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Peer reviewed

**Medical Student Education**

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## LOCUS: Immunizing Medical Students Against the Loss of Professional Values

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**Introduction:** *The Leadership Opportunities with Communities, the Underserved, and Special populations (LOCUS) program at the University of Wisconsin School of Medicine and Public Health is a longitudinal, extracurricular experience for medical students who wish to develop leadership skills and expand their involvement in community health activities during medical school. The program consists of a core curriculum delivered through retreats, workshops, and seminars; a mentor relationship with a physician who is engaged in community health services; and a community service project. Methods:* On-line surveys and interviews with current and past participants as well as direct observations were used to evaluate the effects of the program on participants. **Results:** Participants indicated that the program was worthwhile, relevant, and effective in building a community of like-minded peers and physician role models. Participants also reported that the program sustained their interest in and commitment to community service and allowed them to cultivate new skills during medical school. **Conclusions:** The curriculum and structure of the LOCUS program offers a successful method for helping medical students learn important leadership skills and maintain an altruistic commitment to service.

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In 2001, Coulehan and Williams suggested that medical education should have a commitment to reinforce medical students' empathy, compassion, and altruism but that the actual experience of medical education cultivates an ethic of detachment, self-interest, and objectivity.<sup>1</sup> They described a group of students who were "immunized" against the ethic of detachment and developed service-oriented professional values. Some of this immunization was due to long-term personal characteristics while other aspects came about from educational experiences in family medicine, communication skills, medical ethics, humanities, and social issues during medical school.<sup>2-6</sup>

The stress and disillusionment that medical students experience during their training may cause some to leave the profession prematurely, while others may lose touch with their original commitment to service. Remen stated that the biggest challenge facing medical education today is to "stress-proof these young doctors

to do this work and find the satisfaction that generations of physicians have found before them."<sup>7</sup>

In 1998, the Department of Family Medicine at the University of Wisconsin School of Medicine and Public Health (UWSMPH) established the LOCUS (Leadership Opportunities with Communities, the Underserved, and Special populations) program. The impetus for the program came from students who were interested in remaining involved in community health activities during medical school. Faculty members and students envisioned and created a program to support students who enter medical school with a strong commitment to improve health care for medically underserved populations. In this paper, we briefly describe the structure of the LOCUS program, report its effects on past and current participants, and provide an overall evaluation of the program and its educational outcomes.

### Description of the Program

The LOCUS program was established as a longitudinal, extracurricular opportunity at UWSMPH in the fall of 1998.<sup>8</sup> In the fall of their first year, students are invited to apply through a selective application process based on written applications focusing on motivation for and experience with community health service, how

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this program would benefit applicants now and in their future career, and a description of a leader with whom the applicant has had contact in the past. Student participation is voluntary and carries no academic credit. Participants are referred to as fellows and remain in the program until graduation from medical school. At the time of the program evaluation in the fall of 2004, 102 fellows had enrolled, 35 fellows had completed the program, 65 remained active in the program, and only two had withdrawn. The program was initially supported through predoctoral training grants from the Health Resources and Services Administration and the Wisconsin Area Health Education Center (AHEC) and is now supported by the University of Wisconsin Department of Family Medicine.

Fellows participate in the core curriculum, are matched with mentors, and complete a service project. Mentors initially are generalist physicians with experience in community service. Frequently, additional community mentors are added throughout the course of fellows' projects. Mentors serve as role models—sometimes spending time with fellows in their clinical settings and/or socially over meals and provide guidance regarding students' projects and career development.

**Core Curriculum**

The curriculum addresses a broad range of leadership skills in community health service. A curriculum outline is shown in Table 1.

The core curriculum comprises a series of retreats, workshops, and seminars through 20 hours of scheduled activities per academic year. Fellows are encouraged to engage in the design of the core curriculum. The program has evolved over time through systematic

collection of feedback and incorporation of recommendations from fellows.

