Oklahoma City Community College

Program Review Self-Study Year: FY 2018

Division of: Science, Engineering and Mathematics

Associate in Applied Science in Clinical Research Coordinator (153) and Certificate of Mastery in Clinical Research Coordinator (154)

Prepared by:
Kimberly Kyker, M.S.

I. Introduction

This section should reference the general process of the review and any unique features of the review (such as the use of outside consultants or conducting the review in relation to an accreditation visit).

If the program has been reviewed previously, this section should include a brief summary of prior recommendations and how they were addressed.

Both the AAS and Certificate of Mastery in Clinical Research Coordinator are newer programs approved by the Oklahoma State Regents for Higher Education in 2009. While required audits and reports have been submitted, this is the first five-year review to be performed on these programs. Because these programs are fairly new, no redesigns or major course modifications have been performed. The data gathered for and used in this review were provided by the Institutional Effectiveness department to aid in depicting the history of the Clinical Research Coordinator program at Oklahoma City Community College.

II. Executive Summary

The Executive Summary will include the program's connection to the institution's mission, program objectives, and the strengths and areas for improvement of the program. It will also include the key findings and recommendations of the internal or external reviews with regard to the Program Review Principles and Program Review Criteria.

Since the inception of the Clinical Research Coordinator program in 2009, over 150 students have participated in both the AAS and certificate of mastery programs. Most of these students have continued either in the OCCC nursing program or at a four-year college for a degree that incorporates clinical research in the workforce. Of those graduating from the program, 8 were immediately hired in the clinical research fields, while most chose to continue their education. The program graduates have directly contributed to Oklahoma's economy through their employment in this highly specialized field or have continued their education and will most certainly contribute to the workforce in this state upon their graduation.

The Clinical Research Coordinator program at OCCC is the only program offered in the state that provides the highly specialized training required by the medical and pharmaceutical industries. It is significant to point out that individuals already working in the clinical research field are seeking out the training offered in the certificate of mastery program to further their careers.

The clinical research industry in Oklahoma City and surrounding areas continues to grow, and the program offers formal training for new employees assisting coordinators, as well as coordinators themselves who have traditionally been trained on the job. On-the-job training lacks the rigor and completeness that the program provides, thus lending credence to the need for the formal instruction OCCC provides.

The advent of the program came at a request from the physicians at the University of Oklahoma Health Sciences Center. They expressed a great need for a learning institution to develop an academic program so that anyone going into or already in clinical research might receive a more rigorous, standardized education. Initially, a workforce development grant was written and awarded to OCCC. During the three years the grant was in place, 65 students entered the program with costs covered for tuition, fees, and books. These either continued into the OCCC nursing program or graduated from the CRC program and entered the workforce with still other graduates continuing on to a four-year degree toward a medical professional degree where their AAS in clinical research complemented their career choices.

Although there are a number of private clinical research facilities along with a strong buildup of research within the Integris Hospital system and over 1,000 ongoing clinical research projects at the University of Oklahoma Health Sciences Center, the demand for trained research professionals has leveled off partly as a result of the number of skilled students turned out of the program or graduating from nursing school with courses from the program. The biomedical research industry, including clinical research, continues to maintain a presence in Oklahoma City and the surrounding communities, though that presence is not a large one to date. This is reflected by the change in the number of students currently seeking either the AAS or Certificate of Mastery degrees. After the initial training of skilled personnel and filling of workforce jobs, the turnover rate remains low but steady. This has translated to 3 to 4 new students a year in the program. These changes indicate that the CRC program needs to change its scope from one needed to fill vacancies in the workforce to one needed for the advancement of employees and explains the drop in enrollment in the program.

Because it is the only program of its kind in the state, it fills a unique niche providing academically rigorous training, giving graduates the opportunity to advance along the clinical research career ladder. However, due to the low number of students enrolling each year and the now established policy preventing prorating of adjunct instructor pay for small class sizes, it is no longer advantageous to receive students into the program every semester. As an alternative and a means by which the program may still be maintained, it is proposed that the CRC program be restructured as a cohort-based program, whereby courses will be offered when the minimum number of twelve students are identified from individuals in the industry or those interested in working in the industry. Individuals wishing to enroll in the program shall be placed on a waiting list until the time when the cohort number is met. Once the number is met, these students will move through the program together, taking the same classes simultaneously and completing the core program courses at the same time. Upon completion of the core courses, the students may choose to receive a certificate of mastery or continue with the support and general education courses taught within other departments. To assist in cohort recruitment, the CRC program coordinator will work with OCCC's Workforce Development Center to identify industry partners and to maintain a continued relationship from which to draw cohort numbers.

