 Chapel Street
New Haven, CT 06511
(203)789-3538

Stephanie D. Stewart

25 Hansen Dr.
Vernon, CT 06066
Tel: (860) 690-6892
Email: housestewart@comcast.net

Work Experience

2017-present University of Connecticut Medical Center Farmington, CT

- Staff Certified Registered Nurse Anesthetist

2008 – present Integrated Anesthesia Associates Hartford, CT

CRNA

- Staff Certified Registered Nurse Anesthetist
- Nursing Anesthesia Student Educator: clinical and didactic
- Didactic Educational Responsibilities: Hartford Nursing Anesthesia Program: bariatric, cancer, head and neck anesthesia, musculoskeletal diseases, dexmedetomidine, TIVA technique, neuromonitoring Responsible for lecturing and testing 8 subjects in Advanced Principles to the Junior SRNA students
- Clinical Site Coordinator for New Britain School of Nurse Anesthesia (2008- 2012)
- Clinical Site Coordinator for Hartford Nurse Anesthesia Program (2012-present): responsible for clinical and academic education of Nursing Anesthesia Students
- Clinical Site Coordinator for Quinnipiac Nursing Anesthesia Students (2016-present)

2013-present Central Connecticut State University New Britain, CT

- Adjunct instructor: Pharmacology 500 level course
  Responsible for teaching and testing for one half of a 4-credit pharmacology course to freshman SRNA students and Biology graduate students

2004 - 2008 New Britain Anesthesia New Britain, CT

CRNA

- Staff Certified Registered Nurse Anesthetist
- Taught Nurse Anesthesia Residents during their clinical rotation

Education

1985 – 1989 Western CT State University Danbury, CT
B.S., Nursing

2001– 2004 Central CT State University New Britain, CT
M.S. Biology

2016-(2019) Quinnipiac University Hamden, CT
DNP candidate

RN Licensure

APRN Licensure

CRNA certification (2004) New Britain School of Nursing Anesthesia New Britain, CT

BCLS, ACLS and PALS certified
BCLS, ACLS and PALS instructor

Kelly Gorski

164 Whistling Straits Drive, Southington, CT 06489
Tel: 860 5586411 Email Address: kgorski0806@gmail.com

Education

May 2017	Doctorate of Nurse Anesthesia Practice Texas Wesleyan University Fort Worth, TX
October 2004	Master of Science Nurse Anesthesia Certification Central Connecticut State University New Britain, CT
May 2000	Bachelor of Science Nursing University of Connecticut Storrs, CT

Professional Experience

I. Academic

January 2010- present	Adjunct Faculty	School of Biology Nurse Anesthesia Program Central Connecticut State University
October 2004- present	SRNA Clinical Instructor	Integrated Anesthesia Associates Woodland Anesthesia Associates New Britain Anesthesia P.C.

II. Non-academic

November 2010- present	Staff CRNA	Integrated Anesthesia Associates (IAA) Hartford Hospital Connecticut Children's Medical Center
October 2009- present	Contracted CRNA	North American Partners in Anesthesia The Hospital of Central Connecticut

October 2004- 2009	Staff CRNA	New Britain Anesthesia P.C. The Hospital of Central Connecticut
October 2004- present	Per diem CRNA	Woodland Anesthesia Associates St. Francis Hospital and Medical Center
2009- present	BLS, ACLS, and PALS Instructor	Integrated Anesthesia Associates North American Partners in Anesthesia Woodland Anesthesia Associates Meriden Wallingford Anesthesia Connecticut Children's Medical Center

Awards and Honors

October 2017	The Kenneth H. Wells, MD Distinguished Faculty Award Presented by the Class of 2017 Hartford Nurse Anesthesia Program

Membership and Professional Organization

October 2004- present	American Association of Nurse Anesthetists (AANA)
October 2004- present	Connecticut Association of Nurse Anesthetists (CANA)

Teaching

2010- present	BIO 518: Advanced Pathophysiology and Applied Physiology
2005- present	ANES 520 Basic Principles of Anesthesia including topics: *Airway Management, Preoperative Assessment and Choice of Anesthesia, Acid-Base Balance, and Positioning*.
2005- present	ANES 530 Advanced Principles (I and II) including topics: *Coagulation, Postoperative Nausea and Vomiting, Vascular Anesthesia, Advanced Airway Management, Difficult/Failed Airway Management*.

