

***Empowering Leadership Alliance
Evaluation Report:
ELA Members' Responses to the Tapia
Celebration Survey***

1/02/08

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Introduction:

The Empowering Leadership Alliance (ELA), funded by the National Science Foundation, began in the spring of 2007. Faculty from five elite higher education institutions joined to create a national community serving underrepresented students in computing. The ELA collaborated with organizers of the October 2007 Tapia Celebration to launch the alliance at the event. The ELA held a “Birds of a Feather” Session, a panel, and a reception during the Tapia Celebration. The ELA leadership team worked an information booth, providing resources for interested students and faculty about the alliance and its goals. This report documents data gathered from 53 Tapia Celebration participants who were also members of the Empowering Leadership Alliance.

The survey focused on student, faculty and industry partner expectations and goals for participation in the Alliance, behaviors indicating lasting affects of Tapia Celebration participation, the extent to which ELA members began to develop a social network of peers, and student attitudes towards computing careers and academic pursuits.

ELA Membership: Diverse in ethnicity, age, school affiliation

In the weeks following the October 2007 Tapia Celebration, 53 Empowering Leadership Alliance (ELA) members responded to an online survey. Twenty of the survey respondents are graduate student members of the ELA, eleven are undergraduate students, and eighteen indicated that they are faculty/industry members of the alliance¹. Students and faculty responding to this survey represent over 18 higher education institutions.

One third of the ELA members responding to the survey are Hispanic/Latino/a (n=14), and a fifth of the ELA members indicated they are Caucasian (n=10). Forty-two percent of ELA survey respondents are African American (n=18). The remaining six ELA respondents are Pacific Islander (n=1), Middle Eastern (n=1), Native American (n=1), or marked “other” (n=3).

Forty two percent of the ELA members who responded to the Tapia survey are women (n=18) and 58% are men (n=25). Nearly half of the ELA members are between the ages of 25-35 (n=21). Over one-fifth of the members who completed the survey are 18-24 years old (n=10), while nineteen percent of Alliance respondents are 36-45 years old (n=8). One member is over 55.

¹ It is unclear if 4 of the student members were undergraduate or graduate students, as they did not complete the appropriate Tapia Celebration survey items.

Faculty & Industry Involvement Expanded through Leadership Team Connections and Tapia Celebration Participation

One third of the ELA faculty and industry members responding to the Tapia survey learned about the alliance through contact with a leadership team member (n=5), and nearly half were leadership team members themselves (n=7). One third of the respondents learned about ELA at the October Tapia Celebration (n=5).

Faculty and Industry Partners Serve Students, Recruit them into Graduate School

Faculty and industry members of the ELA expressed a desire to help students succeed in (often isolating) elite computing departments, through recruitment, encouragement, and outreach. They also aim to convince underrepresented minority students to continue their computing studies in graduate school. See quotes below.

“I hope to mentor minority students and help them get involved with research, either my own or at their respective universities. I also would like to get involved with outreach programs developed to try to increase and retain minority involvement in computer science.”

--An ELA partner

“I hope to improve the retention of students of color in my department, and to help make a more welcoming environment in my field.”

--An ELA partner

“(I will benefit from ELA participation by) Meeting and mentoring more students. Hopefully, some may want to be graduate students or faculty at my institution.”

--An ELA partner

Tapia Celebration, Local Professors Recruit Students Into ELA

Many of the students learned about the ELA at the Tapia conference (39%, n=12), and an equal amount of students learned about the alliance from a professor at their home institutions (39%, n=12). Other means by which ELA students learned about the alliance include: student services announcement (n=2), a conversation with another student (n=2), an internet search (n=5), and an academic department announcement (n=5).

Networking Strongest for Students to Students, Students to Faculty

All of the ELA student members who attended the Tapia Celebration met at least one faculty member of the alliance, and 58% of them met 3 or more faculty members of the ELA at the event (n=18). Just over half of the students reported meeting 1 or 2 industry members of the alliance at the Tapia Celebration (55%, n=17), and nearly one fifth met 3 or more industry members of the alliance. However, 25% of ELA students responding to the Tapia survey did not meet any industry representatives of the alliance.

Students were successful in meeting other student members of the ELA. Two thirds of the students reported meeting three or more ELA student members at Tapia (n=21), and nineteen percent met one or two other ELA students at the conference. A fraction of the ELA students were unsure if they met other ELA members (13%, n= 4).²

More Than Half of ELA Students Feel Isolated in Computing Departments

Nineteen students responded that they often felt isolated in their home department (61%). This percentage differed from the 46% (n=24) of all Tapia Celebration student participants responding to this survey who often felt isolated in their home departments.³ One interpretation of this difference is that students who felt isolated were more likely to seek participation in the Empowering Leadership Alliance.

ELA Students Confident, Dedicated to Computing After Tapia Celebration

All thirty-one ELA student respondents are confident that they will complete their degrees (100%, n=31). The majority of student respondents learned about computing careers at the Tapia conference (81%, n=25), and received valuable advice for getting through their academic programs (97%, n=30). The Tapia Celebration reaffirmed ELA students' beliefs that computing work is important (84%, n=31), and increased students' dedication to complete their degrees (90%, n=28).

Student Participants Expand Networks, Seek Academic and Professional Opportunities Following October Event

Nearly half of the ELA student respondents indicated that after the October event they had contacted a faculty member they first met at the Tapia Celebration (48%, n=15). Seventy-one percent of students

² The ELA provided ribbons members adhered to name tags that indicated membership, but students may have met one another outside of conference events, when nametags were removed.

