



NEW ACADEMIC PROGRAM – MAJOR  
Preliminary Proposal Form

- I. Program Details
  - a. Name (and Degree Type) of Proposed Academic Program: Clinical Research
    - i. Emphases (if applicable): N/A
  - b. Academic Unit(s)/College(s): College of Medicine, Phoenix
  - c. Campus/Location(s): Phoenix, Main
  - d. First Admission Term: Spring, 2022
  - e. Primary Contact and Email: Ron Hammer, PhD; ron.hammer@arizona.edu
- II. Executive Summary (please provide no more than 5 bullets/sentences that sum up the rationale, demand, and uniqueness of your proposed major):
  - The Clinical Research (CR) Master of Science (MS) degree proposal responds to an urgent need for educational programs intended to strengthen clinical research both immediately by improving the quality of learners' research projects and long-term by developing highly skilled future clinical research faculty.
  - Based on a recent Employment Potential report on job postings/demand under the category of Medical Scientist, the number of Arizona jobs in this category are **expected to increase by 61.6% over the next 10 years**, compared to a total labor market increase of 11.9%.
  - There are no other CR MS in Arizona. The CR MS program will operate under the auspices of the new Center for Clinical Research Excellence and Educational Development (CREED) at the College of Medicine – Phoenix, with the involvement of clinical research members of the Graduate Faculty in Phoenix and Tucson.
- III. Brief Program Description: The Clinical Research (CR) Master of Science (MS) program is intended for graduate and professional students, clinical residents and subspecialty clinical fellows, postdoctoral scholars, clinical coordinators, and early-career faculty members who wish to master clinical research methods and pursue independent clinical research. Graduates of the program will fill a growing need for highly qualified clinical investigators who are adept in designing and conducting research that translates into better treatments and outcomes for patients throughout Arizona and beyond. The program utilizes both didactic coursework and an original research thesis to provide students with broad knowledge and practice of clinical research and training by experienced clinical research

faculty. Practical aspects of the program are designed to accommodate clinical trainees with hybrid delivery courses taught during evening hours, and their publishable thesis project would satisfy a residency or subspecialty fellowship research project requirement. While the CR MS program is housed in the College of Medicine – Phoenix, students may earn their degree either at the University of Arizona Phoenix Biomedical Campus or at the Tucson Health Sciences campus.

- IV. Program Rationale: Clinical research study outcomes provide critical information regarding the efficacy of therapeutics or preventative measures bearing on various diseases across Arizona and nationwide. We need to look no further than the ongoing and completed clinical research on how to avoid, prevent and treat COVID-19 to understand the necessity of such studies. The CR MS program fills a growing need for highly qualified clinical investigators who are adept in designing and conducting such research, including the trained clinicians charged with recruiting and evaluating patients for these studies. The Banner-University system and our affiliated clinical partners provide the largest source of research subjects with the greatest need for clinical research outcomes in the state.

There is an urgent need for educational programs intended to strengthen clinical research both immediately by improving the quality of learners’ research projects and long-term by developing highly skilled future clinical research faculty and programs. In fact, there are no other Master’s degree programs addressing this topic and designed for clinicians either at UArizona, at other Arizona Universities or elsewhere in the State. To address the issue of providing appropriate research infrastructure and education, the College of Medicine – Phoenix has begun to develop the Center for Clinical Research Excellence and Educational Development (CREED), whose Director is Michael Fallon, MD. Thus, the new CR MS program will operate under the auspices of CREED with the involvement of clinical research faculty in Phoenix and Tucson.

Most of the support for teaching required CR courses will be derived from existing resources at the College of Medicine – Phoenix, with some courses cross-listed with Clinical Translational Sciences or taught by Biostatistics and Epidemiology (see attached letters of support). Additional clinical research faculty in Phoenix or Tucson with appropriate credentials and membership on the Graduate Faculty from any of the University's Health Sciences colleges will serve as clinical research mentors.

- V. Projected Enrollment for the First Three Years:

Year 1	Year 2	Year 3
11	24	28

- VI. Evidence of Market Demand:

A major source of applicants to the new CR MS program will be medical residents and fellows from Banner University Medical Center Phoenix (BUMCP), Phoenix Children’s Hospital (PCH), Dignity Health (DH) and Banner University Medical Center Tucson (BUMCT). Each of these institutions recruits and trains research-oriented clinicians in multi-year clinical residency and fellowship training programs

every year; fellowship programs frequently require completion of a publishable research project similar to the MS thesis. Thus, we anticipate that individuals from many of these programs will wish to obtain clinical research credentials during their residency or

Institution	Residency Programs	Fellowship Programs
BUMCP	10	13
PCH	3	23
DH	7	8
BUMCT	20	39

fellowship training by enrolling in the CR MS program. As evidence of such interest, 5 medical residents or fellows from BUMCP and PCH, as well as 13 additional students from other graduate programs have enrolled in the existing Clinical Research core courses (currently taught as CTS 501/502/503) in the past year.

Further rationale of the need for a CR MS program comes from the Employment Potential report on job postings/demand under the category of Medical Scientist (CIP code 51.1401) provided by Curricular Affairs. From 3/1/2020 to 2/28/2021, 27,206 jobs at the Master’s degree level were posted nationwide with **538 posted in Arizona**. Other states in the Southwest region showed even higher job demand, with 5,297 postings in California and 1,977 postings in Texas. More importantly, the number of Arizona jobs in this category are **expected to increase by 61.6% over the next 10 years**, compared to a total labor market increase of 11.9%. Career outcomes mapped to the Medical Scientist category include physicians and clinical research nurse specialists, clinical research coordinators, clinical project managers, medical science liaison officers, and clinical laboratory scientists, with the majority of jobs based in the Health Care and Professional, Scientific and Technical Services sectors. The median salary in this category based on Burning Glass models is significantly above the average living wage in Arizona and nationwide. While the University of Arizona and its hospital affiliates make up 16% of employers in the category, the biotech and pharmaceutical industry employ 44% of graduates in Arizona and 36% nationwide. Altogether, these data suggest high market demand for CR MS graduates, with significant growth and strong job prospects at high salaries in Arizona and beyond.

- VII. Similar Programs Offered at Arizona Public Universities: There are NO other MS in Clinical Research programs in Arizona. The closest similar MS program at ASU trains postbaccalaureate nurses and clinical coordinators in *Clinical Research Management*, a field of Allied Health Education. This ASU program is NOT intended for postgraduate students who already hold the MD or equivalent degree: <https://asuonline.asu.edu/online-degree-programs/graduate/master-science-clinical-research-management/>

The UA College of Public Health offers a 13-credit program of coursework in Clinical and Translational Research (ACTR) which provides a *graduate certificate* opportunity, but NOT a Master’s degree, to health professionals: <https://publichealth.arizona.edu/academics/certificates/actr>  
 [ACTR certificate students could enroll in the MS in Clinical Research program, then petition to apply at least 6 of their certificate units to the CR MS program (e.g., BIOS 576A/B, EPID 678, EPID 696A).]