Community Service

February 2010	Mission trip to the Philippines
February 2013	Mission trip to the Philippines

Licensing and Certifications

Connecticut Registered Nurse
Connecticut Advanced Practice Nurse
Certified Registered Nurse Anesthetist
Certified American Heart Association BLS, ACLS, and PALS Instructor

Misty Scoggins

44 Conard Drive, West Hartford, CT 06107 | (678) 592-0138 | mistyscoggins@ccsu.edu

Education

DNAP | 2012 | VIRGINIA COMMONWEALTH UNIVERSITY

MSNA | 2011 | VIRGINIA COMMONWEALTH UNIVERSITY

BSN | 2005 | GEORGIA BAPTIST COLLEGE OF NURSING OF MERCER UNIVERSITY

Teaching Experience

INSTRUCTOR | CENTRAL CONNECTICUT STATE UNIVERSITY | 2015-PRESENT

- Co-teach Advanced Physical Health Assessment, develop syllabus, lectures, and exams. Participate in program development for Doctorate of Nurse Anesthesia Practice program including curriculum, accreditation, and evaluation.

PER DIEM INSTRUCTOR | HARTFORD NURSE ANESTHESIA PROGRAM | 2015-PRESENT

- Teach lectures in Basics of Nurse Anesthesia, Advanced Principles of Nurse Anesthesia, and Professional Aspects of Nurse Anesthesia. Participate in student evaluations and member of new student acceptance committee 2016.

COUNCIL OF ACCREDIATION

- 2016 Participation in two COA workshops; 2022 is Closer than You Think – Transitioning to the Doctoral Degree and Self Study Workshop

NBCRNA

- 2016 Completion of Item Writing and Theory Courses

Related Experience

CRNA | ANESTHESIA ASSOCIATES OF WILLIMANTIC | MAY 2017 – PRESENT

- Administration and perioperative management of general anesthesia, regional anesthesia, and sedation to all patient populations in multiple locations throughout Connecticut.

CRNA | ANESTHESIA ASSOCIATES OF NEW LONDON | FEBRUARY 2012 – AUGUST 2015 & MAY 2016 – APRIL 2017

- Administration and perioperative management of general anesthesia, regional anesthesia, and sedation to all patient populations, including pediatrics and obstetrics. Clinical guidance for student registered nurse anesthetists.

CURRICULUM VITAE

David M. Van Ess, MD

PERSONAL DATA

Address: 340 Gulf of Mexico Drive #121
Longboat Key, FL 34228-4000

Telephone: Home (941) 383-4597
Work (203) 567-0272
Cell (203) 610-0601

Date of Birth: 09/20/53

EDUCATION

B.S. Biology: Seton Hall University
South Orange, NJ
1971-1975

M.D. Autonomous University of Guadalajara
Jalisco, Mexico
1975-1979

Rotating Internship: New York Medical College
Valhalla, NY
January 1980 to January 1981

Residency: Anesthesiology, Yale-New Haven Medical Center
New Haven, Connecticut
January 1981 to June 1981

Internal Medicine, New Rochelle Hospital & Medical Center
New Rochelle, NY
July 1981 to June1982

Anesthesiology, Yale-New Haven Medical Center
New Haven, Connecticut
July 1982 to December 1983

Fellowship: Cardiac Anesthesiology, Yale University School of Medicine
New Haven, Connecticut
January 1984 to December 1984

Board Certification: Anesthesiology
April 1985

Medical Licenses: Connecticut - 025193 (Expires 9/30/2018)
Florida – ME100456 (Expires 1/31/2018)
New York – 145589 (Inactive)
Federal Narcotics License: AV1073826
CT State Narcotics License: 12939

POSITIONS HELD

Instructor of Anesthesiology
Yale University School of Medicine
New Haven, Connecticut
January, 1984 to January, 1985

Assistant Professor of Anesthesiology
Yale University School of Medicine
New Haven, Connecticut
January, 1985 to May, 1986

Staff Anesthesiologist
Hospital of Saint Raphael
New Haven, Connecticut
May, 1986 to December, 2009

Instructor
Hospital of Saint Raphael School of Nurse Anesthesia
New Haven, Connecticut
May, 1986 to December, 2010

Instructor
Yale-New Haven School of Nurse Anesthesia
New Haven, Connecticu
January 2011 to Present