Although the program would not be enrolling students yearly in the cohort model, it is important that material still be fresh and current when a cohort is found. Therefore, in order for the program students to be competitive in the employment market, the material they are learning should be current and applicable to the needs of the local industry. As new rules, regulatory issues, and computer client data recording are being

considered, developed, and implemented by the local industry, it is imperative that the program faculty and curriculum stay abreast of the local and national industry and adjust to and incorporate changes in the curriculum and training of the students. Monitoring of the changing topics and regulations is done through published information from the Association of Clinical Research Professionals (ACRP) and the Society of Clinical Research Associates (SOCRA); both are professional organizations with large national memberships. Professionals working in the field are also valuable resources for feedback on program content.

III. Analysis & Assessment

This section will include a complete review and analysis of the Program Review Criteria based on the internal or external team's review. It will also assess developments since the last program review in the context of the current recommendations of the internal review and any recommendations.

A. Centrality of the Program to the Institution's Mission

An assessment and written analysis as to the centrality of the program to the institution's mission and in the context of the institution's academic plan are required. The purpose of the mission of an institution is to indicate the direction in which the institution is going now and in the future. The mission defines the fundamental reason for the existence of the institution.

Together with the planning principles and goal statements, the mission reveals the philosophical stance of the institution with respect to education and learning while at the same time providing a framework for the maintenance of institutional integrity and development.

Describe how the program is central to the institution's mission:

This program supports the mission of the college by offering both a Certificate of Mastery and Associate of Applied Science (AAS) degree that train community college students with an interest in health careers by offering them a new career track. The AAS degree prepares the students for immediate hire and a successful career in clinical research, but also develops the skills and knowledge to continue in OCCC's nursing program or to pursue a four-year degree. These degrees allow graduates to enter clinical research at a higher level and provide an undergraduate degree that may be used as a springboard for graduate or medical degrees in various fields.

B. Vitality of the Program

Vitality of the program refers to the activities and arrangements for insuring its continuing effectiveness and efficiency. To maintain its vitality and relevance, a program must plan for the continuous evaluation of its goals, clientele served, educational experiences offered, educational methods employed, including the effective incorporation of technology, and the use of its resources. This vital principle or force can best be observed by examining the past and present initiatives to insure the vitality of the faculty, students, and program.

1. List Program Objectives and Goals

1. Furnish students with a strong background in Anatomy and Physiology, Pathophysiology, and Pharmacology so the student may have an appreciation of the potentially positive and negative effects of trial compounds/drugs/instrumentation to the human body.
2. Provide database management training so that graduates are able to go into the workforce equipped with the skills needed to handle complex, possibly long-term collection and storage of research data.
3. Illustrate federal guidelines regulating research involving humans, client privacy issues, and professional ethics involved with human research subjects.
4. Train students to understand and develop clinical research protocols, implement these protocols, and integrate databases into protocol data collection and analysis.

5. Instill in the student the skills necessary for management of clinical studies, for selection of research sites, and for recruitment of subjects and investigators.
6. Expose the students to the wide variety of clinical research/clinical trials conducted both nationally and internationally with special emphasis on those projects occurring within the greater Oklahoma City and/or Tulsa area.

2. Quality Indicators

Quality indicators may vary by institutional mission; however, institutions should measure the efforts and quality of their programs by: faculty quality, ability of students, achievements of graduates of the program, curriculum, library, access to information technology resources including efficiencies and improved learner outcomes through appropriate use of this technology and appropriate use of instructional technology to achieve educational objectives, special services provided to the students and/or community, and other critical services.

As appropriate, institutions should evaluate the program against industry or professional standards utilizing internal or external review processes. Institutions must provide specific documentation of student achievement. Such documentation should include programs outcomes assessment data consistent with the State Regents' *Assessment Policy*. Program quality may also be reflected by its regional or national reputation, faculty qualifications, and the documented achievements of the graduates of the programs. This includes a program self-review that provides evidence of student learning and teaching effectiveness that demonstrates it is fulfilling its educational mission and how it relates to Higher Learning Commission Criteria and Components listed below:

a. The program's goals for student learning outcomes are clearly stated for each educational program and make effective assessment possible. List of the student learning outcomes.

