

Impact of the LOCUS Program on UW Medical Students and Physician Mentors: An Evaluation of Program Effectiveness and Longitudinal Outcomes

Evaluated by Julie Foertsch, Ph.D.
UW-Madison LEAD Center
Fall of 2004

1. Introduction: Preserving Physicians' Commitment to Service

At the Association of American Medical Colleges' annual meeting of 2004, several speakers acknowledged the difficulties that doctors-to-be will face in the changing world of managed care and the stress and disillusionment that cause too many to leave the profession prematurely. Even those who remain often lose touch with the commitment to service that encouraged them to become physicians in the first place. Nationally-known holistic healthcare advocate Rachel Naomi Remen told her AAMC colleagues that the biggest challenge facing medical education today is how to "stress-proof these young doctors to do this work and find the satisfaction that generations of physicians have found before them." As she put it in a 2001 editorial to the "Western Journal of Medicine" (v. 174):

"Year after year in medical schools across the country, the first-year class enters filled with a sense of privilege and excitement about becoming doctors. Four years later, this excitement has given way to cynicism and numbness. By graduation, students seem to have learned what they have come to do but forgotten why they have come. In these times, we need to reconsider the principles by which we traditionally educate physicians. We will need to reexamine our educational goals, objectives, and strategies, to help students to stand up to the stresses of contemporary medical practice."

At the same time that physicians and medical students nationwide are confronted with the increasing costs and emotional demands of careers in lesser-paid specialties like family and community medicine, medically-underserved communities throughout Wisconsin struggle to meet the basic health care needs of their burgeoning populations. While many physicians in family medicine, pediatrics, and internal medicine enter these specialties with a willingness to volunteer their services to underserved communities or patients with special needs, actually making such a commitment requires time, leadership skills, and logistical support that most feel they do not have. Practitioners within these fields are coming to recognize the need to provide leadership training, support, and a sense of community for those physicians and medical students who want to hold on to their ideals and maintain their commitment to community service. As a University of Wisconsin Medical School graduate expressed in an interview:

"How do you be a leader in medicine, especially when your real interest is in serving underserved groups? And how do you maintain that passion when you're in med school and you could just as easily just study and do nothing else. We [students] were really feeling that there was a need to support that something else—that spirit, that sense of there's a reason I'm doing this—because I think we had a lot of colleagues who during their med school career became less idealistic and more jaded about medicine and about what you could really do. And you end up with such a heavy debt that you're just like, 'Get me out, get me paying this off, and then, you know, I'm going to do this because that's the path that I'm on and there's no real way to get off of it.' And we wondered, how can we keep people inspired to do service work?"

The program that she and other UW medical students started—Leadership Opportunities with Communities, the Underserved, and Special Populations, or LOCUS—was designed to meet that need.

2. The LOCUS Program's Goals and Strategies

The LOCUS program was established within the University of Wisconsin Medical School in the fall of 1998 by a group of students and faculty members in the Department of Family Medicine who sought to create a support system for medical students with interests in community service. The overarching goals of the program are to help fellows maintain their motivations, sustain their volunteer activities, and enhance their leadership skills in community health service as they progress through medical school. In support of these goals, fellows in the program are given encouragement and guidance from a tight-knit community of like-minded mentors and peers while they:

- (a) experience working with underserved communities through service projects of at least one year in duration,
- (b) participate in self-directed development of their leadership skills,
- (c) explore different concepts and styles of leadership,
- (d) increase their self-awareness and their understanding of what they need to stay balanced and motivated,
- (e) acquire the knowledge and skills to work effectively with underserved communities,
- (f) become active members of the LOCUS community by sharing ideas at meetings and contributing to program development.

Each fall since LOCUS's inception, 9 to 19 first- and second-year medical students have been admitted to the program as fellows through an application process that selects for motivated students with prior experience in community service. Since 1998, 102 students have become LOCUS fellows. Fellows remain in the program from acceptance until graduation from medical school, although the service project that is the focus of the program is usually completed in their first or second year. Participation in LOCUS meetings including seminars, social get-togethers, and retreats is voluntary but strongly encouraged. Fellows agree to develop a community service project or join an existing project in their first year of the program and continue to work on it in subsequent years if desired. They are expected to work with a mentor in developing their project proposal, submit annual project updates, present their project at a local, regional or national conference, and attend LOCUS meetings whenever possible. Students wishing to withdraw from the program may do so at any time by sending a note to program administrators. As of fall 2004, 35 students have completed the program by maintaining their participation through graduation, and only two students have formally withdrawn. The remainder are still in medical school and part of the LOCUS community, which maintains its cohesiveness and sustains its membership through regular meetings, a community listserve, and a website (www.fammed.wisc.edu/locus).

The LOCUS program is administered by a faculty director, an academic staff member with experience in evaluation, a coordinator, and a small group of faculty mentors who meet regularly to review and plan activities. Soon after enrollment, each LOCUS fellow is matched with a physician mentor involved in community service, and, in more recent years, with a third-year student mentor who is also a LOCUS fellow. Mentors serve as role models and provide guidance regarding fellows' projects and career development. In the past, most physician mentors have also served as their fellow's generalist physician preceptor (GPP), so the fellows see their mentor during their monthly rounds at the mentor's clinic. It is left to the fellow and his or her mentors to decide how often to meet. The total amount of contact between physician mentors and their mentees has varied from three or four meetings total to meetings twice a month during the first year. Many student mentors, who have typically been in the midst of third-year internships, have been able to meet with their mentees only once or twice.

Over the last three years, fellows and program administrators have gradually developed a core curriculum to help LOCUS fellows become effective leaders and learn practical skills like grant writing that will help them in developing community service projects. This curriculum is delivered through a series of annual or semi-annual retreats and monthly workshops and seminars that emphasize active learning. There are approximately 20 hours of scheduled activities per academic year, with the greatest participation coming from first-year fellows, and participation trailing off for third- and fourth-year students who are often at internships elsewhere in the state. LOCUS fellows are active in delivering the core curriculum, with all second-year fellows expected to lead at least one session. During these sessions, students are introduced to methods of self-reflection, develop their own vision and mission statements, and discuss the importance of compassion, self-care, striving for balance, and being realistic about what they can accomplish. Students learn strategies for developing effective teams, organizing meetings, working with the media and political entities, and resolving conflicts. They practice community health skills such as assessing the health needs of a defined population, engaging community members' participation in health program development, selecting priorities, designing interventions, and measuring progress. These skills are then brought to bear in their community service projects, on which they work individually or in groups. LOCUS projects vary considerably in their focus, duration, and scope of implementation. Examples of services provided by LOCUS fellows are parenting education for teen mothers, health education for residents of group homes, and free sports physical exams for uninsured youth.

3. Goals and Methods of the LEAD Center Evaluation

The LOCUS program has engaged in formative evaluation since its inception through the regular and systematic collection of participant feedback. Over time, this feedback has been used to refine the program in a process of continual improvement. As one LOCUS graduate said in an interview:

“It seems like we did constant evaluation, and we were always pretty vocal about we thought worked well and what we worried about happening. So we were making changes and improvements as we went along...I think LOCUS has always done a great job at that, so I think any critical thing you had to say was always constructive tweaking.”

