February 20, 2017

Sarah C. Mangelsdorf, Ph.D.  William Karpus, Ph.D.
Provost and Vice Chancellor for Academic Affairs  Dean of the Graduate School
Sent electronically

Re: Review of the Capstone, Graduate and Professional Certificates in Fundamentals of Clinical Research

Dear Provost Mangelsdorf and Dean Karpus:

On behalf of the School of Medicine and Public Health, I endorse the five-year review of the Capstone, Graduate and Professional Certificates in Fundamentals of Clinical Research.

After discussion at the February 15, 2017 meeting of the SMPH Academic Planning Council, APC members unanimously approved the report of the review committee, the recommendations of the committee for implementation, and the response of program leadership to the review committee’s report. Those reports are attached. Also attached is a rationale to continue the certificate programs despite their low award status.

Program Strengths: The review committee and APC are highly laudatory of the certificate programs. The programs meet a need for the university and research communities, fulfill requirements for dozens of T32 training programs, serve as a recruiting tool for new SMPH faculty, and meet program goals of providing targeted instruction and attracting high quality students. Program Coordinator Sally Wedde provides outstanding support.

Recommendation: The programs have low enrollment and thus a low number of certificates awarded. The review committee recommends that the program increase its marketing to increase enrollment.

Program Response: The Institute for Clinical and Translational Research, which administers the program, has increased marketing efforts by improving its website and proactively meeting with department chairs and fellowship directors to inform them about the certificate programs. ICTR plans to create a new TL1 postdoctoral program that will require scholars to complete the certificate; this will dramatically increase enrollment.

The APC supports this recommendation, commends ICTR for having taken steps to increase enrollment and suggests that ICTR market the programs to directors of residency training programs with a research requirement.

Both the SMPH Academic Planning Council and I concur with the review committee’s recommendation to continue the Capstone, Graduate and Professional Certificates in Fundamentals of Clinical Research. We recommend that the next review occur in ten years.
Thank you for your consideration. If you require additional information, please do not hesitate to contact Andrea Poehling.

Sincerely,

[Signature]

Robert N. Golden, M.D.
Robert Turell Professor in Medical Leadership
Dean, School of Medicine and Public Health
Vice Chancellor for Medical Affairs
University of Wisconsin-Madison

Copies to:
Rob Lemanske, M.D. Institute for Clinical and Translational Research
Marc Drezner, M.D. Institute for Clinical and Translational Research
Sally Wedde, Institute for Clinical and Translational Research
Richard L. Moss, Ph.D., School of Medicine and Public Health
Andrea Poehling, M.S., School of Medicine and Public Health
Marty Gustafson, M.S., Graduate School
Emily Reynolds, M.A., Graduate School
Jocelyn Milner, Ph.D., Academic Planning and Institutional Research
Sarah Kuba, Ph.D., Academic Planning and Institutional Research

Attachments:
1) Review committee report
2) Program response
3) Implementation forms
4) Rationale to continue programs
Process. The Fundamentals of Clinical Research Review Committee consisted of Mary Sesto, Caroline Alexander, Barbara Bowers, James Gern (Chair) and Tracy Cabot (Staff). The committee met on three occasions: February 9, April 13 and May 11 2015. Materials that were considered and discussed in the first two meetings consisted of instructions for the review process for certificate programs and the Self-Review document prepared by program leadership. After reviewing the Self-Review and other materials, the committee prepared a number of additional questions that were addressed in writing by the program leadership. These additional responses were also reviewed by the committee. The meeting on May 11 included interviews with representatives from the Program leadership, faculty advisors, course instructors, and students.

Although the original charge to this Committee was to perform a review of the Capstone Certificate, it quickly became evident from the materials provided that it would in fact be more efficient to include a review of the Graduate and Professional Certificates at the same time. Because the Graduate and Professional Certificates were initially approved in 2011, this is an early, “out of cycle” review of these two certificates. The Fundamentals of Clinical Research Program Leadership agreed with the expediency of this suggestion, and the review therefore included all three types of certificates.

Key features of the program. (Description excerpted from the March 2014 self-study document). The Capstone Certificate in the Fundamentals of Clinical Research is offered to students with at least a bachelor’s degree, who apply to the Division of Continuing Studies as Special Students and to the program. However, Special Students are free to enroll in courses identified as Capstone requirements without notifying the program and, indeed, without yet knowing that their objective is to earn the Capstone. The Graduate Certificate and the Professional Certificate are available only to students who are enrolled in UW graduate programs or professional programs (PharmD or DVM, for example), respectively. It must be emphasized that the curriculum is identical for all three certificates. Students are required to take a minimum of 13 credits, currently five courses, three of which are in a specific chronological sequence. The program is designed to be completed in 2-3 years.

Administratively the Certificate program is housed in the Graduate Program in the Research Education and Career Development (REC) core of the Institute for Clinical and Translational Research in the School of Medicine and Public Health. The Capstone, in fact, predates the existence of the Graduate Program in Clinical Investigation. The Capstone Certificate is situated in an appropriate and robust educational context, where it can fulfill the goal for which it was originally
developed: To provide working clinicians and other adult students with training in the foundations of clinical research, without requiring them to enroll in a graduate or professional degree program. The Graduate and Professional Certificates provide the same training opportunity to students who are already enrolled in programs at UW.

**Strengths and Challenges.** The committee noted a number of strengths of the Certificate Program in the Fundamentals of Clinical Research.

1. The program meets a need for the university and research communities. Traditionally, researchers in the health care fields receive in-depth clinical training but little or no formal training in research methods, study design, skills in program development, grant writing and scientific presentation. The review committee heard from both faculty and students that the Certificate curriculum was well targeted to fill these educational gaps.

2. Another strength is the flexibility of the curriculum and the willingness of program staff to customize it to the needs of individual students. The students found the program coordinator (Sally Wedde) to be particularly helpful and willing to work with students to design personalized learning plans.