For both programs, the goals are to train the students so they may perform specific learning outcomes in the capstone course. These outcomes are as follows:
1. Write a basic research proposal from a selected group of possible clinical research topics.
2. Create a "Standard Operating Procedure" for the specified clinical trial protocol developed from the research proposal.
3. Create a study budget for the clinical trial.
4. Design study subject schedules for multi-week purposes.
5. Create an informed consent form for the chosen proposal.

Well-defined criteria for measurement and how the criteria were used in the program.

Each of the above student learning outcomes from 2a provides a written product that is graded according to a rubric that brings together objectives taught across the CRC courses culminating in a capstone course, where it is determined if a student can 1) select a valid human subject research topic, 2) create a research protocol containing both controls and testable variables, 3) develop a reasonable timeline for subject participation, and 4) create a suitable budget for the proposed project including both direct and indirect costs. If a student failed to produce a project typifying what is actually used in industry, the student is given guidance in corrections needed and must resubmit any inadequate components until a quality product is achieved.

The evaluation, results, and recommendations based upon the criteria used.

Throughout the life of the CRC program, these learning outcomes and faculty mentoring ensure that the students are able to perform at a B or above level, as shown in the data collected from Institutional Effectiveness.

The General Education Core

General Education at Oklahoma City Community College is an integral component of each student's experience. Every student receiving an Associate Degree (AAS, AA, or AS) must complete at least one course from each of the following areas, indicating a general understanding of that area.

Human Heritage, Culture, and Institutions
Public Speaking
Writing
Mathematical Methods
Critical Thinking

Strategy:

The General Education Committee will create five interdisciplinary teams with members from multiple divisions. Each team will consist of five members with two members specifically teaching in one of the General Education Core Areas. Also, at least one team member will be a representative of the General Education Committee.

Twice a year these teams will evaluate one hundred artifacts from students having attained at least 35 hours of General Education Courses from OCCC. Reports, recommendations, and actions created from the General Education Assessment Process will be stored on the General Education Committee Website.

General Education Assessment Plan

Objective:
To assess and recommend actions for the general education component of Oklahoma City Community College's curriculum.

Method:
Developed rubrics will provide common criteria for assessing “artifacts” gathered from various courses. Artifacts may include, but are not limited to, recorded performances, PowerPoint Presentations, essays, lab reports, research projects, service-learning projects, or any assignment pre-existing in a faculty's course.

Nevertheless, the underlying principle of this method is (1) to reduce the intrusive nature of assessment within faculty courses, (2) to create a real environment of student performances within a classroom setting instead of a contrived environment of a forced examination (*i.e.* CAAP exams not counting for a classroom grade), and (3) to collect artifacts already designed and administered by our professional faculty at OCCC.

Data Collection:
The Office of Institutional Effectiveness will identify each semester students completing at least 35 credit hours in General Education Courses.

Program Response to General Education Assessment Data
General Education requirements represent just over sixty percent of each Associate of Science or Associate of Arts degree, making the careful assessment of these broad competencies OCCC considers essential for all graduates very important. All programs (terminal or transfer) to be evaluated contain at least 18 general education hours within the curriculum. OCCC has five general education learning outcomes that we expect all of our students to be proficient in upon graduation, they are: human heritage, culture, and institutions; writing; public speaking; mathematical methods; and critical thinking. Provide evidence that shows your participation in submission of artifacts, what types of artifacts are being submitted, and how you have used the general education assessment data to inform curricular refinement and to achieve these general education outcomes in your students in your program.

The CRC program supports the general education assessment by including writing components in the core clinical research courses, where students write critiques of research conducted on military personnel and

prisoners, formulate a procedural protocol, and write research projects and budget summaries. Critical thinking is also supported by student analysis of historical research projects on humans and evaluation of the validity of each research project based on the established FDA guidelines and government regulations. Budget development projects in two of the courses support the general education mathematics criteria. Human heritage and culture are supported as the students are taught about the historical and political events that led to the development of the Food and Drug Administration, as well as historical misuse of human subjects in medical research, resulting in the creation of the Internal Review Board for the protection of human subjects. CRC program faculty will also review curriculum for more opportunities to address outcomes and to submit general education artifacts.

b. The program values and supports effective teaching.