Although fellows and administrators alike agree that the LOCUS program has done well at collecting and utilizing formative feedback, it was difficult for administrators to collect summative data on the program's outcomes over time. For this purpose, I was hired in July of 2004 to conduct a six-month summative evaluation of the program's impact on fellows. I collected qualitative and quantitative data from currently enrolled fellows, LOCUS graduates, and long-time physician mentors, primarily to assess how the program has affected fellows' leadership skills, career paths, medical school experiences, and commitment to community service. Data were collected through the following methods:

- Review of program documents, databases, and formative evaluation data, and observations at one LOCUS retreat and one monthly seminar.
- Individual phone interviews with 15 UW Medical School graduates who completed the LOCUS program.
- Online surveys of 50 current medical students and alumni who completed at least one year of the LOCUS program.
- Individual phone interviews with five faculty mentors and Department of Family Medicine administrators who had not directed the program but had participated in it over time.

Interview Methods: Of the 36 LOCUS participants who graduated from the UW Medical School between 2001 and 2004, I was able to locate current contact information for 29 (83%). After numerous attempts to contact these graduates, primarily through email and phone messages, fifteen (52%) replied, all of whom consented to an interview about their experiences in the LOCUS program. Several of these interviews had to be scheduled more than once to accommodate first- and second-year residents who were on call or unavailable at the agreed-upon time. The semi-structured, tape-recorded interviews were conducted by phone in October and early November of 2004, with each interview lasting 30-60 minutes.

The 15 LOCUS graduates I interviewed included 9 women and 6 men, most of who were in their first or second year of medical residency. There were six interviewees who graduated in 2004, five who graduated in 2003, three who graduated in 2002, and one who graduated in 1999 after helping to start the LOCUS program. Eight of the interviewees were in Family Medicine, three in Pediatrics, two in Internal Medicine, and one each in Obstetrics/Gynecology and Palliative Care. In terms of gender and medical specialty, these demographics are representative of the population of LOCUS graduates as a whole.

In order to understand how the program was perceived within the Department of Family Medicine and collect additional data on how LOCUS participation affected both the fellows and their mentors, I conducted brief phone interviews with five of the faculty mentors and department administrators who had experience with the program over five or more years but had never served as director. These 20-to 30-minute interviews were conducted in December using the same methods described above.

The LOCUS interviews were transcribed and qualitatively analyzed to uncover patterns and underlying themes. Because each interview in a semi-structured design is somewhat different, interviewees' responses were not quantified except to gain a general sense of how representative a response was among those who had been asked the same question. To obtain quantitative data on program outcomes, I conducted an online survey of all LOCUS fellows.

Survey Methods: In mid October, using information from the nine LOCUS graduate interviews I had already conducted, I developed and posted an online survey for LOCUS fellows. An email containing the survey link and a request to take the survey was sent to all 77 fellows who had participated in at least one full year of the program and for whom I could find a current email address. The survey, which took about 20 minutes to complete, had 15 questions, 3 of which required ratings for 11-14 separate items. Most of the responses came within the three-week deadline for survey completion, in some cases after a second email solicitation had been sent. Three additional responses came in the weeks after the official deadline and were also included in my analysis. In all, 50 of the 77 presumed recipients responded, for a response rate of 65%—or 60% of all 83 fellows with at least one year in the program, including 50% of graduates and 70% of current students. See Table 1 for the response rate across cohorts. The responses were subjected to statistical analysis, with significance testing and confirmatory factor analyses conducted where appropriate.

Table 1: Survey response rates across all LOCUS cohorts completing one or more years in the program.

LOCUS Cohort	Total enrolled	# of respondents	% responding
1998	9	5	56%
1999	9	4	44%
2000	16	7	44%
2001	13	10	77%
2002	18	14	78%
2003	18	10	56%
Total	83	50	60%

A note on comparison groups: One’s understanding of a program’s outcomes can be enriched by looking at the outcomes for a similar population not involved in the program—in other words, a comparison group (the term “control group” being too strong for a non-experimental design). In the case of the LOCUS program, such comparisons were complicated by a strong self-selection effect: the fact that medical students who apply for the LOCUS program are already more committed to community service and more motivated to improve their leadership skills than those who do not apply. At the outset of the evaluation, my discussions with program administrators suggested that the only appropriate comparison group would be medical school graduates who applied for the LOCUS program but were not selected due to resource limitations. There were 22 such students, and current contact information could be located for only 9 of them. I twice attempted to contact these non-LOCUS graduates to schedule comparative interviews about their experiences in medical school but received no replies. In my interviews with faculty mentors, I asked their opinion on how LOCUS fellows compared to other medical students with whom they had worked, but because of mentors’ limited experiences with non-LOCUS students, they were unable to make a comparison. However, the lack of comparison data in no way invalidates the conclusions drawn in this evaluation about the impact of the program on those who participated in it.

4. Backgrounds of Participants and Reasons for Enrolling

The 50 respondents to the LOCUS survey were representative of the LOCUS population as a whole (N = 102 including the 2004 cohort) with regards to gender, race, and eventual medical specialty (medical students generally declare a specialty in their third year of medical school). In all, 71% of survey respondents were female and 29% were male. Eighty percent of respondents were white, 10% were Asian, and 10% were from underrepresented ethnic minorities (Black = 6%; Hispanic = 4%). Of the 30 survey respondents who had chosen a medical specialty, the distribution by specialty was the following:

- 47% (14) in Family Medicine
- 23% (7) in Pediatrics
- 13% (4) in Internal Medicine
- 7% (2) in Radiology
- 3% each (1 each) in Obstetrics/Gynecology, Emergency Medicine, and Palliative Medicine.

Fellows were asked about their level of involvement in community service in the two years prior to applying for the LOCUS program and about their other extracurricular service activities while in medical school. All respondents entered the program with at least some community service (a prerequisite once the program became selective in 2000), with 34% (17) responding “I had done some community service and volunteer work on an ad hoc, short-term basis,” 38% (19) responding “I had been involved in at least one longer-term community service or volunteer project that took a fair level of commitment,” and 28% (14) responding “I had taken a high degree of responsibility in developing or coordinating at least one longer-term community service or volunteer project.” Those interviewed described how this prior involvement in community service convinced them of its value and motivated them to enroll in LOCUS, which most of them heard about through a mailing before their first semester began. The faculty mentors I interviewed described the typical LOCUS enrollee as “caring,” “committed,” “open-minded,” “interested in making a difference,” and “willing to go the extra mile” although they saw differences in enrollees’ incoming degree of initiative, self-confidence, and extraversion (which is typically, if erroneously, interpreted as one’s leadership potential). All but 3 of the 50 respondents (94%) had participated in other Medical School service programs, and 32 (64%) participated in two or more other programs. This included 43 participants (86%) in MEDIC, 16 (32%) in Doctors Ought to Care, 16 (32%) in the Medical Students for Minority Concerns, and 9 (18%) in Mothers and Maternal Support/Dando a Luz.