VIII. Resources

- a. Summarize new resources required to offer the program:

Program Director (0.1 FTE) and Program Coord (0.25 FTE 1st year;  
0.5 FTE thereafter + ERE): \$43,094

Operating expenses and volunteer faculty course director contract:  
\$14,500

- b. Estimate total expected cost:


Year 1	Year 2	Year 3
\$117,284	\$212,502	\$241,595

- c. Estimate total expected revenue of the program:


Year 1	Year 2	Year 3
\$102,151	\$228,648	\$271,946

IX. Required Signatures (*the following should be included in the notification memo to campus after ABOR approval*):


a. Program Director/Main Proposer:

- i. Signature: 
- ii. Name and Title: Ron Hammer, PhD, Professor & Director, CR MS Program
- iii. Date: July 9, 2021


b. Managing Unit/Department Head:

- i. Signature: 
- ii. Name and Title: Michael B. Fallon, MD, Chair, Internal Medicine, Executive Director, CREED
- iii. Date: July 9, 2021

c. College Dean/Associate Dean:

- i. Signature: 
- ii. Name and Title: Guy L. Reed, MS, MD, Dean, College of Medicine – Phoenix
- iii. Date: July 9, 2021

**To:** Ronald Hammer, PhD, Professor & Director, CR MS Program

**From:** Greg Heileman, PhD, Vice Provost for Undergraduate Education 

**Date:** September 9, 2021


**Subject:** Approval of Preliminary Proposal for The Clinical Research (CR) Master of Science (MS) degree

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Thank you for submitting the preliminary review proposal for the Clinical Research (CR) Master of Science (MS) degree. The proposed academic program should provide an excellent educational opportunity and a useful degree for students pursuing careers related to clinical research. We believe your ideas are sufficiently well developed that it now makes sense to advance through the stages of the formal academic program approval process.

Please proceed to the development of a full proposal, and do not hesitate to reach out the Curricular Affairs Office for assistance with this process.

**CC:** Liesl Folks, Senior Vice President for Academic Affairs and Provost  
Jim Florian, Vice Provost, Institutional Planning and Analysis  
Liz Sandoval, Manager, Curricular Affairs  
Michael B. Fallon, MD, Chair, Internal Medicine, Executive Director, CREED  
Guy L. Reed, MS, MD, Dean, College of Medicine - Phoenix





ACADEMIC PROGRAM – ADDITIONAL INFORMATION FORM

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- I. **MAJOR REQUIREMENTS**– complete the table below by listing the major requirements, including required number of units, required core, electives, and any special requirements, including emphases\* (sub-plans), thesis, internships, etc. Note: information in this section must be consistent throughout the proposal documents (comparison charts, four-year plan, curricular/assessment map, etc.). Complete the table in Appendix A if requesting a corresponding minor/Master’s.

**GRADUATE**

Total units required to complete the degree	30
Pre-admissions expectations (i.e., academic training to be completed prior to admission)	BS or equivalent science-related degree or advanced professional degree and meets admissions criteria of the Graduate College.
Major requirements. List all major requirements including core and electives. If applicable, list the emphasis requirements for each proposed emphasis*. Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	<p><b>Required Courses (27 units <i>minimum</i>)</b>            CR 501: <i>Principles of Clinical Research I (currently taught as CTS 501) (4)</i>            CR 502: <i>Principles of Clinical Research II (currently taught as CTS 502) (4)</i>            CR 503: <i>Informatics for Clinical Research (currently taught as CTS 503) (4)</i>            BIOS 576A: <i>Biostatistics for Public Health (3)</i> (see LOS)            CR 595C: <i>Responsible Conduct of Research (currently taught as CTS 595C) (2)</i>            CR 900: <i>Research (1-3) (New)</i>            CR 910: <i>Thesis (variable) (New)</i></p> <p><b>Elective Courses (3 units <i>minimum</i>)</b>            CR 585: <i>Individualized Scientific Writing (2) (New)</i>            CR 696A or 696B: <i>Medical Sciences Seminar or Biomedical Sciences Seminar (1) (New)</i>            EPI 573A: <i>Basic Principles of Epidemiology (3)</i> (see LOS)            BIOS 576B: <i>Biostatistics for Research (3)</i> (see LOS)            BIOS 675: <i>Clinical Trials and Intervention Studies (3)</i> (see LOS)</p>
Research methods, data analysis, and methodology requirements (Yes/No). If yes, provide description.	Yes. Students complete 15 units of research methods, data analysis and methodology in CR 501/502/503 and BIOS 576A.
Internship, practicum, applied course requirements (Yes/No). If yes, provide description.	No
Master thesis or dissertation required (Yes/No). If yes, provide description.	Yes. Students must complete at least 6 units of thesis credit <b>comprising a clinical research project.</b>
Additional requirements (provide description)	Written and oral thesis defense.
Minor options (as relevant)	N/A – Master’s only program



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\*Emphases are officially recognized sub-specializations within the discipline. [ABOR Policy 2-221 c. Academic Degree Programs Subspecializations](#) requires all undergraduate emphases within a major to share at least 40% curricular commonality across emphases (known as “major core”). Total units required for each emphasis must be equal. Proposed emphases having similar curriculum with other plans (within department, college, or university) may require completion of an additional comparison chart. Complete the table found in Appendix B to indicate if emphases should be printed on student transcripts and diplomas.

II. **CURRENT COURSES**—using the table below, list all existing courses included in the proposed major. You can find information to complete the table using the [UA course catalog](#) or [UAnalytics](#) (Catalog and Schedule Dashboard> “Printable Course Descriptions by Department” On Demand Report; right side of screen). If the courses listed belong to a department that is not a signed party to this implementation request, upload the department head’s permission to include the courses in the proposed program and information regarding accessibility to and frequency of offerings for the course(s). Upload letters of support/emails from department heads to the “Letter(s) of Support” field on the UAccess workflow form. Add or remove rows to the table, as needed.

