

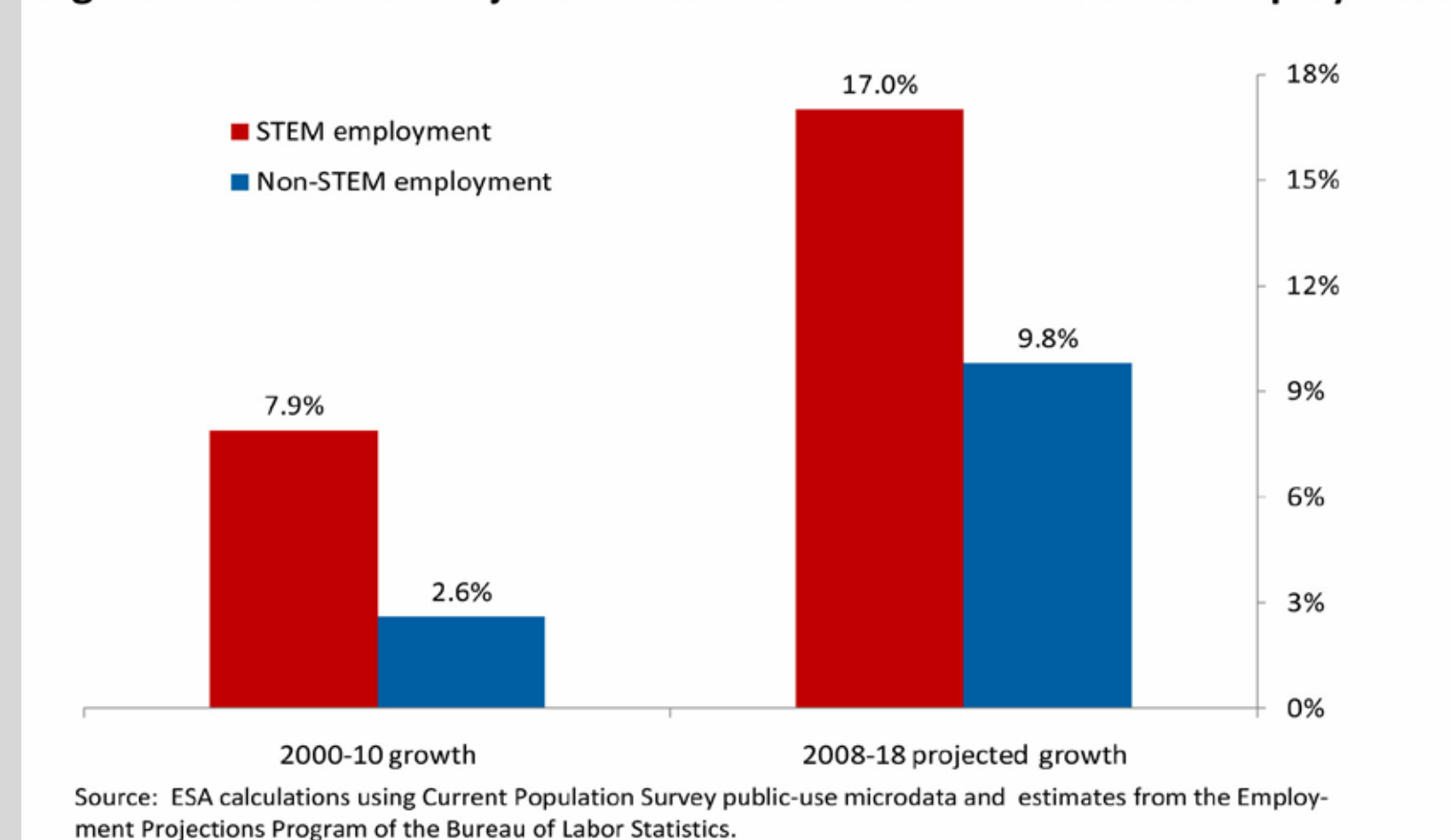
## Introduction

African Americans and Latinos are underrepresented in Science, Technology, Education, and Mathematics (STEM).

These fields are growing substantially compared to non-STEM fields.

The shortage of African Americans and Latinos in STEM fields must be addressed if the democratic principles that America prides itself on having are to be upheld.

Figure 1. Recent and Projected Growth in STEM and Non-STEM Employment



<http://www.commerce.gov/sites/default/files/images/2011/july/stem-job-projections-.jpg>

## Research Question

How can we increase the amount of diversity in Science, Technology, Engineering, and Math (STEM) fields?

## Literature Review

The Association for the Study of Higher Education found that economic concerns about college are particularly important to minorities when considering what college to attend and what courses to take.