Adjunct Assistant Professor of Anesthesiology
Yale University School of Medicine
New Haven, Connecticut
May, 1986 to January, 1998

Medical Director
The Hamden Surgery Center
Hamden, Connecticut
April, 2000 to January, 2009

Adjunct Faculty
University of Tennessee at Knoxville
Knoxville, TN
August, 2011 to Present

Adjunct Faculty
Frank Netter School of Medicine
Quinnipiac University
Hamden, CT
February, 2014 to Present

Adjunct Faculty
University of North Carolina at Charlotte
August, 2015 to Present

Co-Owner & Managing Partner
Core Concepts Anesthesia Review, LLC
Longboat Key, FL
May, 2005 to Present

CRNA, INTERIM ASSISTANT DIRECTOR OF HARTFORD NURSE ANESTHESIA PROGRAM | INTEGRATED ANESTHESIA ASSOCIATES | SEPTEMBER 2015 – NOVEMBER 2015

- Administration and perioperative management of anesthesia. Provide education and clinical guidance for students in operating room.

RN | VIRGINIA COMMONWEALTH UNIVERSITY HEALTH | AUGUST 2008 – AUGUST 2009

- Cardiac Surgery Intensive Care Unit, Richmond, Virginia
- Management of patients receiving vasoactive infusions, sedation, and mechanical ventilation from immediate post-operative period throughout ICU recovery.

RN | SAINT JOSEPH'S HOSPITAL | FEBRUARY 2006 – AUGUST 2008

- Cardiovascular Intensive Care Unit, Atlanta, Georgia
- Worked with healthcare team to facilitate successful recovery of patients immediately following a variety of open heart and robotic surgeries.

Publication

ESSENTIAL ELEMENTS OF PATIENT POSITIONING: A REVIEW FOR THE RADIOLOGY NURSE

Journal of Radiology Nursing, Vol. 31, Peer Reviewed Journal 2012

Memberships

AMERICAN ASSOCIATION OF NURSE ANESTHETISTS
CONNECTICUT ASSOCIATION OF NURSE ANESTHETISTS

CALIN CALABRESE

Calin.Calabrese@Gmail.com
Home: 7 Diamond Drive
Clinton, CT 06413
(c) (860) 662-1615

OBJECTIVE: *Seeking a teaching position to empower future nurse anesthetists*

EDUCATION:

Yale New Haven Hospital — **New Haven, CT**
School of Nurse Anesthesia — *October 2016*
Masters of Science in Biological Sciences: Anesthesia — *At Central Connecticut University*
GPA 3.80

Fairfield University — **Fairfield, CT**
Bachelor of Science in Nursing - GPA 3.58 — *May 2010*

TEACHING EXPERIENCE

American Red Cross — **Connecticut**
Professional CPR, first aid, lifeguard Instructor — *2005-2010*

Yale New Haven School of Nurse Anesthesia — **New Haven, CT**
Guest Lectured Basics of Anesthesia (3x classes) — *2017*

Southern Connecticut State University — **New Haven, CT**
Guest Lectured "Family Involvement During Resuscitation" — *2015*

CRNA WORK EXPERIENCE:

St. Francis Hospital — **Hartford, CT**
Certified Registered Nurse Anesthetist — *10/2016 - Present*

Yale University — **New Haven, CT**
Certified Registered Nurse Anesthetist — *01/2017 – Present*

OTHER WORK EXPERIENCE:

Hartford Hospital — **Hartford, Connecticut**
Stars Team (All ICUs, ED, PACU) — *01/2014 - 09/2015*

New York Presbyterian Hospital — **New York, New York**
of Columbia and Cornell — *09/2013 - 01/2014*
Cardio-Thoracic Intensive Care Unit

Cedars-Sinai Medical Center — **Los Angeles, CA**
ICU Resource Unit — *06/2013 - 09/2013*
Cardiac and Cardio-Surgical Intensive Care Unit

Yale New Haven Hospital — **New Haven, CT**
Surgery & Trauma ICU — *12/2010 - 06/2013*

NATALIE BERARDESCA

NBERARDESCA@YAHOO.COM

203-915-5976

CAREER

CRNA
Yale-New Haven Hospital
York Street Campus, New Haven, CT
01/2017 – Present

STAFF AFFILIATE
Yale University
Department of Anesthesiology, New Haven, CT
01/2017 – Present