Course prefix and number (include cross-listings)	Units	Title	Course Description	Pre-requisites	Modes of delivery (online, in-person, hybrid)	Typically Offered (F,W, Sp, Su)	Dept signed party to proposal? (Yes/No)
CR 501 (to be cross-listed as CTS 501)	4	<i>Principles of Clinical Research I</i>	Principles of Clinical Research I will provide knowledge and practice on various aspects of clinical research for students and fellows in a variety of subspecialties. Students must demonstrate knowledge of established and evolving clinical research standards, regulations, and practices. Students must have a working understanding of the role of clinical research relative to clinical care, ethical foundations, and regulatory oversight mechanisms for clinical research.	none	Live online or hybrid	F	Yes
CR 502 (to be cross-listed as CTS 502)	4	<i>Principles of Clinical Research II</i>	Principles of Clinical Research II will provide knowledge and practice on various aspects of clinical research for students and fellows in a variety of subspecialties. Students must	none	Live online or hybrid	Sp	Yes





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			demonstrate knowledge of established and evolving clinical research practices, conduct, and emerging trends, and have a working understanding of clinical research methodology, study design, preparation of applications for funding and/or approval of clinical research protocols, and critical literature review in clinical research.				
CR 503 (to be cross-listed as CTS 503)	4	<i>Informatics for Clinical Research</i>	Biomedical informatics (BMI) is a field concerned with the collection, management, analysis and optimal use of patient information to facilitate clinical research and drive evidence-based medicine and improvements in healthcare outcomes. This course will present fundamental knowledge on database design, data collection standards and processes, and explore the different data utilization and analytic methods to leverage primary and secondary data in clinical research. Students will review the role of emerging technologies such as electronic health records, administrative and regulatory datasets, biobanks, and research-specific data management systems in clinical research. Practical application of biomedical information will be demonstrated through journal article review and directed questions, data exercises, and generating a data analytics work product.	none	Live online or hybrid	F	Yes
BIOS 576A	3	<i>Biostatistics in Public Health</i>	This course introduces biostatistical methods and applications, and will cover descriptive statistics, probability theory, and a wide variety of inferential statistical techniques that can be used to make practical conclusions about empirical data. Students will also be learning to use a	none	Online	Sp	Yes



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			statistical software package (STATA or SAS).				
CR 595C (to be cross-listed as CTS 595C)	1 (2 sem required)	<i>Responsible Conduct of Research</i>	The course addresses principles underlying the practice of biomedical, behavioral and clinical sciences, including collaboration, conflict of interest, data acquisition, management, sharing and ownership, human subjects protection, laboratory animal welfare, mentoring, peer-review, publication, and ethical responsibilities of scientists.	none	Live Online	F, Sp	Yes

V. **NEW COURSES NEEDED** – using the table below, list any new courses that must be created for the proposed program. If the specific course number is undetermined, please provide level (i.e., CHEM 4XX). Add rows as needed. Is a new prefix needed? If yes, see below table.

Course prefix and number (include cross-listings)	Units	Title	New Course Description	Pre-requisite	Modes of delivery (online, in-person, hybrid)	Status*	Anticipated first term offered	Typically Offered (F, W, Sp, Su)	Dept signed party to proposal? (Yes/No)	Faculty members available to teach the courses
CR 585	2	<i>Individualized Scientific Writing</i>	Intensive, interactive and individualized scientific writing experience.	None	in-person or hybrid	Approved as CTS 585	Spring, 2022	F, Sp	Yes	Graduate Faculty mentors
CR 696A	1	Medical Sciences seminar	Clinical Grand Rounds are weekly seminar series in which noted researchers, including nationally prominent experts, are invited to provide overviews of cutting-edge clinical developments, research and medical education in a given specialty area. Students regularly attend a series of Grand Rounds presentations	None	in-person or online	Approved as CTS 696A	Fall, 2021	F, Sp	Yes	Melisa Celaya



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			to augment their knowledge and spur new research questions or directions.							
CR 900	1-3	<i>Research</i>	Individual research, not related to thesis preparation.	None	In-person or hybrid	D	Fall, 2021	F, Sp	Yes	Graduate Faculty mentors
CR 910	1-6	<i>Thesis</i>	Research for the master's thesis (typically a clinical research project, or thesis writing).	None	In-person or hybrid	D	Fall, 2021	F, Sp	Yes	Graduate Faculty mentors

\*In development (D); submitted for approval (S); approved (A)

a. Subject description for new prefix (if requested). Include your requested/preferred prefix, if any:

VI. **FACULTY INFORMATION-** complete the table below. If UA Vitae link is not provided/available, add CVs to a Box folder and provide that link. UA Vitae profiles can be found in the [UA directory/phonebook](#). **NOTE: full proposals are distributed campus-wide, posted on committee agendas and should be considered “publicly visible”.** Contact [Office of Curricular Affairs](#) if you have concerns about CV information being “publicly visible”.

Faculty Member	Involvement	UA Vitae link or Box folder link
Ron Hammer, PhD	Program Director; teach CR 595C	<a href="https://arizona.box.com/s/b3t0czn23i5zjd4csf4b7mk1wx6cjw3e">https://arizona.box.com/s/b3t0czn23i5zjd4csf4b7mk1wx6cjw3e</a>
Michael Fallon, MD	CREED Center Exec Director; teach CR 501/502; research mentor	Same as above
Melisa Celaya, PhD	Program Assoc. Director; teach CR 696A; advisor; research mentor	Same as above
Lee Seabrooke, MA, MBA, PhD	Teach CR 501/502	Same as above
Pamela Garcia-Fillion, PhD	Teach CR 503; research mentor	Same as above
Mohan Belthur, MD	Advisor, research mentor	Same as above
Michael McKee, MD	Advisor, research mentor	Same as above
Melissa Herbst-Kralovetz, PhD	Advisor, research mentor	Same as above

VII. **GRADUATION PLAN –** provide a sample degree plan, based on your program that includes all requirements to graduate with this major and takes into consideration course offerings and sequencing. Add rows as needed.

Semester 1	Semester 2	Semester 3	Semester 4
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Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
CR 501	4	CR 502	4	CR 503	4	CR 585	2
CR 900/910	3	BIOS 576A	3	CR 595C	1	CR 595C	1
		CR 910	2	CR 910	2	CR 696A	1
						CR 910	3
<b>Total</b>	<b>7</b>	<b>Total</b>	<b>9</b>	<b>Total</b>	<b>7</b>	<b>Total</b>	<b>7</b>

Semester 5		Semester 6		Semester 7		Semester 8	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
<b>Total</b>		<b>Total</b>		<b>Total</b>		<b>Total</b>	



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VIII. **Curriculum Map and Assessment Map** - Complete this table as a summary of your learning outcomes and assessment plan, using these examples as a model. If you need assistance completing this table, please contact the [Office of Instruction and Assessment](#).