3. For a number of T32 training programs on campus, the Certificate fulfills many of the basic educational requirements related to health sciences research, and these educational elements are difficult to find elsewhere.

4. The program is viewed as an asset in the recruitment of junior faculty, and tuition for the Capstone program can be used as a “carrot” and included in start-up packages.

Challenges to the program include:

1. Marketing of the program has been low-key. It would seem that there are many eligible graduate and professional students, post-doctoral fellows, junior faculty and community researchers who could benefit from this program. Several of the program participants were personally recruited by program faculty.

2. Historically, the Fundamentals of Clinical Research Certificate Program predated the Masters and PhD programs in Clinical Research. Separation between these educational programs is artificial, however, since the programs share faculty and administration. Thus, conducting separate reviews of the certificates and degree-granting programs is artificial and inefficient, and restrictive in terms of considering the entire scope of educational programs in clinical research. For the next review cycle, we recommend that all the programs be reviewed together.

3. Official enrollment numbers do not reflect the true number of certificate program participants. There are systems in the reporting process that overlook many of the students who participate in the Capstone program. The actual numbers are approximately 20 students in 7 years, while official enrollment is listed as 12 students. The enrollment for the Graduate and
Professional certificates is 10 and 5, respectively, in the 5 years since these certificates were approved.

**Have the goals of the program been met?** The goals of the Capstone Certificate program are to “offer clinical research training breadth to researchers in the community, within or external to UW, who are not engaged in a formal graduate or professional degree training program”. The Graduate and Professional Certificates provide the same training opportunity to students who are already enrolled in programs at UW.

From the perspective of the students, the Certificate programs provide well-targeted instruction in clinical research principals and methods. Many of the Capstone students remarked that they already had degrees, and what they wanted most was instruction in research methods to complement their clinical knowledge or basic science research expertise. The program is flexible, and classes are scheduled to maximize accessibility. Cost-benefit was perceived favorably, and for many students, tuition was paid by T32 funds or start-up packages.

The instructors feel that the program is accepting quality applicants, on par with participants in other UW graduate-level programs. The instructors remarked that students “think at a different level” when considering their research expertise before versus after completing the certificate program.

The leadership remarked on institutional benefits to UW, including support of T32 grant applications. Dr. Drezner had contributed support letters to over 40 T32 applications, and program staff provided specific curriculum elements to these applications. Other institutional benefits included the role of Capstone and degree programs in attracting faculty recruits who are interested in obtaining formal training in clinical research methods. In addition, the Capstone program has served as a feeder program to the Masters and PhD programs in clinical research. Participants who are uncertain about committing to a degree program can initially commit to a Capstone program with limited course of study to “get their feet wet”. This can serve as a springboard to promote further training in degree programs.

The mission of the Certificate program has evolved over the years, as is evidenced by the expansion to include the Graduate and Professional certificates in 2011. Initially the program was set up to serve as a clinical research training program for the University community as well as public researchers. Increasingly, the program has focused mainly on filling the educational gap for clinicians who are expected to perform research in post-doctoral programs or for promotion, and yet have had little or no formal education in clinical research. The committee recognized that this need is substantial, and that the mission statement of the Certificate program could be revised to acknowledge this as the major mission for the program.

**Summary.** These achievements and functions indicate that the Capstone, Graduate and Professional Certificates in the Fundamentals of Clinical Research are high-
quality programs that serve students, faculty and the public good. The review Committee unanimously recommends that these programs continue. Efforts should be focused on improved marketing and increasing the number of students in these well-run programs that meet an important educational need for clinical researchers.
March 14, 2016

Jim Gern, Caroline Alexander, Barbara Bowers, Mary Sesto

Dear Dr. Gern and Committee Members:

Thank you for your thoughtful review and response to the report.

The Certificate program is a critical component of recruiting to the MS and PhD programs. It is a feeder program to graduate studies: Half (9 of 18) of the current MS and PhD students started as Special (Certificate) Students.

Timing of Reviews. We agree with reviewing the certificates and degree-granting programs simultaneously in the future, replacing separate self-reviews for the (1) Capstone, (2) Graduate and Professional Certificates and the (3) MS and PhD clinical and translational graduate programs.

Marketing and Recruiting. Marketing of the Certificate program indeed is dependent on program faculty recruitment of scholars in the Schools of Nursing, Medicine and Public Health, Pharmacy, and Veterinary Medicine, the College of Engineering, and Marshfield Clinic Research Foundation. It is a unique, applied program in which working faculty and staff gain core training in the field to apply to their work immediately or to build from in pursuit of another degree. The faculty members and scholar prospects are active in the field of clinical and translational research. This is a specialized recruiting pool. In addition, current and former scholars recruit colleagues to earn the Certificate. The advantages of word of mouth marketing by program faculty and scholars is that they are familiar with prospective scholars’ needs, and as a group, they cover a wide range of potential recruits in five schools and colleges as well as the Marshfield medical complex.

The Certificate program is a critical component of recruiting to the MS and PhD programs. Nine of the 18 current MS and PhD students started as Special (Certificate) Students. Recruiting to the Certificate program is integrated with recruiting to the graduate programs that often follow.

Each summer we test the validity of our e-mail list of program faculty, fellowship and traineeship directors and administrators. Each October and December we send them an e-mail describing the graduate programs and the Feb. 1 deadline for admissions. Throughout the year we are in touch with prospective students and send them at least two e-mails prior to Feb. 1 as well. We provide physical Certificate and Graduate Program brochures for Executive, Admissions, and Curriculum Committee members. In addition, we send physical brochures to SACNAS and ABRCMS. We attend career fairs in partner schools and provide in-person presentations about the programs to groups of Fellows in training. We routinely interact with other graduate program coordinators, SciMed GRS, Centennial Scholars, Shapiro Scholars, SROP, Theresa Duello and others.