Survey respondents were given a list of 13 possible reasons for enrolling in LOCUS (developed from the interviews I conducted with LOCUS graduates) and asked to rate each potential reason on whether it was a “major reason” (2 points), “minor reason” (1 point) or “not a reason” that they enrolled. Based on these ratings, the top four reasons for enrolling in LOCUS were:

- (1) “I knew I wanted to engage in community service while in medical school”
(a major reason for 90%; a minor reason for 10%);
- (2) “I thought the experience would help me get more out of my medical school education”
(a major reason for 84%, minor for 14%);
- (3) “I wanted to be around other medical students who were committed to community service”
(a major reason for 84%, minor for 12%);
- (4) “I wanted to be around and learn from physicians committed to community service”
(a major reason for 78%, minor for 22%).

Table 2 shows the 50 respondents’ ratings for all 13 potential reasons, listed in order from the most influential to the least influential.

Table 2: Potential reasons for enrolling in LOCUS and how influential they were in decisions to enroll.

Reasons for enrolling in LOCUS (N = 50) 2 = A major reason 1 = A minor reason 0 = Not a reason	% (n) Major reason (2 pts)	% (n) Minor reason (1 pt)	% (n) A reason (1 or 2)	Average rating from 0-2 (N)
I knew I wanted to engage in community service while in medical school	90% (45)	10% (5)	100% (50)	1.90 (50)
I thought the experience would help me get more out of my medical school education	84% (41)	14% (7)	98% (48)	1.82 (49)
I wanted to be around other medical students who were committed to community service	84% (42)	12% (6)	96% (48)	1.80 (50)
I wanted to be around and learn from physicians committed to community service	78% (39)	22% (11)	100% (50)	1.78 (50)
I knew I wanted to work with underserved populations in medical school and beyond	76% (38)	18% (9)	94% (47)	1.70 (50)
I thought it'd teach me things about medicine I wouldn't learn in courses or internships	76% (38)	18% (9)	94% (47)	1.70 (50)
I wanted training and experience in leadership	72% (36)	24% (12)	96% (48)	1.68 (50)
I thought it would help keep me interested in medicine and retain me through med school	66% (33)	16% (8)	82% (41)	1.48 (50)
I wanted to develop a mentoring relationship with a physician whose work and dedication I admired	52% (26)	34% (17)	86% (43)	1.38 (50)
I wanted to explore my degree of commitment to community service	24% (12)	40% (20)	64% (32)	0.88 (50)
I wanted to explore what it was like to work with underserved populations	28% (14)	26% (13)	54% (27)	0.82 (50)
I thought the experience would strengthen my residency applications	12% (6)	43% (21)	55% (27)	0.67 (49)
I thought the letters of recommendation would strengthen my residency applications	8% (4)	22% (11)	30% (15)	0.39 (49)

5. Participant's Perceptions of the Program's Value, Relevance, and Impact

The LOCUS survey had two questions asking fellows to rate the overall value and relevance of the program and two questions asking them to specify the impacts and outcomes they experienced in various areas. First, the responses to the overall questions:

When asked, "All things considered, were the amount of time and effort you put into LOCUS worth what you received from it?" (N = 50)

62% (31) said "Definitely yes"

22% (11) said "Generally yes"

10% (5) said "Probably yes"

4% (2) said "Probably not"

2% (1) said "Definitely not"

In short, 94% of survey respondents felt the time and effort spent on LOCUS was worth it. In addition, all 15 of the LOCUS of the graduates I interviewed expressed that the LOCUS program—even with the somewhat higher time commitment faced by earlier cohorts—had been "more than worth" their time. As one interviewee expressed:

“I got far above and beyond what I ever expected from the program...Anyone who is interested in any of the objectives of LOCUS, I would strongly encourage them to do it. It's more than worth the commitment that it takes. It's demanding, but very rewarding.”

The average amount of time that fellows spent working on their service projects in their first year of LOCUS was 2.9 hours per week (SD = 2.71; range 1-16 hrs/wk), with 63% of fellows spending 1-2 hours per week on their projects. There was a significant though moderate negative correlation between LOCUS cohort and the amount of time spent on one's LOCUS project, with fellows in later cohorts tending to spend less time on their projects than fellows in earlier cohorts, $r = -0.31$, $p < .05$. This tendency coincided with a change in policy that encouraged fellows in later cohorts to look for service projects that had already been developed by others rather than starting their own from scratch. This change not only reduced the time demands of being a LOCUS fellow but helped to ensure that worthwhile projects already implemented had volunteers willing to carry them forward after the developers moved on.

Survey respondents were also asked, “How relevant are the lessons and skills you learned through LOCUS to the things you are doing in your life now?” (N = 50):

- 54% (27) said “Highly relevant”
- 38% (19) said “Somewhat relevant”
- 6% (3) said “Not relevant currently, but will be in the future”
- 2% (1) said “Not relevant currently, and not likely to become relevant”

It is worthwhile to note that the four students who said the lessons of LOCUS are not currently relevant to what they are doing have not yet graduated.

5. 1. Areas that were affected most by the LOCUS program

The survey asked fellows to rate LOCUS's impact on 14 areas using a 5-point scale (2, 1, 0, -1, -2) from a “very positive” to a “very negative” impact. The four areas with the highest ratings of positive impact were:

- Commitment to community service as a physician (mean impact rating = 1.48)
- Desire to work with underserved populations (M = 1.36)
- Connections with fellow medical students (M = 1.31)
- Ability to be an effective leader (M = 1.24)

The use of a scale that included both negative and positive dimensions allows us to see that for a minority of students (whose characteristics are described in section 5.1.2) there were also negative impacts in some areas, for example:

- Commitment to and interest in coursework (5 respondents)
- Ability to juggle and prioritize competing demands (4 respondents)
- Opportunities to receive mentoring in their specialty (3 respondents)
- Sense of belonging in your department (3 respondents)
- Desire to remain in medical school (3 respondents)

Table 3 shows all 14 areas of potential impact and how survey respondents rated each, with the areas affected most positively listed first. This provides a sense of the response distribution for each area.

Table 3: Perceived impacts of the LOCUS program on 14 areas, with the impact rated on a 5-point scale where 2 = very positive impact, 1 = somewhat positive impact, 0 = no significant impact, -1 = somewhat negative impact, and -2 = very negative impact (N = 50). Impact areas are listed in order of their average impact rating.