Faculty Performance Review and Evaluation

Faculty will be evaluated on the basis of the established standards of performance and objectives established in the person's contract and any subsequent memorandums of agreement established for the position/person. Faculty are defined as employees who primarily perform teaching and instruction-related duties and who are employed on the basis of a written contract setting forth the duties to be performed and the compensation to be paid. The performance appraisal for each faculty member will be conducted by the Division Dean or Director as appropriate.

Course and Faculty Evaluation

The Student Input on Instruction process is a means of gathering student perceptions of instruction at the college. The results are intended to be used by you and your dean in identifying ways to improve instruction.

Students will receive an email during the 6th and 7th week for the first 8- week classes, and during the 14th and 15th week for the second 8-week/16-week courses and 16-week c. The email will include the information to evaluate each course. The window for replying to these surveys will be closed at the end of the designated weeks. Faculty will not have access to their SII results until after grades have been turned in.

c. The program creates effective learning environment.

For the core courses, the Clinical Research Program has as its faculty a pool of adjunct faculty working in the field as clinical research coordinators and clinical research directors. This faculty pool serves as the best support service in preparing students for a career in the field. In addition to these individuals, the physical sciences lab and biological sciences lab have staff and tutors always on hand to help with subject matter in the support courses for the AAS degree.

d. The program's learning resources support student learning and effective teaching.

Instruction and Reference

Reference librarians (3.5 FTE) provide instruction and reference assistance to students. In the past two years the number of librarian positions decreased from 6.5 to 4.5 positions including one that is currently vacant. Many students receive hands on introduction to the Library's resources, as well as instruction on selecting and evaluating sources, as part of the required Success in College and Life course. Additional instruction is provided to a variety of other classes, usually with a focus on the appropriate resources for that discipline.

Librarians are available at the Library Assistance Desk 40 hours per week, a decrease from 65 hours two years ago. Students may also request additional research help outside those hours. Video tutorials and online LibGuides on the Library's website also supplement instruction by providing "just-in-time" research tips.

Print and Electronic Resources

The Science Engineering and Mathematics librarian selects and purchases science and biological related materials. Items are evaluated for content and to ensure they are appropriate for college freshman and sophomores. Most book purchases are based on reviews in *Choice, Booklist* and related scholarly journal reviews. Recommendations by faculty are also encouraged. The collection is weeded periodically to maintain currency. Ebooks are also purchased but have not yet been fully embraced by students.

Course textbooks are available at the Library Circulation Desk for in-library use. Texts for the Clinical Research Assistant are heavily utilized.

Print periodicals specifically for Clinical Research Assistant do not exist. Instead students must use several databases available via *EBSCOhost*. *CINAHL, Medline, Health Source: Nursing*, and *Academic Search Premier* and *MasterFILE Premier* provide substantial resources which includes relevant mass market periodicals and full text, peer-reviewed scholarly journals. A complete list of full text periodicals accessible via the Library's databases is available at http://bit.ly/2cyW7w4.

Films on Demand, a collection of academic and scholarly videos, is utilized by faculty teaching online courses as well as in the on-campus classrooms. Over 2,000 videos related to the field of medicine and medical research are available.

The Library also strives to support the professional development of faculty. The circulating book collection is updated with books on teaching, learning, technology in the classroom and curriculum development. Additionally, in 2014 the Library added the *Education Source* database (available via *EBSCOhost*) to provide faculty access to periodical literature on teaching and andragogy.

In summary, the Library supports this program and the faculty comprehensively and well.

e. The institution's curricular evaluation involves alumni, employers, and other external constituents who understand the relationship among the course of study, the currency of the curriculum, and the utility of the knowledge and skills gained.

OCCC has established specific curriculum patterns for transfer programs leading to the Associate in Arts (A.A.) or Associate in Science (A.S.) degrees. Describe program coordination efforts, partnerships and relationships with transfer institutions.

These programs are A.A.S. and Certificate of Mastery pathways not intended for transfer purposes. However, the CRC program will work with OCCC's Workforce Development Center for more relationships with business partners to provide students for cohort models.

f. The organization learns from the constituencies it serves and analyzes its capacity to serve their needs and expectations.

