1. Introduction

This project, shorthanded PEARLS (Program for Engineering Access, Retention, and LIATS Success), or PEARL$, investigates the effectiveness of an institutional intervention model seeking to increase the retention and success of low-income, academically talented students (LIATS).

2. Problem Background

The College of Engineering (CoE) at the UPRM enjoys modest retention and persistence statistics in its five-year long programs. However, other statistics call for renovated efforts:

- Graduation rates at 150% time have been in decline, falling from 67% in 2006 to 56% in 2016
- On-time graduation rates have also dropped in that period from 21.2% to 5.0%.

3. ePEARLS Objectives & Vision

- Increasing the retention and success of low-income, academically talented students (LIATS) in engineering programs at the UPRM
- Researching a hybrid intervention model that combines:
  - Elements from social cognitive career theory
  - Attrition mitigation strategies
  - A framework provided by a structured scholarship program
- The project vision is providing guidelines for institutional policies and practices aimed at improving LIATS success

4. Metrics for LIATS Success

Success Indicators include:

- Retention
- Persistence
- Time to graduation
- On-time graduation
- Graduation rates
- Successful insertion into grad school or the workforce

5. Theoretical Framework: The L-CAS Model

The LIATS College Access and Success Model (L-CAS) can be viewed as a structure that integrates a set of institutional interventions addressing individual’s traits.

Based on Tinto’s studies on attrition mitigation and Lent’s Social Cognitive Career Theory, the L-CAS model seeks to answer the fundamental research question: How effective is the proposed L-CAS model in improving engineering LIATS retention and success?

Longitudinally, the L-CAS model is arranged in five stages that include:

- LIATS Background Experiences
- Belonging Intervention
- Formation Intervention
- Growth Intervention, and
- Graduation & Performance Achievements

6. Project Schedules & Activities

Table 1: Scholarship schedule

<table>
<thead>
<tr>
<th>Scholarships</th>
<th>Fall 2008</th>
<th>Spring 2009</th>
<th>Fall 2009</th>
<th>Spring 2010</th>
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</thead>
<tbody>
<tr>
<td>Student</td>
<td>12%</td>
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<td>Retention</td>
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<td>Persistence</td>
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<tr>
<td>Graduation</td>
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<tr>
<td>Total</td>
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Table 2: Mentorship schedule

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<th>Spring 2010</th>
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<tbody>
<tr>
<td>Student</td>
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<td>Retention</td>
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<td>Persistence</td>
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7. Status and Ongoing Work

Students have been selected to form 3 study groups:

- Participants with scholarships
- Participants without scholarships
- Non-affiliated general student population

Activities are slated to start in Spring 2019

8. References