The Certificates and the MS are marketed through program to program visits; the ICTR website ictr.wisc.edu/certificateprograms/; the Advance Your Career website https://advanceyourcareer.wisc.edu/ established in Summer 2015; through current faculty and students; alumni; and training grant and fellowship directors and administrators.
The Advance Your Career site, developed by the Division of Continuing Studies, provides a way for all internet users to learn about the programs, which are geared to working health professionals who attend classes generally at 4 PM or later. Prospects who indicate interest using a form in the website receive an automated letter with brief, additional information and an offer to answer further questions when the prospect is ready. We have had inquiries, but the site is too nascent to analyze for reliable information.

While functionally cohesive, these are promotional and marketing activities. We are aware that they are not a written marketing plan. The Graduate Program in Clinical Investigation faculty Executive Committee and its Admissions and Marketing Subcommittee discussed marketing and recruiting for the programs March 3 and 14. The Executive Committee directed staff to work with the School of Business and ICTR Deputy Director Rob Lemanske as needed to find a student to help the program create a plan as a practicum for a marketing course. The full committee has not yet voted on draft marketing goals recommended by the subcommittee. Part of this discussion was also focused on how to continue to attract and increase the number of individuals defined by the NIH as underrepresented populations in the biomedical research workforce among new faculty and academic staff considering the Certificate or MS or PhD. We will collaborate with UW representatives engaged with the NIGMS National Research Mentor Network and the Health Equity Leadership Institute to extend our reach-out to more diverse scholars.

**Counting Enrollees and Graduates.** It is a challenge to count Certificate students formally and accurately; they do not have to declare at the outset that they are earning a Capstone Certificate in the Fundamentals of Clinical Research, and because only five courses are required, it has not been clear to the University where each Certificate enrollee is in the completion process. Further, some Special Students choose the wrong category when they apply online (not knowing whether they are declaring a Capstone or not).

Since the site visit related to the Certificate review process, we have helped the Office of the Registrar and the Division of Continuing Studies to get the Capstone coursework requirements into the Degree Audit Reporting System (DARS). This is the system that UW undergraduates use to track their own progress. For Certificate programs campus-wide, DARS is the official record of Capstone enrollments and completions. A system is also in place to allow for course waivers or alternate ways to complete the Certificate. It consists of a shared mailbox in box.com, with increased access to the DARS Encoding Service Team in the Registrar’s office.

**Additional Goals.** Additional goals for the array of training programs under ICTR certainly will be aligned with the NIH Clinical and Translational Service Awardee institutions. These goals are under active discussion by, and include ICTR leadership membership on, a national education innovation committee. NIH funding for ICTR, its K training program and its T training program are up for competitive renewal in 2016, with proposals due in September 2016. Of particular interest is the training of clinical and translational researchers whose work addresses health disparities, and/or vulnerable populations at either end of the life span continuum.

In the next self-review report, we will include up to date information about CTSA student competencies.

Sincerely,

Marc K. Drezner, MD, Training Director
Fundamentals of Clinical Research Certificate Program
Graduate Program in Clinical Investigation
Implementation Form – Capstone Certificates

This form must accompany a capstone certificate proposal. An updated form should be submitted when changes to the certificate are made and when a certificate is reviewed. It is used by administrative offices to better assist departments and programs with implementation. Questions in this form reflect guidelines in the Full Guidelines for For-Credit Certificates, http://apir.wisc.edu/certificates.htm.

Document Date: Dec. 21, 2016
Name of Capstone Certificate: Fundamentals of Clinical Research
Faculty Program Director: Robert F. Lemanske, Jr., MD
Primary Faculty/Staff Contact: Sally Wedde
Home Department/Academic Unit (Name/UDDS): 532940 (ICTR took over admin of Certificate in 2007)
Approval Date: 2001 (original approval)
School/College: School of Medicine and Public Health
Approval Date: November 2010
GFEC Approval Date: December 2010
UAPC Approval Date: January 2011
Implementation Term (typically the fall term after UAPC approval): Fall 2001 (continual enrollment)
Year that first program review is scheduled (usually 5 years after implementation) or year most recent program review completed: Submitted for review 2011, no action, revised and submitted 2014

Information to be completed by RO and APIR:
Plan Code (assigned by the Registrar’s Office):
CIP Code (assigned by Academic Planning and Institutional Research):
Primary Divisional Disciplinary Assignment (assigned by APIR for analysis purposes only):

Curriculum - List of required and elective courses and any other program requirements:
BMI 541 Introduction to Biostatistics (3 cr)  PHS 797 Introduction to Epidemiology (3 cr)
BMI 542 Introduction to Clinical Trials I (3 cr)  BMI 544 Introduction to Clinical Trials II (3 cr)
Responsible Conduct of Research course (6 options, 1-2 cr)
Credit total required (9-12 credits): 13-14
Projections for annual enrollment: 5-10/year
Fundamentals of Clinical Research Student Learning Goals:
1. Determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.
2. Understand the principles of clinical research design and statistical analysis.
3. Understand the principles of multidisciplinary patient-oriented clinical research protocols.
4. Apply and foster professional, ethical and responsible conduct of clinical research.

Plan for Assessing Each Student Learning Goal
For each of the degree major/program student learning goals, indicate how the program plans to assess whether or not students are meeting the expectation, as well as when each learning goal will be assessed. Keep in mind that each academic degree program is expected to engage in at least one assessment activity per year and assessment activities, in total, must include one direct assessment method. While programs do not need to assess each learning goal every year, all learning goals must be assessed within a period of three years.