14 areas that the LOCUS program affected	%(n) affected positively (2 or 1)	%(n) not affected (0)	%(n) affected negatively (-1 or -2)	Average impact (N = 50)
Commitment to community service as a physician	90% (45)	8% (4)	2% (1)	1.48
Desire to work with underserved populations	82% (41)	16% (8)	2% (1)	1.36
Connections with fellow medical students	88% (43)	8% (4)	4% (2)	1.31
Ability to be an effective leader	88% (44)	8% (4)	4% (2)	1.24
Interest in taking leadership positions	78% (39)	18% (9)	4% (2)	1.14
Desire to remain in medical school and become a physician	74% (37)	20% (10)	6% (3)	1.12
Opportunities to receive mentoring from physicians in their specialty	70% (35)	24% (12)	3% (6)	0.94
Ability to juggle and prioritize competing demands on their time	70% (35)	22% (11)	8% (4)	0.92
Sense of belonging in their specialty	56% (28)	38% (19)	6% (3)	0.80
Networking opportunities within their specialty	58% (29)	38% (19)	4% (2)	0.70
Ability to compete for residency assignments that interested them	42% (21)	58% (29)	0% (0)	0.64
Development of their medical skills	50% (25)	50% (25)	0% (0)	0.58
Willingness to work in rural areas	36% (18)	64% (32)	0% (0)	0.56
Commitment to/interest in their coursework	40% (20)	50% (25)	10% (5)	0.46

5.1.1.1. Correlations between LOCUS’s overall impact, cohort, and cohort size:

All of the ratings in Table 3 were submitted to a confirmatory factor analysis, which indicated that the 14 sets of ratings could be reduced to a single scale with an alpha reliability of .85. This means we can have 85% confidence that all the items in this scale are contributing toward the measurement of a single underlying concept—i.e., the “overall impact” of the LOCUS program. With this assurance, I then collapsed the impact area ratings for each survey respondent into an average or “overall impact rating” for each individual. The overall impact rating across all 50 respondents was .94, with a standard deviation of .52 and a range from 1.93 to -.46. The distributions of the overall impact scores across the six LOCUS cohorts who responded to the survey can be seen in Table 4.

Table 4: Distributions of the overall impact ratings for LOCUS by cohort

Ranges of overall impact	1998	1999	2000	2001	2002	2003	% of all respondents
2.00 to 1.50	3		2		1		12%
1.49 to 1.00	2	3	2	5	6	4	44%
.99 to .50			3	1	5	4	26%
.50 to 0		1		2	2	1	12%
below 0				2		1	6%
Total	5	4	7	10	14	10	100%

A look at this distribution suggests that the overall impact ratings given by fellows in later cohorts were somewhat lower than the ratings by fellows in earlier cohorts. Indeed, there was a moderate but significant negative correlation between LOCUS cohort and overall impact rating, $r = -.36$, $p < .01$. In other words, program impacts tended to be somewhat more positive for fellows in the earlier years of the program. Perhaps the extra effort and time that fellows in earlier cohorts generally spent on their projects led to the program having stronger impacts. Another factor that might contribute to this correlation is that the cohorts were somewhat smaller in the earlier years of the program. However, statistical analyses of these items on the survey showed no correlation between overall impact rating and the reported hours spent on one's project or the number of fellows in one's cohort. Although these factors may have contributed to the program's overall impact for some students, other factors must account for the moderate differences in impact between cohorts.

5.1.2. How program outcomes differed depending on fellows' reasons for joining the program: The "task and product" oriented fellow versus the "community and process" oriented fellow

Another potential factor contributing to the correlation between average impact rating and LOCUS cohort is that later cohorts of the program attracted more applicants, and among these applicants were a higher proportion of students who didn't fit the typical LOCUS profile. According to both the survey responses and data collected through formative feedback in later years of the program, later cohorts included more students who were from specialties other than family medicine and pediatrics, were more interested in the leadership and research training aspects of the program, and were less interested in the community building, self-reflection, and mentorship opportunities. For convenience, I will refer to this new type of LOCUS student as "task and product" oriented, as opposed to "community and process" oriented, which apparently all of the survey respondents in the earlier LOCUS cohorts were. "Task and product" students may have been more likely to be attracted into the program in later years because of the program's building reputation and because of a new emphasis in LOCUS recruiting materials on the program's leadership and research training opportunities. It appears as if some of the students who then applied for and were accepted into the program came looking for something different than what traditional LOCUS fellows wanted, and their eventual satisfaction with the program was somewhat reduced as a result.

Evidence in support of this hypothesis comes from looking at the statistical correlations between various survey questions and from comments made by one interviewee and several survey respondents who were somewhat less satisfied with the program than others had been. First, I analyzed the many combinations of correlations between respondents': (a) LOCUS cohort, (b) medical specialty, (c) 11 reasons why respondents enrolled in LOCUS, (d) rating of the degree to which the program was worth the time and effort spent, and (e) overall impact ratings and 14

specific impact ratings. For example, significant positive correlations were found between survey respondents' overall impact rating and just 4 of the 11 possible reasons for enrolling in LOCUS:

- “I wanted to be around and learn from physicians committed to community service,” (r = .44, p<.01)
- “I wanted to develop a mentoring relationship with a physician whose work and dedication I admired,” (r = .35, p <.05)
- “I wanted to be around other medical students who were committed to community service,” (r = .34, p<.05)
- “I wanted to explore my degree of commitment to community service” (r = .30, p <.05)

Three of these four reasons relate to the desire to be in a community of like-minded role models and peers—a desire which separated fellows with a “community and process” orientation from those with a “task and product” orientation.

From numerous analyses like these, I discovered that there were significant differences between the 84% of participants (42) who responded that LOCUS was “definitely” or “generally” worth it and the 16% (8) who had ambivalence (only a small degree for 5) about the time and effort they spent. Participants who expressed some degree of ambivalence about LOCUS were more likely to:

- Still be in medical school (all were current students from the 2001-2003 cohorts) and be in a specialty different from that of most LOCUS students and mentors;
- List “training and experience in leadership” as one of two primary reasons they enrolled in the program (the other primary reason being that they wanted to engage in community service—the top-ranking reason overall);
- Rank and rate the LOCUS community-building and support aspects of the program as relatively unimportant to them compared to things like developing research and leadership skills and making them more competitive for residencies;
- Have a less positive experience in most impact areas, especially: networking and mentoring opportunities with physicians in their specialty, their desire to work with underserved populations or in community service, and their confidence in their leadership abilities.

The latter three points above describe the key differences between what I am calling “task and product” fellows (who only started to join the program after 2000) and the “community and process” fellows that traditionally made up the core of LOCUS participants. As for the first point, fellows from the 2001-03 cohorts were recruited with materials that placed a heavier emphasis on goals and activities that would be more likely to appeal to those with a “task and product” orientation.

The statistical evidence of this distinction was corroborated by the open-ended survey comments made by the eight students who were somewhat ambivalent about the benefits of the program and by a graduate interviewee who entered the program her second-year and had interests that were different from most of the other fellows in her cohort. When asked the most important outcome of their LOCUS participation, most of the eight ambivalent survey respondents made comments like:

“Doing research and publishing a paper”

“I learned that I have a lot to learn about organizing and being efficient in instituting something I believe in.”

“Learning about interacting with people with different beliefs/thought styles than myself, for more effective leadership in helping them and to care health-wise for them.”

“Understanding that one should participate in activities that fulfill one's personal needs, and not because the collective says they are good or helpful to others—that may in fact be untrue. It is too easy to be enamored with one's own personal ‘goodness.’”

When one graduate who hadn't entered the program until her second year and didn't attend as many of the meetings was interviewed about what she described as an atypical LOCUS experience, she had the following to say:

“I thought it would be more people wanting to do rural projects, but really I felt like I was the only one, and I'm trying to think of whether we had monthly meetings or weekly meetings or something like that, and I don't remember really having many meetings. I know LOCUS has really evolved a lot since the very beginning and I think maybe those meetings would've helped with meeting up with people that were interested in the same thing. I kind of felt like I was on my own.”