Working individually or in teams, fellows apply and refine leadership skills through design and completion of a community health service project, often by the end of the second year. Fellows are expected to discuss project plans with their mentors, to submit project updates, and to present their project at local, regional, or national meetings. Fellows are encouraged to reflect on and share lessons learned from completed, as well as uncompleted, projects. It is stressed to the fellows that the process of the project is more important than the perceived success or failure based on completing a project or not. Examples of community service projects include (1) a home visitation program for teen mothers in Rhinelander, Wis—designed to prevent teen pregnancy, partnering with the county health department, (2) Mentoring Achievement Program, which pairs medical students with at-risk middle school students, (3) San Lucas Project: service-learning project in San Lucas Toliman, Guatemala, (4) Boys and Girls Club Health Education Program: conducting after-school programs at the Dane County Boys and Girls Club, and (5) Health Care in Diverse Communities elective—ongoing elective for medical and other health science students. Senior fellows, many of whom present their projects at annual retreats, often become advisors and role models for first- and second-year fellows.

**Methods**

An independent evaluator conducted a program evaluation using phone interviews with graduates who had completed the program, a survey of all medical students and graduates who completed at least 1 year

Table 1

Outline of Program Curriculum Topics

Introduction to Leadership in Medicine	Explore the meaning of leadership, leadership qualities and styles, leadership versus followership, cultivate personal leadership qualities
Leadership and One's Self	Develop personal mission statement; experience and use strategies for balance and stress management; use self-reflection to assess interpersonal, organizational, and planning skills; identify personal challenges
Leadership and Others	Demonstrate team skills, lead effective meetings, participate in conflict resolution, and mediation skills training
Leadership and Communities: Health Issues in Communities	Identify community health challenges and discuss how physicians may help address health challenges, experience and reflect on a project-related health challenge
Leadership and Communities: Community Health Methods	Understand approaches to community health, community-oriented primary health care, ecological models, and evidence-based medicine; community medicine; public health; population health, logic model, and other theoretical frameworks
Leadership and Communities: Community Service Activism Skills	Improve oral communication skills, written presentation skills, activist skills
Leadership and Communities: Community Health Service Projects	Learn and use rapid appraisal techniques, surveys, key informant interviews, access health and demographic data; apply community service frameworks to projects; implement, evaluate, and present projects

of the program, direct observation at retreats and seminars, and review of program documents, databases, and formative evaluation data. Only the data from the student interviews and surveys are reported here. Study methods were approved by the University of Wisconsin Institutional Review Board.

#### *Instrument Development and Content*

Of the 35 fellows who graduated from medical school (past fellows) since the inception of the program, current contact information was found for 29 (83%). After numerous attempts to contact these graduates by e-mail and phone, 15 (43%) replied, all of whom consented to an interview. The semi-structured interviews were recorded and transcribed. The 15 graduates interviewed to help develop the questionnaire reflected the demographics and career choice of the group of graduates as a whole. The areas of focus of the interviews included motivation for going into medicine and joining the LOCUS program, skills learned and how they were learned, program influence on medical school education, community service project, leadership skill improvement, mentor experience, outcomes of program involvement, and career directions and community service.

#### *Survey Methods*

Using themes from these interviews with graduates, the evaluator developed a questionnaire that was administered to all 77 past and current LOCUS fellows who had participated in at least 1 full year of the program and for whom current e-mail addresses were available. The questionnaire, which took about 20 minutes to complete, had 15 questions (three of which required ratings for 11 to 14 separate items) focusing on students' background and reasons for enrolling, the details of their program experience, their ratings of program elements, the perceived influence the program had had on various factors, and suggestions for improvement. Students were given a 3-week period to complete this questionnaire.

#### **Results**

After two rounds of e-mail solicitation, 50 of the 77 LOCUS fellows contacted completed the online questionnaire, for a response rate of 65%. Of the 30 survey respondents (of 50 total) who had chosen a medical specialty, 47% were in family medicine, 23% in pediatrics, 13% in internal medicine, and 19% in other specialties. This compares to an average annual percentage of graduates of UWSMPH choosing family medicine over the past 5 years of 14.9%. All respondents entered the program with at least some prior experience in community service, a prerequisite for participation starting in 2001. All but three of the 50 survey respondents (94%) participated in at least

one other service program while in medical school, and 32 (64%) participated in more than one. Survey respondents ranking of a list of 13 possible reasons for applying to the program are shown in Table 2.

