



Science, Technology, Engineering, and Math (STEM) Career Exploration Utilizing e-Portfolio

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STEM W.I.N.G.S

Winning In Navigating Graduation Success

Calling on All STEM Majors!!!!

The Office of Institutional Effectiveness and Research is searching for you!



We are looking for: Juniors Majoring in Biology, Chemistry or Engineering to participate in our pilot program STEM W.I.N.G.S.! (Winning In Navigating Graduation Success)

W.I.N.G.S. will assist STEM students in exploring diverse options/opportunities for career preparation. All participants will receive a \$500 stipend for participating! We are here to help you SOAR!



TSU-18-0053(A)-7g-11820 –
Tennessee State University is
an AA/EEO employer."

For more information
contact Tammy Taylor at
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Purpose of STEM W.I.N.G.S

To support career exploration and ensure successful academic pathway course selections

- ▶ Encouraging STEM juniors to participate in career research and exploration project.
 - ▶ Research theoretical knowledge from thematic fields of career choices and career preparation requirement
 - ▶ The project is designed to explore this reality in the place where it will be especially relevant: one's future profession.

Methodology

- ▶ Development of an e-portfolio as the repository of the research and exploration activities
- ▶ the tool for both direct and indirect assessment.

High Impact Practice of e-Portfolio

- ▶ Perfect tool for building a consciously more learner centered and outcomes oriented project
- ▶ This project uses e-Portfolio as a product showcase and as an assessment measure.

Requirements of STEM W.I.N.G.S

- ▶ Reflection papers in e-Portfolios
- ▶ e-Portfolios shared documents
- ▶ Presentation from various careers
- ▶ Mentoring, daily activities of the career
- ▶ Reflection papers to document changes, maturing, and increased understanding of the career selection requirements/expectations

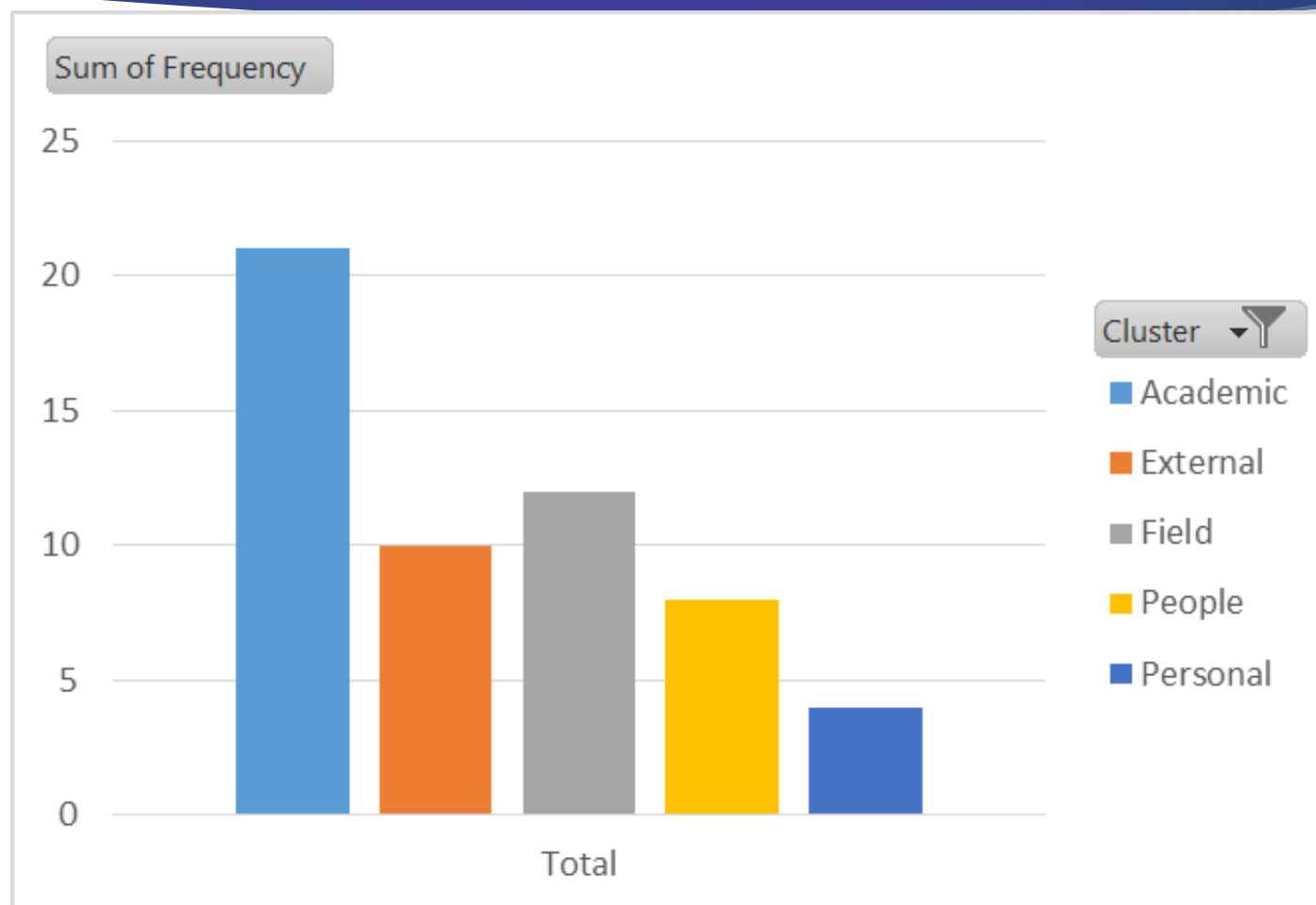
STEM W.I.N.G.S Participants

- ▶ 34 participants
- ▶ Career Aspirations by Fields
 - ▶ Engineering
 - ▶ Biology/Medical
 - ▶ Computer Science
 - ▶ Chemistry
 - ▶ Mathematics