Summary of Learning Assessment Process, by Learning Objective

<table>
<thead>
<tr>
<th>Assessment Planning (How)</th>
<th>1. The student will determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.</th>
<th>2. The student will understand the principles of clinical research design and statistical analysis.</th>
<th>3. The student will understand principles of multidisciplinary patient-oriented clinical research protocols.</th>
<th>4. The student will apply and foster professional, ethical and responsible conduct of clinical research.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method for assessing learning (at least one direct method required)</td>
<td>• The faculty Executive Committee and NIH External Advisory Committee review program in aggregate (head count, type of student) annually (direct).</td>
<td>• Grades.</td>
<td>• Course evaluations.</td>
<td></td>
</tr>
<tr>
<td>Timetable for assessment activity (at least one activity each year; all goals reviewed in a 3-year cycle)</td>
<td>2017</td>
<td>2017, 2018, 2019</td>
<td>2017, 2018, 2019</td>
<td>2019</td>
</tr>
<tr>
<td>Who performs the assessment?</td>
<td>Executive Committee</td>
<td>Executive Committee</td>
<td>Executive Committee</td>
<td>Executive Committee</td>
</tr>
<tr>
<td></td>
<td>External Advisory Committee</td>
<td>External Advisory Committee</td>
<td>External Advisory Committee</td>
<td>External Advisory Committee</td>
</tr>
<tr>
<td>How is the assessment reviewed?</td>
<td>Discussion of staff report at Executive and Curriculum Subcommittee meetings</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Who produces annual summary report? When?</td>
<td>Staff (post-meeting)—annually</td>
<td>Staff (post-meeting)—annually</td>
<td>Staff (post-meeting)—annually</td>
<td>Staff (post-meeting)—annually</td>
</tr>
<tr>
<td>How are recommendations implemented?</td>
<td>Student works with staff and faculty as needed (troubleshooting)</td>
<td>Faculty committees (curriculum, executive) invite instructors to discuss solutions as needed, if pattern of problems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. **Who is responsible for assessment?** (identify an individual or team who will coordinate the implementation of the plan on an annual basis): Program administrator Sally Wedde discusses student progress with Curriculum Subcommittee chair year-round, especially prior to twice annual subcommittee meetings. Subcommittee discusses and recommends action for Executive Committee vote. Ms. Wedde reports aggregate information to ICTR leadership for annual NIH External Advisory Committee meeting. EAC provides annual report with recommendations.

2. **What is the plan for review of the assessment information?** (typically during an annual meeting of the program faculty and staff; note that at this meeting the program may want to review enrollment information, course progression, degree completion, and other structural features of the student experience in addition to the evidence about student learning): Curriculum Subcommittee discusses student progress in aggregate and course by course annually, providing a report for potential Executive Committee action. Either faculty committee can invite instructor to meeting for discussion of mutually agreeable solution to any problem or evolving need.

3. **What is the plan for production of an annual summary report?** (the annual summary report includes the materials that form the basis of discussion at the annual meeting of the program faculty and staff, along with any recommendations made after considering the student learning assessment information presented): After faculty committee discussion/action, staff compiles report and submits it to Office of the Provost.

4. **How will recommendations be implemented?** (explain the general process by which recommendations will be implemented): Committee works with instructor through staff or by inviting him/her to meeting. Post-meeting, staff works with department hosting course if timetable change is involved. Several changes have been made in courses in the program’s first six years (Fall 2008-Spring 2015), including adding and removing course from list of requirements; and changing course content, credits, time of course offering, or prerequisites.

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**Graduate Degree Program Curriculum Mapping Worksheet (Where)**

This worksheet, or similar document, must be included with the submission of the program’s assessment plan.

- **Learning Goals** – Enter the academic degree program learning goals identified in the assessment plan on the top row of the following chart. (If the learning goals have been submitted to the Office of the Provost, a pre-populated template is available; contact regina.lowery@wisc.edu) Feel free to add columns if the academic degree/major program has more than five learning goals.

- **Degree/Major Program Courses/Experiences** – List all degree requirements (in some cases co-curricular experiences may also be included). Feel free to add rows as needed.

- Indicate with a check (X) where the course or learning experience contributes to each of the learning goals. Courses may contribute to multiple learning goals.

<table>
<thead>
<tr>
<th>Certificate in the Fundamentals of Clinical Research (13-14 credits)</th>
<th>1. The student will determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.</th>
<th>2. The student will understand the principles of clinical research design and statistical analysis.</th>
<th>3. The student will understand principles of multidisciplinary patient-oriented clinical research protocols</th>
<th>4. The student will apply and foster professional, ethical and responsible conduct of clinical research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum Map (Where)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Biostatistics</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Introduction to Clinical Trials I</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Course</td>
<td>Required</td>
<td>Elective</td>
<td>Total</td>
<td></td>
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<td>-----------------------------------------------</td>
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<td></td>
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<tr>
<td>Introduction to Clinical Trials II</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Responsible Conduct of Research (Choice of 6 Courses)</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Introduction to Epidemiology</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</table>

Minimally, all of the courses/experiences required to complete the major degree program should be listed. Optionally, elective courses may be included in addition to the required courses.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm that the capstone certificate is open to only non-degree seeking University Special students who hold a bachelor’s degree.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that all credits are required to be earned in residence at UW-Madison.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Will there be limits on number of students who can enroll? If Yes, please explain:</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that all core/required courses are approved through the school/college curriculum committee.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that courses in curriculum are offered on a regular basis and have space for students in this program.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that required courses in the curriculum are numbered 300 or above.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that courses taken as Pass/Fail or Audit are not included in the curriculum.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Are courses taken Credit/No Credit allowed? If yes, specify limits: <strong>Instructor of one of Responsible Conduct of Research options is grading as Cr/No Cr (Oncology 675)</strong></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that special topics courses are only used if all instances count for the certificate.</td>
<td>X</td>
<td></td>
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<tr>
<td>Confirm that, at a minimum, C grades must be earned on all course work attempted for the capstone certificate program. (Only graduate-level work from the capstone that is earned with a grade of B or better is eligible for subsequent application to a UW-Madison graduate degree program.) If other requirements, please specify:</td>
<td>X</td>
<td></td>
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<tr>
<td>Will exceptions to the course core requirements be allowed? If yes, specify limits and process: <strong>Student may request course waiver based on prior training. If faculty Curriculum Committee approves, 13-14 certificate credits still must be reached.</strong></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that the program/department has a process in place to monitor student progress and to notify the Registrar’s Office when students complete the certificate requirements.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Assessment plan – confirm that the proposal includes a plan that describes how the program faculty will regularly evaluate student learning.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that the program/department understands that international students who must request a UW-Madison-issued I-20 (for the F-1 student visa needed for legal study in the US) will only be eligible to participate in the program if it is offered full-time and if the</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
program has been approved by the US government to receive such international students. If the program is offered entirely online or the international student is here legally on another visa (such as the JS, H, etc.) and an I-20 from UW-Madison is not needed, then this provision does not apply.

