# EVALUATION PLAN

## Empowering Leadership Alliance (ELA)

**Lecia Barker & José Cossa**

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## 1. Evaluation Team

Independent evaluation will be conducted by Dr. Lecia Barker and Dr. José Cossa of the School of Information at the University of Texas at Austin. Barker, who has evaluated the ELA project since its inception, is experienced evaluating pipeline and curricular efforts intended to increase participation of members of under-represented groups in information technology academic program and in-depth understanding of research on increasing participation of under-represented groups in computing. Cossa, who joined the ELA evaluation in early 2009, is an experienced evaluator and provides customized consultation to undergraduate computing departments intending to increase women's representation in their programs. Both Barker and Cossa are committed to continuing their support of ELA's goals through formative and summative evaluation. Barker also evaluated the Grace Hopper and Tapia Celebrations six times (combined) and the evidence from those evaluations strongly endorses the *community building model* proposed here. Barker and Cossa believe that the ELA leadership is particularly appreciative of the possibilities of formative evaluation for making mid-course corrections to improve implementation.

## 2. Theory of Change and Evaluation Goals

The goal of the EL program is to increase retention of minority undergraduates and graduates in majority computing programs, increase the number of undergraduates who pursue graduate degrees, and enhance the career possibilities of all students. Underrepresented students studying computing in majority institutions are more likely than their non-underrepresented peers to leave their computing major or their graduate degree program. A number of reasons are offered in the research literature for their higher attrition, including personal issues (financial, family support) and low feelings of belonging in the socio-educational environment of a degree program. Studies show that underrepresented students perceive greater discrimination and racism than their majority counterparts and low perceived ethnic fit. These can lead to a sense of threat to identity and ethnicity and many students then distance themselves from the collegiate environment.

ELA leaders hope to achieve their retention and advancement goals by ensuring that students experience a greater sense of social support, receive advice, and are encouraged to persist through their network of peers and role models. The theory of change behind the ELA strategies is that a feeling of membership in a larger community of similar others and routinely gaining the wisdom of those who have walked a similar path and learned lessons along the way can provide a protective support factor to minority students. The goal of evaluation is to support leaders in implementing the program as well as in assessing the impact of the program by integrating formative and summative components into the overall implementation plan in genuine partnership with the leadership team. Formative evaluation will focus on the three key strategies intended to retain students and will continue to include regular feedback on these practices. This feedback will continue to play a key role in shaping program activities and goals. In addition, summative evaluation will continue to measure and quantify the impact of the proposed strategies at the end of the grant period.

### 2.1. Evaluation Methods

Evaluation will use data collection and analytical methods consistent with the type of evaluation question being asked. For example, observations will be used for understanding the situations and discourse that might have influenced impact of event attendance, while interviews and surveys will be used for understanding students' attitudes and beliefs about their experiences,

their interpretation of events, and the degree to which events make a difference. Interviews will also be used to inform survey construction. Baseline data is collected when students first sign up for ELA membership. They will be tracked individually to determine whether they were retained and/or advanced and what events were likely precursors to their decisions.

Students' perceptions, experiences, and outcomes will be collected and documented, as described above and in the Formative Evaluation Summary table (below). In addition to these, members of the leadership team, speakers, and other professionals involved as role models and mentors will be interviewed and surveyed to understand impacts on them for their involvement as well as to gather perceptions and ideas for improvement of implementation. The Formative Evaluation Summary table below provides a brief overview of the formative evaluation. Existing instruments will be used; new instruments will be developed as needed. At present, existing instruments include the Tapia Conference Survey, two versions of Regional or Local Events Surveys (Texas, Northeastern), two versions of Baseline survey, an ELA Feedback survey (embedded in the Tapia Survey during odd-numbered years), and an ELA mentoring survey. In addition, interview protocols have been developed to provide more nuanced understanding of students' home institution situations, perceptions of events, and mentoring. These data collection mechanisms have different foci to support the Leadership Team in understanding whether their strategies are producing the desired outcomes. Because a student's involvement may not be long enough to permit collecting data of actual degree completion, job held, graduate enrollment (due to short-term nature of funding), intention data are also collected.