Adjunct faculty for the AAS and Certificate of Mastery are either currently working in the clinical research field or have previously worked in the field. The faculty serve as an advisory group and have continuous input on curricula for all CRC courses. The A.A.S. program has a built-in internship where students are placed at one of three clinical research sites for 8 weeks. Through interaction with the on-site supervisor and the CRC coordinator, students, as well as the program, are evaluated on the skill set students should have perfected during course completions.

3. Minimum Productivity Indicators

The following are considered to be the minimum standards for degree program productivity (averaged over five years). Programs not meeting these standards may be identified for early

review as low producing programs. Institutions will be notified of programs not meeting either one of the two standards listed below and other quantifiable measures in this section.

a. Number of degrees conferred (averaged over five years, minimum standard: AA/AS/AAS 5)

CRC Total for AAS and Certificate:
FY 2013: 6
FY 2014: 4
FY 2015: 5
FY 2016: 2
FY 2017: 1
Five year average: 3.6

CRC AAS:
FY 2013: 5
FY 2014: 2
FY 2015: 3
FY 2016: 2
FY 2017: 1
Five year average: 2.6

CRC Certificate:
FY 2013: 1
FY 2014: 2
FY 2015: 2
FY 2016: 0
FY 2017: 0
Five year average: 1.0

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
AAS	5	2	3	2	1
CERT	1	2	2	0	0

A low-productivity report for the AAS in Clinical Research Coordinator was submitted to the Regents by May 1, 2018, detailing the program as a special purpose program and outlining future goals to address productivity.

b. Number of majors enrolled (averaged over five years, minimum standard: AA/AS-25 AAS-17)

CRC Total for AAS and Certificate:
FY 2013: 1
FY 2014: 2
FY 2015: 1
FY 2016: 1
FY 2017: 2.
Five year average: 1.4

CRC AAS:
FY 2013: 0
FY 2014: 0
FY 2015: 0
FY 2016: 0
FY 2017: 1

Five year average: 0.2

CRC Certificate:
FY 2013: 1
FY 2014: 2
FY 2015: 1
FY 2016: 1
FY 2017: 1
Five year average: 1.2

	FY13	FY14	FY15	FY16	FY17
AAS Clinical Research Coordinator	0	0	0	0	1
Certificate Clinical Research Coordinator	1	2	1	1	1

A low-productivity report for the AAS in Clinical Research Coordinator was submitted to the Regents by May 1, 2018, detailing the program as a special purpose program and outlining future goals to address productivity.

4. Successful Course Completion

a. Report the successful completion rates of all major courses in the program.

		FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
CLINICAL RESEARCH COORDINATOR	CRC-1103	85.7%	60.0%	100.0%	100.0%	75.0%
	CRC-1112	91.7%	100.0%	100.0%	90.9%	NA
	CRC-1203	100.0%	88.9%	100.0%	100.0%	100.0%
	CRC-1303	83.3%	75.0%	100.0%	100.0%	100.0%
	CRC-1503	100.0%	100.0%	100.0%	100.0%	100.0%
	CRC-2003	NA	NA	NA	NA	NA
	CRC-2103	100.0%	75.0%	66.7%	66.7%	100.0%
	CRC-2113	100.0%	75.0%	100.0%	100.0%	100.0%
	CRC-2203	100.0%	100.0%	100.0%	100.0%	100.0%
	CRC-2213	NA	NA	NA	NA	NA
	CRC-2313	83.3%	100.0%	75.0%	100.0%	100.0%

b. Report the successful completion rates of all general education courses in the program.

The CRC program does address general education outcomes. The general education categories of human heritage and culture are represented by the introduction of historical treatment of human research subjects from the time of Christ through the Nazi atrocities of World War II and the Tuskegee studies in CRC-1103. Writing is covered in all CRC core courses. Mathematical methods are supported by student creation of research study budgets in CRC 2113 and CRC 2313.Critical Thinking is developed in all of the CRC courses. The completion rates for these courses are shown in 4a above.