**Program:** MS Clinical Research

<b>Learning Outcome #1:</b> Understand the design and conduct of clinical research within regulatory and ethical guidelines.
<b>Concepts:</b> Students will apply knowledge of the design and conduct of clinical research studies within regulatory and ethical guidelines.
<b>Competencies:</b> Students will demonstrate knowledge of the design and conduct of clinical research studies.
<b>Assessment Methods:</b> This outcome will be assessed in homework, exams, papers or other student projects.
<b>Measures:</b> Instructor grading of homework, exams, papers or other student projects.
<b>Learning Outcome #2:</b> Utilize biomedical informatic functions and analyses in a clinical setting.
<b>Concepts:</b> Students will effectively utilize biomedical informatics to analyze clinical research data.
<b>Competencies:</b> Students will demonstrate their knowledge of biomedical informatics analysis.
<b>Assessment Methods:</b> This outcome will be assessed in homework, exams, papers or thesis projects.
<b>Measures:</b> Instructor grading of homework, exams, and papers or thesis committee review and defense.
<b>Learning Outcome #3:</b> Demonstrate appropriate statistical analysis of clinical research data, and interpretation of results from clinical research projects.
<b>Concepts:</b> Students will apply knowledge of statistical analysis and interpretation of results from clinical research projects.
<b>Competencies:</b> Students will demonstrate their knowledge of statistical analysis and interpretation of clinical research data.
<b>Assessment Methods:</b> This outcome will be assessed in homework, exams, papers or thesis projects.
<b>Measures:</b> Instructor grading of homework, exams, and papers or thesis committee review and defense.
<b>Learning Outcome #4:</b> Enable the application of developed knowledge derived from clinical research meetings and the medical literature.
<b>Concepts:</b> Students will effectively utilize knowledge derived from clinical research meetings and the medical literature.
<b>Competencies:</b> Students will demonstrate their ability to utilize clinical research information and the medical literature.
<b>Assessment Methods:</b> This outcome will be assessed in classroom interaction, homework or thesis projects.
<b>Measures:</b> Instructor grading of classroom interaction and homework or thesis committee review and defense.
<b>Learning Outcome #5:</b> Advance the development of better treatments and outcomes for patients.
<b>Concepts:</b> Students will utilize their acquired knowledge and new research findings to provide better treatments and clinical outcomes.
<b>Competencies:</b> Students will demonstrate their ability to utilize new research findings to provide better treatments and clinical outcomes.
<b>Assessment Methods:</b> This outcome will be assessed in classroom interaction, homework or thesis projects.
<b>Measures:</b> Instructor grading of classroom interaction and homework or thesis committee review and defense.



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3/29/2021

Curriculum Map - Courses and Activities Mapped to MS Clinical Research Outcome Set

University of Arizona AMS » College of Medicine – Phoenix

**MS Clinical Research**

**MS Clinical Research Curriculum Map**

Courses and Activities Mapped to MS Clinical Research Outcome Set

	Outcome				
	Design and Conduct Understand the design and conduct of clinical research within regulatory guidelines.	Biomedical informatic functions and analyses Utilize biomedical informatics functions and analyses in a clinical setting.	Statistical Analysis Demonstrate appropriate statistical analysis of clinical research data, and interpretation of results from clinical research projects	Application of knowledge Enable the application of developed knowledge derived from clinical research meetings and the medical literature	Advance the clinical outcomes Advance the development of better treatments and outcomes for patients
<b>Courses and Learning Activities</b>					
CR 501 Principles of Clinical Research I	I			P	
CR 502 Principles of Clinical Research II	I			P	
CR 503 Informatics for Clinical Research	P	I	P	P	
BIOS 576A Biostatistics in Public Health			IPA		
CR 595C Responsible Conduct of Research	P			P	
CR 585 Individualized Scientific Writing	P			P/A	
CR 696A Medical Sciences Seminar				P	P
CR 910 Master Thesis	P/A	P/A	P/A	P/A	A
Exit Survey Exit survey (Indirect)	A	A	A	A	A
<b>Legend :</b>	I	P	A	I/P	
	Introduced	Practiced	Assessed	Introduced/Prac	

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IX. **PROGRAM ASSESSMENT PLAN**- using the table below, provide a schedule for program evaluation 1) while students are in the program and 2) after completion of the major

Assessment Measure	Source(s) of Evidence	Data Collection Point(s)
Student Interest	Enrollment numbers	Annually
Student knowledge and learning across objectives	Course-based homework and projects, thesis defense	End of courses, end of program
Academic Program Review	Reviewers' responses	Every 7 years
<b>After degree completion</b>		
Job Placement Statistics	Exit and alumni survey	Exit and alumni survey
Satisfaction with the program	Exit and alumni survey	At graduation and 5 after degree completion

X. **ANTICIPATED STUDENT ENROLLMENT**-complete the table below. What concrete evidence/data was used to arrive at the numbers?

5-YEAR PROJECTED ANNUAL ENROLLMENT					
	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
Number of Students	11	24	28	30	30

Data/evidence used to determine projected enrollment numbers:

Estimated annual enrollment is based on 11-15 students entering the two-year program annually drawn from 40 residency and 83 fellowship programs at COM-P, COM-T and their affiliates. Current enrollment in Principles of Clinical Research courses is 11 students, even though this the first year the courses were taught or advertised. We anticipate that steady-state enrollment will reach 30 or more as additional clinical trainees become interested in obtaining their MS research credentials during clinical training. We anticipate that postbaccalaureate students interested in careers as clinical research coordinators also may enroll.

XI. **ANTICIPATED DEGREES AWARDED**- complete the table below, beginning with the first year in which degrees will be awarded. How did you arrive at these numbers? Take into consideration departmental retention rates. Use [National Center for Education Statistics College Navigator](https://nces.ed.gov/ipeds/datacenter/natcen/) to find program completion information of peer institutions offering the same or a similar program.



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PROJECTED DEGREES AWARDED ANNUALLY					
	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
Number of Degrees	N/A	11	13	15	15

Data/evidence used to determine number of anticipated degrees awarded annually:

This estimate is based on students achieving their degree within 2 years. Professional students joining the program during their postgraduate training years are highly motivated to complete their degrees, so we anticipate high retention and graduate rates.

XII. **PROGRAM DEVELOPMENT TIMELINE-** describe plans and timelines for 1) marketing the major and 2) student recruitment activities.

Development of the program was accomplished under the auspices of the Center for Clinical Research Excellence and Educational Development (CREED) at COM-P. The Center is based at BUMCP and COM-Phoenix; it has extensive links to residency and fellowship programs and faculty at our clinical affiliate hospitals in Phoenix. We anticipate advertising the MS program to affiliates and recruiting applicants for enrollment in Spring, 2022. Several prospective students from affiliate hospitals have already enrolled in the Principles of Clinical Research courses as nondegree-seeking students, and could then apply to the CR MS program when available.