Late Middle School is a good place to teach about STEM because the children have not begun to formulate a committed vision towards a career path and are open to influence.

Educational theory supports the role of experiential learning in STEM education: activities such as research and internships. Students often are more enthusiastic about STEM when they are exposed to the field through group-activities.

## Method

Through our literature review, we found that minority participation in STEM & Information Sciences can be improved in a variety of ways:

- Providing information & access to scholarships.
- Providing information & access to tutoring services.
- Providing information & access to real-world activities related to STEM.
- Encourage students to engage in STEM by educating them on college requirements and career possibilities.
- Built a curriculum around these findings, and created handouts for the students.
- Conducted a Pre/Post survey to gauge iDiscover's effectiveness

## iDiscover

**Suggestion from a student at Lakeland Middle:** *"I think they should have a paper which they would use for people to put their email address who are looking forward to the iDiscover Program: like me!"*

Pre/Post survey – Administered to gauge student's interest in STEM before and after iDiscover.

Presentation detailed the nature of STEM, Information Sciences, career options in STEM, and how to gain competency for college and receive financial aid.

Communicated to the students the benefits of STEM using media.

Group activity: students interpreted bags of "information" given to them and derived organization categories. Handouts: Affording college, What colleges look for in admissions, How to catch up in courses, and a college assistance poster from University of MD directed towards K-12 Students.

