

Qualitative Findings of the In-Depth Baseline Interviews and Written Responses to the Interview Protocol of Participants of the Horizontal Mentoring Alliances

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October 2009

Introduction

This report presents baseline results for the external evaluation of the NSF PAID-ADVANCE initiative, “Horizontal Mentoring Alliances to Enhance the Academic Careers of Senior Women Scientists at Liberal Arts Institutions.” This initiative is designed to provide Alliance members opportunities to: network with senior women science faculty in liberal arts institutions; participate in career development discussions and workshops aimed at enhancing leadership, visibility, and recognition on their campuses and in the broader academic community; and develop mentoring paradigms that can be used on their own campuses with students, junior female faculty colleagues, and other senior female faculty colleagues, among other benefits. In the first phase of the external evaluation, the goal was to gather baseline data from the participants regarding their: career, institutional context, motivations for participating in the initiative, and satisfaction with early stages of participation. As with any program evaluation, it was also an objective to determine initial successes of the initiative, as well as to provide formative feedback for future program improvement.

A mixed-methods research-with evaluation study was developed in collaboration with the initiative’s Principal Investigators, Drs. Kerry Karukstis (Harvey Mudd College) and Bridget Gourley (DePauw University), and the External Evaluator, Anne-Barrie Hunter (Ethnography & Evaluation Research, University of Colorado at Boulder). To begin, participants were asked to fill out a detailed survey, which gathered information about their academic history, experiences with mentoring, current context and the departmental “climate,” and probed other issues relevant to senior women faculty in the sciences. At the end of the first year of the initiative, in-depth interviews with participants were also conducted. Interviews were conducted with seven Alliance members during the New Orleans ACS meeting April-5th-7th, 2008. Four Alliance members subsequently submitted written responses to the interview questions. Across Alliances 1, 2 and 3, qualitative interview data has been collected from 11 of the 15 members (73%).

Interviewees (and those providing written responses) were asked to describe their career objectives and experiences and to comment on their experiences and attitudes regarding their current position and context. Alliance members were then asked their views about their motivations for participating in the Horizontal Mentoring Alliance, to describe what they understood to be the objectives of the initiative, their experiences of participating, and any benefits and outcomes (or not) of participating. As well, participants were asked their views regarding the efficacy and relevancy of the structural model (i.e., horizontal vs. vertical mentoring) in practice, their thoughts about barriers and supports to using this model, its sustainability, and for whom it might be usefully replicated.

Method of Qualitative Analysis

Qualitative research methods are particularly useful in studying areas where existing knowledge is limited. Using careful sampling, qualitative data (i.e., in-depth interviews and open-ended survey questions) ground findings in the accounts, experiences, and explanations offered by those who are best situated to address the subject being studied. Careful analysis of such data can uncover, explore, and estimate the significance of issues that shape informants' thinking and actions. Through consistent coding, and modern software, ethnographers can disentangle patterns in very large qualitative data sets.

To begin, transcribed interviews with the Alliance members and their written responses to the interview protocols were entered individually into text files and then imported into *NVivo 7.0*, a computer software program used in qualitative analysis.

Using qualitative method, a content analysis of each of the data sets was conducted to identify attitudes, behaviors, and the range of activities that Alliance members described concerning their participation in the Horizontal Mentoring Alliances initiative. Particular emphasis was placed on exploring the extent to which the initiative, at this early stage, was already helping Alliance members to make progress toward program objectives of supporting senior women science faculty. As well, insofar as possible at this early stage in the initiative, questions important to the NSF were also explored; namely, investigating ways in which peer mentoring networks in the context of liberal arts colleges differ from or compare to similar mentoring networks in Ph-D-granting institutions; and gathering evidence of whether and how this type of mentoring initiative is replicable and sustainable.

Using the qualitative method of in-depth content analysis, text segments referencing distinct ideas are tagged by code names. Codes are not preconceived, but empirical: each new code marks a discrete idea not previously raised. Using *Nvivo 7.0*, codes and their associated text passages are linked, amassing a set of codes and their frequency of use across the data set. When coding of the qualitative data is completed, codes similar in nature are grouped together to define themes. These clustered frequencies, represented as grouped themes, or "parent" categories, describe the content, range and relative weighting of issues in participants' collective report. The qualitative findings thus provide detailed and grounded evidence for evaluating the efficacy of the initiative. Evaluation and research findings from these qualitative data are strong because of near-complete participation by all Alliance members.

Qualitative Findings

The qualitative analysis revealed a total of 27 "parent" or thematic categories; there were 15 major categories, capturing 75% of all participants' comments and comprised of 67% of all developed codes (see Figure 1 and Table 1). The 15 major categories reflect participant responses relevant to answering questions central to the evaluation. The remaining 25% of participants' comments (33% of developed codes) sorted across 12 minor categories, capturing a broad range of responses which were not specifically informative to the evaluation. In the following discussion, quotations are provided to illustrate the qualitative findings. Care has been taken in the selection of quotations and no attribution is given to protect anonymity.

Figure 1. Summary of Content Analysis		
<i>27</i>	<i>parent categories;</i>	<i>847</i> comments; <i>354</i> codes
15	"major" parent categories;	639 comments; 236 codes
12	"minor" parent categories;	208 comments; 118 codes

Table 1. Summary of Content Analysis by Major Parent Categories

Major "Parent" Category	N of Comments	% of All Comments
Motivation to participate in Horizontal Mentoring Alliance	23	3%
Career satisfaction	23	3%
Mentoring	43	5%
Liberal arts colleges vs. large research universities	36	4%
Institutional context: Generally; representation of senior women administrators	33	4%
Comments on departmental context	34	4%
Comments on gender issues	26	3%
Comments on Horizontal Mentoring Alliance meetings	53	6%
Comments on positive gains	229	27%
Comments on gains not made	5	1%
Comments on "mixed" gains	7	1%
Comments on difficulties of participating in the Alliance: Group members, oneself, generally; geography; other	67	8%
Alliance members' unmet needs and wants	18	2%
Comments on whom the Horizontal Mentoring Alliance best serves	29	3%
Comments on replicability and sustainability	13	2%
<i>Subtotal</i>	<i>639</i>	<i>75%</i>
Miscellaneous comments comprising 12 small categories averaging 14 comments each (department history, spouse/family, sabbatical, background, etc.)	208	25%
TOTAL	847	100%

Comments on Motivations to participate in the Horizontal Mentoring Alliance

Eight of the 11 Horizontal Mentoring Alliance members (73%) cited the opportunity to get advice from other senior women science faculty as their motivation for participating in the initiative; four cited additional reasons for participating (see Table 2). Some described the Principle Investigators' invitation to participate as an "incredible opportunity" which they couldn't turn down. A few said they were glad to be able to continue a professional association which had developed through their work together on a previous grant. Members also mentioned

that they were motivated to participate as a means to: mentor women in science, expand their professional circle and socialize with other women, or alleviate isolation, among other reasons.

Table 2. Comments on Motivations to participate in Horizontal Mentoring Alliance	N of Participants	N of Comments
In order to get advice from other senior women science faculty	8	9
Sees participation as an "incredible opportunity"	3	3
Liked the women who were participating in Alliance: has known these women for a long time	3	3
Felt obligation/desire to mentor women in science	2	3
To alleviate feeling of isolation	2	2
Opportunity for professional socialization with other women science faculty: expand circle	2	2
Wanted support/good mentoring for new leadership position: feels has lots to learn from other women science faculty	1	1
TOTAL		23

A lot of it just came out of just wanting to have a network of people that were also chemists. ... I wanted a group of individuals to sort of bounce ideas off of. I also wanted people, not necessarily that were doing the same science I was doing, but at least could understand my science or could understand. ... It was very hard to go to somebody who was more advanced than me and say, "Help me." I'm a full professor. I'm supposed to know what I'm doing. But it's okay to go ask somebody who's at your own career stage, "How have you made this work?" There's something more comfortable and more familiar about your asking a friend or colleague, not a superior, "How do I do this?" It's not a helpless-female, "Help me out," but just, "Oh, what's your set of tricks?" kind of thing. I think that's a big part of it.

(I was invited to participate.) I instantly thought it was an excellent idea. I had been so isolated in my department and had been so overwhelmed by the amount of committee work I was doing that I had no clue about how to get my career back on a balanced path. I admit I was a bit hesitant to go to the first meeting. Even though I knew it was something I needed to do. I had so many other obligations at (my institution) that the idea of taking time to add yet another activity seemed foolhardy. But, inside I knew that something in my career needed to change—even if the change was just an understanding of why I was doing what I was doing. I had certainly lost track of the big picture.

I miss the company of other women that like science. It's nice to be able to just have casual conversations about some of the day-to-day challenges that you're up against, that may not be earth-shattering, but just to be able to share those experiences and hear different ways to go at it; to meet and get to know people from other institutions, to hear other ways of doing it, because we don't have frequent sabbaticals, and we don't get a lot

of new blood in through the department and so it's a way to get alternate perspectives and things like that. I think women in liberal arts institutions can be extremely isolated because we're in two- to four-member departments generally out in the middle of nowhere with very few other white-collar professionals in the community and you can just really get so pigeon-holed in your own little job and keeping up with what you're doing, that you step on a university campus and like, "Wow, there's all these people who like science."

Mostly I liked the people who were in the first Alliance. I like (Alliance member) a ton. I've known (another Alliance member) for a long time, and I've known (another Alliance member) for a long time, so these are people I've been involved with in council integration research, so when they asked me to be a part of it, I was very pleased.

I am interested in promoting the careers of more women in science education and at the time I was invited to join the Alliance all of the administrators at my institution were male so it seemed institutional barriers were well entrenched in terms of opportunities for women at my institution.

Comments on Career Satisfaction

Nine Alliance participants were happy with their institutional context; two were not and were actively looking for and scouting out opportunities to “jump ship” (see Table 3). The majority was happy with the liberal arts college context, generally, and liked the balance between research and teaching and the opportunity to work one-on-one with students that liberal arts colleges afforded them. One participant, while offering a positive comment about her job satisfaction, also noted that she “felt beaten down” by the male-dominated department.

Table 3. Comments on Career Satisfaction	N of Participants	N of Comments
Happy with institution, career, context generally	5	6
Very happy with job: a perfect match	4	5
Institution is a good match: a good balance between teaching and research	4	4
Looking to move to another institution: present institution is too conservative; Conflict of values	2	4
Loves working with the students one-on-one	2	2
Some regrets didn't follow an interdisciplinary career path; incorporate other interests with science discipline	1	1
<i>Mixed view:</i> Fairly happy at institution, but does feel beaten down by male-dominated department	1	1
TOTAL		23

(My institution has) a beautiful campus. We have really wonderful students. It's highly selective. Chemistry facilities are not great, kind of in line for renovation some day, but

adequate. I've always been comfortable there. I enjoy teaching there and I don't think I'd want to move and start over learning somewhere else.