Analysis of 1st e-Portfolio artifact

- ▶ Analyzed inductively, resulting in the identification of three main areas of focus
 - ▶ **Why** the student selected the career field
 - ▶ The temporal **orientation** of this choice
 - ▶ The student's current **knowledge** of the career field

Analysis of Why Selected Career Field



Analysis of Temporal Orientation Towards Career

- ▶ 61 % was Backward looking at the beginning –
 - ▶ “ my interest in computer science started back in 2007 during middle school. I have always been a fan on video games ...”
 - ▶ “I have always wanted to be a doctor...”
 - ▶ “My desire to be in STEM manifested at a young age...’

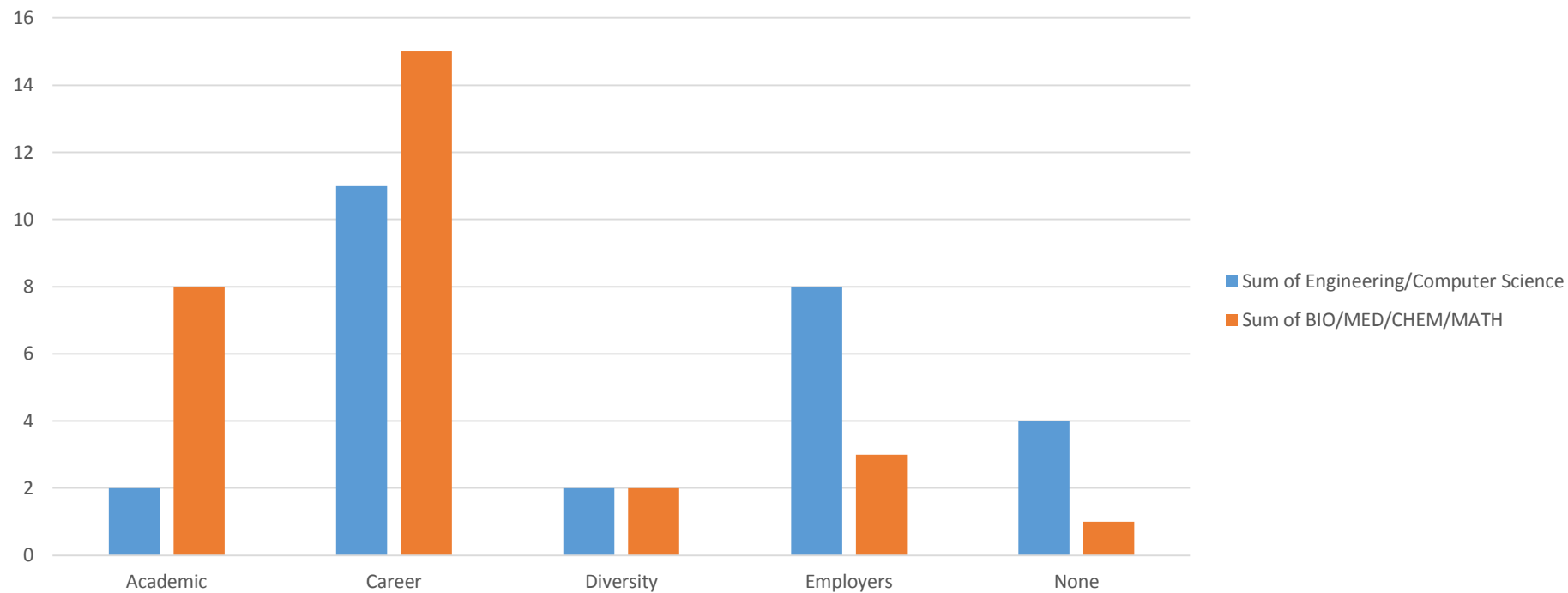
Analysis of Temporal Orientation Towards Career

- ▶ 26 % contained Forward looking
 - ▶ " ... the devices and new amazing technologies that I would love to be apart of and to design"
 - ▶ " ... all I really can do look toward improving most of today's technology"
- ▶ 13 % contained backward and forward looking
 - ▶ "I loved to figure out if the pieces of the puzzle meshed and how to fix anything around the house..., Therefore I can see myself in the future working toward bettering technology."

Fund of Knowledge

Fund of Knowledge	CLUSTER	Total
Additional skills or degree needed beyond bachelors	Academic	10
Globalization	Diversity	2
Knowledge of Underrepresentation in the field	Diversity	2
Details of Companies (e.g Location, Projects, etc)	Employers	5
Internship Opportunities in Career	Employers	6
Lack of specific knowledge	None	2
NONE	None	3
Challenges faced on the job	Career	3
Daily working conditions or activities	Career	5
Details of the types of work	Career	5
Salary Information	Career	2
Sub Field Information	Career	11

Analysis of Knowledge of Career Field



Next Steps

- ▶ Continue the Speaker Series
 - ▶ Engineers
 - ▶ Physicians
 - ▶ Pharmacist
 - ▶ Computer Technologist
 - ▶ Research Scientist
- ▶ Implement the Mentoring Activity with Alumni employed in the STEM fields
- ▶ Student Research and Exploration via e-Portfolio artifacts

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- ▶ Speaker Series

Ms. Tammy Taylor

Administrative
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