In subsequent years, we will market the program through the COM-P website and by contacting and/or visiting Graduate Medical Education (GME) programs at our affiliate hospitals in Phoenix and Tucson. In addition, Stacy Pigott, Executive Director of Communications for UAHS, will assist in marketing the program throughout the state.

IX. **Program Fees and Differential Tuition (PFDT) Request** – For implementation of fees, you must work with [University Fees](#). The annual deadline is December 1. For any questions, please contact the [University Fees Program Manager](#).

N/A





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Appendix A. Minor or Master's Requirements. Complete if requesting a corresponding minor/master's.

MINOR

Minimum total units required	9 <i>minimum</i>
Minimum upper-division units required	N/A
Total transfer units that may apply to the minor	3
List any special requirements to declare/admission to this minor (completion of specific coursework, minimum GPA, interview, application, etc.)	Meet with the Program Director. This minor would be appropriate for certain students enrolled in the PhD programs in Clinical Translational Sciences, Epidemiology or other clinically-oriented graduate programs.
Minor requirements. List all minor requirements including core and electives. Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	Select at least 3 courses totaling a minimum of 9 units from the following options: - CR 501, <i>Principles of Clinical Research I</i> (4) (cross-listed as CTS 501) - CR 502, <i>Principles of Clinical Research II</i> (4) (cross-listed as CTS 502) - CR 503, <i>Informatics for Clinical Research</i> (4) (cross-listed as CTS 503) - CR 595C, <i>Responsible Conduct of Research</i> (1) (cross-listed as CTS 595C)
Internship, practicum, applied course requirements (Yes/No). If yes, provide description.	No
Additional requirements (provide description)	None
Any <a href="#">double-dipping restrictions</a> (Yes/No)? If yes, provide description.	Yes. Minor coursework may not be used to satisfy a different major or minor requirement.



ACADEMIC PROGRAM – ADDITIONAL INFORMATION FORM

*To be used once the preliminary proposal has been approved.*

Appendix C. ABOR Form

Request to Establish New Academic Program in Arizona

Please complete all fields. Boxes may be expanded to accommodate longer responses. Clarifying field descriptions can be found below. Should you have any questions or concerns, please email Helen Baxendale, Director of Academic Affairs and Policy at [helen.baxendale@azregents.edu](mailto:helen.baxendale@azregents.edu)

**University:** University of Arizona

<p><b>Name of Proposed Academic Program:</b> Clinical Research</p>
<p><b>Academic Department:</b> The name of the academic department or unit that will primarily administer the academic program. If the proposed program will be jointly administered across more than one department, please list the(se) additional department(s).  Internal Medicine</p>
<p><b>Geographic Site:</b> The physical site (campus, extended campus, etc.) or modality where the academic program will be primarily delivered or administered.  Phoenix</p>
<p><b>Instructional Modality:</b> The primary modality of the academic program (i.e., immersion/in-person, online/ONLN campus, icourse, hybrid).  Hybrid (in-person and online)</p>
<p><b>Total Credit Hours:</b> The number of credit hours required to complete the academic program.  30</p>
<p><b>Proposed Inception Term:</b> The term and year in which the program will be first delivered (i.e., Spring 2021; Fall 2022). Spring 2022</p>



ACADEMIC PROGRAM – ADDITIONAL INFORMATION FORM

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**Brief Program Description:**

A short outline of the content and skills that the proposed program will deliver. A brief description of how the program fits into the institutional mission of the university. If relevant, please provide succinct information about existing related or complementary academic programming.

The Clinical Research (CR) Master of Science (MS) program is intended for graduate and professional students, clinical residents and subspecialty clinical fellows, postdoctoral scholars, clinical coordinators, early-career faculty members and others who wish to master clinical research methods and pursue independent clinical research. Graduates of the program will fill a growing need for highly qualified clinical investigators who are adept in designing and conducting research that translates into better treatments and outcomes for patients throughout Arizona and beyond. The program utilizes both didactic coursework and an original clinical research thesis to provide students with broad knowledge and practice of clinical research and training by experienced clinical research faculty. Practical aspects of the program are designed to accommodate clinical trainees with live online and evening courses, and their publishable thesis project would satisfy the residency or subspecialty fellowship research project requirement.

**Learning Outcomes and Assessment Plan:**

Define the core concepts and competencies that the program will convey and stipulate how these key learning outcomes will be measured and assessed.

Upon completing the degree, students will be able to:

- Understand the design and conduct of clinical research within regulatory and ethical guidelines;
- Utilize biomedical informatic functions and analyses in a clinical setting;
- Demonstrate appropriate statistical analysis of clinical research data, and interpretation of results from clinical research projects;
- Enable the application of developed knowledge derived from clinical research meetings and the medical literature; and
- Advance the development of better treatments and outcomes for patients.

Student Learning Outcomes will be assessed annually through:

- Data-related projects and presentations related to students’ coursework.
- Regular survey of knowledge, abilities, and careers of program graduates

**Projected Enrollment for the First Three Years:**

Please provide anticipated enrollment numbers for each of the first three years of the proposed program

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year
Number of students	11	24	28

**Evidence of Market Demand:**

Please provide an estimate of the future state-wide and national demand for graduates of the proposed academic program. Please specify the source (e.g., Burning Glass; Jobs EQ; US Department of Labor) of workforce demand data and detail the assumptions that underpin these projections. If job market data is unavailable or not applicable, please explain why and elaborate another justification for the proposed program.



ACADEMIC PROGRAM – ADDITIONAL INFORMATION FORM

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Employment Potential report on job postings/demand under the category of Medical Scientist (CIP code 51.1401) reveals 538 postings in Arizona from 03/01/20-02/28/21, which is expected to increase by 61.1% over the next 10 years, with a total labor market increase of 11.9%. Other Southwestern states showed even higher job demand. The University of Arizona Colleges of Medicine and their affiliates boast 40 residency and 83 fellowship programs, from which postgraduate applicants will be drawn, with additional postbaccalaureate applicants expected. Current courses which will serve as core courses are well-subscribed with the projected enrollment numbers already filled.

Similar Programs Offered at Arizona Public Universities:

List existing programs at Arizona public universities that deliver similar concepts and competencies to the proposed new program.