CRNA
Hartford Hospital
Hartford, CT
10/2016 - Present

REGISTERED NURSE
Yale-New Haven Hospital
York Street Campus, New Haven, CT
Medical Intensive Care Unit
08/2010 – 08/2015

REGISTERED NURSE
Bristol Hospital
Bristol, CT
Adult Medical-Surgical Telemetry
07/2009 – 07/2010

EDUCATION

MS BIOLOGY / 10-2016
Central Connecticut State University

CRNA / 10-2016
Nurse Anesthesia Program of Hartford

BSN / 05-2009
Quinnipiac University, Accelerated Track

BA PSYCHOLOGY / 05/2006
Western Connecticut State University

LICENSURE AND CERTIFICATIONS

CT RN LICENSE, EXP. 07-2018

CT APRN LICENSE, EXP. 07-2018

CT CONTROLLED SUBSTANCE

NBCRNA

ACLS/BLS/PALS

APPENDIX J. Course Sequences in DNAP Programs

DNAP: Entry Level Specialization, 80-86 credits

Summer	**Fall**	**Spring**
CHEM 550 Basic Organic and Biological Chemistry 3 credits BIO 517 Advanced Human Anatomy, Physiology and Pathophysiology 6 credits **TOTAL 9 CREDITS**	BIO 519 Advanced Neuroscience 3 credits BIO 528 Advanced Pharmacology 4 credits BIO 598 Research in Biology 3 credits BIO 725 Bioethics in Nurse Anesthesia* 3 credits **TOTAL 13 CREDITS**	BIO 530 Immunology 3 credits BIO 518 Advanced Pathophysiology and Applied Physiology 3 credits BIO 736 Evidence-based Practice and Biostatistics* 3 credits BIO 525 Advanced Physical Health Assessment for Nurse Anesthetists 3 credits ANES 500 Basics Principles of Nurse Anesthesia Practice 3 credits **TOTAL 15 CREDITS**
ACP 730 Anesthesia Clinical Practicum I (off campus) 1 credit ANES 501 Advanced Principles of Nurse Anesthesia Practice I 3 credits ANES 528 Advanced Anesthesia Pharmacology 2 credits **TOTAL 6 CREDITS**	ACP 731 Anesthesia Clinical Practicum II (off campus) 1 credit ANES 502 Advanced Principles of Nurse Anesthesia Practice II 3 credits ANES 515 Professional Aspects of Nurse Anesthesia Practice 3 credits BIO 740 Leadership in Nurse Anesthesia Education* 3 credits **TOTAL 10 CREDITS**	ACP 732 Anesthesia Clinical Practicum III (off campus) 1 credit ANES 590 Clinical Correlation Conference 2 credits BIO 730 Human Factors and Patient Safety for Nurse Anesthetists* 3 credits BIO 745 Doctoral Capstone Project I 3 credits **TOTAL 9 CREDITS**
ACP 733 Advanced Anesthesia Clinical Practicum I 3 credits **TOTAL 3 CREDITS**	ACP 734 Advanced Anesthesia Clinical Practicum II 3 credits BIO 746 Doctoral Capstone Project II 3 credits BIO 739 Advanced Topics in Pharmacology* 3 credits **TOTAL 9 CREDITS**	ACP 735 Advanced Anesthesia Clinical Practicum III 3 credits BIO 747 Doctoral Capstone Project III 1 credit (if needed) Doctoral Comprehensive Exam BIO 742 Advanced Topics in Nurse Anesthesia*3 credits **TOTAL 6-7 CREDITS**
	BIO 747 Doctoral Capstone Project III 1 credit (if needed)	

