

**Excerpted Section from Evaluation Report, Richard Tapia Celebration of Diversity in Computing Symposium, December 2001, Lecia Barker, University of Colorado**

*The General Challenge Of Graduate School*

Students at the Tapia Symposium expressed many of the same concerns as students everywhere. In the first panel presentation, student presenters—graduate students themselves—addressed several issues through question and answer. For example, they talked about the application process (how long it takes, cost, most important parts of application), income as a research or teaching assistant, whether to write a thesis or take a test, and many others. Audience members asked which degree to go after (i.e., master's or doctorate), what they might do with each, whether to go straight to graduate school or to get industry experience first, how to choose an advisor, and how to stay motivated with the writing process. Concerns expressed mirrored comments heard in casual conversations as well as those written in on the survey (for a complete list of responses, see Appendix D). On surveys, challenges for remaining in or entering graduate school included money and time, career and graduate school advice, motivation to complete the work, finding, keeping, and dealing with advisors, and competing life goals. For example, one student wrote, "I don't yet feel confident I can complete my doctoral studies and start a family in the time frame I'd like to."

During the panels, technical, and plenary sessions, the majority of students were very attentive and actively engaged, listening like sponges to soak up the wisdom of their elders and others with whom they could identify. The symposium was an excellent vehicle for concrete advice for many concerns, as students heard not only from faculty and professionals, but also from each other. A Hispanic male graduate student described being a graduate student as "very different from being an undergrad. There's little partying. You invite each other over for dinner." In addition to other advice about applying, another student said "Whether or not you're admitted depends on whether there's a faculty member that matches up with what you want to do." Managing advisors, in terms of finding one and dealing with their idiosyncrasies, was addressed with advice to discover someone with whom one shares a research interest, but with whom one can get along interpersonally and who will support the student. Ms. Ann Redelfs of San Diego Supercomputing Center offered the following advice:

When you ask someone their interests or advice, this will help them to talk. You no longer have to worry about what you're going to say. You can figure out if their field interests you, if they're a nice person. You're interviewing them without their knowing.

It was suggested that a student consider the status of the faculty member in the department and where they are in their career. Professor Earl Barnes added,

Go to weekly colloquia or seminars whether you think you'll learn something or not. People will notice you. Show an interest; people will be flattered. You talk to a lot of people before you decide on your interest. Go to seminars, picnics, whatever, but make sure everyone knows who you are.

As far as money is concerned, students were advised to "get a fellowship because, you'll have more autonomy." How one goes about getting a fellowship or sources of such funding were not discussed. In response to whether one should go straight through or get job experience

first, one faculty member said she would probably work first if she had that choice now; another said she was away for “13 years, raising kids.” She continued that this had been too long, because she had to re-learn a lot of subjects.

Another thread concerned social support: “There are some people who don’t look for support, don’t get it, and drop out. Grads should talk to each other.” While encouragement, support, and self-confidence are issues for all graduate students, being an under-represented student in STEM, and especially computer science, makes acquiring the support group more difficult.

### *Feeling Isolated And Developing A Support System*

In her introduction to Jackie McNab, Dr. Sandra Baylor described the great joy she experienced in finding another African-American, female, STEM graduate student. Feelings of isolation as a minority student directly affect students’ self-confidence and their ability to create and maintain support systems. For example, students indicated as challenges “keeping confidence level high in a department with a hostile attitude towards minorities; I have to thank my many mentors for long talks and support” and “being the only black grad student in the department, getting the support I need. Getting a feeling the department wants me there.” One student warned, “there are places where they recruit you, but once you get there, it’s not as welcoming as you think.” Especially hard is “going from the nurturing environment of an HBCU to [majority institution]. There are no faculty of color and only two African-American students out of 100.” An undergraduate female whose undergraduate degree was at an all-woman’s college reported being intimidated in classes when one is the only female; another said she “sits at the front of the class so she doesn’t have to see who was behind her.” While this statement amused students who heard it, it is a sad commentary on what students from under-represented groups experience in order to study and succeed in their areas of interest. Students also expressed fears related to collaboration issues, “when you’re the only minority student in class, what about working with others?”