I just love the intellectual life of a liberal arts college. I just like the intellectual part of it, the fact that there are humanities and the social sciences and science. I have real broad academic interests, so it's a good setting for me in that regard. The other thing is that I really like 18- and 19-year-olds a lot. Even 20 years into the job, watching these kids come in at 17 and 18 and what happens in four years is amazing. It's just amazing. And it's a lot of fun, because you play a role in that. The students are pretty articulate about sort of saying, "Wow, I hadn't thought about this before until you mentioned it!" or, "Your encouragement here really made a difference." You don't get a huge amount of feedback, but once in a while you get a little nudge that says, "Yeah, you made a difference.

It's a perfect match for me in terms of the balance of teaching and research.

It's been a very supportive environment. My colleagues and I really are extremely complementary to one another in terms of being able to balance each other's strengths and weaknesses very efficiently. We've got a great department.

Most rewarding? Working with the students one-on-one. This is what attracted me to this setting and this is what I still enjoy the most.

There is a part of me that wishes I could pick the college up and drop it in a different geographic location. It's broader than, "I'm a long way from family," or anything like that. It's the values...(that) don't match my values. ...Things that just hit you in the face sort of everyday.... So it's sort of an overall culture that's particularly problematic and it's magnified by being in a small town and not having a lot of those resources. So interestingly, my biggest drive for leaving and trying to figure out to leave is personal and my challenge right now is, "What else am I willing to do?" because I'm not willing to start over at the bottom, apply as a faculty member and go through tenure again; not on your life.... But the question is, I don't know, "Would I be willing to be a Dean?" I'd really like to use the Alliance to figure that out and I guess one of my goals is sort of figuring out, "What next?" It's hard, because I really don't want to give up the classroom, but on the other hand, if I don't ever grade another lab report, it would be too soon.

(I have) mixed feelings on this. I enjoy working with the students. I enjoy teaching chemistry. I enjoy a lot of the committee work I have had the opportunity to do. But, I have struggled being the only woman in my department for years and years. The men haven't even realized how much they have beaten me down—and worse yet I hadn't realized it either until I began talking with other women who had begun careers in liberal arts colleges at about the same time. My departmental colleagues had sucked the joy right out of me. I am definitely not the same easy-going person I was when I accepted the job.

Comments on Mentoring

Nearly three-quarters of participants noted that no formal mentoring program existed when they were hired by their institution (see Table 4). Just over half said that a mentoring program had been established at their institutions in the past five or six years. A couple Alliance members commented on a cultural injunction against mentoring at their institution, which considered it a form of “interfering in others’ independence to do things as they saw fit.” Several individuals had experienced mentoring informally with varied degrees of success. Despite heavily male-dominated institutions, several also recalled, and were grateful for, colleagues who made a concerted effort to help them early on in their academic careers (both within and outside their departments).

Table 4. Comments on Mentoring	N of Participants	N of Comments
There was no mentoring at all when she started	8	8
Department mentoring program was instituted 5 or 6 years ago: faculty members matched with mentor OUTSIDE department	6	6
Effective mentoring empowers a person to have confidence to try things and succeed at them	3	3
Institution is very conservative: no mentoring, no advice, "considered interference"	2	4
Informal mentoring from others at institution: hit or miss, gaps	2	2
Informal mentoring available from senior women faculty outside the sciences	2	2
Went to previous chair for advice, mentoring	2	2
Does not feel she has mentors at own institution; has peers, but not mentors	2	2
Does have a good mentor (department chair)	1	2
Department mentoring: MIXED effectiveness of matching faculty members with mentors OUTSIDE department	1	1
Mentoring helps you avoid common pitfalls: can warn you before it's too late	1	1
Senior faculty in department and his wife "watched out" for her regarding teaching of general chemistry, but no broader mentoring	1	1
Very fortunate to have strong male and female mentors OUTSIDE institute for support	1	1
Department has a peer mentoring group for junior faculty members (read drafts of papers, review proposals, etc.)	1	1
Department mentoring for junior faculty members was attempted and failed: everyone was too busy	1	1
Formal mentoring program at institution is NOT department based: totally ineffective	1	1
Alliance member does get informal mentoring: almost always from an individual OUTSIDE her department	1	1

Alliance member does get Informal mentoring both in and outside department	1	1
Dept still does not have formal mentoring program for faculty	1	1
As a department chair, she is active in mentoring junior faculty	1	1
Peer at another liberal arts college has served as only mentor	1	1
TOTAL		43

When you were first hired, did the department provide good help in getting you started?
No.

Did you have any mentors who helped you? *No.*

Was it offered? Did it exist? *No.*

The culture of the institution that I'm at is one where it's sort of very old-fashioned...and so mentoring is not an acceptable thing culturally. It's viewed as interfering. At my school, anything that smacks of telling somebody what to do, even if it's not telling somebody what to do, is strictly forbidden. And so when we talk about mentoring in the department, faculty would say, "Well, I'm not going to tell anybody what to do." And I sort of thought, "Wow! We have a long way to go." They had absolutely no clue what mentoring meant as a concept.

There was no, "Here's your mentor. Here's your department chair." Maybe a little bit of, "Watch out for this." It was more, "You make mistakes, you try something. If you get smacked down then you just get back up and do something different next time."

There was a lot of informal mentoring. Most of the senior women faculty have taken somebody under their wing. The staff have recently developed a formal mentoring arrangement. There was a very short-lived attempt at formalized mentoring arrangement for junior faculty. It pretty much disappeared because everyone was too busy, at both the upper-level and the lower-level. Everybody was just too caught up in what they were doing to really think anything much of it. But I would say most of us have somebody who's a few years older up the pipe that we hang out with and get a lot of informal mentoring that is non-structured.

Informally, I could ask certain folks in the department for guidance on teaching strategies, which conferences would be the best for me to attend, and how to handle difficult student issues.... I learned most of what I needed by listening carefully around the department—of course an awful lot of decisions were actually made in the men's locker room or out while they were running. ...I have realized that it is always necessary to have someone you can use as a sounding board. The exact person or people that have filled this role have changed over time, but almost always they were outside my department.

There is now formal faculty mentoring. I also participate in a college-supported mentor network for women faculty at my own institution. Mentoring of younger departmental

colleagues is essential as a department chair or supervisor of courses involving younger faculty.

There was a senior faculty person who I taught with my first few years and he was tremendous teaching mentor. So the first time I taught gen chem., he taught at 8am, I taught at 9am. I sat in on his class every day. He gave me his notes, 9 o'clock every night—he'd come by at 9 or 10 o'clock at night because we worked at nights—and so about 9 o'clock at night, he'd poke his head in my office, "Do you want to practice the demo?" So at 9 o'clock at night we were in there trying it out because we did demos everyday in class. And he set it up and he did all that work. He'd set it up and he'd practice it and then I'd go to his class at 8am and watch and there was so much stuff in that class. There was content in that class I'd never really done before, so I would sit and listen to him and figure it out, take some notes so I could teach it in the next hour. His wife was at the institution, as well as an adjunct faculty. So the two of them watched out for me, which was really nice. But it was really with respect to teaching gen chem., not with respect to research or life in general. So I was really happy to have them for that, but there just weren't any other women around. There weren't really a lot of sympathetic men. Everybody kind of just did their own thing and figured everybody else would do their own thing.

Comments on Working at a Liberal Arts College vs. a Large Research University

Participants spontaneously mentioned differences between working at a liberal arts college versus a large research university. A majority (6 participants) pointed out that, at a liberal arts college, there were much higher expectations to do more things in more and unrelated areas (see Table 5). One participant described it as “having to wear a lot of different hats.” A number of Alliance members also noted that liberal arts colleges tended toward isolation in multiple ways: they were located in rural and remote locations; women were a definite minority; and representation of socioeconomic status was narrow. Three individuals were frustrated that it was difficult to advance professionally at liberal arts colleges: there simply weren't that many positions that came open, and most administrative positions were generally viewed as conferring negative status on women: no one wanted these jobs.

Table 5. Comments on Working at a Liberal Arts Colleges vs. a Large Research University	N of Participants	N of Comments
At a liberal arts college you have to do everything and you have to do it well, no insulation/hiding behind grants and publications: "We have to wear lots of different hats"; Much broader range of issues to deal with	6	7
Liberal arts colleges are more isolated in multiple ways: by gender, discipline, socioeconomic status	4	5
Advancement at a liberal arts college is difficult because there are so FEW positions AND they are NOT considered prestigious, only a LOT of work; Always competing against the same person	3	4

At R1s there is more freedom because there is less emphasis on students and teaching and more on research	3	3
Liberal arts colleges have varied cultures and are diff from R1s: HIGHLY LOCAL CULTURES	2	2
R1s and liberal arts colleges have different political issues: At R1s, issues of power and who decides (i.e. space wars); Not as important at liberal arts colleges	2	2
R1s' emphasis on research naturally means reaching out to others, professional collaborations, communicating results, travel to conferences, etc.; All more rare, difficulty for liberal arts faculty	2	2
R1s have larger departments, liberal arts colleges have smaller departments	1	2
At R1 mentoring imp in own dept and disc At liberal arts college mentoring can occur across disc issues broader more common re liberal arts college context	1	2
At an R1 institution, faculty members ae NOT as tied to the department	1	1
At R1s there are more women in own department and at the institution	1	1
R1 faculty focus on their department; liberal arts college faculty focus on the college as a whole	1	1
Liberal arts college faculty members are possessive of their classes and their time in the classroom	1	1
At R1s there are women in administrative positions, but very rarely so at liberal arts colleges	1	1
Rules are clearly stated at R1s: seem unclear at liberal arts colleges	1	1
Liberal arts college faculty are expected to do everything: Can't hand off anything (i.e., grading exams, lab reports are commonly handed off to TAs at R1s, not so at a liberal arts college; faculty at liberal arts colleges are EXPECTED to attend graduations, not necessarily so at R1s)	1	1
TOTAL		36

At a liberal arts college, you have to do everything and you have to do it all well. We always joke in our department somebody doesn't have to be a great teacher and a great researcher—and it's like, Yes, you do! Don't lie! So I think only folks at other liberal arts colleges, especially these very research-active places, are the only ones that kind of get the fact that you're writing your grants, you're doing your research, you're publishing your papers, you're being an exceptional teacher, you're running the sexual harassment program at work, and you're department chair, and that's your life. And it's a lot! Folks at R1 institutions also do a lot, they work 24/7. But it's not trying to do everything, so I'm not saying we work harder by any stretch. Everybody's working too

hard, that's the bottom line. But it's more of this variety of the tasks, the fact that you're expected to be good at all of them.