Since the CRC courses are not general education courses, below are the general education results from the General Education Committee for successful completion rates of general education outcomes across campus:

Summary of Results Since 2013
The goal for each outcome is that 70% of students pass. Passing means scoring equivalent to "acceptable" or better on the rubric for that outcome.

category	2017	2016	2015	2014	2013	
Human Heritage, Culture, and Institutions	71.5% (138/193)	73% (96/131)	76% (59/78)	74% (100/136)	74% (69/93)	**Human Heritage, Culture, Values, and Beliefs**
					73% (30/41)	**Social Institutions**
Writing	92.8% (373/402)	94% (220/235)	99% (187/189)	87% (192/220)	93% (88/95)	
Public Speaking	87.8% (72/82)	76% (69/91)	75% (69/92)	88% (71/81)	77% (62/81)	
Math	62.1% (231/372)	61% (156/257)	63% (60/95)	75% (59/79)	72% (70.3†/98)	
Critical Thinking	76.9% (290/377)	77% (235/306)	75% (183/244)	77% (175/227)	76% (157/206)	
			75% (120/160)	82% (105/128)	73% (96/132)	**Science Methodology (later called Critical Thinking in science)**
			75% (63/84)	71% (70/99)	82%†† (61/74)	**Critical Thinking in nonscience**

†The overall score is the average of the "acceptable" or better results in three categories.
†† 51% were at the bare minimum level of competence.

c. Describe program student success initiatives.

1. The instructors for the core Clinical Research Coordinator course are chosen from the field itself. These adjunct faculty are currently working as coordinators or as directors of clinical research programs. Together, they bring a wealth of experience to the program that ensures the courses are streamlined to the needs of the industry.
2. Each core course is designed to provide instruction through PowerPoint presentations, as well as research and historical article analysis to enhance critical thinking skills.
3. Support is also available on campus in the Science, Engineering and Mathematics division through the assistants, tutors, and materials provided in the Physical Sciences and Biological Sciences Center.
4. The internships with partnering companies and academic institutions train students in a hands-on environment and often lead to employment of participating students.

d. Describe results from success initiatives and future plans to increase student success based on success initiative results.

The student pass rate success of 100% in all but one of the core courses, high graduation rate of those in the program, and placement of students in the industry from exposure during internships illustrate the established initiatives are effective. Efforts in advising and recruiting will be evaluated and altered if it is determined there is a need in this component of the program.

The cohort-based model will allow students to enter the program together and complete core courses simultaneously. This model will allow the college to hire a qualified adjunct instructor who is current on industry standards and will foster good relationships between industry partners and the institution.

5. Other Quantitative Measures
   a. The number of courses taught exclusively for the major program for each of the last five years and the size of classes for each program level listed below:

1000 level courses: Number of courses taught
FY 2013: 8; FY 2014: 6; FY 2015: 6; FY 2016: 6; FY 2017: 5.

1000 level courses: Class size
FY 2013: 32; FY 2014: 24; FY 2015: 24; FY 2016: 27; FY 2017: 12.

2000 level courses: Number of courses taught
FY 2013: 5; FY 2014: 4; FY 2015: 4; FY 2016: 5; FY 2017: 4.

2000 level courses: Class size
FY 2013: 17; FY 2014: 27; FY 2015: 23; FY 2016: 22; FY 2017: 8.

   b. Student credit hours by level generated in all major courses that make up the degree program for five (5) years.

1000 level
FY 2013: 90; FY 2014: 91; FY 2015: 63; FY 2016: 72; FY 2017: 42.
Overall 5 year average: 71.6

2000 level
FY 2013: 54; FY 2014: 87; FY 2015: 69; FY 2016: 69; FY 2017: 24.
Overall 5 year average: 60.6

   c. Direct instructional cost for the program for the review period.

Technology use in the classroom continues to expand to meet the needs of our students. 190 of our classrooms are equipped with permanent multimedia equipment with the availability of mobile carts to increase the number of high tech classrooms to 100%. The cost incurred with this multiyear effort was $1.55 Million. A faculty committee submitted a proposal for a classroom design that supports flexibility in classroom functionality including thin clients, a smaller folding presentation station, and moveable furniture. This committee's proposal was adopted and supported by the Academic Affairs' Deans and President's Cabinet. Through a multi-department effort a total of $400,000 were spent to redesign 8 classrooms to support active learning and cooperative learning formats of instruction as well as a more traditional lecture style.