In response to questions about whether the amount of time and effort put into the program was worthwhile, 94% said yes (62% definitely, 22% generally, and 10% probably). Only 4% said "Probably not," and 2% "Definitely not." Ninety-two percent of respondents stated that the topics in the program were either "highly" (54%) or "somewhat" (38%) relevant to their lives at the present time. Six percent said that material was not currently relevant but would be at some point, and only 2% said that material in the program was not relevant to their career.

Table 3 shows the most positively rated areas by fellows of the effects of the program on their current activities, based on a scoring system from 2 (most positive) to -2 (most negative). Table 4 shows fellows' ratings of the most important outcome of their participation in the program. A large percentage of the fellows who responded to the question about important outcomes (40%) mentioned the inspiration and ongoing support network provided within the community of students and program faculty as the most important outcome they experienced. As one respondent wrote, "I was glad to know that there was a place that supported students with a strong interest in communities—a place that acknowledges the service skills we bring into medical school. It brought me support and encouragement to not lose sight of those values." A few participants said that the LOCUS community had been a key factor in retaining them in medicine as a career when they were having doubts.

Table 2

#### Potential Reasons for Enrolling in LOCUS

<i>Reasons for Enrolling in LOCUS (n=50)</i>	<i>% (n) for a Reason</i>
I knew I wanted to engage in community service while in medical school.	100% (50)
I wanted to be around and learn from physicians committed to community service.	100% (50)
I thought the experience would help me get more out of my medical school education.	98% (48)
I wanted to be around other medical students who were committed to community service.	96% (48)
I wanted training and experience in leadership.	96% (48)
I knew I wanted to work with underserved populations in medical school and beyond.	94% (47)
I thought it'd teach me things about medicine I wouldn't learn in courses or internships.	94% (47)

Table 3

Perceived Impacts of the LOCUS Program on Areas in Participants' Lives

<i>Areas That the LOCUS Program Affected</i>	<i>Average Impact, From 2 to -2</i>
Commitment to community service as a physician	1.48
Desire to work with underserved populations	1.36
Connections with fellow medical students	1.31
Ability to be an effective leader	1.24
Interest in taking leadership positions	1.14
Desire to remain in medical school and become a physician	1.12

LOCUS—Leadership Opportunities with Communities, the Underserved, and Special populations

For a minority of respondents, there were also negative effects of the program. A small percentage of the 50 respondents said they experienced negative impacts in their commitment to and interest in coursework (10%), ability to juggle and prioritize competing demands (8%), opportunities to receive mentoring in their specialty (6%), sense of belonging in their department (6%), or desire to remain in medical school (6%).

In response to the question asking respondents to rate 15 elements of the program according to how much each item contributed to what they learned, Table 5 shows that respondents felt that the four most influential elements in their LOCUS experience were collaborating/negotiating with others involved in the implementation of projects, interactions with fellow students, social activities and get-togethers with others in the program, and working on community service projects.

**Discussion**

Participants in the LOCUS program rated it effective in helping them to maintain their motivation, sustain their volunteer activities, and enhance their leadership skills in community health service as they progressed through medical school. Some fellows even felt the program helped to retain them in medicine at times when their commitment was flagging.

Both the graduates of the program and fellows still involved in the program felt that the program taught them organizational and logistical skills that were important in developing and implementing community service projects in medical school and beyond. Several interviewees described how they have been able to apply these skills within their residency programs. Some interviewees discussed how the program helped maintain their motivation by broadening their perspective beyond the struggles and tedium of medical school coursework. Others found that the program's community service work and leadership training challenged them to become more assertive and proactive in their educational work as residents.