<table>
<thead>
<tr>
<th>Will this capstone certificate be implemented as a Fund 131 tuition program?</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, has a budget been developed with the Division of Continuing Studies and the sponsoring school/college dean’s office?</td>
<td>X</td>
</tr>
<tr>
<td>Who is the appropriate school/college contact for questions?</td>
<td></td>
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</tbody>
</table>

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Capstone Certificate Implementation Form – July 2016 - Page 5 of 5
Implementation Form – Graduate/Professional Certificates

This form must accompany a graduate/professional certificate proposal. An updated form should be submitted when changes to the certificate are made and when a certificate is reviewed. It is used by administrative offices to better assist departments and programs with implementation. Questions in this form reflect guidelines in the Full Guidelines for For-Credit Certificates, http://apir.wisc.edu/certificates.htm.

Document Date: Dec. 21, 2016
Name of Graduate/Professional Certificate: Fundamentals of Clinical Research
Faculty Program Director: Robert F. Lemanske, MD
Primary Faculty/Staff Contact: Sally Wedde
Home Department/Academic Unit (Name/UDDS): Institute for Clinical and Translational Research/A5329
Approval Date: 10/10/2010
School/College: Partner-Schools and Colleges: SMPH, Vet Med, Nursing, Engineering, Pharmacy
Approval Date: 11/30/2010
GFEC Approval Date: 12/10/2010
UAPC Approval Date: 12/16/2010
Implementation Term (typically the fall term after UAPC approval): 11/14
Year that first program review is scheduled (usually 5 years after implementation): 2015

Information to be completed by RO and APIR:
Plan Code (assigned by the Registrar’s Office):
CIP Code (assigned by Academic Planning and Institutional Research):
Primary Divisional Disciplinary Assignment (assigned by APIR for analysis purposes only):

Curriculum (check one):

______ Included in detail in the proposal

___ X __ A list of required and elective courses is below:

BMI 541 Introduction to Biostatistics (3 cr)    PHS 797 Introduction to Epidemiology (3 cr)
BMI 542 Introduction to Clinical Trials I (3 cr)    BMI 544 Introduction to Clinical Trials II (3 cr)

Responsible Conduct of Research course (6 options, 1-2 cr)

Credit total required (9-12 credits): 13-14

Projections for annual enrollment: 1-2 students/year
Thirteen additional credits in addition to a graduate or professional degree is proving to appeal to a small but dedicated number of students
Approved by Clinical Investigation faculty Executive Committee 3/14/2016

Fundamentals of Clinical Research Student Learning Goals:
1. Determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.
2. Understand the principles of clinical research design and statistical analysis.
3. Understand the principles of multidisciplinary patient-oriented clinical research protocols.
4. Apply and foster professional, ethical and responsible conduct of clinical research.

Plan for Assessing Each Student Learning Goal
For each of the degree major/program student learning goals, indicate how the program plans to assess whether or not students are meeting the expectation, as well as when each learning goal will be assessed. Keep in mind that each academic degree program is expected to engage in at least one assessment activity per year and assessment activities, in total, must include one direct assessment method. While programs do not need to assess each learning goal every year, all learning goals must be assessed within a period of three years.

Summary of Learning Assessment Process, by Learning Objective

<table>
<thead>
<tr>
<th>Assessment Planning (How)</th>
<th>Method for assessing learning (at least one direct method required)</th>
<th>Timetable for assessment activity (at least one activity each year; all goals reviewed in a 3-year cycle)</th>
<th>Who performs the assessment?</th>
<th>How is the assessment reviewed?</th>
<th>Who produces annual summary report? When?</th>
<th>How are recommendations implemented?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student will determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.</td>
<td>• The faculty Executive Committee and NIH External Advisory Committee review program in aggregate (head count, type of student) annually (direct). • Grades. • Course evaluations.</td>
<td>2017</td>
<td>Executive Committee</td>
<td>Discussion of staff report at Executive and Curriculum Subcommittee meetings</td>
<td>Staff (post-meeting)—annually</td>
<td>Student works with staff and faculty as needed (troubleshooting)</td>
</tr>
<tr>
<td>2. The student will understand the principles of clinical research design and statistical analysis.</td>
<td></td>
<td>2017, 2018, 2019</td>
<td>Executive Committee</td>
<td></td>
<td>Staff (post-meeting)—annually</td>
<td>Faculty committees (curriculum, executive) invite instructors to discuss solutions as needed, if pattern of problems</td>
</tr>
<tr>
<td>3. The student will understand principles of multidisciplinary patient-oriented clinical research protocols</td>
<td></td>
<td>2017, 2018, 2019</td>
<td>Executive Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The student will apply and foster professional, ethical and responsible conduct of clinical research</td>
<td></td>
<td>2019</td>
<td>Executive Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. **Who is responsible for assessment?** (identify an individual or team who will coordinate the implementation of the plan on an annual basis): Program administrator Sally Wedde discusses student progress with Curriculum Subcommittee chair year-round, especially prior to twice annual subcommittee meetings. Subcommittee discusses and recommends action for Executive Committee vote. Ms. Wedde reports aggregate information to ICTR leadership for annual NIH External Advisory Committee meeting. EAC provides annual report with recommendations.