When asked if her interactions with her mentor helped her to feel less isolated, she said:

“Well, we met together about 2-3 times and talked on the phone maybe once or twice, and she was helpful in that he encouraged me to be creative and do some things that I wanted to do, so in our meetings she was kind of helpful.”

When talking about changes in the program that she felt would be helpful for someone like her, she said:

“Maybe more regular meetings, though not necessarily the retreats, because honestly I felt like that was almost too much time, because it was an entire weekend, like an hour away or something like that. You really feel like, “we have a test on Monday, I have to study”...I think I even left early, and when I said I was leaving early like five people jumped in my truck with me to go home—a lot of people were worried. That's the only time I remember feeling that time stress, though...But shorter lunchtime meetings would be good, or evening meals. And I did go to a couple of evening meals that were really good, and I think they're doing more of that now because when I went back to present my topic near the end of fourth year, it seemed like they were having more...It also seemed really different, just in that one meeting, so I don't really know what the focus is now. It seems more introspective or something, and I don't know if I would've been as interested in that.”

5.2. The outcomes of LOCUS that fellows considered the most important:

For most fellows, the support and networking opportunities provided by the LOCUS community were a key part of their experience. When fellows were asked to comment on the most important outcome of their participation in the LOCUS program, almost all of the interviewees and 40% of the survey respondents mentioned the inspiration and ongoing support network provided within the LOCUS community of like-minded students and physicians. These interviewees and another 21% of the survey respondents elaborated on how the LOCUS community had helped them to maintain their idealism throughout medical school and sustained or increased their commitment to careers in medicine. A few even said the program had been a key factor in retaining them in medicine at times they were having doubts. As one interviewee said:

“ For me it was just like a breath of fresh air that I think I really needed, because starting back from the beginning when I was in Medical Scholars, I was kind of pushed towards medicine. I love medicine today and I practice it with a passion, but at that time I kind of liked a lot of things. I kept going forward with it, but it wasn't until I met other mentors in LOCUS programs and met some of the physicians working in LOCUS that I was like, “Wow, I could see myself doing this”...I think it definitely helped retain me in medicine, and it

helped me to be in medicine with a purpose, to be in medicine with a passion, to be in medicine enjoying being in medicine.”

These and other important outcomes are elaborated upon below. Table 5 shows the percentage of survey respondents that mentioned a particular outcome when asked to name “the most important outcome of your participation in LOCUS.”

Table 5: The percentage of 43 survey respondents who mentioned certain outcomes when asked, “For you, what was the most important outcome of your participation in LOCUS?” The n’s sum to more than 43 because some respondents mentioned more than one “most important outcome.”

The 11 most important outcomes that 43 survey respondents mentioned	% (n)
The inspiration and support provided by the LOCUS community	40% (17)
Maintaining (or increasing) their idealism and their commitment to careers in medicine	21% (9)
Learning organizational and logistical skills important in developing and implementing a community service project	16% (7)
Developing the skills and confidence to be an effective leader	16% (7)
An increase in their commitment to work with underserved communities	16% (7)
Better self-awareness and a clearer sense of their career goals	14% (6)
Exposure to and ongoing connections with physician role models	5% (12)
Seeing their service project have a positive impact on its target community	4% (9)
Learning how to maintain balance in their busy lives	3% (7)
Help in deciding upon a specialty or residency assignment that would be right for them	5% (2)
Research publications that grew from their service project	2% (1)

In the sections that follow, I provide representative quotes from the interviews and the surveys regarding each of the outcomes listed in the table above.

5.2.1. The inspiration and support provided by the LOCUS community:

The community-related outcomes that survey respondents mentioned included:

“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 support and encouragement to not lose sight of those values.”

“Being with other students, faculty, physicians and community members who value community service. What an inspiring way to go through medical school and beyond!”

“Being a part of a community of people in med school who share some of the same values about service and what is important for us in our future careers as physicians.”

“Being part of a community that supports my aspirations and empowers me to actualize my full potential.”

“Becoming a part of a community of driven, kind, committed people.”

One interviewee enumerated the ways the LOCUS community had influenced him by saying:

“LOCUS went above and beyond the other programs [in med school] because it set me up with a mentor. My mentor was [Dr. X] and I was also close with [the Program Director], and these were doctors that were practicing medicine and working with underserved communities, creating projects to better the community in terms of medical access, in terms of medicine in general. So LOCUS provided me contact with these doctors that were doing this. We also had lectures, we had meetings between other students, so I could meet students that were also interested in this... I think the interaction with other medical students and my physician mentor, and other doctors that were in the program, was key. They were constantly giving me feedback, constantly giving me other ideas, constantly telling me ways to develop the project. And helping me with grant-writing and looking over some of the things that I was doing, or offering another resource or website that had resources. When you're in a community that's doing similar projects, people have more resources, they have more input, they have more ways of getting the project done.

Interviewer: So ultimately, did you get what you had been hoping for from the program?

Yeah, I didn't really have expectations going in. I was like, ‘Wow, amazing, an experience that's actually something that I'm really interested in...I'm not forced to do this because it's a requirement.’...I was just kind of relieved that this existed...and I was really happy to do it. I definitely got out of it a ton...It shaped who I am today and the way that I practice medicine. And all the doctors I worked with...they were just amazing. I carry a lot of them with me here in the work that I do.”

Another interviewee emphasized how being surrounded by so many others who were making a difference reinforced her commitment to service and gave her faith that she could have an impact too:

“I think the commitment to community and the commitment to get involved—and the impact you can really make just as a single physician speaking out—is the greatest lesson I learned. Seeing such incredible mentors devote time to the program and seeing how they go about incorporating their passions and their motivating factors into daily life, and how really just even a small time commitment to the right causes can really make a difference...I think it provided the skills and an incredible sense of motivation, and especially if you look at LOCUS fellows in my class and even the following classes, we were the ones involved in leading almost all of the major extracurricular activities in the medical school and especially all the advocacy programs...With a group of people meeting together on a regular basis with the goal of learning these skills, you could see all these other students doing so much for so many things, and that got you motivated. And then you'd look at your other classmates who weren't doing anything, and it became a little frustrating. What if those were the only people you were surrounded by? It's so important to provide a common group, to feel connected in the cause.”

Many interviewees—now in their first or second year of residency—said they still feel like part of the LOCUS community even today. As one said when asked the most important outcome of her participation in LOCUS:

“ I'd say the relationships with my classmates and with the mentors, because I now feel like I today could send off an e-mail to any number of the people I met through LOCUS and they would take the time to consider what kind of proposal I'm working on, or even just having to bounce ideas off each other, that connectedness to them, knowing that somebody's there for me to talk to about service and about how to integrate that and to serve as an advocate for me in the future probably is the greatest thing.”

Several interviewees mentioned how the continued participation of upperclassmen in LOCUS meetings and retreats was especially inspiring. One said:

“I think having older students still involved was huge, especially since so many of the older students our first year had done pretty phenomenal large-scale projects, so being able to look at their projects and their passion in

general was an incredibly motivating factor for me, and it really made me attempt to try to get back to some of those meetings in third and fourth year when I had 100 other things to do and it would've been really easy just not to go. I'm glad I did, because it was one of the main things that impacted me as an upperclass student."