**Table 1 Evaluation Summary**

| Data Collection Goal and Categories of Inquiry | Participants | Mechanism |
|---|---|---|
| Overall impact. Baseline: Thoughts of leaving and confidence re: degree completion; knowledge of and intention to pursue research careers (UGs); existing support mechanisms and feelings of connectedness in local/home environment. Outcome: degree completion, job landed, graduate enrollment, intentions (in absence of outcome data).<br>Local, Regional, and National Impact. Surveys and interviews (ethnography). | Students<br>Students and Faculty (when relevant) | Survey (annual)<br>Upon joining ELA<br>Repeated for each cohort of students<br>Tracked over life of project<br>Local, Regional, and national assessments |
| Event surveys, interviews. – (Conferences, workshops, etc.) Impact of participating in event on degree completion, confidence, and intention to pursue research career; contacts made and continuing communication; support for event navigation; advice and events desired, suggestions for improvement; impact of repeat participation; overall satisfaction. | Students | Interviews (annual sample), survey (annual) |
| | Professional ELA members | Interviews, surveys |
| | All participants | Observation of events |
| ELA Feedback. Intention to pursue & highest degree intended; knowledge of research career and steps; how learned about ELA; perceived costs and benefits of participating in ELA; use of ELA site or Facebook page; ELA communication and dissemination mechanisms. | All participants | Interviews, surveys |
| Mentoring – Planning and goal setting; use of suggestions provided; perceptions of value; frequency of contact and responsiveness; format; topics. | Undergraduate and graduate students | Interviews, Surveys (annual for each cohort) |
| | Professionals | Surveys (annual) |

## 3. Evaluation Concerns and Mapping

The evaluation team has concerns in regards to the following:

- **Career enhancement:** The majority of the ELA leaders are academics, who may feel somewhat unqualified to mentor students about industry careers. How will the ELA locate persons who can coach students about industry careers? The proposal states that the ELA will have an *increased focus on computing research faculty*; why this focus and not an equal or increased focus on top-level managers or executives in industry?
- **Going beyond the present population:** We suspect (from our own observations) that many students do not care to join groups whether related to minority issues or not, and that this is due to various reasons. Therefore, we are concerned that the students who are presently part of the ELA are not the most at risk for attrition. How will the ELA reach the *non-joiners*? Is it possible to reach them through advisors, faculty, peers, etc.?
- **Special Interest and Implementation Groups (SIIGs):** What is the most important work these groups can do? Is it possible that they could participate in developing research-based materials to distribute to faculty, chairs, CS researchers, advisors, etc.?
- **Documenting Efforts:** The Site Visit Team (SVT) recommends documenting "how local and regional groups are established? Who will do this work? How can the evaluators help with this work?" [**One of our ideas is**: to interview people in depth, develop transcripts, and someone else can create a "manual" (for example: Conduct an ethnographic study on the experience of ELA@UT Austin)]
- **"Possible Selves":** We think that the notion of "role model" is incomplete, especially in terms of assuming that a superficial feature of another person is enough to make someone think "I want to be like that." For example, we doubt that identification with skin color or the label "Latina" in and of itself is enough to persuade someone to pursue a degree or career. Instead, there needs to be some important feature of the person with which others identify AND the students have to look at the others and believe they want to spend the rest of their lives with others like that AND that they are "real" people who both succeed and fail.
- **Building infrastructure:** What should we do to evaluate this? Should we evaluate it? Is there anything we as evaluators can do to support the building of infrastructure? By building infrastructure, it seems like it means increasing non-student membership—is that the case?

Figure 1 is one way of looking at the plans for accomplishing goals. It incorporates the notion of sustainability by visually demonstrating how building infrastructure is a means to support students who, with proper guidance and channeling, will come back to participate as mentors, speakers, etc. for other more junior students while contributing to the national knowledge base as professors, inventors, researchers, leaders, and the like.