2. **What is the plan for review of the assessment information?** (typically during an annual meeting of the program faculty and staff; note that at this meeting the program may want to review enrollment information, course progression, degree completion, and other structural features of the student experience in addition to the evidence about student learning): Curriculum Subcommittee discusses student progress in aggregate and course by course annually, providing a report for potential Executive Committee action. Either faculty committee can invite instructor to meeting for discussion of mutually agreeable solution to any problem or evolving need.

3. **What is the plan for production of an annual summary report?** (the annual summary report includes the materials that form the basis of discussion at the annual meeting of the program faculty and staff, along with any recommendations made after considering the student learning assessment information presented): After faculty committee discussion/action, staff compiles report and submits it to Office of the Provost.

4. **How will recommendations be implemented?** (explain the general process by which recommendations will be implemented): Committee works with instructor through staff or by inviting him/her to meeting. Post-meeting, staff works with department hosting course if timetable change is involved. Several changes have been made in courses in the program’s first six years (Fall 2008-Spring 2015), including adding and removing course from list of requirements; and changing course content, credits, time of course offering, or prerequisites.

**Graduate Degree Program Curriculum Mapping Worksheet (Where)**

This worksheet, or similar document, must be included with the submission of the program’s assessment plan.

- **Learning Goals** – Enter the academic degree program learning goals identified in the assessment plan on the top row of the following chart. (If the learning goals have been submitted to the Office of the Provost, a pre-populated template is available; contact regina.lowery@wisc.edu) Feel free to add columns if the academic degree/major program has more than five learning goals.

- **Degree/Major Program Courses/Experiences** – List all degree requirements (in some cases co-curricular experiences may also be included). Feel free to add rows as needed.

- Indicate with a check (X) where the course or learning experience contributes to each of the learning goals. Courses may contribute to multiple learning goals.

<table>
<thead>
<tr>
<th>Certificate in the Fundamentals of Clinical Research (13-14 credits)</th>
<th>1. The student will determine when it is appropriate to use a patient-oriented research design to investigate a translational clinical problem.</th>
<th>2. The student will understand the principles of clinical research design and statistical analysis.</th>
<th>3. The student will understand principles of multidisciplinary patient-oriented clinical research protocols</th>
<th>4. The student will apply and foster professional, ethical and responsible conduct of clinical research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum Map (Where)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Biostatistics</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Introduction to Clinical Trials I | X | X | X | X
Introduction to Clinical Trials II | X | X | X | X
Responsible Conduct of Research (Choice of 6 Courses) | X | X | X
Introduction to Epidemiology | X | X | X

Minimally, all of the courses/experiences required to complete the major degree program should be listed. Optionally, elective courses may be included in addition to the required courses.

<table>
<thead>
<tr>
<th>Please answer the following:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will there be limits on enrollment?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If Yes, please explain: <strong>Subject to space in classes; currently not an issue</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirm that all core/required courses are approved through the school/college curriculum committee.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that courses in curriculum are offered on a regular basis and have space for students in this program.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that all courses numbered 300 or above.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that courses taken as Pass/Fail or Audit are not allowed.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Are courses taken Credit/No Credit allowed?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If yes, specify limits: <strong>Instructor of one of Responsible Conduct of Research options is grading as Cr/No Cr (Oncology 675)</strong></td>
<td></td>
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<tr>
<td>Confirm that special topics courses are only used if all instances count for the certificate.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Will the certificate use the typical minimum GPA requirement of 3.0 for all course work for the certificate?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If no, specify other requirements:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will exceptions to the course core requirements be allowed?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If yes, specify limits and process: <strong>Student may request course waiver based on prior training. If faculty Curriculum Committee approves, 13-14 certificate credits still must be reached.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirm that at least 50%/half of the credits must be earned “in residence” at UW-Madison (in residence includes distance/online courses and Study Away/Abroad on UW-Madison courses.)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that the program/department has a process in place to report certificate enrollment to the Registrar’s Office.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that the program/department has a process in place to monitor student progress and to notify the Registrar’s Office when students complete the certificate requirements.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Confirm that the program faculty and staff understand that a student’s graduation should not be delayed to complete the certificate.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Assessment plan – confirm that the proposal includes a plan that describes how the faculty will regularly evaluate student learning.</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
Specify overlap provisions – name degree/major, doctoral minors or certificate programs that may not be earned along with the certificate. Note that majors take priority over certificates. (Students may not earn a graduate certificate if they are also earning a post-baccalaureate major/degree or doctoral minor with the same name.) **No overlap**

What provisions have you made in the admissions process to gain consent from students’ degree/major program(s) to participate in the certificate program?  
**Students must submit an application and statement of purpose that has been signed by their primary faculty adviser.**
Graduate Program in Clinical Investigation

DATE: Dec. 21, 2016  
FROM: Faculty Executive Committee, Graduate Program in Clinical Investigation (GPCI)  
      GPCI Training Director Robert F. Lemanske, Jr., MD  
TO: School of Medicine and Public Health Academic Planning Council  
     Care of Andrea Poehling  
SUBJECT: Rationale for Continuing the Clinical and Community Outcomes Research Capstone and the Fundamentals of Clinical Research Capstone and Fundamentals of Clinical Research Graduate/Professional as Separate Certificate Programs

Dear Academic Planning Council Members:

The Executive Committee members of the Graduate Program in Clinical Investigation (GPCI) are the faculty governing body for the following academic programs housed in the Institute for Clinical and Translational Research (ICTR): (1) PhD and MS in Clinical Investigation; (2) PhD minor with a clinical and translational science (CTS) research focus, which we call PhDcts; (3) Capstone, Graduate and Professional Certificates in the Fundamentals of Clinical Research (FCR); and (4) Capstone, Graduate and Professional Certificates in Clinical and Community Outcomes Research (CCOR). ICTR represents five academic partners: The College of Engineering and the Schools of Medicine and Public Health, Nursing, Pharmacy, and Veterinary Medicine.