There are NO other MS in Clinical Research programs in Arizona. The closest similar MS program at ASU trains postbaccalaureate nurses and clinical coordinators in *Clinical Research Management*, a field of Allied Health Education. This ASU program is NOT intended for postgraduate students who already hold the MD or equivalent degree:

<https://asuonline.asu.edu/online-degree-programs/graduate/master-science-clinical-research-management/>

The UA College of Public Health offers a 13-credit program of coursework in Clinical and Translational Research (ACTR) which provides a *graduate certificate* opportunity, but NOT a Master’s degree, to health professionals:

<https://publichealth.arizona.edu/academics/certificates/actr>

ACTR certificate students could enroll in the MS in Clinical Research program, then petition to apply at least 6 of the certificate units to the MS (e.g., BIOS 576A/B, EPID 678, EPID 696A)

FOR CURRICULAR AFFAIRS USE ONLY

Objection(s) Raised by Another Arizona Public University?      YES    NO

Has another Arizona public university lodged a written objection to the proposed program with the proposing university and the Board of Regents within seven days of receiving notice of the proposed program?

If Yes, Response to Objections:

Please provide details of how the proposing university has addressed the objection. If the objection remains unresolved, please explain why it is in the best interests of the university system and the state that the Board override it.

New Resources Required? (i.e., faculty and administrative positions; infrastructure, etc.):

Please provide an estimate of the personnel and infrastructure requirements of the proposed new program and the corresponding costs. Please specify if the proposed program requires new resources (e.g., new faculty lines; a new laboratory; new teaching assistantships or scholarships) or whether resource needs may be met through the reassignment or extension of existing ones. If resource extension or reassignment will impact extant programs and/or operations, please make this clear.

Graduate coordinator, 0.25 FTE initially, increasing to 0.5 FTE with growth of the program.



THE UNIVERSITY  
OF ARIZONA

ACADEMIC PROGRAM – ADDITIONAL INFORMATION FORM

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Plan to Request Program Fee/Differentiated Tuition?      YES    NO

Estimated Amount:

**Program Fee Justification:**

Note: The fee setting process requires additional steps and forms that need to be completed. Please work with your [University Fees](#) office to complete a fee request.

Specialized Accreditation?      YES    NO

**Accreditor:**

The name of the agency or entity from which accreditation will be sought

**Graduate Major Peer Comparison Chart**-select two peers for completing the comparison chart from (in order of priority) [ABOR-approved institutions](#), [AAU members](#), and/or other relevant institutions recognized in the field. The comparison chart will be used to identify typically required coursework, themes, and experiences for majors within the discipline. The comparison programs are not required to have the same degree type and/or major name as the proposed UA program. Information for the proposed UA program must be consistent throughout the proposal documents.

<b>Program name, emphasis (sub-plan) name (if applicable), degree, and institution</b>	<b>Proposed UA Program:</b> MS in Clinical Research	<b>Peer 1: UCLA</b> MS in Clinical Research	<b>Peer 2: UCSD</b> Master’s in Clinical Research
<b>Current # of enrolled students</b>		36	37 (from 2016)
<b>Major Description. Includes the purpose, nature, and highlights of the curriculum, faculty expertise, emphases (sub-plans; if any), etc.</b>	The Clinical Research (CR) Master of Science (MS) program is intended for graduate and professional students, clinical residents and subspecialty clinical fellows, postdoctoral scholars, clinical coordinators, and early-career faculty members who wish to master clinical research methods and pursue independent clinical research. Graduates of the program will fill a growing need for highly qualified clinical investigators who are adept in designing and conducting research that translates into better treatments and outcomes for patients throughout Arizona and beyond. The program utilizes both didactic coursework and an original research thesis to provide students with broad knowledge and practice of clinical research and training by experienced clinical research faculty. Practical aspects of the	From: <a href="https://www.ctsi.ucla.edu/education/pages/tpts#track3">https://www.ctsi.ucla.edu/education/pages/tpts#track3</a>  The program is designed to train fellows and faculty to: <ul style="list-style-type: none"> <li>• Design and conduct clinical research (clinical trials and observational studies)</li> <li>• Successfully compete for funding (e.g., foundation grants, NIH K23, or R01's in clinical research)</li> <li>• Analyze data and interpret research results</li> <li>• Present research at scientific meetings and in the medical literature</li> <li>• Critique and interpret the research of others</li> </ul> The MSCR Program consists of two “Track” options: One focused on <b>Research/Clinical Trials</b> and one serving physician scientists with an interest in <b>Biomedical Informatics</b> .	From: <a href="https://clre.ucsd.edu/program-overview/">https://clre.ucsd.edu/program-overview/</a>  The master’s degree in Clinical Research helps students meet the demand for well-qualified clinical researchers in academia and industry. This critical need for individuals who are able to conduct credible patient-based research within stringent ethical and regulatory guidelines continues to grow. Current estimates point to the need for more than 50,000 qualified clinical investigators for industry-sponsored drug development in the United States alone. Furthermore, San Diego is one of the most advanced centers in the world for biotechnology and clinical research. <b>Features:</b> - Broad-based curriculum covers the principles of epidemiology, biostatistics, patient-oriented research, health services/outcomes

	program are designed to accommodate clinical trainees with live online and evening courses, and their publishable thesis project would satisfy the residency or subspecialty fellowship research project requirement.		research, applied quantitative analysis, and professional development seminars for clinical researchers. - High-level clinical research project in the student's final term.
<b>Target careers</b>	Physician-scientists and clinical research managers	Physician-scientists	Physician-scientists, Biotech leaders
<b>Total units required to complete the degree</b>	30	40 (quarter units)	36 (quarter units)
<b>Pre-admission expectations (i.e. academic training to be completed prior to admission)</b>	BS or MD or equivalent	MD or equivalent	MD or equivalent
<b>Major requirements. List all major requirements including core and electives. Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.</b>	<p><b>Requirements:</b>  CR 501: <i>Principles of Clinical Research I (currently taught as CTS 501)</i> (4)  CR 502: <i>Principles of Clinical Research II (currently taught as CTS 502)</i> (4)  CR 503: <i>Informatics for Clinical Research (currently taught as CTS 503)</i> (4)  BIOS 576A: <i>Biostatistics for Public Health</i> (3)  CR 595C: <i>Responsible Conduct of Research (currently taught as CTS 595C)</i> (2)  CR 910: <i>Thesis (6-12)</i>  CR 696A or 696B: <i>Medical Sciences Seminar</i> (2) (New)</p> <p><b>ELECTIVES (such as):</b>  CR 585: <i>Individualized Scientific Writing</i> (2) (New)  BIOS 576B: <i>Biostatistics for Research</i> (3)  BIOS 675: <i>Clinical Trials and Intervention Studies</i> (3)</p>	<p><b>Requirements:</b> (32 units)  - Biomath 170A. Biomath for Medical Investigators  - Biomath 259. Clinical Trials  - Biomath 265A. Data Analysis I  - Biomath 266A. Applied Regression  - Analysis in Medical Science  - Biomath 266B. Adv Biostatistics  - Biomath M261. RCR Involving Humans  - Methodology in Clinical Research  - Biomath M260A/B/C.  Directed Research 596 (8 units)</p> <p><b>Electives</b> (8 units)  - epidemiology, health services, or other basic science courses</p>	<p><b>Requirements:</b>  CLRE 253/4, Biostatistics I &amp; II (2 ea)  CLRE 255, Data Management/ Informatics (2)  CLRE 251/7, Epidemiology I &amp; II (2 ea)  CLRE 252, Health Services Research (2)  CLRE 250/6, Patient-oriented Research I &amp; II (2 ea)  CLRE 259, Scientific Communication Skills (2)  CLRE 236, Translational Research Fundamentals (2)  CLRE 258, Seminar (2)  CLRE 295A/B, ISP Seminar (4)  CLRE 297, Independent Research Project (2)</p> <p><b>Electives</b> (4 units total):  CLRE 270, Experiential CR (2)  CLRE 232, Qualitative research  CLRE 237, Translational regenerative medicine (2)  CLRE 238, Translational research (2)  CLRE 239, Applied translation (2)</p>