In an RI, you might have a department of 20 or 50 people and if there are 12 people you don't get along with. That still leaves a lot of choices. Whereas most of the liberal arts college, if you have a dozen faculty in chemistry, it's huge, and for most of us it's two to five. And if you don't get along with two, now that's a big deal. You don't have the professional isolation on top of the gender isolation on top of the socioeconomic and academic isolation that you do when you're a little college in a little town in the middle of nowhere and there are three other chemists within a 50 mile radius. It's a whole different scale. ...There are very different kinds of needs in terms of what you're trying to manage professionally and I don't think that the mentoring that's needed in the liberal arts or the small liberal arts college is mentoring about your primary job function. I don't think that I need or the other women in my Alliance need mentoring on how to be good teachers. I think we get that from all across campus, but we need the nurturing as scientists, we need the mentoring for balancing all the other things that are lopped on top of our primary professional responsibility, which is to be teachers, and I think at an RI your primary professional responsibility is to be a researcher and I think there's a need for mentoring about research and not writing grants and about choosing projects and handling grad students, about your primary job function. Whereas, I think the mentoring that I feel the need for is mentoring for everything but for my primary job function and making the rest of my life work around my job.

I think when women in RI institutions network, it may be for more research-focused reasons, like trying to find research collaborators or maybe to find new positions, something like that. They might have a specific question or need in mind, and I think naturally they have opportunities to travel more, because of their research. They aren't as tied to their campus and so they probably get to know more women at other institutions who maybe don't have the need for one of these kinds of Alliances to be set up. For those at liberal arts colleges, we tend to put the institution and the students first, instead of ourselves. So when it comes to, for example, travel during the semester, as we've said, you tend to think you can't do that, you can't leave your students. And so you don't take opportunities to get out and meet the women who might not be on your own campus.

I do feel like we are more isolated. Well, it may be true that there are few women at some of the RI institutions. I think most of them are in much larger cities and have more natural opportunities to interact with other women. The other thing that's different, RI faculty—this might speak to why they might need this kind of approach—they tend to focus solely on their department as opposed to liberal arts colleges where all your committees are across the campus. You certainly have many more opportunities to get to know the people in all the other fields and sometimes an institution, because there are no other women in your department, you have to go outside your department.

One of my frustrations at our institution, because it's so small, there aren't too many opportunities for leadership.

You can be chair of certain committees and that's a leadership position. But very few of those are extremely prestigious. They're all tremendous amounts of work. So there's only a couple little things you can do on campus that are extremely well-respected and thought of as prestigious positions. They're positions people want to avoid because there's so much work.

Comments on Institutional Context

About half of participants commented that their institutions were “a cultural backwater” and that this was true of liberal arts colleges, generally (see Table 6). While male faculty members were credited with being supportive, such support was more or less mediocre: it did no harm, but it didn't help a lot either. Overall, male faculty members were characterized as fairly oblivious to any of the issues that women faced as the usually lone female in their departments. Alliance members noticed that department decisions were apt to be made “on the basketball court,” “in the gym” or “in the smoky faculty lounge over donuts and coffee”—without their input—and you were “out if you don't have kids.” Working at heavily male-dominated institutions, it is not surprising that only a couple Alliance participants claimed that women served in senior administrative positions at their institutions.

Table 6. Comments on Institutional Context	N of Participants	N of Comments
<i>Comments on Institutional Context in General</i>		
Very rural; Institution is in a cultural backwater (true of liberal arts colleges generally)	5	9
Department decisions are made "in the gym", running/playing basketball: male bonding activities determine decisions important to the department; or in the smoky faculty lounge over donuts and coffee	3	3
Very conservative; Conflicts with own values	2	4
Male faculty very supportive as a person; However, no awareness of her position as only woman; NO RECOGNITION FOR CONTRIBUTIONS	2	2
Department is geared towards faculty with families, especially with small children; Faculty in department bond around children. "You're out if you don't have kids"	2	2
At an all women's college	1	1
Only woman faculty in discipline	1	1
Male faculty members are very supportive of women students	1	1
Institution is very elitist: "We're the best" attitude, "no need for professional collaboration"	1	1
Alliance member says she has a protective Dean who appreciates education research as a scholarly endeavor	1	1
Dept is fairly apolitical: helpful, supportive, friendly	1	1
Describes very traditional male workplace: Monastic life devoted to work; No outside/other interests allowed if you are a “scientist”	1	1

<i>Subtotal</i>		27
<i>Comments on Women in Senior Administrative Positions at their Institution</i>		
Half of chairs are women, but no upper-administrative positions are held by women; Some assistant deans are women	2	2
There have been a variety of women in senior administrative positions over time, including a president	2	2
There were women in senior leadership positions when she was hired	1	1
There are other women department chairs; They are NOT good sources of advice: SOURED by their experience	1	1
<i>Subtotal</i>		6
TOTAL		33

You still feel pretty isolated working at (my institution), because you're only one of three, you're the only biochemist, you're the only whatever. (My institution) is very rural and you don't have a lot professional contacts.

Not only are we isolated geographically and as first woman, but also the culture of the academy—all the autonomy that you have, which is something very appealing about the job—the downside of that is that autonomy can really lead to incredible isolation.

It's fairly friendly, but it's much more geared to faculty with small children; certainly more geared to the male faculty because there are very few things we do as a department except those that center around sports. In fact, the kinds of casual things that the faculty do together are play basketball, and there are a couple male faculty that are not as tall as several of the others so they're even excluded; so it's very interesting. So really tall males bonding around basketball....

Much of the social structure that many of the faculty have center around their kids. There's one high school in town; so if your kids are in high school, you all see each other. You know, if you support your kids at the soccer game, you see your colleagues at the soccer game, or whatever, and I'm just not in that loop because I don't have kids. I'm not so enamored with high school basketball to go for the sake of going.

I basically had to pretend I was male for most of my professional career. I dated in secret and didn't feel I could let folks know I was engaged until after the tenure decision was final. I was given the impression that work in my department was expected to be what I spent every waking hour on. I could either be a woman with a normal balanced life or I could be a chemist who had no other interests. When I naively mentioned once that I had always wanted to be a girl scout leader since scouting had given me such wonderful opportunities to develop leadership roles I was told in no uncertain terms that if I wanted to be successful in the chemistry department I better not waste my time on that. This came straight from my chairman. This same individual also told me that even though four female students wanted to work with me one summer that would not be a

good idea and that he couldn't allow that. After all, "Who would change the pump oil for us?" I could continue but it is water under the bridge.

I attribute the attraction of the women to the chemistry department not just because chemistry lead and had women faculty from an early stage; really the male faculty are very supportive of the female students. One woman or two women in the department can't do it alone, so I'm very grateful for that, they're very supportive of the students. I feel support as a person, but not as a female. I don't think there's recognition of what it's like to be a lone senior woman, basically, at the college.

A lot of the women who were in department chair positions had kind of soured on being department chair in their particular circumstances, so they were not in a good place professionally to provide leadership for younger women faculty who might be in that boat and so it was like, "Oh gosh, what have I gotten myself into?"

There's certainly a lot more woman faculty now, the way governance operates. It's still pretty much male-dominated, but there is a woman who's the head financial officer of the college. On graduation day there is at least one woman on the stage. It's gendered when you're the only one. You just have to not notice that kind of stuff. You have to not let it bother you. I'm not saying you have to be one of the guys, but you just have to be one of the chemists.

Comments on Departmental Context

A majority of participants (7) said that their departments were aware of their participation in the Horizontal Mentoring Alliance (see Table 7). However, four were keeping their involvement "low profile." While three mentioned that their Chairs or other colleagues and administrators were curious about their work and asked questions, more commonly, their male peers showed little or no interest about the Alliance, or, indeed, about any aspect of their professional work.

Table 7. Comments on Departmental Context	N of Participants	N of Comments
Department DOES know about Horizontal Mentoring Alliance participation, but she is not emphasizing it much: low profile so doesn't have to explain time away from campus	4	4
Dept DOES know about participant's involvement in the Horizontal Mentoring Alliance: Very interested or some support	3	3
Department provided good start-up support	3	3
When she started department Chair and Dean hostile: Not many resources for mentoring	2	3
Little, no interest/recognition from department regarding professional accomplishments; does know of Horizontal Mentoring Alliance, but no one has asked about it; haven't asked about other work either	2	3

Department is "Midwestern friendly": very helpful, but shallow not deep: Received what was needed, but not much overt support; No meaningful collegial feedback re. papers, proposals, etc.	2	2
Department does NOT know she is in Horizontal Mentoring Alliance/NSF sponsored mentoring initiative	1	1
Thinks another woman in her department does NOT feel valued, listened to	1	1
Department provides good career counseling/advice for STUDENTS: Lots of career direction with an emphasis on interdisciplinary studies	1	1
Travel: Time away from classes has NOT been an issue for Department	1	1
Departments are political by definition	1	1
Workshop for new faculty is/was helpful; Offered every year; "Peer group mentoring" model	1	1
Institution is uneven in terms of salary equity: "Just stupid"	1	1
Department pays travel to one conference per year	1	1
Department chair blatantly made sexist jokes when in front of/to colleagues when she was hired	1	1
Very unhelpful male faculty; NO help in preparing courses outside her field	1	1
Very political department: Committees/decision-making such that seniority carries most weight, "no arguing"	1	1
Participant says/feels that there is "no safe place in department"	1	1
Women in department are very different: good for students, lots of role models	1	1
Other, newer women in department are NOT as conscious of gender issues; are not proactive regarding promotion of women in science/mentoring (particularly of students)	1	1
Department socializing is always awkward	1	1
Department did not provided start-up funds when she started; bought own microscope	1	1
TOTAL		34

When I began working with the Mellon group I passed along a copy of the Mellon proposal to my department chair. I think it opened his eyes to the fact that perhaps the woman in his department needed more support and attention. He has treated me differently—in a good way—ever since reading the initial Mellon proposal. When the NSF grant came through he was stunned that we got the funding and realized that this was an even bigger issue than he had thought. The other men in the department have been a bit more aloof. I heard one of them telling students that it was nice that I got a grant but that it didn't do anything to help the department. The Dean and the Provost have both been very interested in the project and are eager to hear more as we learn more about Horizontal Mentoring Alliances.

I haven't received too much attention to this, to my chagrin, since there are a lot of "words" about supporting women in science.

