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Living and Loving Biology: A Learning Community with Research for College First-Years

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A Trelawny Year

## Application & Selection

Students apply through Residence Life. Current TLC’s and mentors help select the next generation of students with a passion for research and motivation to pursue science as a career.

## Arrival at JMU, Placement in Research Labs

At Virginia Safari Park, Lexington, VA. At least 2 events per semester help bond the group and build team/leadership skills.

## Trips & Social Events

Part of the uniqueness (and fun) of TLC is that each student joins a lab akin to their interests. Students tour each others’ labs and report activities to the group.

## Seminars

Once a week, usually a presentation or targeted discussion. Here, students get a tutorial on a scanning-electron microscope.

## Spring Research Symposium

Culmination of the year. TLC’s help organize and cater the symposium and participate themselves with poster presentations. The symposium simulates a conference, promoting interaction with faculty and peers in a professional yet relaxed setting.

## Journals

Mostly a unique experience, but TLC’s mentors also run a group-ecology project to allow sharing of research knowledge.

## Lab/Field Research

Mostly a hands-on experience, with database and lab work.

## Mastery and an Independent Project

Focus on young undergraduates benefits student learning. Once first-years are trained, they can stay in a lab 3 more years, gaining important roles. Example: A 2010 first-year is heading to Costa Rica this summer to study salamanders which he helped feed and observe as a TLC student. Students may find research is NOT for them - and they find out early enough to aid vital life decisions.

### Fallbacks of this New Program

Many students don’t do research because they CAN’T.

- "Dr. C is concerned about the lack of space he has in the new building and doesn’t know how many people he can take on."

The comment above describes the biggest hurdle to the TLC program: Difficulty placing each student in a lab where they can have a reasonably active role and stay on if they wish. Competition for research is high. In 2014, we will target labs with graduate students who can train new students while increasing their own productivity.

### Faculty Involvement is a Challenge:

The same individuals tend to take on TLC students - and so far, the only faculty incentive is a Service credit.

### Future Plans for Assessment

#### Teamwork and Mentor Learning Outcomes

In fall 2013, mentors will continue their journals in their new teaching/learning role. Their writing will provide a source of coded themes for comparison with first-years. Teamwork skills will be assessed in the near future as well.

#### Add a Control:

Now that a few semesters of data from TLC are being collected, this data represents the first application of qualitative techniques to TLC.

This data represents the first application of qualitative techniques to TLC. To start, student journals are theme-coded with NVivo to assess what students learn from their first-year experience. Themes are coded in the context of research, and include:

- **Motivation/Eagerness**
  - “I am eager to finish training quickly… and am looking forward to our first experiment and finding out what kind of role the other freshmen and I will play.”

- **Revelation/Discovery**
  - “I realized that this research includes a lot of down time while things are processing. The experiment took place till the next day and possibly longer.”

- **Realization of Failure leading to Growth**
  - “Today didn’t go too well… he looked at my results and noticed that they were wrong! … On the other hand, now that I’ve had all that practice, I’m a lot faster at inputting the data.”

- **Emotions**
  - “When I went back over my pictures, they were missing important data points. I was shocked because I thought I had done a thorough job.”

  - “I am a little disappointed that there nothing hands on that I am allowed to do this semester.”

#### How to Assess Learning Outcomes?

- **Gender as Attribute:**
  - In this early data, males express excitement and females express motivation 50% more often than males. Otherwise, themes appear similar.

- **Coding for Nodes:**
  - Each node occurs with 18.7-38.8% coverage, with Realization of Failure having least and Emotion the most.

With establishment of some recurrent themes, in-depth analysis of journal/survey data can begin along with application of SoTL theories relevant to this type of program.

- **Data also shows students’ expectations of the program, which aids its development!**