<b>Research methods, data analysis, and methodology requirements (Yes/No). If yes, provide description.</b>	Yes, students complete 15 units of research methods, data analysis and methodology.	Yes, students complete 24 (quarter units) of research methods, data analysis and methodology.	Yes, students complete 26 (quarter units) of research methods, data analysis and methodology.
<b>Internship, practicum, applied course requirements (Yes/No). If yes, provide description.</b>	No	No	No
<b>Master thesis or dissertation required (Yes/No). If yes, provide description.</b>	Yes. Students must complete at least 6 units of thesis credit comprising a clinical research project.	Yes, original thesis project	Yes, original thesis project
<b>Additional requirements (provide description)</b>	Written and oral thesis defense	Written and oral thesis defense	Written and oral thesis defense

\*Note: comparison of additional relevant programs may be requested.



**BUDGET PROJECTION FORM**
**Name of Proposed Program or Unit: Master's of Science in Clinical Research**

Budget Contact Person:	Projected		
	1st Year 20 21 - 20 22	2nd Year 20 22 - 20 23	3rd Year 20 23 - 20 24
<b>METRICS</b>			
Net increase in annual college enrollment UG			
Net increase in college SCH UG			
Net increase in annual college enrollment Grad	11	24	28
Net increase in college SCH Grad	132	321	375
Number of enrollments being charged a Program Fee	-	-	-
New Sponsored Activity (MTDC)			
Number of Faculty FTE			
<b>FUNDING SOURCES</b>			
<b><u>Continuing Sources</u></b>			
UG RCM Revenue (net of cost allocation)			
Grad RCM Revenue (net of cost allocation)	102,151	228,648	271,946
Program Fee RCM Revenue (net of cost allocation)	-	-	-
F and A Revenues (net of cost allocations)			
UA Online Revenues			
Distance Learning Revenues			
Reallocation from existing College funds (attach description)			
Other Items (attach description)			
<b>Total Continuing</b>	<b>\$ 102,151</b>	<b>\$ 228,648</b>	<b>\$ 271,946</b>
<b><u>One-time Sources</u></b>			
College fund balances			
Institutional Strategic Investment			
Gift Funding			
Other Items (attach description)			
<b>Total One-time</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>TOTAL SOURCES</b>	<b>\$ 102,151</b>	<b>\$ 228,648</b>	<b>\$ 271,946</b>
<b>EXPENDITURE ITEMS</b>			
<b><u>Continuing Expenditures</u></b>			
Faculty	-	-	-
Other Personnel	32,846	48,604	49,577
Employee Related Expense	10,248	15,164	15,468
Graduate Assistantships			
Other Graduate Aid	59,690	133,944	161,464
Operations (materials, supplies, phones, etc.)	4,000	4,080	4,162
Additional Space Cost			
Other Items (attach description)	10,500	10,710	10,924
<b>Total Continuing</b>	<b>\$ 117,284</b>	<b>\$ 212,502</b>	<b>\$ 241,595</b>
<b><u>One-time Expenditures</u></b>			
Construction or Renovation			
Start-up Equipment			
Replace Equipment			
Library Resources			
Other Items (attach description)			
<b>Total One-time</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 117,284</b>	<b>\$ 212,502</b>	<b>\$ 241,595</b>
<b>Net Projected Fiscal Effect</b>	<b>\$ (15,133)</b>	<b>\$ 16,146</b>	<b>\$ 30,351</b>



Mel and Enid Zuckerman  
College of Public Health

Department of  
Epidemiology &  
Biostatistics

1295 N Martin Avenue  
P.O. Box 245210  
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Tel: (520) 626-3589  
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[www.publichealth.arizona.edu](http://www.publichealth.arizona.edu)

Ron Hammer, PhD  
Basic Medical Sciences  
College of Medicine, Phoenix

Dear Ron,

As Professor and Department Chair of Epidemiology and Biostatistics at the Mel & Enid Zuckerman College of Public Health, I am writing to convey my enthusiastic support for establishment of the M.S. in Clinical Research at the College of Medicine – Phoenix. The new program will nicely complement our Clinical & Translational Research graduate certificate program and the Clinical Epidemiology track in our MS Epidemiology program.

It is a pleasure to collaborate with you on the new M.S. in Clinical Research program. I support your use of BIOS 576A, *Biostatistics for Public Health* as a required course. Further evidence of our ongoing collaboration is your listing of the following courses as electives:

EPI 573A: *Basic Principles of Epidemiology*  
BIOS 576B: *Biostatistics for Research*  
BIOS 675: *Clinical Trials and Intervention Studies*

Together, our programs will provide a seamless transition for students to learn clinical research skills, knowledge and practice from our Certificate in Clinical & Translational Research to your M.S. in Clinical Research programs and the Clinical Epidemiology track in our MS Epidemiology. We will collaborate in publicizing these programs by referring to each other's program on our website.

I look forward to working with you in the future. Please feel free to contact me with any further questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Zhao Chen'.

Zhao Chen, PhD, MPH  
Professor and Chair  
Department of Epidemiology and Biostatistics  
Mel and Enid Zuckerman College of Public Health  
University of Arizona



March 29, 2021

Ron Hammer, Ph.D.  
Professor, Basic Medical Sciences  
College of Medicine-Phoenix

Dear Dr. Hammer:

This letter is to confirm the enthusiastic support of the Clinical Translational Sciences graduate program for establishment of a new Master of Science degree program in Clinical Research at the College of Medicine-Phoenix. The Clinical Translational Sciences (CTS) program offers M.S. and Ph.D. degrees at the Phoenix biomedical campus of UArizona as well as on the main University campus in Tucson.