Faculty members are continuing to utilize student response software, interactive whiteboards and projectors, tablets, and network computing devices in classrooms. OCCC continues to support the

utilization of technology in the classroom so faculty can continue to engage students. The Center for Learning and Teaching offers multiple learning opportunities for faculty related to strategies for incorporating technology into instruction effectively as well as the use of the College's Learning Management System, Moodlerooms. The CLT team has strategically worked to meet the needs of our 144 full-time faculty as well as the 428 adjunct faculty members. They support them through organized workshops, online training modules, and individual faculty consultations conducted via phone, email, or in person. The consultations focus on instructional strategies, course design/redesign, assessment construction, selection and use of instructional technology, and aspects of using the College's LMS.

d. The number of credits and credit hours generated in the degree program that support the general education component and other major programs including certificates.

The A.A.S. degree in Clinical Research Coordinator contains 18 hours of general education courses, including English Composition I, Technical Writing, U.S. History, American Government, Introduction to Public Speaking, and Introduction to Statistics. These courses support all programs on campus.

The core CRC courses in the program support the general education assessment by including writing components in the core clinical research courses, where students write critiques of research conducted on military personnel and prisoners, formulate a procedural protocol, and write research projects and budget summaries. Critical thinking is also supported by asking students to analyze historical research projects on humans and evaluate the validity of each based on the established FDA guidelines and government regulations. Budget development in two of the courses supports the general education mathematics criteria. Human heritage and culture are even supported as the students are taught about the historical and political events that led to the development of the Food and Drug Administration, as well as historical misuse of human subjects in medical research resulting in the creation of the Internal Review Board for the protection of human subjects.

e. A roster of faculty members including the number of full-time equivalent faculty in the specialized courses within the curriculum.

Full-time faculty: Kimberly Kyker, MS
Adjunct faculty who have taught during the past 5 years:
Bradley Hightower, MS
Lori Patton, MS
Linda Allen, MS

CLINICAL RESEARCH COORDINATOR	CRC-2103	3
AAS, C	CRC-2113	3
FTE:	CRC-2203	3
0.4	CRC-2313	3

f. If available, information about employment or advanced studies of graduates of the program over the past five (5) years.

As the program does not monitor students going on to four-year institutions or employment after graduation, exact numbers are not available. However, it is known that six graduates have obtained jobs in the clinical research field; two who obtained the certificate of mastery were already working in the field and were able to advance with the certificate, and others continued with a four-year degree.

g. If available, information about the success of students from this program who have transferred to another institution.

This information is not available, but students can use this program to further their studies and pursue related four-year degrees and medical degrees at other institutions.

6. Duplication and Demand

a. Demand from students, taking into account the profiles of applicants, enrollment, completion data, and occupational data.

Although the program is small, it meets a demand for students in the field of clinical research. The program prepares students for direct work in this field.

b. Demand for students produced by the program, taking into account employer demands, demands for skills of graduates, and job placement data.

The partnerships with Intergris and the University of Oklahoma Health Sciences Center provide internships for A.A.S. students. Demand for graduates remains strong, reflected by the employment of interns at these or private research sites. The Certificate of Mastery continues to offer those employed in the field a structured academic program that creates financial and advancement opportunities once obtained.

c. Demand for services or intellectual property of the program, including demands in the form of grants, contracts, or consulting.

This demand does not correlate with the program.

d. Indirect demands in the form of faculty and student contributions to the cultural life and well-being of the community.

Upon completing this program, students can contribute to the community's need for skilled researchers and growing demand for professionals in clinical research.

e. The process of program review should address meeting demands through alternative forms of delivery.

Both the A.A.S. and the Certificate of Mastery core courses are available and delivered in Moodle. This allows individuals working either in the industry or otherwise to complete coursework around a work schedule. Many of the general education and support courses are also offered through Moodle, as well as in the classroom. The two human anatomy classes incorporate a hybrid format of online lectures and on-site laboratory exercises.

7. Effective Use of Resources

The resources used for a program determine, in part, the quality of the educational experiences offered and program outcomes. Resources include financial support (state funds, grants and contracts, private funds, student financial aid); library collections; facilities including laboratory and computer equipment; support services; appropriate use of technology in the instructional design and delivery processes; and the human resources of faculty and staff. The efficiency of resources may be measured by cost per student credit hour; faculty/student ratio; and other measures as appropriate. The effective use of resources should be a major concern in evaluating programs. The resources allocated to the program should reflect the program's priority consistent with the institution's mission statement and academic plan.