The symposium allowed students to ask of each other and give specific advice for dealing with these issues. For example, advice to those coming from HBCUs was to get used to it: “in real life you won’t always have a predominantly black crowd.” But also, “everything you’ve heard, there’s someone out there like that. But there’s also the complete opposite.” Other advice included “force yourself to go make those connections. Talk to professors and other students in your class” and participate “with all the grads when they do social events,” even if one feels isolated. Others suggested getting involved in organizations, “You must reach out to them; it’s too easy to become isolated.” For deciding whether to go to an institution in the first place, “check out the institution for more than one day to try to get a feel for whether they really want you, will support you.” Concrete suggestions for which questions to ask and what to look for in that situation were not provided.

On the survey, 63 percent of respondents indicated that their universities or places of employment have mentoring programs, though only 55 percent participate. 79 percent of participants reported having a relationship with someone they consider to be a mentor, though it may not be part of a formal program. The survey asked about several kinds of support mentors are thought to supply, ranging from understanding the culture of the field or department to individualized help with writing and research (see Appendix A). The mentor-related questions, including simply having a mentor, are highly correlated. In other words, people who reported having a mentor were likely also to believe their mentor served the functions asked about. In

spite of the high number of persons with mentors, however, those with mentors were as likely as those without mentors to express the same challenges. For example, of the nine people who wrote in that one of their graduate school challenges was a lack of advice, six participate in a mentor program. Though an important ingredient, having a mentor in and of itself will not provide the level of support graduate students say they need.

During the symposium, a sense of community developed among participants. A sense of community is "... a readily available, mutually supportive network of relationships upon which one [can] depend and as a result of which one [does] not experience sustained feelings of loneliness..."<sup>1</sup> Students learned that there are many similar others who have similar experiences and that they are not alone. At the Town Hall Meeting, the final event in which all participants' opinions and ideas were elicited and noted, students who had been observed whispering quietly during the first panel uninhibitedly expressed themselves and offered suggestions for the 2003 conference. Two significant concerns are maintaining that sense of community when they return to their institutions and motivating people to enter or remain in graduate school after hearing so many fears expressed by their peers.

### Motivators And Motivating Messages

When asked in the first graduate panel, about 20 participants said they were considering graduate school. On surveys, participants were asked to indicate what would motivate them to remain in or enter graduate school. Three categories are directly related to the goals of the symposium. First, the existence of relevant others who believe in them or "the encouragement of others who relate to me and my situation, especially those who've attained graduate degrees themselves" was very important; five of the 25 comments written into this question fit this category. Also, knowing there would be a "support system in place when I get there" was important. Finally, the profession itself was a motivator, "the chance to be a part of interesting, challenging, and relevant research."

Probably one of the most important benefits of the symposium was for students to see, hear, and talk to others like them who were successful and who were part of exciting new research projects. For example, particularly inspiring were the awards banquet, highlighting the spirit, generosity, and technical successes of Professor Richard Tapia; Sandra Baylor's introduction to Jackie McNab; and Valerie Taylor's opening remarks. Evidence for the power of seeing and hearing about the successes of relevant others with whom one can identify appears in the role models indicated on the survey, where Tapia's, Baylor's, Taylor's, and Bryant York's names appear numerous times.

Many motivational messages were presented in subtle and less subtle ways by speakers who had succeeded in completing graduate school. For example, Jackie McNab may or may not have encouraged students to enroll in a STEM program but certainly provided a variety of information, especially about how to be successful in business. In conversation, one undergraduate expressed uncertainty about whether to attend a STEM or business graduate program. While McNab and others suggested that there are many barriers to success, it was clear that they had overcome these barriers. To the extent that students identify with these speakers, they will be able to imagine themselves as being successful, too. Faculty members during the Survival Skills panel told the audience the benefits of having a Ph.D.: the freedom of tasks, a career working with smart people, ability to go interesting places, knowing that people will

---

<sup>1</sup> Sarason, S. B. (1974). *The psychological sense of community: Prospects for a community psychology*. San Francisco, CA: Jossey-Bass, Inc., p. 1.

assume you are right and thereby facilitating goal accomplishment, and the influence and impact for opening doors in organizations. While these benefits would be irrelevant to someone seeking a master's degree, they may be inspiring for Ph.D. students or students trying to decide which kind of program to enter. On the survey, 72 percent of respondents said that attending the symposium gave them a stronger desire to pursue an advanced degree; 86 percent of those who do not yet have a graduate degree (either master's or Ph.D.) indicated stronger desire. In all respects, the symposium organizers were successful in achieving their goals.