³ This difference approached statistical significance $\alpha=0.07$

contacted a fellow ELA student member after the Tapia Celebration (n=22). Over half of the students contacted an industry representative of ELA after the conference (55%, n=17). Twelve of the ELA student members searched for research articles written by Tapia Celebration presenters and speakers (43%).

Nearly a third of the students inquired about graduate school opportunities following their participation in the Tapia Celebration (32%, n=9), and three ELA students applied for graduate programs based on the information they received at the Tapia Celebration.

Forty percent of the student ELA respondents searched for corporate careers based on information received at the Tapia Celebration (n=12), and nearly one quarter of respondents applied for industry employment following Tapia participation (23%, n=7).

Past Tapia Involvement Increases Community, Mentoring Opportunities

Thirteen of the ELA survey respondents had participated in past Tapia Celebrations. Many participants reported ways in which Tapia participation led to professional, academic, and social benefits. Four participants conducted research with colleagues they first met at Tapia, while two published research articles with Tapia colleagues. Three ELA participants co-authored a grant proposal with someone they first met at Tapia.

Tapia colleagues contacted one another about educational opportunities (n=6), and job opportunities (n=5) as well. ELA members who attended Tapia Celebrations also contacted one another about academic employment opportunities (n=5).

Most of the ELA participants with former Tapia Celebration experience asked for or gave Tapia colleagues career or academic advice (n=10). Another large majority of Tapia colleagues connected with one another at other conferences, and felt they knew someone there (n=11).

Faculty/Industry Commit Time to Mentor Students, Spread the ELA Message

In all, faculty and industry representatives responding to the Tapia Celebration survey pledged 458 hours per month to further Empowering Leadership Alliance goals.⁴ The majority of faculty and industry ELA

⁴ This figure was determined by calculating the average number of pledged hours per category and multiplying each amount by the number of responses in that numerical category. For example, 5 individuals said they would be willing to mentor a student for 1-5 hours per month. The number of individual responses, 5, was multiplied by the average number of hours pledged, 3, to average 15 hours per month. This was repeated for each time category and for each ELA task. Raw data is available upon request.

members plan to mentor students (85%) and spread the word about the Empowering Leadership Alliance (92%) at least 1-5 hours per month. More than half plan to spend time finding students internships and other computing work (62%), discussing with students via online chats and discussions (69%), and attending videoconferences (57%). Half of the respondents (50%) will present technical talks via videoconference to students, faculty, and industry partners, while slightly fewer said they would host local events on campuses (42%).

ELA to Provide Infrastructure for Underrepresented Computing Professionals' and Students' Networking and Development

Students hope that ELA will assist them in their academic and professional pursuits. In particular, students hope the ELA will provide support, structure, and venues for networking (39%, n=7), mentoring (39%, n=7), and providing information sessions (33%, n=6) for underrepresented students. Students also hope to learn about scholarship opportunities (17%, n=3) and employment prospects (11%, n=2) in computing through their participation in ELA.

The Empowering Leadership Alliance may serve as an impetus for some students to socialize with others in their field across institutions. See quote below.

“(ELA can assist me) by pulling me out of the books and getting me comfortable with others who have similar interests and goals.”

–ELA student

Students Hope to Network, Get Advice, and Provide Service in ELA

Half of the students surveyed hoped to network with industry and faculty professionals through their participation in the ELA (50%, n=12).⁵ Often this goal was paired with a desire to receive advice and mentoring through the Alliance (29%, n=7). See quote below, from a student member of the ELA.

“I hope to gain more of an opportunity to meet people (who) will shape and inspire my career direction, through networking and mentoring, (and through) listening to my thoughts, perspectives, and ideas.” –Student member of ELA

Another common goal for student members of the ELA was to have the opportunity to provide service to other students who are members of

⁵ Twenty-four students answered this open-ended survey item. Responses were coded iteratively as themes emerged from the data. Coding scheme and item responses will be made available upon request.

underrepresented groups in computing (25%, n=6). Sample service responses from students include: “I want to help others”, “an opportunity for service”, and “help the minority community in computer science”.

Students reported additional expected gains from their participation in the ELA. Specifically, students hoped to understand underrepresentation in computing, and how to address the issue (8%, n=2); to gain knowledge of and experience with research (8%, n=2); and to become privy to the “inside scoop” from successful academics in computing on how to structure their academic and professional careers. (16%, n=4).

Conclusions and Recommendations

The Tapia Celebration served to introduce the Empowering Leadership Alliance to a diverse group of computing students, faculty, and industry partners. Students met other ELA members, became acquainted with the goals of the Alliance, and reported what they need in order to succeed in their academic and career endeavors. Survey results indicate that the benefits of participating in the Tapia Celebration can extend beyond the event, and can lead to social, academic, and employment opportunities for students, faculty, and industry partners. This suggests that the Tapia Celebration should remain an important aspect of Empowering Leadership Alliance participation. Recommendations for improving the ELA, based on survey responses, include the following:

- Provide industry partners a higher profile in the Empowering Leadership Alliance. Students were less likely to meet (or to know when they *had* met) industry representatives aligned with ELA.
- Continue and augment plans to develop a student leadership committee for the ELA that can serve as a leadership platform for motivated ELA student members interested in serving underrepresented students in computing.
- Expand plans to hold local and national events that inform students about computing research, internships and scholarships, and navigating through computing education, particularly for those interested in academia. Students were particularly interested in local and national face-to-face events.