The Clinical Research Coordinator program was developed so that the core courses can be taken online while working within the field itself, allowing research personnel to obtain a degree. The online learning management system, Moodle, is key for the delivery of information. Because of the heavy emphasis on online learning, the CLT group works closely with the core courses each semester.

Initially, the program was funded by a federal grant that paid tuition and fees for all students, as well as indirect costs to the college. As the core courses were developed online, no monies were required to house and teach a new program on campus. The general education courses and support courses were already in place and heavily attended by students; thus, no new monies are necessary for these.

Though the core courses are not attended by a large number of students, the cost of teaching these students has historically been minimal given that adjunct faculty were hired to teach these and paid a per diem based on low enrollment.

Thus, even though the program has had a low number of students enrolling over the past five years, the cost to teach these students has been minimal to the college.

IV. Program Review Recommendations

This section is a description of recommendations that have been made as a result of the review and of actions that are planned to implement these recommendations. Recommendations should be clearly linked and supported by the information and analyses that were articulated in the previous sections and should contain a realistic strategy for implementation of any changes.

A. Describe the strengths of the program identified through this review.

Strengths of the program include students or graduates of the program getting placed in the clinical research sites and the students' ability to advance in their career field by obtaining the AAS or certificate. Classes are taught by those who are currently working or have worked as clinical research coordinators; students are able to obtain hands-on experience through internships, and there is a high success rate for those enrolled in the program.

B. Describe the concerns regarding the program that have been identified through this review.

As regulations have been passed down from the State Board of Regents regarding the inability of adjunct faculty to teach a class with fewer than the minimum number of students on a prorated pay basis, the responsibility has fallen to one full-time faculty member to teach all of the clinical research classes on a prorated scale.

The program is low-producing regarding the number of graduates and majors enrolled.

C. Develop a list of recommendations for action that addresses each of the identified concerns and identify planned actions to implement recommendations.

Because of the low student enrollment and the burden placed on the academic coordinator due to recently changed adjunct teaching rules, it is recommended that the program become a cohort-based program.

D. Provide institutional recommendations as the result of the program review and planned actions to implement recommendations.

A means by which the program may still be maintained is proposed that restructures the program as a cohort-based program, whereby courses will be offered when the minimum number of twelve students are identified from individuals in the industry or those interested in working in the industry. Individuals wishing to enroll in the program shall be placed on a waiting list until the time when the cohort number is

met. Once the number is met, these students will move through the program together, taking the same classes simultaneously and completing the core program course at the same time. Upon completion of the core courses, the students may choose to receive a certificate of mastery or continue with the support and general education courses taught within other departments. To assist in cohort recruitment, the CRC program coordinator will work with OCCC's Workforce Development Center to identify industry partners and to maintain a continued relationship from which to draw cohort numbers.

APPENDIX

Program Curriculum: see below

Program Requirements: All courses listed below are required for the AAS degree. Only those with the CRC prefix are required for the Certificate of Mastery.

Minimum Required Hours: 65

Major Courses		
Prefix & Number	Course Title	Credit Hours
CRC 1103	Introduction to Clinical Research	3
CRC 1112	Vital Signs and Venipuncture	2
CRC 1203	Medical Ethics and Client Care	3
CRC1303	Clinical Trials and Research Regulations	3
CRC 1503	Clinical Trials and Research Internship	3
CRC 2103	Clinical Research Design	3
CRC 2003	Clinical Database Applications	3
CRC 2203	Pathophysiology	3
CRC 2113	Clinical Research Site Management	3
CRC 2213	Pharmacology for Clinical Research	3
CRC 2313	Clinical Protocol Design	3
		32

General Education Courses		
Prefix & Number	Course Title	Credit Hours
ENGL 1113	English Composition I	3
ENGL 1233	Report Writing	3
HIST 1483 or HIST 1493	US History to the Civil War -or- US History Since the Civil War	3
POLSC 1113	American Federal Government	3
COM 1123	Interpersonal Communication	3
MATH 2013	Introduction to Statistics	3
		18

Support Courses		
Prefix & Number	Course Title	Credit Hours
AHP 1013	Medical Terminology	3
BIO 1314	Anatomy and Physiology I	4
BIO 1414	Anatomy and Physiology II	4
CHEM 1123	Survey of General, Organic and Biochemistry	3
		14

Life Skills Courses		
Prefix & Number	Course Title	Credit Hours
SCL 1001	Success in College and Life	1
		1