*Hybrid online courses

DNAP: Advanced Specialization, 30-39 credits in 2 years

Summer	**Fall**	**Spring**
	BIO 725 Bioethics in Nurse Anesthesia* 3 credits BIO 740 Leadership in Nurse Anesthesia Education* 3 credits **TOTAL 6 CREDITS**	BIO 730 Human Factors and Patient Safety for Nurse Anesthetists* 3 credits BIO 736 Evidence-based Practice and Biostatistics* 3 credits BIO 745 Doctoral Capstone Project I 3 credits **TOTAL 9 CREDITS**
Summer	**Fall**	**Spring**
ACP 733 Advanced Anesthesia Clinical Practicum I 3 credits **TOTAL 3 CREDITS**	ACP 734 Advanced Anesthesia Clinical Practicum II 3 credits BIO 746 Doctoral Capstone Project II 3 credits BIO 739 Advanced Topics in Pharmacology* 3 credits **TOTAL 9 CREDITS**	BIO 742 Advanced Topics in Nurse Anesthesia* 3 credits BIO 747 Doctoral Capstone Project III 1 credit (if needed) BIO 525 Advanced Physical Health Assessment and Monitoring for Nurse Anesthetists 3 credits (if needed) **TOTAL 3-7 CREDITS**
Summer	Fall	Spring
TOTAL 0 CREDIT	BIO 747 Doctoral Capstone Project III 1 credit (if needed)	

*Hybrid online courses

APPENDIX K. Library Resources

Elihu Burritt Library Homepage: http://library.ccsu.edu
Library Department and Liaisons: http://libguides.ccsu.edu/contactus

Available Library Resources

Search Engines:
1. CINAHL
2. Cochrane Collaboration Plus
3. Google Scholar
4. Medline
5. National Library of Medicine Databases
6. Ovid
7. PubMed
8. SCOPUS

Anesthesia Text Books (Electronic)
1. Chestnut DH, Wong CA, Tsen LC, et al. *Chestnut's Obstetric Anesthesia: Principles and Practice*. 5th ed. Philadelphia, PA: Saunders; 2014.
2. Coté CJ, Lerman J, Anderson BJ. *Coté and Lerman's A Practice of Anesthesia for Infants and Children*. 5th ed. Philadelphia, PA: Saunders; 2013.
3. Cousins MJ, Carr DB, Horlocker TT, et al. *Cousins & Bridenbaugh's Neural Blockade in Clinical Anesthesia and Pain Medicine*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2008.
4. Davis PJ, Cladis FP, Motoyama EK. *Smith's Anesthesia for Infants and Children*. 8th ed. St. Louis, MO: Mosby; 2011.
5. Dorsch JA, Dorsch SE. *Understanding Anesthesia Equipment*. 5th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2007.
6. Evers AS, Maze M, Kharasch ED. *Anesthetic Pharmacology: Basic Principles and Clinical Practice*. 2nd ed. Cambridge, UK, New York, NY: Cambridge University Press; 2011.
7. Fleisher LA. *Anesthesia and Uncommon Diseases*. 6th ed. Philadelphia, PA: Saunders; 2012.
8. Flood P, Rathmell JP, Shafer S. *Stoelting's Pharmacology & Physiology in Anesthetic Practice*. 5th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2014.
9. Hall JE. *Guyton and Hall Textbook of Medical Physiology*. 13th ed. Philadelphia, PA: Elsevier; 2016.
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6. American Journal of Physiology/Heart & Circulatory
7. American Journal of Physiology/Regulatory, Integrative & Comparative Physiology
8. American Journal of Physiology/Renal Physiology
9. American Journal of Physiology: Cell Physiology
10. American Journal of Public Health
11. Ambulatory Anesthesia
12. Anaesthesia
13. Anaesthesia and Intensive Care
14. Anesthesia Essays and Researches
15. Anesthesia & Analgesia
16. Anesthesia Progress
17. Anesthesiology
18. Annual review of physiology
19. British Journal of Anaesthesia

20. Cardiovascular Anesthesia
21. Cell
22. Clinical & Vaccine Immunology
23. Continuing Education in Anaesthesia, Critical Care & Pain
24. Current Anesthesia and Critical Care
25. Evidence-based Healthcare
26. Evidence-based Healthcare & Public Health
27. Health Communication: A Call for Papers
28. Health Outcomes Research in Medicine
29. HSR Proceedings in Intensive Care & Cardiovascular Anesthesia
30. Infection & Immunity
31. International Journal of Obstetric Anesthesia
32. International Student Journal of Nurse Anesthesia
33. Journal of Business Ethics
34. Journal of Anesthesia
35. Journal of Anesthesia History
36. Journal of Cardiothoracic and Vascular Anesthesia
37. Journal of Clinical Anesthesia
38. Journal of Comparative Physiology A & B
39. Journal of Medical Ethics
40. Journal of Healthcare Law & Ethics
41. Local and Regional Anesthesia
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43. Pediatric Anesthesia and Critical Care Journal
44. Risk Management and Healthcare Policy
45. Seminars in Anesthesia
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