Do others (especially other senior or ranking members) at your institution know that you are participating in this Alliance? *Yes.*

Have they commented about it? Positively? Negatively? *No.*

They know of the (grant) award, but no one has asked me about it... I have one really good friend in the department who I share a lot of this with, but no one else has asked me, "What's going on with your award?" ... Nobody's asked me what I've been doing. ...I'm really amazed how few people, not even the Dean of Faculty, cares to know what I'm doing.

Comments on Gender Issues

Despite the fact that the very large majority of Alliance participants were the first woman to be hired in their department, there was not an overwhelming number of issues specifically related to gender that they found troubling, though, by definition, gender issues quite clearly existed for them (26 comments total) (see Table 8). Three women specifically commented that women tend to be less confident than their male colleagues. Three felt the burden of being the only role model for women students. One member felt that she was the "token mom trotted out at events." One participant, however, did not feel that she was singled out to be a role model for women students in science. A couple participants noted ways in which women tended to cope with being the lone woman in science, or to cope, generally: working harder and being more considerate and conciliatory towards their colleagues.

Table 8. Comments on Gender Issues	N of Participants	N of Comments
Women tend to be less confident: Suffer from imposter syndrome	3	3
Does feel that women students look to her as role model of the working mom	2	3
Institution does NOT have mission statement regarding increasing the representation of women faculty	2	2
Critical Mass: If other women can do this (with kids, et al.) than so can I!	1	1
Has experienced instances of being invisible, talked over by men	1	1
Women tend to consider other people's feelings more than men and how things will impact others	1	1
Gender is NOT particularly a problem	1	1
Felt like she was the token working mom trotted out at events, once was only mom in the sciences	1	1
Did NOT feel like a token female when hired, only later felt burden of being a woman role model	1	1
Women naively expect that hard work will be rewarded; No so, connections, luck and timing matter more	1	1

Tells of being confused with only other woman in the sciences; Feels she knows "What it's like to be Black and have people think they all look the same"	1	1
Tells of colleague at another institution that is heavily gendered and negative towards women	1	1
"Command and control" is an effective strategy for dealing with ornery men	1	1
Female students have limited view of careers and what's possible with a family	1	1
Participant faced a two-body problem regarding sabbatical	1	1
No one has a stay at home wife anymore to manage kids, etc.	1	1
Female PhDs scare the hell out of men; Hard to find a date, especially in rural liberal arts college environments	1	1
Felt like token woman hired to be role model to women and WAS	1	1
Did NOT feel it an issue to be a woman in chemistry UNTIL she was hired by a liberal arts college	1	1
Imposter syndrome: Knowing when enough hard work is enough	1	1
Waited until after tenure to tell dept she was engaged	1	1
TOTAL		26

My sense is that women tend to be less confident in their abilities. So what I think mentoring does is to provide a support system for you, so that you either feel comfortable going out and doing the sorts of things that are necessary to be professionally successful or you are forced, as I was, to apply for grants and all that sort of stuff. This is the sort of thing you want for your children, too. You want them to have experiences or to be forced into experiences where they overcome obstacles and then they know they can, because the more times you do that, the more you're willing to do that in the future. So I think that that's the thing that mentoring does. Mentoring is also important in that it helps you avoid the pitfalls that you might stumble into through ignorance. Instead of feeling like you have to discover everything yourself, there's someone to help and guide you, so you feel you're not alone in this. I know for me, it's a question of confidence.

I've been there 13 years and two years ago was the first time they hired another woman— they hired a biologist—and just this year they're hiring a new one for next year, so it's booming! It would be nice to not be the only role model for all of our female students, because we have a lot of female undergraduate in the sciences. We're actually very estrogen-dominated. We have close to 75% of the science students are female. So it felt kind of burdensome for a while there for them to see me as the only possible example. It kind of was odd.

I would say in terms of feeling isolated, etc., I went through a phase where I felt like I was the token working mom. Like someone had decided that our students need a role model of a working mom, so we'll find one. And I was hired. And then I became the poster child of working moms and I was trotted out at all these events as the working

mom, and sitting on panels and discussions and committees. That was real tiresome for me.

I'm wondering if some women, not all women, if women tend to second-guess what they're doing or else tend to consider not only would an action benefit them, but is an action appropriate, does it benefit a larger group of people. I think sometimes it seems like women tend to consider more of those issues than men do.

Comments on Horizontal Mentoring Alliance Meetings

Alliance participants said that they were in fairly regular communication with other members. Nearly 65% of Alliance participants discussed periodic phone communication with other members, particularly those who were able to establish professional collaborations (see Table 9). Almost half said that they emailed on a regular basis. In response to specific questions, participants related the substance of their first meetings in which they “talking non-stop all weekend”: they reviewed CVs, established short- and long-term professional goals, and discussed teaching load and equity. A few pointed out that they set agendas and made sure that “business got done.”

Table 9. Comments on Horizontal Mentoring Alliance Meetings	N of Participants	N of Comments
Alliance members have periodic phone conversations, especially with those involved in professional collaborations	7	9
Alliance members email periodically	5	5
Main topic of 1st meeting: how to deal with difficult people	4	4
Alliance has only met once	4	4
1st meeting: Spent entire weekend talking	3	4
Email or phone calls for issues needing quick response; Talking about longer-view, larger career issues are best addressed in face-to face conversations	3	4
Alliance originally started under Mellon grant: Alliance members had met three times previously to the Horizontal Mentoring Alliance	3	3
Alliance meetings are very organized: agenda, assigned tasks: "business gets done"	3	3
Alliance members have phone conversations regularly: about every 2 weeks (video conferencing included)	2	3
Alliance has met 3 times	2	2
Main topic of 1st meeting: discussed teaching load, equity	2	2
Sakai site is used to post resources	2	2
Alliance members have met three times	2	2
Main topic of 1st meeting: review CVs	1	1
Main topic of 2nd meeting: how to present ourselves	1	1
Alliance has met twice	1	1

None of the Alliance members has hit a crisis needing immediate communication; critical and important issues are saved for face-to-face meetings	1	1
Main topic of 1st meeting: discussing and establishing short- and long-term goals	1	1
There is more communication with Alliance members in own discipline	1	1
TOTAL		53

There are some specific day-to-day challenges that arise that need quick response—these are handled well electronically—although a phone call in addition is always appreciated if someone has the time or opportunity. For long-range career planning, sitting together in-person is great. When there isn't a specific time constraint, it is easier to relax and blue sky about opportunities and how to take advantage of them.

Every once in a while one of us will “need a mentor today” and we send out an emergency request for rapid response on a particular issue. Every time this has happened we have all jumped in to provide ideas and feedback. It is great to have a group to serve this function.

How have you communicated? Email? Phone? Use of webcam, whiteboard, Skype? SAKAI? *All of the above.*

The first time we met, I think the topic was, “What are the issues?” So we just talked a lot. I wear pedometers to see how many steps I make and I normally make between 5000 and 10,000 steps in a day and that weekend I think I had less than 1000 steps for the whole weekend, because we literally sat and talked the whole weekend. One night, I finally said, “I need to walk,” so we walked around the campus and came back, but even then it was a pitiful 1000 steps. We just sat and talked and talked, talked about everything, from A to B. Teaching load became a real issue, equity in teaching load, How can you feel good about your teaching load when it's really high, and when your teaching load is really low? How you can feel you're contributing? and What are your other responsibilities? and how to balance on that. We had no trouble coming up with things to talk about. Difficult people. We talked a lot about how to handle difficult people.

We have some very specific times that we set on our calendars for conference calls. We usually have an agenda but each call begins with casual updates on recent events in our lives. Some of the updates are professional while others are just wonderful life experiences. We then get down to business.

Comments on Positive Gains, Gains Not Made and “Mixed” Gains

Participants were very positive about their involvement in the Horizontal Mentoring Alliance, offering 229 comments about gains from participating (26% of all comments), and by far the largest number of observations offered on any topic discussed. In sharp contrast, they offered

only 4 comments indicating a particular gain had not been made, and just 8 comments noting a “mixed,” or qualified, gain (see Tables 10, 11, and 12).

Positive Gains

Of 40 different types of positive observations, the five most common were mentioned by nearly three-quarters to 100% of all participants (see Table 10).

Table 10. Comments on Positive Gains	N of Participants	N of Comments
Feels like she is among equal peers: share advice, ideas: Interaction of women at similar levels highly valuable (horizontal mentoring); Genuine support from professional to personal	11	34
Different perspective; Outside viewpoint	11	22
Increased confidence: learning to speak up for herself, ask for what she wants from her department, accept due recognition for professional work and contributions; permission to focus on professional development	8	14
Horizontal Mentoring Alliance participants have become genuine friends; Will likely continue beyond Alliance life; Organic life of its own; Trust takes time to gel	8	13
Socializing, talking with other women	8	12
Transfer of gains, lessons learned, to women at own institution	7	7
Horizontal and vertical mentoring: Experience matters; Can head off problems for women coming after	6	11
Anonymity to address institutional issues without fear of confidentiality being compromised	5	9
Advice given has worked in practice	5	7
New appreciation for importance of negotiating to get what one wants; Increased awareness	5	6
"A different kind of mentoring you don't get anywhere else"	5	6
Participant has established goals to achieve	5	5
Admires respects other Alliance members: "other members are very prestigious"	5	5
Permission to focus on longer-term goals, professional development	4	7
Getting advice on matters you didn't know you needed advice on	4	5
Transfer of gains, lessons learned, to deans, administrators at own institution	4	4
Seeing things she didn't see or sense before	3	5
Horizontal mentoring: Similar in positions/status; All first woman hired in their department; All making it up: "There is no one more senior"	3	5

Can now see where she stands relative to women faculty in other institutions, what others have/don't have and vice versa	3	5
Widens one's circle, especially coming from small departments	3	3
Security/comfort in knowing that there is nothing to be gained from others success or failure: neutrality	3	3
Opportunities for professional collaboration	2	5
Advice on time management efficiency has really been important and worked in practice	2	4
Transfer of benefit in effort made to support junior faculty on own campus	2	3
Relief of isolation	2	3
Benefit of sustained engagement vs. "one shot workshops"	2	3
Presentations to group very helpful (i.e. on "balance")	2	2
Holistic mentoring, "Whole life issues": From work to family; A flow between the personal and the professional, life is not compartmentalized	2	2
Each member has strengths she brings, shares with group	2	2
Read books on relevant issues; shared with the group	2	2
Benefit in knowing she is not alone in what she has to cope with at own institution: Others face the same situations	2	2
Opportunity to expand professional interests	1	2
Lack of department politics, struggles, jealousies	1	2
Benefit transfers to personal life	1	2
Focus on planning, determining long- and short-term goals	1	1
Important to set aside/designate time to deal with these issues, otherwise there is no time, get lost in the shuffle	1	1
More benefits than anticipated	1	1
Benefits: Advice that works but HIGHLY individualized; LOCALISM is addressed	1	1
Developed grid of dept benefits to compare relative positions	1	1
Transfer to own institution: stepping forward for more leadership opportunities	1	1
Greater recognition from Chair/own department regarding her talents and contributions	1	1
TOTAL		229

All participants said that they appreciated the genuine support of peers and mutual sharing of advice (11 participants; 34 comments) and that the Horizontal Mentoring Alliance was valuable in that it provided a different perspective from an outsider's point of view (11 participants; 22 comments).