The importance of having a community of like-minded peers and role models is key to the success of many programs that recruit and retain students in challenging fields. Indeed, the presence of a supportive community of peers and role models has been a critical factor in the success of all of the science, math, and technology-focused professional development and retention programs that LEAD has evaluated. The inspirational and retentive effects of community are especially important for students 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 choosing is not very popular or glamorous. As one faculty mentor put it during his interview, "People like to know that they're not weird—that there are other successful people who have the same interests and beliefs that they do."

5.2.2. Maintaining (or increasing) their idealism and their commitment to careers in medicine's lesser-paid specialties:

A survey respondent described this impact by saying:

"LOCUS escorted my idealism about medicine through the medical school years, and gave me the skills to preserve my idealism for medicine through residency."

One of many graduate interviewees who had the same experience described it the following way:

"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."

Another said:

"I think in the first two years [of medical school] when you're mostly in the classroom, getting to do those sorts of things and getting out and sitting and talking with patients, it kept in the back of my mind really strongly what I was doing and why. [My mentor] was just a complete advocate for her patients and for her community. And she is out doing things for them all the time, starting projects, writing columns in the paper. I saw a real example of how you can really be involved in the community and make a difference, and it kept me going when the coursework couldn't."

This last interview was one of several who said being in LOCUS kept them inspired by *broadening their focus beyond coursework*. As another explained:

"I thought medical school would be kind of narrow and regimented. You take anatomy and biology, and I had heard the stories about medical students feeling alienated and thinking they'd just come into service work a few years down the road when they had more time. I was looking at the schedule of what was to come and it seemed pretty obvious that time pressures weren't going to get any better, so why would you want to wait?"

And still another:

"I'm glad I did it and I think I really got a lot out of it...Just having had that experience really added to my medical school experience because there wasn't just books in my first and second years—there was something meaningful that I was involved in."

A faculty mentor concurred by saying:

“During the course of those two years you get to know that sometimes [the fellows] are happy and sometimes they’re depressed. The medical school topics are not easy. Those first two years I found very difficult and totally different from what I expected. If medical school was like the first two years, no one would ever want to be a doctor...but after that it’s a lot of fun. That’s what you’ve got to tell them and show them.”

On the down side, as a few interviewees and five survey respondents indicated, having a more meaningful alternative to coursework can sometimes reduce fellows’ motivation to do that coursework. As one interviewee said:

“I remember there being times where I was so invested in LOCUS that I wondered whether it drew me away from the books and the academics. But I felt like LOCUS was really flexible about those other demands having priority—as flexible as it could be.

Interviewer: So it sounds like it was a lot to manage, but do you think it affected your performance in courses?

I think given the option between studying biochemistry and working on my LOCUS project, it's possible. But you passed your tests and got through fine. So I guess it didn't really matter in the end.”

5.2.3. Learning organizational and logistical skills important in developing and implementing a community service project:

The most detailed survey response mentioning this impact was:

“I learned how to pull in many different resources in forms of peer advice, grant money, literature research, and public need in order to formulate a plan and lead its realization.”

All of the interviewees discussed organizational and logistical skills that they learned through LOCUS seminars and practiced through their hands-on project work. Below are two descriptions of the important things fellows learned and then applied in real-life contexts:

“One of the important lessons I learned is preparing for projects. I wanted to work with underserved people and create projects to do that, and had no practical experience in what that meant. And that meant gathering resources and even writing grants to get funding if that’s what you needed to do. That meant looking at the population that you’re working with and really understanding their concerns. That meant making contacts with other people in the community that are doing similar projects. That meant planning a project, and having a deadline, and trying to follow a plan, and actually make concrete what you have in your head.”

“The noon meetings were for business and had different functions. It kind of had an agenda and then the function would be, ‘This is how you run a meeting.’ And I think now, looking at some of my residents, they probably never had that training: This is how you run a meeting; this is how you set an agenda; this is how you get everyone involved. The net effect was that we learned how to run a meeting, which really helps with what I’m doing now... And then the actual project development workshop that we had: This is how you write a grant; this is how you hold a focus group; this is how you can evaluate yourself in your personal development. I think there are some incredible things that I learned...Our coalition [at my residency] just got a community grant to implement the school dental program. And those are all things that without LOCUS, I wouldn't have known how to write the grants for...It's just a small grant, but again, I found out these grants existed because we learned about it in LOCUS, and I thought, ‘I can get one of these.’ The person I worked with had never had this experience before. Had I not had LOCUS, I wouldn't have been able to teach her to do this, that it’s really not so hard. And now she's in a place where she could write a grant. So I think that's a credit to LOCUS for sure.”

The faculty mentors I interviewed concurred with the importance of this practical training and said one of their roles was to help fellows “zero in” or “help them take broad ideas and narrow them down into something they can actually do.”

5.2.4. Developing the skills and confidence to be an effective leader:

Survey respondents who listed this as the most important outcome of LOCUS said:

“Exposure to current physician community leaders and the exploration of my own strengths and weaknesses as a leader. It has also helped me to address my weaknesses and become more comfortable in situations where I hadn't in the past.”

“Learning about interacting with people with different beliefs/thought styles than myself, for more effective leadership in helping them.”

“Gaining a more specific, practical personal definition of leadership.”

Less extroverted fellows, particularly women, found that the community service work and meeting leadership responsibilities of LOCUS challenged them to become more assertive and pro-active. For most, this was a confidence builder, although a small number of product-oriented survey respondents indicated that their unsuccessful efforts within the program had negative impacts on their confidence and interest in leadership. The interviewees who spoke of the program's effect on their confidence and assertiveness said things like:

“[LOCUS helped with] getting used to even being in a waiting room of patients and going up to people and asking them questions. Or talking with physicians, who by and large are much older than you. You cite your research and try and defend it. Things like that make you more assertive and more confident as you go along. And then we did have a lot of talks or seminars on various forms of leadership. Some of that is harder to see in yourself at first. I think it helped me to see it in me.”

“My team experience was back in my home community, and the confidence you get with the healthcare team goes way beyond the nurse-secretary-doctor relationship. And social workers and school teachers, you learn how to work with them...Because of the student mentors, we had a constant reminder of the interpersonal skills that were real assets, and we worked to develop those. I think as far as the leadership, I've always been a relatively soft-spoken person, so the leadership piece and kind of encouraging me to be confident and to defend what I believe in and make a stand and work for an objective, that was all really important.”

5.2.5. An increase in their commitment to work with underserved communities:

Reinforcing my desire to work with the underserved, learning more about Madison's underserved community, meeting other students who have similar aspiration, etc.

5.2.6. Better self-awareness and a clearer sense of their career goals:

Survey respondents who experienced better self-awareness as an outcome said the program helped them in:

“Being aware more of myself and my abilities to contribute to the community through working with others.”

“Being better able to define myself and how I will be involved in communities in the future.”

“LOCUS nurtured the dual gifts of self-awareness and community-connectedness that have fueled my career in medicine.”

Several interviewees, including the one whose experience in LOCUS had been somewhat isolated and atypical, said the program gave them a clearer and stronger sense of what they wanted to do. As this interviewee put it:

“It definitely had a positive impact on my commitment to community service. I had always planned on doing rural medicine or kind of semi-rural small-town medicine, and it solidified and in my mind that I really wanted to be involved in the community and clarified how I might want to do that.”

