

TEL Grant Proposal

THE INTEGRATED FAMILY MEDICINE RESIDENCY CURRICULUM (IFMRC): ESSENTIAL CORE CONTENT FOR FAMILY MEDICINE RESIDENT PHYSICIANS

PRINCIPAL INVESTIGATOR

Joseph J. Brocato, Ph.D.

Assistant Professor and Director of Medical Education

Department of Family Medicine & Community Health

6-621 Phillips Wagensteen Building

MMC 381

420 Delaware Street SE

Minneapolis, MN 55455

Phone: 612-624-4464

Fax: 612-624-5930

E-mail: broca003@umn.edu

CO-INVESTIGATOR

Jennifer Welsh, M.D.

Assistant Professor and Residency Program Director

Department of Family Medicine & Community Health

University of Minnesota Medical Center (Fairview) &

Smiley's Clinic (Minneapolis)

Telephone: 612-333-0770

Fax: 612-359-0475

E-mail: jwelsh@umphysicians.umn.edu

CO-INVESTIGATOR

John McCabe, M.D.

Assistant Professor and Residency Program Director

Department of Family & Community Health

Waseca Medical Center/Mayo Health System (Waseca)

Telephone: 507-835-3110

Fax: 507-837-4268

E-mail: mccab007@umn.edu

THE INTEGRATED FAMILY MEDICINE RESIDENCY CURRICULUM (IFMRC)
ESSENTIAL CORE CONTENT FOR FAMILY MEDICINE RESIDENT PHYSICIANS
A 2006 TEL GRANT PROPOSAL

The Context

The Department of Family Medicine at the University of Minnesota is one of the oldest and largest family medicine departments in the nation. In 2005-2006, the department had 123 residents located at six residencies within the Greater Minneapolis-St. Paul area, and one regional residency program located in Mankato. Based on size alone, the family medicine residency programs are the largest by specialty of any medical training programs at the University. In addition to the current six residency programs, the department also is in discussions with a residency program in St. Cloud that may in the near future join the department as an affiliated program, with an additional 12 residents.

The Significance and Challenges

The expansion outlined above points to the need for a common core curriculum that can be delivered across multiple training sites to bridge distance barriers, while accounting for continuity of educational experiences to ensure uniformity in both teaching and learning. According to the Accreditation Council for Graduate Medical Education (the accrediting body for all residency programs nationwide): “when multiple participating institutions are used for training, there should be assurance of the continuity of the educational experience (ACGME Family Medicine Program Requirements, Revised Draft July 2006, p. 2).” Further, the ACGME requires that all residency programs develop an organized curriculum that provides at least 100 hours of structured experiences in twelve curricular areas that they call “focused experiences” (see Table 1 below). Finally, the ACGME requires that all residents should graduate demonstrating that they have mastered six ACGME general competencies including patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

Currently, each individual residency program in the Department of Family Medicine has its own residents, program director and coordinators, and residency curricula that are unique--representing the residents these programs train, and the patient populations they serve. However, due to mandates to maintain accreditation nationally alluded to above, as well as locally by the Medical School and Department, it is essential to ensure that residents complete their training with a prescribed set of knowledge, skills, and attitudes (competencies) to assume careers as highly functioning family physicians.

Table 1: The ACGME Family Medicine Focused Experiences

Focused Experience Area I (Module 1)	Ambulatory Family Medicine (Adult Medicine)
Focused Experience Area II (Module 2)	Care of Neonates, Infants, Children, and Adolescents
Focused Experience Area III (Module 3)	Maternity & Gynecology Care
Focused Experience Area IV (Module 4)	Care of the Surgical Patient
Focused Experience Area V (Module 5)	Musculoskeletal and Sports Medicine
Focused Experience Area VI (Module 6)	Emergency Care
Focused Experience Area VII (Module 7)	Human Behavior and Mental Health
Focused Experience Area VIII (Module 8)	Community Medicine
Focused Experience Area IX (Module 9)	Care of the Skin
Focused Experience Area X (Module 10)	Diagnostic Imaging and Nuclear Medicine
Focused Experience Area XI (Module 11)	Practice Management (Management of Health Systems)
Focused Experience Area XII (Module 12)	Integrating the ACGME General Competencies into Practice