While the CTS program is one avenue for graduate training in clinical research, we in the CTS program absolutely recognize the need for a dedicated master's degree in Clinical Research and are confident the CTS and Clinical Research programs will collaborate with and complement one another in serving the significant unmet need for formal postgraduate training in clinical research in the Phoenix area. There are many physicians in and around Phoenix whose career aspirations would be served by formal training in clinical research to become physician-scientists, while others with prior training in biomedical and scientific disciplines wish to build skills for a career in clinical research. We fully support the establishment of the M.S. in Clinical Research as an avenue beyond the CTS program for this vital training and agree that demand is sufficient to provide a consistent population of applicants and students to both the Clinical Research and CTS M.S. programs. I personally see absolutely no downside to offering both programs through our medical campus.

One forum in which the CTS and Clinical Research programs can collaborate and provide mutual support is in the joint offering of graduate courses. There are currently four CTS courses which we favor cross-listing with Clinical Research, as they serve students' needs in both programs.

The proposed cross-listed courses would be:

- CR 501, Principles of Clinical Research I (cross-listed with CTS 501)
- CR 502, Principles of Clinical Research II (cross-listed with CTS 502)
- CR 503, Informatics for Clinical Research (cross-listed with CTS 503)
- CR 595C, Responsible Conduct of Research (cross-listed with CTS 595C)

These courses have all been offered previously to CTS students, have been highly valued in their scientific training and will be useful to students in the Clinical Research program as well. CTS/CR 501, 502 and 503 are taught by faculty in Phoenix, and CTS/CR 595C is collaboratively taught by faculty and personnel from the Office of Responsible Conduct of Research to students both in Phoenix and Tucson.

Please do not hesitate to contact me if I can provide any further information.

Sincerely,

A handwritten signature in black ink, reading "Nancy K. Sweitzer". The signature is written in a cursive style with a large, stylized initial 'N'.

Nancy Sweitzer, M.D., Ph.D.

Co-Director, Clinical Translational Sciences Graduate Program

Director, Sarver Heart Center

Chief, Division of Cardiology

[nancysweitzer@shc.arizona.edu](mailto:nancysweitzer@shc.arizona.edu)



THE UNIVERSITY OF ARIZONA  
COLLEGE OF MEDICINE PHOENIX  
**Internal Medicine**

Michael B. Fallon, MD, FACP  
Professor and Chair  
Department of Internal Medicine  
475 North 5<sup>th</sup> Street  
Phoenix, AZ 85004

April 6, 2021

Ron Hammer, PhD  
Professor, BMS  
College of Medicine-Phoenix

Dear Ron,

I am writing to enthusiastically support the Master's of Science in Clinical Research proposal in my role as Chair of the Department of Internal Medicine and Executive Director of the Center for Clinical Research Excellence and Educational Development at the College of Medicine-Phoenix. Graduate courses in Clinical Research will be housed within my Department. These courses will be available to graduate students and will be able to accommodate the anticipated enrollment generated by this new program.

Many of our Department faculty members are clinical researchers and leaders in their fields. These faculty are uniquely qualified to contribute to the program as mentors, instructors, and advisors to Clinical Research students.

We look forward to the opportunities in clinical research training provided by this program.

Sincerely,

Michael B. Fallon, MD  
Chair, Internal Medicine  
University of Arizona College of Medicine - Phoenix



THE UNIVERSITY OF ARIZONA  
College of Nursing

Office of the Dean

PO Box 210203  
Tucson, AZ 85721-0203  
Tel: (520) 626-6152  
Fax: (520) 626-2669  
[www.nursing.arizona.edu](http://www.nursing.arizona.edu)

October 16, 2021

Ronald P. Hammer, Jr., PhD  
Professor of Basic Medical Sciences, Pharmacology, and Psychiatry  
University of Arizona College of Medicine – Phoenix

Dear Ron,

This letter will confirm our support for the establishment of a new Master of Science degree in Clinical Research at the College of Medicine - Phoenix. The proposed MS program will help provide trainees based in Tucson and Phoenix with the tools they need to become clinical researchers. The curriculum, while intended for physician-scientists, clinical research coordinators and others, is complementary and does not overlap with that of some Nursing courses. This program responds to an urgent need for educational programs intended to strengthen clinical research both immediately by improving the quality of students' research projects and long-term by developing highly competent future clinical research faculty. This is an exciting opportunity for physician-scientists as well as those in other disciplines, including Nursing, to advance their educational career opportunities in clinical research.

As the Clinical Research MS program requires a thesis, we anticipate that Tucson-based students will conduct their thesis research with existing Tucson-based research faculty. Some trainees may benefit from working with College of Nursing faculty either as mentors or committee members, which we think could be mutually advantageous.

Sincerely,

Ida M. (Ki) Moore, PhD, RN, FAAN  
Anne Furrow Professor and Dean



THE UNIVERSITY OF ARIZONA  
**College of Medicine**  
Tucson

1501 N. Campbell Ave. Ofc: 520-626-5675  
P.O. Box 245017 medicine.arizona.edu  
Tucson, AZ 85724

## Office of Research and Graduate Studies

Ronald P. Hammer, Jr., PhD  
Professor of Basic Medical Sciences,  
Pharmacology, and Psychiatry  
Chair, UA Graduate Council  
Co-Director, Clinical Translational Sciences Graduate Program  
Co-Director, MD/PhD Program  
Director, Graduate Training Office  
The University of Arizona College of Medicine, Phoenix  
Email: Ron.Hammer@arizona.edu

RE: Clinical Research Master of Science Program

Dear Ron,

This letter will confirm our enthusiastic support for the establishment of a new Master of Science degree in Clinical Research at the College of Medicine - Phoenix. We anticipate that the new MS program will help provide trainees based in Tucson and Phoenix with the tools they need to become physician-scientists and clinical researchers.

As the Clinical Research MS program requires a thesis, we anticipate that Tucson-based students will conduct their thesis research with existing Tucson-based research faculty. The combination of clinical research faculty at COM-T and COM-P comprise an abundant source of mentors for students in the proposed Clinical Research MS program.

Please do not hesitate to contact me with any questions.

Sincerely,

Jason Wertheim, MD, PhD, FACS  
Vice Dean for Research and Graduate Studies  
Associate Professor, Surgery  
Associate Professor, Biomedical Engineering  
Medicine Administration  
University of Arizona