Under the University Academic Planning Council definition adopted June 16, 2016, three types of ICTR certificates were identified as being in a low award producing status: graduate/professional and Capstone completers in the FCR and Capstone completers in the CCOR programs. We are writing on behalf of both the FCR and CCOR programs to address this issue as follows. First, we will provide information that supports the unique educational value and career opportunities these programs provide to the university community and the rationale for maintaining both the FCR and CCOR programs as separate entities. Second, we will provide information that addresses why these programs have low enrollment status currently, and our planned corrective measures.

Do the programs fulfill specific academic niches unique to UW-Madison?

• The rationale for continuing both the FCR and CCOR certificate programs as separate entities includes the following. First, the programs fulfill unique academic niches within UW-Madison; second, the demonstrated student need; third, the program’s stable home, faculty commitment, and effort; fourth, the role of the certificate in graduate student recruitment, and fifth, the fact that the Certificate programs are essential to the National Institutes of Health (NIH) Clinical and Translational Science Award (CTSA)-mandated biomedical workforce development programs in ICTR.

• All four Certificate programs – FCR and CCOR Capstone, and Graduate/Professional -- are critical components of the continuum of clinical and translational research training. The Certificates were created in response to a national need for clinicians to be trained to acquire the skills to conduct research on new clinical treatments and health interventions, and to successfully translate these research findings to improvements in patient care.

• The objective of the original FCR Capstone Certificate program, and its subsequent expansion to include professional and graduate students, is to provide formalized training for health care professionals in clinical research methodologies, designs, and statistical analyses.

• In contrast, the CCOR programs are designed to train researchers at early career stages from a variety of disciplines to focus on dissemination and implementation of health and biomedical research findings and solutions to diverse patient populations and communities.

• The Capstone programs reach health professionals who otherwise would have no student relationship with the University.
• The Graduate and Professional programs reach graduate and professional students who apply clinical and translational science to their field of study; that is, the conduct of research that is designed from the start with an eye toward the patient populations that eventually would benefit.

Do the programs address student needs?

• Currently the Graduate Program in Clinical Investigation (GPCI) has 21 graduate students, 26 Certificates students, and 10 PhD<sup>CTS</sup> students (see table below). The educational programs within ICTR, both for credit and non-credit, provide a purposeful array of options for a variety of students interested in advancing their education in various aspects of the clinical and translational continuum. The Certificate programs play a critical role in contributing to this continuum and their loss would introduce a gap that cannot be filled through other courses. Indeed, the curriculum of the FCR certificate program constitutes the didactic foundation required of all students enrolled through the NIH CTSA-funded TL1 predoctoral (existing) and postdoctoral (new and projected to begin in July 2017) programs.

<table>
<thead>
<tr>
<th>Clinical and Translational Research Students (Nov. 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEGREE</td>
</tr>
<tr>
<td>PhD CI</td>
</tr>
<tr>
<td>MS CI</td>
</tr>
<tr>
<td>PhD&lt;sup&gt;CTS&lt;/sup&gt;</td>
</tr>
<tr>
<td>FCR Certificate</td>
</tr>
<tr>
<td>CCOR Certificate</td>
</tr>
</tbody>
</table>

• Based on new initiatives created in the recent CTSA renewal request for applications (RFA), we feel confident that the low enrollment status of the Graduate/Professional FCR program will be corrected. Importantly, NIH funding of ICTR for the five-year renewal starting in mid-2017 hinges on providing the didactic foundation (the FCR Certificate) for TL1 program predoctoral (PhD CI and PhD<sup>CTS</sup>) and postdoctoral trainees. The newly created postdoctoral training program will increase the pool of students who will complete the FCR Certificate 13-15 credit requirement by approximately 3-4 students/year.

• For the Capstone FCR program we are addressing the low enrollment status in three ways. First, through personal and widespread (six ICTR academic partners) faculty recruitment of potential scholars among Wisconsin working health professionals, with future funding allowing expansion to out of state. Second, by increasing visibility on our recently revised and updated ICTR website. Third, through direct marketing in person and promotional materials to fellowship programs in academic partner schools and colleges.

• Regarding low enrollment status in the Capstone CCOR program, we are working on a number of factors that we consider relevant to this problem. Most Capstone students are engaged in clinical practices that make it difficult for them to attend timetable courses. To make it easier for this group to enroll in the methods courses required for the certificate, we’re exploring the feasibility of packaging online lectures, readings, and assignments into asynchronous, online, credit-bearing courses on 1) qualitative research methods for health services research and 2) dissemination and implementation research methods. This alternative course access approach is in response to feedback from current and past Capstone certificate enrollees.

• The certificates are crucial for recruitment of Clinical Investigation Program graduate students. Among all alumni and current students, 62% of MS students and 24% of PhD students in Clinical Investigation started as Certificate students. When students move from the certificate to the graduate program, they become “non-completers.” The ability of the Certificate Programs to serve as an initial step towards the subsequent pursuit of advanced graduate degrees should be considered as one of their assets and not as criteria for their discontinuation.
• We did not realize at the inception of the GPCI how valuable the Certificates would become for graduate program recruitment. Indeed, clinical Investigation MS and PhD students tend to begin the GPCI as potential Capstone Certificate earners. Prospective students know they are interested in more training about clinical research, but they do not yet know whether they will pursue formal or even further training. Since many of our scholars are working health professionals and/or junior faculty, they are unsure of the practicality of coursework with other responsibilities. These students are not required to notify the program to enroll in a course as a Special Student, and they can complete these courses before declaring either Certificate.

• In addition, in order to allow health professionals time to see whether taking a course fits into their professional and personal lives, the bar for admission to a Certificate program is lower than that for Graduate Schools; the online application is shorter, and there are fewer letters of recommendation. This ability to explore the courses is eminently helpful for working health professionals for whom the programs are designed.