After extensive discussion by members of the Department of Family Medicine’s Educational Policy, Curriculum and Development Committee (EPCD) during 2005-2006, a strategic educational development plan for the Department was drafted. The educational plan included a specific need for a unified web-based core residency curriculum (Department of Family Medicine Retreat Meeting Minutes, July 2005). This core curriculum would serve residents from the multiple residency programs by providing educational content to supplement existing clinical training on educational rotations. The program set a target of three years to design and implement this twelve unit curriculum. **The envisioned project by the EPCD meets several of the parameters set for the Tel Grant Program including a program-wide curricular focus, a project that improves access (reaches all resident for training at seven residency sites located off campus), and enhances community (several projects linking medical faculty and**

residents—see description below). Finally, the proposed project involves emerging technologies: Macromedia Breeze, WEBCT/VISTA, and electronic portfolios (through new proprietary software in development by the ACGME).

Curriculum Project Description

Project Timeline

Based upon these needs expressed unanimously by all six of our family medicine residency program directors, this project will be designed in three phases in which the twelve module curriculum will be developed for implementation using VISTA/Web-CT:

Phase 1: Core Curriculum Development Phase for First Six Modules (April 2006-June 2007)

During the first phase of the project, the first six modules in the grid below above will be developed. Specifically, each of the rotational modules will have:

- Goals and objectives for each module, and where appropriate, differentiated by year.
- Each module would include: (a) didactic lecture(s) that use streaming video and Macromedia Breeze presentations with narration toward an electronic library of new and “best practice lectures” (b) assigned readings related to each module, (c) assigned cases with reflective practice-based activities (including resident and faculty electronic journaling), (d) links to other related web resources for review (e) a discussion-based & moderated faculty-resident web forum (linking faculty & residents across the system on a particular rotation), (f) and links to essential evidence-based and practice-based medicine resources.
- An extensive online evaluation system that will involve an assessment of resident learner’s pre-knowledge of each core rotation’s content (pre-test versus post test knowledge), with documented completion of each rotation’s knowledge component.
- On an ongoing basis, an extensive online documentation system comprising an electronic residency portfolio that captures a summary of a resident’s learning throughout his/her three years of family medicine residency. This portfolio will demonstrate content knowledge mastery of each core rotation (pre/post tests), online cases completed related to that content (synthesis and application of knowledge), essential procedures performed and other logged data (documentation of essential skills), and copies of New Innovations rotation evaluations received during each rotation outlining a global assessment of knowledge, skills, and attitudes from each rotation. **Note: The principal investigator is currently working with the Graduate Medical Education Office in the School of Medicine and the Accreditation Council for Graduate Medical Education in local beta development and testing of such an electronic portfolio as part of the ACGME’s national portfolio initiative.**

Phase 2: Implementation of first six modules of Core Curriculum at Pilot Sites & Development of last six modules (July 2007-June 2008)

- During the second phase of the project, implementation of the first six modules will occur at two of the residency programs that will serve as test (pilot) sites-- one from near the main campus in Minneapolis (Smiley’s Clinic) and one at a distance (in Mankato) to address local and developmental issues. Additionally during this period, the last six modules will be developed.
- Each module will include the elements described above as developed in phase one.

Phase 3: Implementation and Evaluation of Core Curriculum at all training (July 2008-June 2009)

- The final phase will involve implementation of the entire online residency curriculum at all six training locations ending with both a comprehensive learner and faculty evaluation of all rotation modules, with suggestions for improvement. Additionally, to determine program effectiveness in terms of knowledge, Family Practice ABSITE in-training exam scores for each residency by content area will be reviewed and compared statistically between scores reported both before and after implementation of this online curriculum.