The value of having a lasting community of like-minded peers and role models has been critical to the success of many programs that recruit and retain people in challenging fields such as primary care,<sup>9-12</sup> and the data from this study show similar strong effects from the LOCUS program. The inspirational and retentive effects of community are especially important for people who consider themselves to be "different" or in the minority in their field because of their gender, ethnicity, or the fact that the specialty they are pursuing is currently not popular or glamorous or has high emotional demands. The support provided by the program allowed medical students with a history of and interest in service to feel justified and supported in considering careers that, while not the most financially rewarding, carry the opportunity to continue involvement in

Table 4

Most Important Outcomes of LOCUS Participation According to 43 Survey Respondents

<i>The "Most Important Outcomes" That Survey Respondents Mentioned</i>	<i>% of All Respondents Who Mentioned</i>
The inspiration and support provided by the LOCUS community	40%
Maintaining (or increasing) their idealism and their commitment to careers in medicine	21%
Learning organizational and logistical skills important in developing and implementing a community service project	16%
Developing the skills and confidence to be an effective leader	16%
An increase in their commitment to work with underserved communities	16%
Better self-awareness and a clearer sense of their career goals	14%
Exposure to and ongoing connections with physician role models	12%

LOCUS—Leadership Opportunities with Communities, the Underserved, and Special populations

Table 5

## How Program Elements Influenced What Fellows Felt They Learned and Gained From LOCUS

<i>LOCUS Program Elements Rated on a Scale of 3–0, With 3 Being the Most Critical to What Was Learned and Gained</i>	<i>Average Rating</i>
Collaborating/negotiating with others involved in the implementation of my LOCUS project	2.34
Interactions with LOCUS students in my own cohort	2.33
Social activities and get-togethers with others in LOCUS	2.24
Working on my LOCUS project within its target community	2.22
Conceptualizing and developing my LOCUS project	2.18
LOCUS retreats	2.17
Interactions with other physicians involved with LOCUS (not my Mentor)	2.13
Writing about or presenting my LOCUS project to others	2.13

LOCUS—Leadership Opportunities with Communities, the Underserved, and Special populations

community activities outside of clinical medicine. As one interviewee said:

“I think there’s a lot of support that took place during the confusion, the frustration, and the career-decision part of medicine, and that let people negotiate some of the tougher sub-specialties and why would you ever want to do primary care. Allowing people to have that support system is really a noble idea—to let them see that it’s okay to keep thinking that this is a valid career goal.”

As this evaluation of the LOCUS program shows, fellows graduate from the program inspired as doctors and capable as leaders. When US physicians seem to be dismayed by many aspects of their lives and primary care physicians in particular feel discouraged, a program to reinvigorate the core reasons for becoming a physician would seem to be widely useful and even necessary for medical education.<sup>13,14</sup>

Programs such as this do not develop in a vacuum. In the case of this program, one of the factors that contributed to its success was its natural and organic growth from a small group of focused, committed students and faculty to a larger group of invested participants, which was not forced or rushed but gently supported by the University of Wisconsin Department of Family Medicine. By being an extracurricular program, few limitations or demands have been placed on the program as it has grown and developed. Therefore, its growth and changes have been driven almost completely by student input and direction, and for a program of this size (15 to 18 students per year), there was little difficulty finding a group of committed, service-oriented, enthusiastic

students to keep the program going. Of course, challenges existed as well. These have included ongoing funding, struggles with credit versus no credit, formal elective versus not, growth to a larger group versus a smaller, more intimate group, etc, and maintaining the interest and energy of the faculty mentors.

Our program evaluation has limitations that should be noted. First, the fellows are a self-selected group from the larger population of medical students. Attempts to obtain control data from a group of 22 students who had applied to the program but not been accepted were unsuccessful. Thus, any ability to distinguish fellows’ attitudes, experiences or views of medicine from other students who weren’t participants cannot be determined.

Second, the long-term effects of the program on participants’ career choices, satisfaction, and continued community involvement are essential to understanding the value of the program and other programs that might want to combine community service and leadership but currently are unknown.<sup>15</sup> At a future point, comparison of participants with a control group of nonparticipants would be useful.

## Conclusions

A primary rationale for the development of the LOCUS program was to create a space and curriculum to support students interested in leadership and community health service. We believe the program offers a successful model for “immunizing” medical students against detachment and self-interest and for building on the altruistic commitment to service that is critical to the development of compassionate, principled physician leaders.

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