I think people feel pretty much as though they are peers in this group and I think there is a pretty much even sharing of advice and ideas.

What I was struck by was how much we have in common. It was almost like after a ten-minute introduction I felt that I knew them really well. We have the same jobs. We teach the same classes. We have the same students. We have the same challenges. Even though we do different types of research—but with such similar contexts or backgrounds—it was really easy to get to know them very quickly. So we had a really nice weekend talking about different issues and ways to face things and getting different ideas for, “Oh, that’s how you do that!” and not feeling like you have to solve every problem for the first time yourself. It was also interesting to see people who are very much alike in so many ways but also are different in different ways. ...It surprised me the more I get to know (Alliance member). Here she is full professor at a very prestigious institution. She’s in a position to be envied in terms of being in a college with a lot of resources and a great reputation. She’s the chair, so, “Wow! That’s so cool!” But she’s so nervous and jittery and not very confident about things that go on in her department and second-guesses herself a lot. I was like, “Huh! I didn’t realize that was normal.” That was an option! I thought you have to be confident and know what you’re doing all the time! It does make me see things from a different perspective, where I thought somebody like that would be in control of everything.

I think one of the strongest benefits is we’ve gotten to know one another. We’ve touched on not just our professional lives, but our personal lives. So we have a really good understanding of each person. I think the two can’t be separated. Our personal lives affect the choices we make professionally. We, through time, have built an incredible amount of trust in one another. That’s made it easy to share issues or concerns with no fear of somebody telling someone on your campus what’s going on. Because of the frequency with which we talk, it’s really easy to pick up where we just left off and we follow up and say, “All right. How did x go the other day? We were talking about some meeting you were going to have to run...” or whatever the case might be. It’s not that we just focus on big issues, but we’re able to share minor issues and situations and achievements or whatever the case might be. So it’s really filled quite a few roles.

The dealing with difficult people thing, great topic. Well, I don’t have time to read every single book on dealing with difficult people, so we shared it around. That was just incredibly helpful. That’s an issue that’s really important to several of us now, so we’re able to strategize together. Everybody basically said here’s my difficult person and here’s the kind of stuff that they do. So we were able to come up with some ideas and strategies for each other. So that was really helpful. I had to teach with my difficult person this past year and I was really nervous about it, because he’s just horrible. So they gave me some advice on how to set up the ground rules ahead of time on how the class would work, so that’s what I did and things went really smoothly. So that was really good.

There’s this sense of having somebody who’s in the same boat you’re in to bounce things off of and that I think gives you a basis on which to really have a more friendly relationship and even also share how you managed to get the kids to the afterschool activities or what do you do with your spouse when you want to go to a meeting. It is

very personal, it's about trying to make your life function and we're all in a very similar kind of position.

Folks from other institutions have a different perspective, which is valuable.

We may be age peers, we may be professional rank peers, but yet there are some aspects of the job that she'll encounter before I do..... So there's an experience thing that means sometimes you're the one who knows more and sometimes you're not and that helps. And it goes across the whole spectrum, in terms of publications and grant rating and children, department chair-ship, difficult colleagues. If you have more than two people, there's always somebody in the group that's hit it before you did, so there's good advice to be had when you're ready for it.

Nearly 75% of participants agreed that being part of a Horizontal Mentoring Alliance had given them more confidence to “speak up for myself,” ask for what they wanted from their departments, accept due recognition for their professional work and contributions and permission to focus more time and attention on their professional goals (8 participants; 14 comments).

They (Alliance members) gave me the confidence to get out and renegotiate my job responsibilities. It never would have dawned on me to do that. But I can see within the group, we spend a long time wrangling with how to deal with difficult people, either as department chair or a fellow member of the department, and dealing with people who are intimidating or are uncooperative or whatever, and just being able to hear other solutions to the problem or that somebody else had dealt with the same challenges, really kind of gave me of gave me a little bit more backbone to go back again and handle it again and face it one more time. “No, you're not alone,” does a lot to make it easier to walk into a distasteful situation and just face it down. And it's a confidence thing. Just knowing that you're not the only person in the world that's dealing with it gives confidence as well. It's also very valuable to be able to go back to your department chair and say this group of people that's funded by the National Science Foundation, that are in institutions that are aspirant institutions, and to say that the way we are handling things is not the best way in the world gives me leverage like no tomorrow with my Dean, that I don't think anything would have changed if we as a department were complaining. It's an outside perspective with a stamp of authority.

I have regained some of my confidence. I now know that I have always been doing a great job here but that it just wasn't being recognized. I have learned how to “tell my story” a bit more effectively. I have learned that if I don't speak up about an interesting result in the lab no one will ever know that we have had an interesting result. More likely they probably will assume that nothing interesting is happening in my lab.

Just by talking to us about our teaching load, she came back from that weekend and went to go talk to her Dean and said, “All right. I just had an Alliance meeting and nobody's teaching anywhere near as much as we are. Everybody gets credit for teaching lab and class contact hours.” And she was able to negotiate not just for her, but for others, more credit for teaching labs.... It gave her the ammunition she needed

to go in and say, "I could be more effective, according to these people, if I had fewer courses and got credit for the labs. It's caused an institutional change.

I would say that it has probably helped me be more not myself in that I'm a Midwestern girl. I have acquired the Midwestern modesty. You don't go out and you don't praise yourself and all that sort of stuff. That has helped me recognize that sometimes if you don't, nobody will, and that goes against the grain for me, but I think it's a valuable thing to do. And I've also watched some of the women in my Alliance who are very forthright and say this is what I know what I need, this is what I do, and I'm going to go for it, and I looked at them, and said, "Huh, maybe I can do some of that stuff."

I think that if I didn't have this group, I would not think about my professional development to the extent that I do now. This has really encouraged me to constantly think about what it is I want to do, what should the next step be, what are some of my goals, what are some better ways to achieve that goal? I don't think I would have thought about that because, again, at my campus, there just aren't enough people interested in that as a topic.... And this Alliance has helped me focus on raising my own visibility. Not to the point where it's obnoxious. I always grew up thinking that I was always the kid rewarded for doing well and that doesn't come easy as an adult. A lot of successful people, unless you share with them what you're doing, they're not necessarily finding out. Since so much of what I'm involved in is off-campus, opportunities for people to know what I'm doing are limited. And I do think it has increased my confidence level. Sometimes when we're trying to help each other through a particular situation, I see some behavior or characteristic in someone else and it looks terrible and we want them to stop it, I say to myself well, I'm not going to do that either. So that's helped to see perhaps some kind of personal characteristic reflected in someone else and recognize how that looks to the outside and make some changes in my own behavior.

Three-quarters of participants also noted that, aside from strong professional support, they had developed friendships with other Alliance members that would last beyond the life of the grant (8 women; 13 comments) and that a benefit of participating was simply in talking and socializing with other women.

We've gotten to be such tremendous friends.... I like these women so much I'd be willing to spend my own money...to get together for a weekend somewhere.

I think, probably for me, when I started having kids, I sort of cut out contact with colleagues, including female colleagues. There was no time to do anything but to raise the kids and work on research. So, in some senses, my social skills have atrophied. So, it's been really nice to have a chance to talk with women. That's really been a good thing for me.

It's a really supportive group. This is something I don't get in my marriage and I don't get in my professional life and that is being with people who say, "Tell me more. Why do you think that?" That kind of stuff. I don't get it at work. I don't get it at home. So the only place I can get it is with these other women. So what a great gift to be able to be

with a group of people who say, “Well, tell me more about that. How does it make you feel?” ...All I know is that I don’t get enough of it, and I’ve learned that I have to seek it out, because I need it desperately. I think the general care, concern, friendship part of it is working great.

It takes time for an Alliance to gel. Trust doesn’t happen overnight and being able to open up about what is happening in your career happens at different rates for different people. I believe our initial Alliance had an immediate positive impact on me but it was as we got to know each other better that the value matured. I wish an opportunity like this had existed earlier for me, but now that I have my Alliance I am going to keep them!

One third to three-quarters of participants also noted a range of benefits that included the transfer of gains back to their own institutions in terms of a renewed effort to mentor women (7 participants; 7 comments) and to Deans and other institutional administrators who were actively interested in the Horizontal Mentoring Alliance initiative and seeking ways to support women science faculty (4 participants; 4 comments).

Whenever I do any Alliance thing, the first thing I do when I get back is that I get in touch with all the junior women faculty in science, which is only a couple people. Just kind of check in with them, somehow validate something that they’re doing, give them some kind of positive feedback, go out for coffee or whatever, and just really listen to them and check in with them and see how they’re doing. So that’s something that’s come back to my home institution.

I have made a much larger effort to act as a mentor to the junior women across campus. In addition, I have pushed very hard to get more women hired in my own department. We had three openings and a woman was offered each of those positions. ... Another aspect of my Alliance participation is that of outreach. At my own institution, there are only eight women in the mathematics and natural science departments in tenure-track or tenured positions. Each of us is quite isolated and as I have thought about it none of us have had much of a support network. I am setting up a series of informal meetings for us off-campus so we can speak more freely among ourselves about our concerns and needs. This won’t be a truly horizontal mentoring network because we have one assistant professor and two associate professors. Initially, I was just going to focus on the full professors, but omitting the other three seemed wrong—there are too few of us. So, we will have some horizontal mentoring and some vertical mentoring.

My own colleagues and my Dean is very interested in what’s going on. Like, “Well, I found out that at (this other institution) they....” ...Definitely, my Dean is the most interested in specifics. And one of my colleagues in biology, she’s very interested in how things are going. When they hear how things are done at other places similar to ours, it certainly seems to get them thinking.

Participants offered numerous observations on other specific ways in which the Horizontal Mentoring Alliance had provided important benefits: horizontal and vertical mentoring enabled participants to head off problems before they became difficulties; it provided the anonymity

necessary to address institutional issues without fear of confidentiality being compromised, as well as security in knowing that other Alliance members had nothing to gain from their “failures” and could be depended upon for their neutrality. Several noted that advice had proved effective in practice. Indeed, participants said that they had received valuable advice on matters they “didn’t know I needed advice on,” and that Alliance members’ perspectives had “helped me see things I didn’t see before.”