5.2.7. Exposure to and ongoing connections with physician role models:

Survey responses about this impact included the following:

“Having community physician role models who are outstanding examples of the type of physician I hope to become.”

“Connections with like-minded physicians and meeting role-models for how I'd like to form my career.”

“Being exposed to students and physicians who make community service a priority.”

One of many interviews who discussed the importance of physician role models they met in the LOCUS program described the impact by saying:

“I think the mentorship, seeing doctors who already went through this medical training that had the ideals that they started medical school with, was really important. They are people that hung on to those rather idealistic goals and learned how to apply them and make something happen.”

5.2.8. Seeing their service project have a positive impact on its target community:

Several survey respondents listed the most important outcome of LOCUS as being:

“My LOCUS project and the impact it had.”

“The sense of accomplishment and pride that came from completing the project.”

“Feeling connected in Madison, and knowing that I was making a positive change.”

The degree of impact that graduate interviewees saw with their own service projects varied considerably. A number of interviewees regretted that their project wasn't more successful or that they didn't find someone to carry it forward after they moved on. Other were pleased with the impact of their project or projects and were inspired by these successes to know that

5.2.9. Learning how to maintain balance in their busy lives:

I feel better able to work in the community and balance that with residency and private life.

5.2.10. Help in deciding upon a specialty or residency assignment that would be right for them:

An example of this outcome from the survey responses is the respondent who said:

“I continue to be on a career path that was shaped by LOCUS. As a resident I work with the rural underserved with an on going community project. As a graduate from residency I will look for jobs with underserved populations in rural areas in primary care.”

One interviewee said LOCUS participation is what steered him into family medicine:

“LOCUS influenced me a lot just because I got all this exposure to family doctors and really liked them, so I think that's a lot of why I ended up choosing this career.

Interviewer: So did it give you information in making that specialty choice?

I don't even know about information, it just helped me...(pause) At the time, it just sort of made me feel like this is a place I can fit in.”

Another interviewee interested in community medicine said:

“It definitely impacted how I looked at my residency search. I mean I looked for programs that had some sort of community focus who work with underserved communities. And I don't know if I would have known the questions to ask particularly, or known that that was so important to me prior to LOCUS... I think it definitely kept me interested in primary care and in working on a community wide level, and seeing the effect of that verses working one-on-one with patients. Like I said, it definitely impacted how I looked at residency programs and the kinds of programs that I was interested in. And ultimately the kind of community I work with.

Another found herself drawn toward working with Indian tribes in the state:

“In my career I've always considered returning to a rural population. And then having the exposure from LOCUS to the Indian Health Service, that really opened my eyes. That's probably where I'll go as a career.”

5.2.1. Research publications that grew from their service project:

One of the more task-and-product oriented survey respondents listed “doing research and publishing a paper” as the most important outcome of her LOCUS participation.

5.3. Impacts of LOCUS Participation on Mentors:

In addition to all the positive impacts that the LOCUS program had on fellows, physician mentors whom I interviewed about their participation in LOCUS all reported positive impacts for themselves as well. Most said that being around idealistic young medical students who shared their enthusiasm and passion for community service kept them feeling invigorated and inspired about their own work. Each of the five mentors I interviewed specialized in family medicine, three were regular faculty members within that department, and one was the department chair. It was typically when I asked them to describe “some of the highlights of your experience as a faculty mentor” that they first mentioned how being part of the LOCUS community was important to them in some of the same ways that it was for students. One mentor described the highlights for him by saying:

“It's getting to know a young person with values that I think are similar to those that I have, and being able to talk with them about things that we both find important. It's also an opportunity to understand a little bit better what young physicians are thinking about the community, and learn others' strategies for working in communities, and so on.”

When asked specifically about the program's impact on him, this mentor said, “It kept me hopeful,” and “It's a sanctuary.”

Another mentor discussed how having LOCUS fellows working in his clinic gave him an opportunity to work with dedicated students who were “willing to go the extra mile” and who

had a “broader view” of medicine, much like his own. He has found working with LOCUS students much more satisfying and productive than working with those outside of the program, to the point that he now wants to limit his GPP clinic spots to LOCUS fellows. He described working with these idealistic and ambitious students as “exciting” and “fun.” When asked specifically about the impact his participation had had on him, he said:

“Well, it’s nice to see these optimistic students when you’re not have a particularly optimistic day, where things have failed on your line...It’s fun to see them and it’s nice to see them actually develop projects...I’ve also met a bunch of neat kids who I know are going to be neat physicians when they get out, and I hope there is something as an older physician that I have imparted to them. I do believe that the LOCUS students will be much more likely to be involved in social issues, so that’s increasing further the impact that I can have.”

6. Participant’s Ratings of Program Elements

The survey asked fellows to rate 15 elements of the LOCUS program on how much each “contributed to what they learned and gained.” The ratings were on a 4-point scale from 0-3, with 3 indicating an element was “critical” and 0 indicating it was “of little relevance.”

Overall the 4 most influential elements in contributing to the program’s gains were:

- “Collaborating/negotiating with others involved in the implementation of my LOCUS project” (Mean rating = 2.34)
- “Interactions with LOCUS students in my own cohort” (M = 2.33)
- “Social activities and get-togethers with others in LOCUS” (M = 2.24)
- “Working on my LOCUS project within its target community” (M = 2.22)

For the community-and-process oriented students that made up the bulk of survey respondents (84%), the four most influential program elements were the same as those above. However, for the task-and-product oriented fellows that made up 16% of survey respondents, the four most influential program elements were:

- “Collaborating/negotiating with others involved in the implementation of my LOCUS project” (same as with community-and-process fellows)
- “Conceptualizing and developing my LOCUS project” (7th for community-and-process fellows)
- “Writing about or presenting my LOCUS project to others” (8th for community-and-process fellows)
- “Working on my LOCUS project within its target community” (same as with community-and-process fellows)

In addition, two of the program elements were rated significantly less influential by task-and-product fellows, even given the wildly different sample sizes (8 vs. 42). Those elements were:

- Interactions with Clinical Mentor (mean rating of 1.20 vs. 2.00)
- Interactions with other physicians involved with LOCUS (mean rating of 1.40 vs. 2.30)

Two of the factors likely contributing to the comparatively low influence of mentors on the task-and-product fellows were (1) that most of these fellows were interested in specialties different from their mentor’s specialty and (2) they did not come into the program looking for mentors or role-models.

Table 6 shows how much the survey respondents thought each of the 15 program elements contributed to that they learned and gained.

Table 6: How 15 program elements influenced what fellows felt they learned and gained from LOCUS. Elements were rated on a 4-point scale where: 3 = This element played a critical role in what I gained and learned; 2 = This element played an important but not critical role in what I gained and learned; 1 = I gained/learned something from it, but it wasn't that important compared to other elements; and 0 = I gained or learned very little of relevance from this element. Respondents who didn't experience a given element marked "Not applicable" and were not included in the average rating or N for that element. Elements are listed from the most influential to the least influential.