Outcomes Expected

- The development of measurable goals and objectives and associated core family medicine content, ensuring the continuity educational coverage mandated by the U of M Graduate Medical Education Office, as well as nationally by the ACGME through its “Program Requirements for Family Medicine Residencies”.
- There will be a demonstrated increase in resident’s core rotational knowledge as identified in a pre/post project comparison of in-training resident exam scores by core content area. In addition, it is expected that aggregate residency scores will show less overall variance between individual residency programs.
- There will be higher residency program evaluation scores highlighting the comprehensive nature of the core curriculum as well as overall applicability to clinic practice.
- For each resident, electronic portfolios of educational experiences and outcomes will be generated that can help individual residency programs meet the ACGME’s requirements for each of the General Competencies mandated for all residents. These include documentation of “Patient Care”, “Medical Knowledge”, “Systems-based Practice”, “Practice-based Learning and Improvement”, “Interpersonal Communication Skills, and “Professionalism”. The portfolio will also assist in resident’s personal development and transition into clinical practice through documented learning outcomes that can be shared and reviewed. The electronic portfolio developed by the Department of Family Medicine is expected to become a model within the Medical School for residents from other specialties, as well as for family medicine residents nationwide.
- Overall higher order learning (and retention) by residents linking content knowledge to application and synthesis as demonstrated through longitudinal program evaluations of the web content.
- In general, a more collegial medical resident cohort and faculty group, united across training programs, focused upon the core content and its application (toward the development of an “electronic departmental learning community”). This electronic

departmental learning community will contribute to individual self learning and the learning of others equally--rather than historical patterns of individualistic learning prevalent in medical education.

Roles and Responsibilities for Development of Core Curriculum

Name	Responsibilities
Joseph J. Brocato, Ph.D., Project PI	<ul style="list-style-type: none"> Overall instructional design, project leadership and coordination to include (a) setting up a production schedule, (b) assigning faculty from the EPCD committee to serve as module developers and electronic facilitators, (c) sequencing module content, (d) developing the evaluation elements of the curriculum, (e) interfacing with the GME and ACGME on portfolio development, (f) with each module developed, coordinating between the faculty developer and the U of M Academic Health Center's Learning Commons Technology web designers, (g) assisting in the beta testing and implementation of the curriculum at residency sites, (h) if selected, participating in the DMC Faculty Fellowship Program toward developing this curriculum.
Jennifer Welsh, M.D. & John McCabe, M.D., Project Co-Investigators	<ul style="list-style-type: none"> (a) Providing feedback on each core module to module directors, (b) Leading beta testing of curriculum with each of their residencies and (c) gathering formative and summative evaluation data as part of the curriculum development and implementation process.
The DFM's Educational Policy and Curriculum Development Committee	<ul style="list-style-type: none"> This committee of program directors which meets every other month will serve as the overall content experts for the curriculum by (a) dividing up the overall core curriculum and assigning individual modules to module directors drawn from EPCD faculty and (b) collectively, approving the content of each module for implementation.
The U of M Academic Health Center Learning Commons Technology Specialist(s)	<ul style="list-style-type: none"> Overall module development: Will meet with the PI to recommend technology delivery methods and evaluation systems and will take developed module content and will convert to Web CT content and upload for use.

Three Year Program Budget

Using an existing budget from the Department's Rural Health Program's (RPAP) Web CT project as a guide, the following program expenses are anticipated and requested:

Budget Item	Dept. Exp (Yr 1-3).*	DMC Fellowship (Yr 1)*	Tel Grant (Yr 1)	Total Item Cost (Yr 1-Yr 3)
Joseph Brocato, Ph.D., 20% FTE (Year 1 represents fellowship stipend; Years 2 & 3 represents salary & benefits to department)	\$60,800.00	\$20,000.00	\$0.00	\$80,800.00
Jennifer Welsh, M.D., 1 hr per week during all three Dev Phases @ \$105 per hr (Salary + Benefits)	\$16,224.00	\$0.00	\$0.00	\$16,224.00
John McCabe, M.D., 1 hr per week during both Dev Phases @ \$105 per hr (Salary + Benefits)	\$16,224.00	\$0.00	\$0.00	\$16,224.00
Web Developer 20% FTE (15% to Tel Grant & 5% to Department)	\$2,685.00	\$0.00	\$8,055.00	\$10,740.00
Two Dell Latitude D610 Laptop Computers per Residency (12 total/\$1,270.00 each)	\$13,970.00	\$0.00	\$1,270.00	\$15,240.00
Subtotals	\$109,903.00	\$20,000.00	\$9,325.00	
Project Total Cost				\$139,228.00
*Note: If PI is not selected for fellowship program, protected time will be provided by the department for the project				