• Certificate students go on to earn other graduate degrees at UW-Madison. Among students who are counted as Certificate non-completers, three went on to earn other degrees: the MPH, MS in Educational Leadership and Policy Analysis, and Kinesiology. An FCR non-completer is pursing the PharmD; another completed the FCR and went on to earn an MS in Population Health Sciences.

• All of these factors indicate that the certificate programs can serve multiple purposes for workforce development along the clinical and translational spectrum and graduate education in general. As such, they should be given more time to flourish.

What is the program’s academic home and faculty commitment?

• The ICTR is committed to hosting the Certificate programs. Faculty from the ICTR partner schools and college are committed to the students, as demonstrated by their active service as primary mentors, degree committee members, program governing committee members, and lead course faculty and/or lecturers in required courses. Some 142 faculty members were involved in these varied activities from 2009 through 2014 (source: Executive Committee review of GPCI faculty)

• Leaders of many fellowship training programs now recommend certificate level training at a minimum, for health care professional fellows and trainees.

• Capstone Certificate program participants include junior and mid-level faculty, fellows, research assistants and research program managers, and scientists. The range of interest among graduate students in the certificate and graduate programs indicates a growing awareness of the value of clinical research training.

What costs are incurred by the program?

As detailed in the five-year self-reviews, the estimated annual dollar cost for the four Certificate programs is $87,143, as follows:

• The FCR Certificates budget includes $23,542 for salary and fringe benefits for administration and student services, and $41,383 for instructor and TA salaries and fringe benefits. These TA costs are not exclusively directed to the Certificates. The courses form the didactic foundation for the MS, PhD in Clinical Investigation, PhD<sup>CTS</sup>, and the future postdoctoral training program and therefore serve a larger constituency. Certificate student enrollment in the courses is a small part of total enrollment.

• The CCOR Certificates budget is $11,218 for administration, and approximately $11,000 for TA costs for one course that also is open to all UW-Madison graduate students with instructor consent.

• In addition, the GPCI recognizes that the certificate programs also incur costs for the School of Medicine and Public Health, the Registrar’s Office, the Graduate School, the Office of the Provost, and others.
Why is merger or discontinuation not productive options?

- The FCR program started in the Biostatistics Department and moved to ICTR in 2007 as a Capstone program. The programs were approved for enrollment of graduate and professional students as well in 2011. Providing a quantitative-based didactic foundation, the FCR program is the predecessor to the whole GPCI (see five-year self-review report, Capstone Certificate in the Fundamentals of Clinical Investigation).

- Meanwhile, the CCOR program started in 2009 for Capstone, graduate, and professional students. Its genesis was a joint venture of several departments focused on qualitative research including health equity research. (see five-year self-review report, Clinical and Community Outcomes Research).

- Merger of the FCR and CCOR certificate programs would be inappropriate, given the differing research needs of the students of the FCR and CCOR programs and the curriculum content of each that addresses different aspects of clinical and translational research and community engagement. Even though the students are engaged in some aspect of the translational research spectrum, the didactic foundations they acquire by completing the certificates are unique and provide them with distinct career opportunities.

- Despite low numbers for Capstone and Graduate/Professional student completers of the FCR and Capstone completers of the CCOR, outcomes for participating students are quite positive, including 197 publications and $5.5 million in external and internal awards.

- Multiple schools and colleges benefit from the FCR and CCOR Certificate programs (source: 2015 report to NIH External Advisory Committee) as demonstrated in the following table:

<table>
<thead>
<tr>
<th>CCOR Student Academic Homes</th>
<th>FCR Student Academic Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPH</td>
<td>SMPH</td>
</tr>
<tr>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>SON</td>
<td>SVM</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>SOP</td>
<td>SOP</td>
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<td>3</td>
<td>5</td>
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<td>COE</td>
<td>COE</td>
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<td>3</td>
<td>2</td>
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<tr>
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<td>L &amp; S</td>
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</tbody>
</table>

As summarized in our response to the five-year review, **we are committed to promoting the Certificate programs for all types of students as a key part of marketing training opportunities within the GPCI and ICTR**. Our current priorities are:

- Personal and widespread (six ICTR academic partners) faculty recruitment of potential scholars among Wisconsin working health professionals, with future funding allowing expansion to out of state

- Increased visibility on ICTR revised website

- Direct marketing in person and promotional materials to fellowship programs in academic partner schools and colleges.

In summary, program faculty and staff are committed to Certificate students in the continuum of training; the programs are proving to be an invaluable pipeline to graduate program recruitment; and the programs increasingly attract students who otherwise would have no other training program available. The certificate programs in totality are a critical part of ICTR’s requirements for successful and continued funding via the NCATS Clinical and Translational Services Award.

Do not hesitate to contact us if you have questions.

Sincerely,

Robert F. Lemanske, Jr., MD, Training Director, and
Executive Committee Members of the Graduate Program in Clinical Investigation:

Barbara J. Bowers, PhD, RN, Associate Dean, Professor Nursing SON

KyungMann Kim, PhD (Chair)  
Professor, Biostatistics and Medical Informatics SMPH

Robert Thorne, PhD (Vice-Chair)  
Assistant Professor, Pharmaceutical Sciences SOP

Christopher L. Brace, PhD  
Associate Professor, Biomedical Engineering COE and Radiology SMPH

Murray H. Brilliant, PhD  
Director, Human Genetics Center, Marshfield Clinic Research Foundation

Ronald Gangnon, PhD  
Professor, Population Health Sciences SMPH

Karen E. Hansen, MD, MS  
Associate Professor, Medicine-Rheumatology SMPH

Eneida Mendonça, MD, PhD  
Associate Professor, Biostatistics and Medical Informatics SMPH

David Rabago, PhD  
Associate Professor, Family Medicine and Community Health SMPH

Marulasidappa Suresh, DVM, PhD (Invited)  
Professor, Pathobiological Sciences SVM