LOCUS program elements rated on a scale of 3-0 with 3 being the most critical to what was learned and gained	% (n) 3	% (n) 2	% (n) 1	% (n) 0	Average rating (N)
Collaborating/negotiating with others involved in the implementation of my LOCUS project	48% (21)	41% (18)	9% (4)	2% (1)	2.34 (44)
Interactions with LOCUS students in my own cohort	51% (25)	33% (16)	14% (7)	2% (1)	2.33 (49)
Social activities and get-togethers with others in LOCUS	39% (19)	49% (24)	10% (5)	2% (1)	2.24 (49)
Working on my LOCUS project within its target community	40% (18)	44% (20)	13% (6)	2% (1)	2.22 (45)
Conceptualizing and developing my LOCUS project	27% (12)	64% (29)	9% (4)	0% (0)	2.18 (45)
LOCUS retreats	47% (22)	32% (15)	13% (6)	9% (4)	2.17 (47)
Interactions with other physicians involved with LOCUS (not my Mentor)	40% (19)	40% (19)	15% (7)	6% (3)	2.13 (48)
Writing about or presenting my LOCUS project to others	41% (19)	35% (16)	20% (9)	4% (2)	2.13 (46)
LOCUS monthly meetings	22% (11)	50% (25)	26% (13)	2% (1)	1.92 (50)
Interactions with my LOCUS Clinical Mentor	32% (15)	30% (14)	28% (13)	11% (5)	1.83 (47)
Interactions with (more advanced) LOCUS students from earlier cohorts	27% (12)	38% (17)	27% (12)	9% (4)	1.82 (45)
Interactions with (less advanced) LOCUS students from later cohorts	23% (11)	42% (20)	27% (13)	8% (4)	1.79 (48)
Training in meditation and self-awareness techniques	22% (11)	41% (20)	20% (10)	16% (8)	1.69 (49)
Readings I did as part of LOCUS	10% (5)	50% (25)	36% (18)	4% (2)	1.66 (50)
Writing and structured reflection I did as part of LOCUS	18% (9)	39% (19)	33% (16)	10% (5)	1.65 (49)

7. Lessons that LOCUS Graduates Learned about Medicine and Community Service

In my interviews with LOCUS graduates, I asked about the lessons they learned from being in the program. The following is a compilation of all the lessons that were mentioned by at least two of the 15 graduates:

- It is possible and worthwhile to be involved in community service, even for busy physicians and residents. Finding a way to find the time is worth it.

- You are not alone: There are other doctors and students who believe in social justice and service, and being in a community with them will help you to sustain your own commitment.
- With the right group of people supporting an effort, even a relatively small time commitment can have a big impact, both on the community and on your own satisfaction with medicine. You shouldn't let the fear of a huge time commitment keep you from getting involved—just make a smaller commitment.
- It's important to work on a problem you are passionate about, but you also need to take the real needs of the community you are serving into account. Pay attention to what the community says they need, not just what you want to do.
- Health care occurs in a context that you cannot ignore if you want your efforts to be successful in the long-term. You can't really be effective in serving people and creating programs that will work for them if you don't take their context and their personal circumstances into account.
- Make big problems smaller by focusing your efforts on just a piece of the larger problem or working with others who can help do the rest. It is all right to be ambitious, and even big ideas can sometimes be pulled off, but whittling an idea down into something more manageable will increase your likelihood of success.
- Consider whether there are already programs or groups out there that you can contribute to rather than starting from scratch. There is no sense in “reinventing the wheel” if there are good programs available for the topic you are passionate about and that need volunteers to help sustain them or move them to the next level.
- Leadership often involves listening as much as speaking; enabling others to act as much taking things into one's own hands. Leaders need organization, facilitation, and mediation skills if they want to be effective in the long run.

8. Conclusions and Issues for Future Consideration

My six-month summative evaluation of the first six years of the UW Medical School's LOCUS program found that the program was very effective in helping fellows to maintain their motivations, sustain their volunteer activities, and enhance their leadership skills in community health service as they progressed through medical school. Ninety-four percent of the fellows who responded to my survey felt that the time and effort they put into the program during what is already a very busy time of their lives was worth it, and 98% felt that the lessons they learned through LOCUS would be relevant to them in the future. The vast majority of both survey respondents and graduate interviewees were still involved in community service after their first-year LOCUS project had ended or been passed on to someone else, and their interest in doing community service in the future had either increased or been sustained. A number of fellows said that their experiences in LOCUS helped steer them into particular specialties or residencies focused on service. A few even said the program helped retain them in medicine at times they were having doubts. For 84% of the fellows surveyed and 93% of the LOCUS graduates interviewed, being in a community of like-minded peers and physician role models was the key factor in inspiring and reassuring them, teaching them how to be more effective leaders and more

skillful project developers, and motivating them to want to continue their service work in medical school and beyond. There were many benefits of program participation for the vast majority of respondents, and all respondents received at least some benefits. These many positive outcomes and the comments of UW Medical School faculty who were interviewed suggest the LOCUS program has played an important role in the Medical School by providing the students most interested in service with hands-on opportunities and intensive training in leadership, self-awareness, program development, and program implementation. Fellows graduate from the program more inspired, more capable, and more likely to make a difference in the communities in which they serve.

From my interviews with program graduates and physician mentors, the following issues to consider for future implementation of the LOCUS program emerged. Program administrators and stakeholders will need to consider:

1. The drawbacks and benefits of increasing the program's size, either through more aggressive recruitment or by making it part of the Medical School curriculum: While the program's first priority is merely to survive, doing so, either through grants or institutionalization within the Medical School, is bound to put pressure on the program to increase the number of participants. The issues with this that interviewees raised were the following:

- (a) Making LOCUS participation worth course credits will make it easier for many fellows to commit their time to the program and their service projects.
- (b) A larger LOCUS community may be less close-knit (and hence less effective?) unless efforts are made to implement certain activities within smaller subgroups. If the program grows, perhaps LOCUS will want to create interest groups within the program.
- (c) Recruiting a larger cohort may mean including students who are less motivated about community service or more students who are task-and-product oriented. There is still a good chance that these students will get something of value from the program, and if the program can successfully bring in those who aren't "already in the fold," it can increase the number of physicians committed to community service. Some program developers call this "reaching into the second tier." However, if the survey results are any indication, a higher percentage of these students will be less satisfied with the program's outcomes or even drop out if the commitment outpaces their motivation. That's the risk you take.
- (d) Think carefully about your website and your program recruitment materials. What you say in them influences who decides to apply and what their expectations are for program activities. Use the results from your formative and summative evaluations to ensure that what you emphasize in recruiting materials is what students say the program actually delivers.

2. The ideal relationship between GPPs and the faculty mentors who serve in the program: This year, for administrative reasons, many fellows were assigned to faculty mentors who were not their GPPs. Almost all of the alumni and faculty mentors who were asked about this in interviews thought that would make it harder for the mentors to see enough of their mentees and be as effective in their mentoring. A couple of the faculty members I interviewed felt strongly that, if they were going to serve as LOCUS mentors, they wanted only LOCUS students assigned to their GPP clinic. Because the mentoring relationship needs time to develop and mentors want to know that their efforts will be geared towards motivated, service-oriented students, it was recommended that every effort be made to ensure GPPs and faculty mentors be the same person.