Horizontal mentoring has been great for me since it does provide me with sounding boards for ideas and issues that I encounter. The vertical structure is absolutely necessary for folks at the beginning of their careers as they are trying to find their own place in a department, division, and institution. There needs to be a friendly, helpful transfer of knowledge and best practices to those starting out—but not a rigid “do it this way or else” mentality. But, at later stages, having people who have been through the same situations or who have had experience with a related situation is absolutely great. The important thing about this horizontal mentoring is that we’re not all at the same institution, so if I say something about a colleague I’m mad at, it’s not going to get back to him. It’s not going to get to three or four other people in the institution that, “So-and-so made this person mad,” or, “So-and-so is mad at you.”

They don’t have anything to gain or lose from your success or failure. If I come up with a really cool idea for a new course or whatever, it’s not going to step on their toes, preventing them from offering something they want to offer. So I can bounce things off them— “Does this sound like a good idea?”—knowing that it’s not going to be filtered through a, “What’s that going to mean for me?” kind of thing.

Everybody has a certain strength that they bring to the group and that pops out pretty fast. We have one person in the group who is just ruthless about her time and she’s just really good about how to protect your time, how not to waste time, how to be efficient, how to focus on your family. I mean this person’s written a textbook. She does research. She’s chair. She just does all this stuff. So we just go to her and we’re like, “Here’s where I’m stuck.” And she’s like, “Why would you spend twelve hours grading lab reports?” “Well, that’s what we do.” “Well, stop it! There’s got to be another way.” She’s always got ideas about how to be able to find time to do the important things that you need to do. So everybody in the group has some sort of experience like that. That’s just incredibly beneficial, really helpful when you dump your problem out there in the middle of the table.

They have helped me think of other professional and personal options that I probably would not have thought about.

You get to a certain stage in your career and you’re still the only senior woman. There aren’t a lot of people who can commiserate with you about situations that you’ve been in, that can give you a reality check. Horizontal mentoring allows that, because the situations you encounter are different when you’re an assistant professor than when you’re a full professor. So I think horizontal mentoring is very important there. Again, I don’t know whether it was because I was oblivious during most of my career, but it seems

as though I now see more situations...where there appear to be gender differences that I didn't see before. I don't know why that is, but to have a horizontal mentoring situation is very useful for that. I think it definitely helped me spot that more.

Smaller numbers of Alliance participants also offered a lesser number of observations on a range of other benefits, including opportunities for professional collaboration, relief of isolation, and the opportunity to expand professional interests, among others.

Gains Not Made

Horizontal Mentoring Alliance participants mentioned very few instances in which a gain was not made (4 total) (see Table 11). In this small handful of observations, two comments noted that advice had not been received or was found not to be of help. In the other two instances, the participant said that benefits gained had not transferred to her personal life or that participation in the Horizontal Mentoring Alliance had not provided her any insight into what she might like to achieve professionally or personally.

Table 11. Comments on Gains Not Made	N of Participants	N of Comments
Has not gotten advice on how to best manage administrative position she holds	1	1
Participation has not helped regarding issues particular to liberal arts colleges (i.e., small departments, high service requirements)	1	1
Participation has not opened horizons of new career possibilities	1	1
No transfer of benefits to personal life	1	1
TOTAL		4

“Mixed,” or Qualified Gains

Like the number of comments offered about gains that had not been made, the number of comments offered by participants noting a “mixed,” or qualified, gain was also small (8) (see Table 12). Half the participants mentioning a qualified gain said that while they hadn’t yet noticed significant benefits, it was early days yet and they expected gains in the longer-term (4 participants; 5 comments). One individual offered two comments that suggested a “mixed” benefit: though very glad to be participating in the Alliance, she was the most senior woman in her group. She noted that the more senior women in the Alliance tended to do most of the mentoring, receiving less mentoring themselves. She also observed that, while she was glad to have the opportunity to interact and talk with other women, she had not previously realized how “oppressive” her department was and “how much joy had been sucked out of her” until she started talking with other women. One other participant felt that she had not benefited much from “mentoring” from the other women in her Alliance.

Table 12. Comments on "Mixed" or Qualified Gains	N of Participants	N of Comments
Hasn't felt much benefit overall: too soon in the Alliance	4	5
Senior women in Alliance do most of the mentoring, get less mentoring themselves; some gain	1	1
Though she was glad to talk with other women, she didn't realize how oppressive her department was and how much joy had been sucked out of her until she started talking with other women,	1	1
Participant does not feel that she has received much mentoring	1	1
TOTAL		8

Comments on Difficulties of Participating in the Horizontal Mentoring Alliance

Though members were overwhelmingly positive about their participation in the Horizontal Mentoring Alliance, and offered few observations regarding gains that were not made or were qualified, when asked, they also discussed a variety of difficulties that they had encountered (8% of all observations; N=67). The difficulties participants mentioned were balanced among three types: those related to issues of time (n=24), those associated with group, oneself or more general difficulties (n=22), and those associated with geography (n=21) (see Table 13).

Table 13. Comments on Difficulties of Participating in the Horizontal Mentoring Alliance	N of Participants	N of Comments
<i>Comments on Difficulties Associated with Time</i>		
Just finding time to participate in Alliance is an issue: balance is main issue	8	16
Time away at weekends is difficult for families	3	3
Finding time for Alliance participation during the academic year is difficult	2	2
Finding time for Alliance participation during the summer is difficult	2	2
Time to figure out technology is an issue (i.e., set up computer-to-computer video conferencing)	1	1
<i>Subtotal</i>		<i>24</i>
<i>Comments on Difficulties with Group Members, with Oneself, and More General Difficulties</i>		
There just are no other senior women science faculty out there: we are so few	3	5
Doesn't feel she is very helpful as mentor; doesn't face same issues as others in Alliance	2	3
Hasn't been able to identify needs that group could help her with	2	2

Some “givers” some “takers”; “takers” require the most energy	2	2
One person in group tends to put in extra time organizing everything (meetings, putting together an agenda, etc.)	2	2
Feels a bit out of place; not as alienated in department as many others in Alliance; wonders whether she should relinquish position to someone who would benefit more	1	2
Effective communication is necessary and difficult to establish	1	2
Group hasn't quite coalesced: a variety of different needs	1	1
One member has not responded to email trying to coordinate meetings; unclear what issues might be contributing to this	1	1
Alliance less of a priority for particular Alliance member	1	1
Reached out for professional collaboration with another Alliance member; she didn't reciprocate and collaboration has not gone anywhere	1	1
<i>Subtotal</i>		22
<i>Comments on Difficulties Associated with Geography</i>		
Travel is difficult from remote liberal arts colleges	5	9
Coordinating travel across US regions is difficult	4	4
Alliance members are NOT close geographically: distance is problematic	2	2
One person in group ends up putting in extra travel days to accommodate other's schedules/geographic locations	2	2
Coordinating phone conversations across time zones is difficult	2	3
Alliance member is abroad over summer	1	1
<i>Subtotal</i>		21
Total		67

Comments on Difficulties Associated with Time

Most commonly, Alliance members said that just finding time to participate was difficult (8 participants; 16 comments). Smaller numbers of participants offered a few comments on a range of difficulties of participating in the Horizontal Mentoring Alliance which were associated with time: taking time at weekends was hard on family; taking time during the academic year was difficult, and, conversely, taking time during the summer was difficult. For one participant, finding the time to set up computer software to video conference with Alliance members had proved quite time consuming.

What are the challenges? Time and making this a high priority.

Being gone for several days is the challenge. ...If I'm going to get a plane and be gone for three days, that's a whole different level of planning and scheduling and arranging to make room.

At this conference we will have three out of the five of us. I think it has to do with the timing. I think it worked out for us in January because we were all between semesters and that was perfect. If we could meet again before Fall classes start, I think that would be good timing, or else we might end up having to wait again. It's hard for us to get away from our campuses.

It has actually been somewhat of an issue for me in terms of our summer meetings, because I'm part of a dispersed REU site, where what we do is we need to go on a national meeting with our students, so that's one opportunity for us to interact together. So, I've had to work out the Alliance meetings, try to fit the Alliance meetings into a summer that has a week taken out already.... It's hard to get away.

One of the difficulties that we've had is traveling during the academic year. Everyone feels as if they can take very few days off from classes.

Comments on Difficulties with Group Members, with Oneself, and More General Difficulties

Very small numbers of Alliance members mentioned difficulties associated with group members, oneself, or more general difficulties. Three recognized that one difficulty was that there were simply so few senior women science faculty; this made participation almost requisite. Two participants felt that they were not being effective mentors for others in the group because they had not faced similar difficulties and felt unable to offer helpful suggestions and advice. Two participants said that they had been unable to identify issues on which they needed advice. A couple Alliance members commented that, on occasion, some tended to require more effort and energy, while another sensed that participation was not a high priority for one of the group. One member felt that she was perhaps not as good a fit with the initiative as other members and wondered whether she should withdraw her participation. Others noticed that one person in the group tended to be the one to organize everyone and that communication was difficult (either people didn't reply or that it was generally difficult to establish). One participant said that she had tried to establish professional collaboration with another member, but when the other member was unresponsive, she didn't pursue it further.

Many of us were the first woman in the department. Like I said, I recognized that early in my career and I recognized it later in my career as well. There aren't any other women out there, we have to pull together, we have to draw on one another.

Frankly there just aren't many people further along who have been through this process as a woman. I think it makes it incumbent upon us to participate.

I'm not as interested in learning how to negotiate or in leadership things, because for me, that sort of stuff has worked. ... I can't decide whether I am at all an effective mentor for people who aren't as far along as I am.

I don't know how much of my uncertainty about what we're going to do comes from my uncertainty about what I need. ... For me, it's a question of identified needs. I'm having a hard time identifying what those needs are. It may be others have identified them more effectively.

I feel like we all work very hard to accommodate her. “What works in your schedule?” so we all pick a date, and we all make compromises, whether it’s a date for a conference call or whether it’s a date, but we are clearly not on her priority screen.

I’ve noticed in my Alliance that some people are takers more than givers, or some people are needier than others. Not that anyone minds continually offering advice or helping someone out, but I’m going to be interested to see if there is an imbalance of give and take.