**Figure 1: Community Building Strategic Model**

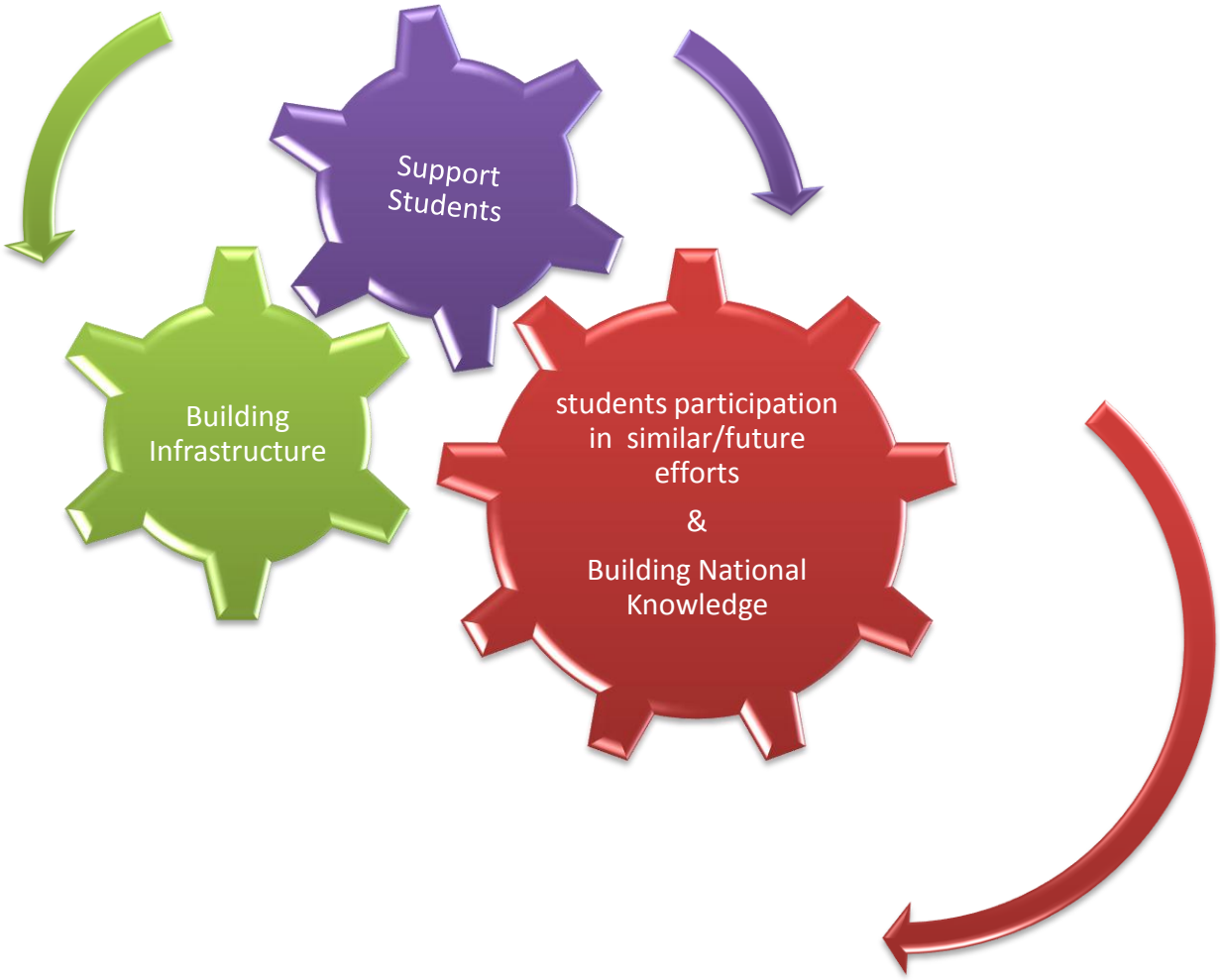


Table 2 shows a tabular mapping of the evaluation plan. Strategy constitutes the larger category and it is divided into building infrastructure, support students, and building national knowledge base—however, based on graphic mapping on Figure 1, we propose adding student participation in similar/future efforts. Each category will be evaluate according to implementation site—i.e., local, regional, and national—and activities. For each combination of implementation site/activities, we will address the corresponding evaluation.

**Table 2: Question to Evaluate Strategy**

| STRATEGY | | | | | | |
|---|---|---|---|---|---|---|
| | **Building infrastructure** | | **Support students** | | **Build national knowledge base** | |
| **Implementation Site** | **Activities** | **Evaluation** | **Activities** | **Evaluation** | **Activities** | **Evaluation** |
| **Local** | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of supporting students and building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building infrastructure and supporting students)? |
| **Regional** | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of supporting students and building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building infrastructure and supporting students)? |
| **National** | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of supporting students and building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building national knowledge base)? | What activities? Where? How? | Why these activities? Do these activities work? What is the outcome/impact (in terms of building infrastructure and supporting students)? |