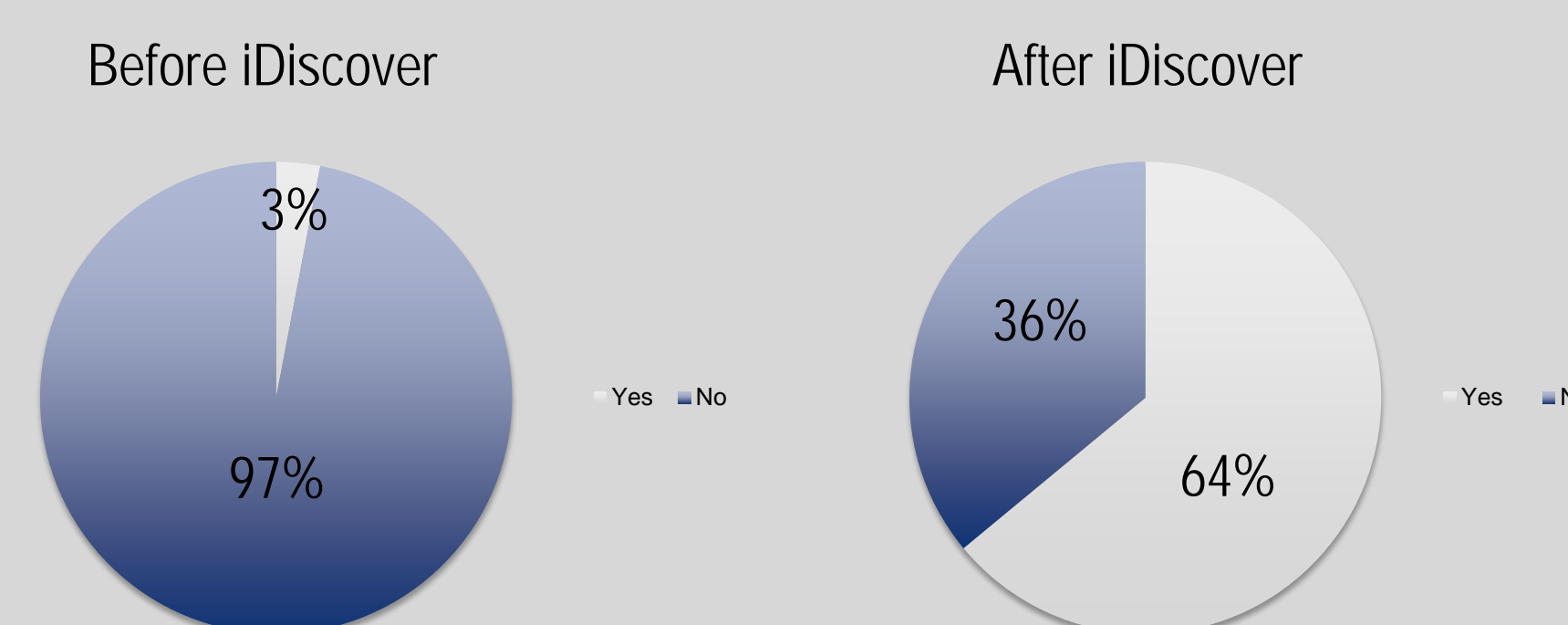
## Results

### Observations from iDiscover:

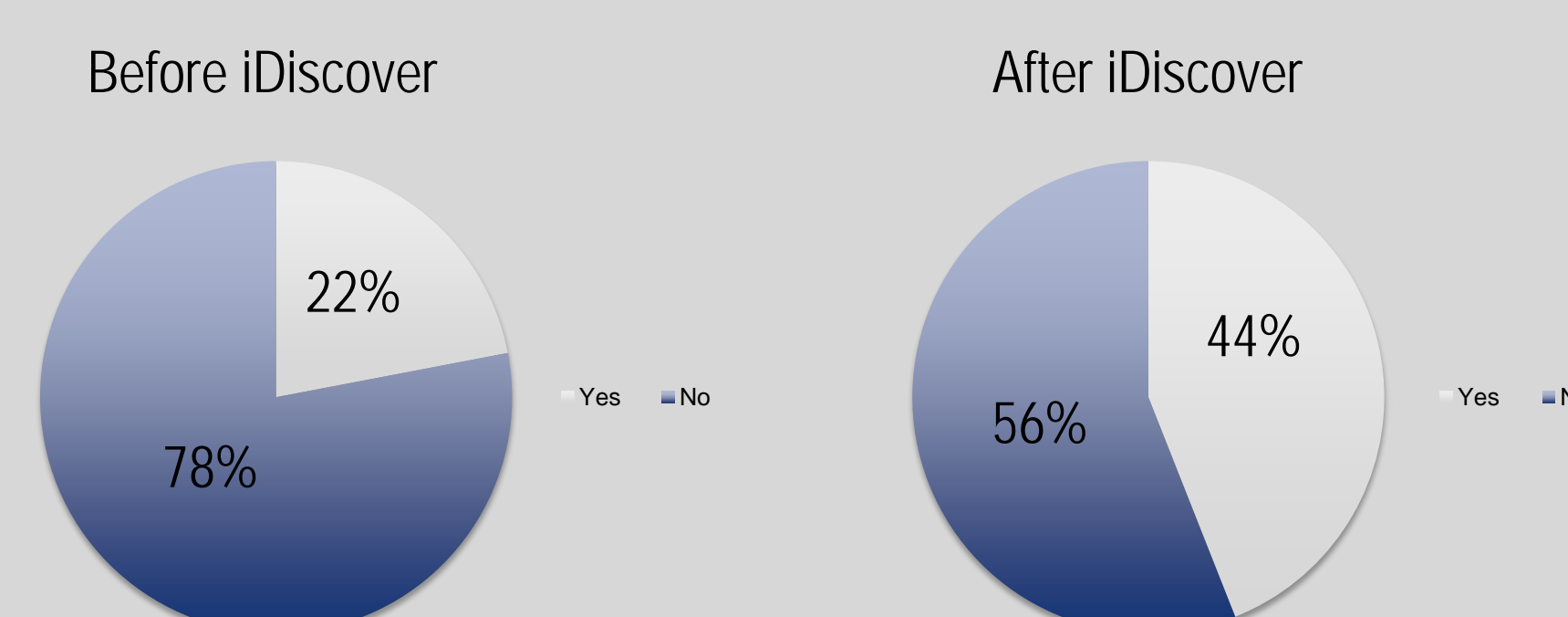
- Lakeland Middle: Located in inner-city Baltimore. 54% Female, 46% Male.
- Very motivated set of students and staff.
- Technology was archaic but still present
- Students were most interested in financial aid and scholarships, intrigued by the summer programs. Very excited when distributing the resources we gathered for them.
- Students and staff had difficulty grasping the concept of Information Science. Became more interested when I spoke to some students individually about the interdisciplinary nature of IS.
- Held a discussion with the students where they suggested how information on social sites could be organized.
- School administration stressed that the students needed tutoring resources in Math. This guided our construction of the handouts.

### Significant Results from Surveys

Do you have a good understanding about STEM?



How likely are you to pursue Mathematics in college?



## Conclusions



Lakeland Middle was impressed with iDiscover and asked us to return and present the program to more students

Centralized Baltimore City Public School Administration moved very slowly in placing our program into a school.

Eventually we began contacting schools individually and this sped up our efforts greatly, we found interested teachers

Had to focus on STEM more than Information Sciences because the complete lack of knowledge regarding Information Sciences



## Acknowledgements/Sources

- Mike Depew, James "Kip" Courier, and Courtney Loader – i3 Inclusion Institute
- Lakeland Middle School Staff and Students
- UMBC Research Compliance Center
- Way2GoMD – University System of MD
- For sources refer to:  
<http://pastebin.com/bn5FrRPU>