I feel a little out of place in the Alliance because I’m not the only woman in my department. I was for a while, I’m not now. My sense in talking to some of the women in the Alliance is that they felt the traditional route for a chemist, in terms of doing traditional research and all that sorts of stuff, is not felt as a match for them. For me, it’s a perfect match. I have felt valued throughout my career and felt like I had gotten, for the most part, appropriate rewards for what I’ve done, and I don’t know if that’s true for everybody. Sometimes I feel like I’m here under false pretenses.

I think the communication thing. ...I think what we need, and what’s going to happen, is that we really need to set up with some social networking capabilities, which is kind of what Sakai is supposed to be but it doesn’t play that role. ...So we’ve learned, we’ve been through all the steps, and we’ve settled down to these weekly meetings on Marretech to do video conferencing with. So that’s what we need. We need that piece. And part of it was the learning process—it took us a while to get there. And so now, with each Alliance, if we could just say that is an expectation, that you’re going to meet once every three months, or whatever, virtually, then I think it’s going to be a great thing.

Comments on Difficulties Associated with Geography

Almost half of participants agreed that travel it was difficult to coordinate travel across the US from their more remote liberal arts colleges. For a couple of participants who wanted more contact with their Alliance, it was difficult to be so far away from the other members. A couple members also noted that one group member tended to put in extra time traveling in order to accommodate others’ schedules and locations, and that scheduling conference calls across time zones was difficult. It was particularly difficult to coordinate with one member who was abroad over the summer.

They have a harder time traveling. ... (She) is at a more remote location and she has to commit a much bigger period of time to that. So actually, in some senses, trying to figure out times to meet has been a little bit of a challenge.

Distance makes it stressful to get together.

Four time zones, it’s certainly limited when we can talk via conference calls.

Comments on Horizontal Mentoring Alliance Members’ Unmet Needs and Wants

Alliance members were asked to comment on what was missing from or could improve the initiative. Six of 11 participants indicated that they would appreciate meeting the rest of the

Horizontal Mentoring Alliance participants and opportunities to interact as an entire group (see Table 14). A few participants said that they would appreciate more regular and scheduled communication with their group members. One participant said that she would like to have a list of all senior women science faculty nationally and another wondered about the possibility of setting up a nationwide mentoring network for women science faculty. In terms of producing a PowerPoint or other resource material, one member wanted more direction about what information would be most useful to the Horizontal Mentoring Alliances, overall. Finally, one member noted that it was important to set boundaries on topics of discussion—in particular, she noted that, if they were not careful, grant business could take up too much of group members’ precious time with each other.

Table 14. Comments on Horizontal Mentoring Alliance Members’ Unmet Needs and Wants	N of Participants	N of Comments
Would be interested in meeting other women in the Alliance: encourage interaction across Alliances	6	9
More regular/scheduled communication: once a month would be good; more time together	3	5
List of other senior women science faculty nationally	1	1
Possibility of developing a nationwide mentoring network	1	1
More direction about what would be useful to produce for the whole group overall	1	1
Need to set boundaries so that grant business doesn't eat up all Alliance time	1	1
TOTAL		18

I think it would be great if we could try to encourage more interaction across all of the Alliances.

I'd be interested in getting to know the women in the other Alliances, too—to have the opportunity for us all to get together. But I can just imagine the logistics of trying to arrange that—with everyone’s schedule.... It would be worth trying though, I think.

We’ve got an NSF grant to do all this stuff, so we’re all really committed to it. I think with the Alliance, we could easily meet for an hour once a month and really make some good progress. And I would love to check in with the women once a month. That would be something I would really look forward to.

To get together virtually would just be really nice. I’m going to push pretty hard on that when we get together in June. And what would be nice if I could show people how it works and how easy it is, because it’s incredibly easy to use.... You can set a meeting schedule, four meetings or something like that. And we’re good with that, we’re good with schedules. And we had a great conference call that went really well, so I know we

can really do it. So I would really like that. I would like to get more contact than what I'm getting more. Not a lot more, just a little more.

I was very intrigued...how few senior women are out there to choose from. I would be very interested in seeing someone put together a list of women at the smaller institutions that aren't being addressed by the Alliance. Just name, institution, e-mail address and maybe their field of specialization. But just something like that might be valuable. I don't know how many people are out there. I was talking with one of the guys from my department and he said he managed to find 15 senior women chemists at Swarthmore College. He said, "Oh, there's got to be tons more!" I don't know if there're 20, if there's 100, or if there's 500. I'd be really curious, if she took the time to go through and find people, I'd be really curious to see a list, to see how big it is, to see what institutions are there. Because I have no idea.I don't know if the NSF would have (collected that information), but I know the ACS does their career survey and their salary survey and all that other stuff and they ask for demographics and they've got you classified into types of institutions. So ACS should be able to pop the list out if NSF can't. There's got to be a database out there with this information in it. I know the WCC might have it.

We've taken too much of our Alliance meeting time to do grant business, and we may have to decide that we have grant businesses phone calls and we have Alliance phone calls, and instead of saying we're going to have an agenda that's part of each.

Comments on Whom the Horizontal Mentoring Alliance Best Serves

Just over half of participants agreed that the Horizontal Mentoring Alliance best served senior women science faculty at the later stages of their careers (i.e., once they had been promoted to full professor) (see Table 15). In alignment with this view, some (4) argued that the more commonly-available vertical mentoring model best served early and mid-career faculty members. Just one member wondered whether the Alliance might better serve women who were earlier in their career than she was in hers. All agreed that mentoring was necessary at every stage of an academic career, and some noted that junior faculty members have access to multiple mentoring resources (unlike more senior faculty).

Table 15. Comments on Whom the Horizontal Mentoring Alliance Best Serves	N of Participants	N of Comments
Alliance serves later stage careers	6	8
Vertical mentoring: Alliance would better serve women earlier or mid-career; Early mid-career faculty need advice from people who have gone before	4	4
Alliance best serves women mid-career	1	1
There are more resources available for junior faculty, in general, but especially in terms of mentoring	2	2
Honesty and openness among Alliance members is very important	1	2
Thinks other, older Alliance members have benefited more;	1	1

Institutional context (i.e., with fewer women) might have an important influence		
Wonders whether Horizontal Mentoring Alliance should be earlier in career stage, i.e. not near retirement, near end of career; More valuable earlier	1	1
Expected others would have the answers but they do NOT	1	1
Vertical mentoring is important too; Institutional perspective is necessary too	1	1
Change in institutions of higher education is slow: older faculty have to retire for meaningful change to occur	1	1
Horizontal mentoring Alliance has value at all career stages	1	1
Early on, as an assistant professor, mentoring at own institution is very important to find to discover how one fits in in the department; Not useful to have mentors from different institution	1	1
Funding allows Alliance to be national; Otherwise would be limited to local, in-state	1	1
LOCALISM, individualized mentoring to address specific circumstances is important	1	1
This type of mentoring (i.e., the Horizontal Mentoring Alliance) is very needed, is needed MORE at liberal arts colleges	1	1
Horizontal Mentoring Alliance would function the same at R1s as liberal arts colleges, just different issues: a group for sustained support	1	1
Feels greater need for mentoring now than as a junior faculty member	1	1
TOTAL		29

I guess I see this full professor range as early in the full professoriate is the place to start it. If somebody has been a full professor for 10 or 15 years, I think they've kind of figured out what they want to do, but they get to "full professor," and there's really a "Now what?" Many people don't want to go into administration, which is Deans or whatever. They've been in higher education for so long a lot of other doors may appear shut to them; you know, jumping ship to industry at that point or something like that. There could well be 20 years of a career left. They'd had a chance to choose a few things, "Oh, I want to go do this," and now it's many people getting to this stage, "Do I want to maintain an active lab, an active research program?" I think what makes this difference from R1s, in some sense, even if you're full professor at an R1, unless you sort of leave the department for administration, there's a clear expectation and a raise structure that is so tied to continuing to maintain a lab and maintain grants and grant support, you have to make a very clear decision to stay or not. I think it's a harder issue at a PUI institution because there's a part that says you can't have anyone ... when you have a department of six, nobody can opt out of being willing to take students if this is a departmental or institutional value. Yet many people are very tired of coming up with new ideas and asking themselves, "How much longer do I want to play this game?"

“What else do I want to do?” The other thing is when you get to this level, probably if we talked to everyone they have some level of administrative responsibility. Maybe they’re not an administrator, per se, maybe they have no release time. I mean I have release time to be chair and that’s an administrative role where confidentiality becomes a bigger issue.... Now you’re a full professor and I’m struggling, I’ve got two professors in my department that are bickering how much access we give students to this piece of equipment. Person X bought it under their grant, but hasn’t used it in 10 years, and person Y is the major user, but you can’t just go down the hall because you have to protect the confidentiality of those individuals, but you’d like a sounding board about how would you deal with this? So I think that outside network serves an entirely different function. I mean, certainly, an associate professor may well need an outside network of research collaborators. It never hurts at any stage of your career to know what’s going on beyond your institution so that you’re not too institution-centric or whatever. But I think that confidentiality needs, perhaps, the most critical place because your responsibilities change.

There’s value in it at all the different levels, but I don’t think that assistant professors are in a position where they need or have room for mentoring from people at other institutions, because at the assistant professor level, one of the big responsibilities is to figure out how you fit into your own institution, so getting your mentoring internally is more important to getting yourself into a good for tenure purposes, so I think mentoring from within your own university system or your own college system would be more direct to getting tenure and getting past that milestone. I think at the associate professor level, that might be a good opportunity to start reaching out, seeing how it’s done at other places, developing some relationships that you could build to the point so when you’re in over your head in the department chair, you already have established relationships with other people in other schools that might have other coping strategies or other administrative systems. They might have a different takes on things, or when you’re trying to pull your materials together for promotion to full professor, having an outside perspective, having somebody you can draw in who can comment on the quality of your scientific work. That becomes a time when your reaching outside of your institution would be more appropriate and more beneficial to you professionally and also getting it in place so that when the crisis comes or when you’re in over your head, that you have an established network of support, whereas I think, our Alliance, we’ve all kind of been through the fire, we’re able to commiserate about what we’ve all gone through and I know we will be able to take advantage of that in future crises which are inevitable, but it would have been nice to kind of have that network of support. It would have been nice that kind of network for the support, I might have been able to handle being a department chair differently, if I I’d already had some established networks.

As you proceed in your faculty career, there are fewer and fewer resources, so I think the needs are going to be higher later on. I think junior faculty certainly could benefit but they might have, especially with more institutions setting up mentoring programs and increased hiring of women on campuses, that they might naturally have more opportunities on their own campus, but I think the more advanced you are, there just isn’t the guidance available.

At the associate professor level, there's still a good bit of your career where you can either crash and burn or you can continue to be productive and you might be making decisions: "Do I want to stay in this research area? Do I want to keep teaching this way? Do I want to go to teaching that way?" with still a whole lot of time to make a whole lot of influence. And I think immediately after getting tenure would be a good time for horizontal mentorship among other people, not full professors meeting with the same old, "This is how it was for me and this is what you need to do," but a whole bunch of people who have gotten tenure within the last two years saying, "Where do we go from here?" Having that, that would be a mentorship that could last for decades.

At later stages in a career the horizontal mentoring structure becomes the most valuable. Frankly, there just aren't many people further along who have been through this process as a woman. Campus-wide there are probably less than a half dozen women who have been here in an academic role longer than I have been here.

Horizontal has been great for me since it does provide me with sounding boards for ideas and issues that I encounter. The vertical structure is absolutely necessary for folks at the beginning of their careers as they are trying to find their own place in a department, division, and institution. There needs to be a friendly, helpful transfer of knowledge and best practices to those starting out—but not a rigid "do it this way or else" mentality. But at later stages having people who have been through the same situations or who have had experience with a related situation is absolutely great.

My only thought would be when they construct Alliances, should it be people earlier in their careers, than mine? ...I think that when you have a finite period of time you're looking at, then if you were inclined to feel that there were certain things that you wanted to change, you might feel less inclined to change them, than if you were earlier on. So that's why I think the Alliance might be more effective for people who were like in their mid- to late-40's rather than later on.

Comments on the Replicability and Sustainability of the Horizontal Mentoring Alliance Initiative

Only 13 comments were offered concerning the issues of replicating and sustaining the Horizontal Mentoring Alliance model (see Table 16). Members agreed that they tended to be over-committed and had too little time. Funding was also mentioned as a factor affecting both replicability and sustainability. Group dynamics and whether participants formed a sense of trust and bonded with each other were also seen as important factors influencing whether and how a Horizontal Mentoring Alliance could be successfully replicated and sustained. One participant mentioned distance as a hindrance to sustainability.

Table 16. Comments on Replicability and Sustainability of the Horizontal Mentoring Alliance Initiative	N of Participants	N of Comments
Issues of time: everyone too busy	3	3
Group dynamics: whether group forms "tight connection"	3	3

Maintaining momentum with entire group; Some participants miss meetings due to life circumstances	2	2
Issues of money/funding	2	2
Planning an activity that keeps momentum going; Incentive to keep involved	1	1
Geographic distance	1	1
Local context is prohibitive	1	1
TOTAL		13

As with me, all of the women who have participated to date are all extremely busy people with a myriad of prior commitments. Getting people to commit to something else that will take time is always going to be difficult. The only way to get this replicated is to properly advertise the benefits of participation—that means telling people our own individual stories.

I think the sustaining cost for an Alliance that is well established can drop. I think there could easily be a period of significant funding that gets an Alliance going and it gives that initial momentum, and then I think if there was just a little bit of money to provide incentive so for those of you that get together at X meeting or what not.... I think it would be nice to provide some small amount of funding and I haven't fully thought about—and I suspect it might vary one Alliance to the other—what would be most valuable as a way to keep them connected. But a small pot and then organically they would stay together.... But I also think there might well always need to be some money.... One's not going to develop these relationships without money and time to do it

What are the challenges to sustaining this type of mentoring? “Out of sight out of mind.” I get so busy with the day-to-day routine that I lose sight of the bigger picture unless someone reminds me. I think that if we had a specific target date on each of our calendars to at least exchange email updates it would be helpful.

I think probably what one has to look at is, generally speaking, the idea of developing the tight connections, which means that at one point it either got established or it didn't, or it got established for a subset of the members, and for whatever reason, a subset didn't find a fit and find a value, so they didn't stick with it, but the remaining group did.

What are the challenges to replicating this type of mentoring structure?

Need to get a group that likes each other.

What are the challenges to sustaining this type of mentoring?

Distance.

Summary and Conclusions

Members were primarily motivated to participate in the Horizontal Mentoring Alliance as a means to network and receive advice from other senior women science faculty. Several, however, mentioned other reasons to participate, including the desire to mentor women faculty,

as well as the opportunity to extend their professional circle, while also reaching beyond the commonly-felt isolation of working at rural liberal arts colleges.

The majority of participants were happy with their career. They appreciated the liberal arts context: its intellectual breadth, the mix of teaching and research it afforded, and working closely with students. However, two members were exploring the option of leaving their current position, and looked to the Alliance for good advice on how they might move their career forward.

Nearly three-quarters of participants noted that no formal mentoring program existed when they were hired by their institution. Just over half said that a mentoring program had been recently established at their institutions. A couple Alliance members commented on an institutional culture that discouraged mentoring of any kind, considering it improper interference in others' personal and professional lives. Several individuals had experienced informal mentoring with varied degrees of success. Despite heavily male-dominated institutions, several also recalled, and were grateful for, colleagues who made a concerted effort to help them early on in their academic careers.

During the interviews, participants brought up differences between working at a liberal arts college and a large research university without prompting. Most agreed that the liberal arts context demanded more work in more and unrelated areas than expectations for faculty at large research universities. Too, a relatively common theme was the multiple ways in which liberal arts colleges tended toward isolation: they were located in remote locations; women faculty members were a definite minority, and socioeconomic status was fairly narrowly represented. Some expressed frustration at the limited opportunities for professional advancement: there simply weren't that many positions that came open, and administrative positions were generally viewed as conferring negative status on women.

About half of participants commented that their institutions were "a cultural backwater," and though their male colleagues were credited with being supportive, in general, the quality of support was judged to be unenthusiastic, overall. Most male faculty colleagues didn't say much about anything one way or another, and they were characterized as largely oblivious to any of the issues that women faced as the (usually) lone female in their department. Participants noted that decision-making practices still tended toward "a good ol' boys" club, occurring "on the basketball court," "in the gym" or "in the smoky faculty lounge over donuts and coffee," without their input. Only a couple Alliance participants said that women served in senior administrative positions at these male-dominated institutions.

A majority of participants said that their departments were aware of their participation in the Horizontal Mentoring Alliance. However, several pointed out that they were keeping their involvement at a "low profile." While a few mentioned that their Chairs or other colleagues and administrators were curious about their work and asked questions, as noted previously, their male peers generally showed little or no interest in any aspect of their professional work.

Overall, Alliance members offered only a small number of comments specifically related to gender issues that were seen as problematic, despite the fact that the very large majority of

Alliance participants were the first woman to be hired in their department. A few commented that women tend to be less confident than their male colleagues. A few also described years of being the only role model for women students in their department or of being the “token mom trotted out at events.” A couple participants noted ways in which women tended to cope with being the lone woman in science: working harder and being more considerate and conciliatory towards their colleagues.

Participants said that they were in fairly regular communication with other members by phone and email. Some also mentioned using electronic networking and conferencing software, including Sakai, whiteboards, Merratech and Skype. Almost all described their first meeting as “talking non-stop all weekend.” They reviewed CVs, established short- and long-term professional goals, and discussed teaching load and equity. Initial face-to-face meetings enabled Alliance members to establish the bonds of trust and friendship that carried over and enabled future support given at a distance.

Alliance members strongly emphasized the benefits and outcomes they had taken away from participating in the Horizontal Mentoring Alliance. Indeed, participants positive observations far outnumbered any other category of comments by at least four to one. Alliance members detailed a wide range of gains, but most commonly described the benefits of: sharing and receiving advice and support among a group of peers; increased confidence to speak up for oneself and accept due recognition for professional work and contributions; permission to focus on one’s professional goals and development; genuine friendships that would last beyond the life of the initiative; and the transfer of gains and lessons learned to their own institutions. Smaller numbers of Alliance participants offered fewer numbers of comments on a variety of gains, such as opportunities for professional collaboration, relief of isolation, and the opportunity to expand professional interests, among others. In strong contrast, participants offered only a handful of comments that indicated a gain had not been made, or that the gain was “mixed,” or qualified in some manner.

Though members were overwhelmingly positive about their participation in the Horizontal Mentoring Alliance, and offered few observations regarding gains that were not made or were qualified, when asked, they also discussed a variety of difficulties that they had experienced. These difficulties were balanced among three types: those related to issues of time, those associated with the group, the participant, or more general difficulties, and those associated with geography. Alliance members’ agreed that just finding time to participate had proved a difficulty. Smaller numbers of participants offered a few comments on a range of difficulties associated with time: taking time at weekends was hard on family; taking time during the academic year, and taking time during the summer. About half of participants agreed that travel was more difficult from their rural liberal arts colleges and that it was difficult to coordinate travel across the US from their more remote locations. A few noted that scheduling conference calls across time zones was difficult.

When asked to comment on what was missing from or could improve the initiative, participants most commonly said that they would appreciate the opportunity to interact with the Horizontal Mentoring Alliances as a group. A few said that they wanted more regularly scheduled communication with their group members. One participant suggested that it would be interesting,

if not helpful, to have a list of all senior women science faculty nationally and another wondered about the possibility of setting up a nationwide mentoring network for women science faculty.

A majority of participants agreed that the Horizontal Mentoring Alliance best served senior women science faculty at the later stages of their careers, while the more common practice of vertical mentoring served early- and mid-career faculty members best. However, one member wondered whether the Alliance might better serve women who were earlier in their careers. All agreed that mentoring was necessary at every stage of an academic career.

Participants offered few comments concerning the replicability and sustainability of the Horizontal Mentoring Alliance as a model. Members were agreed that that time and money were two important factors: too little time and the difficulty of obtaining and maintaining funding affected both replicability and sustainability. Establishing a good and trusting bond among group members was also mentioned as an important element influencing whether and how a Horizontal Mentoring Alliance could be successfully replicated and sustained. Just one participant mentioned distance as a hindrance to sustainability.

Overall, results from the analysis of the qualitative interviews with participants indicate that the Horizontal Mentoring Alliance has been very effective in meeting its objectives. From Alliance members' observations, it is clear that the initiative has provided participants opportunities to: network with senior women science faculty in liberal arts institutions; engage in career development discussions aimed at enhancing leadership, visibility, and recognition on their campuses and in the broader academic community; and develop mentoring paradigms that can be used on their own campuses with students, junior female faculty colleagues, and other senior female faculty colleagues, among a range of other benefits. In the first phase of the external evaluation, baseline data has been gathered concerning participants' career, institutional context, motivations for participating in the initiative, and ascertained their (very high) level of satisfaction concerning the early stages of their participation. In addition to determining the initial successes of the initiative, the small amount of formative feedback that Alliance members' gave—primarily the desire to meet together as an entire group—will allow the Principal Investigators the opportunity to address participant wishes for future program improvement.