

What are SEA and SEI?

The University of Michigan Multicultural Engineering Programs Office (MEPO) sponsors several programs under the Summer Engineering Academy (SEA) and the Ford Motor Company Summer Engineering Institute (SEI). Each offers a rigorous curriculum to expose high achieving pre-college and entering first-year students to engineering disciplines and career opportunities. SEA and SEI participants interact with UM faculty, students, alumni, and other talented peers who share interests in mathematics, science, and engineering. As such, they form a pipeline of prospective engineering talent.

SEA 2009 consists of three programs:

- Michigan Introduction to Technology and Engineering (MITE 10th/11th Grades)
- Leadership, Education, and Development – Program for Engineering (LEAD 11th/12th Grades)
- Summer College Engineering Exposure Program (SCEEP 12th Grade)

SEI 2009 consists of two entering first-year programs:

- Michigan Science Technology Engineering and Mathematics Academy (M-STEM)
- Professionals-In-Training Program (PTP)

Purpose of Evaluation

The evaluation set out to answer the following questions:

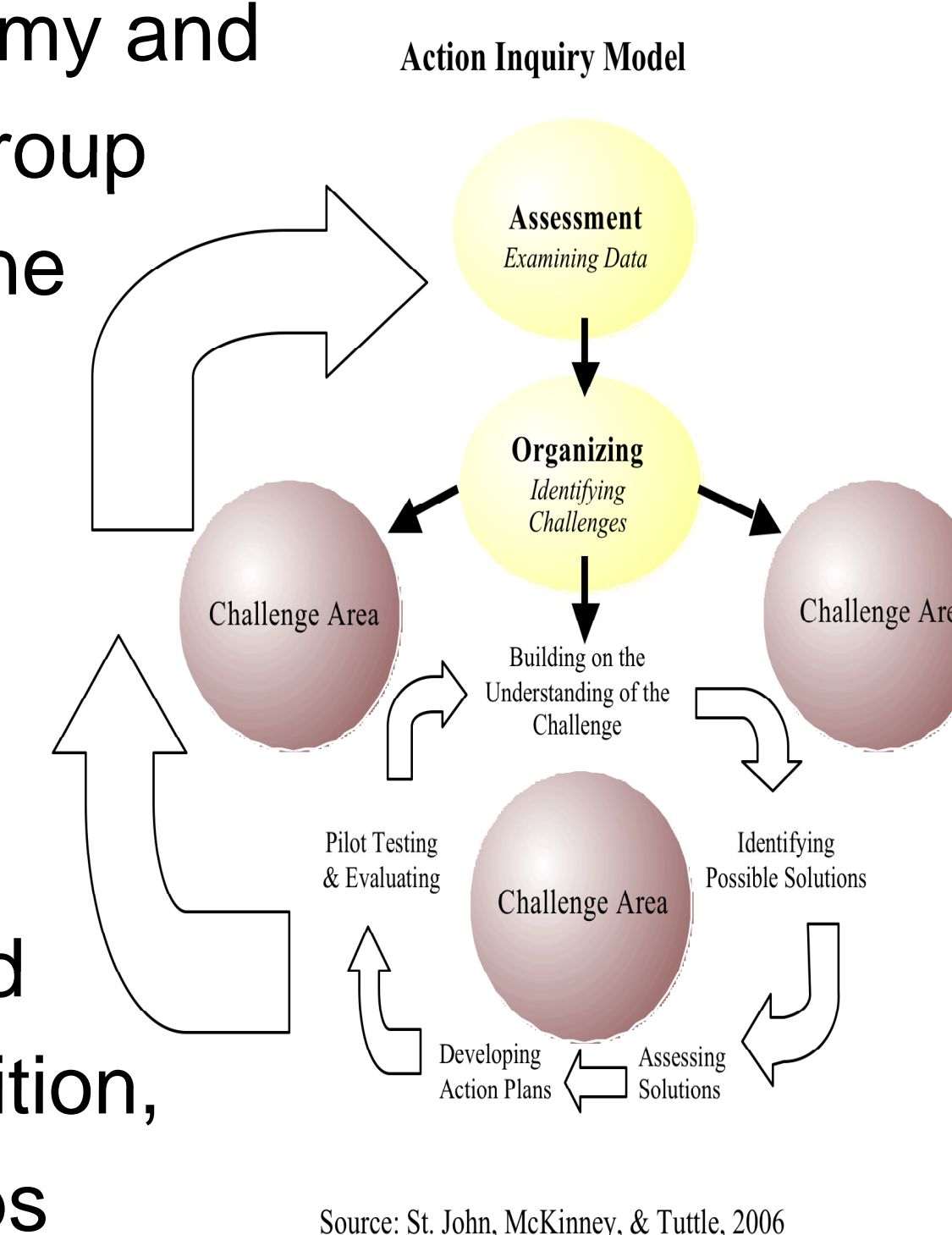
- Why did students participate in SEA and SEI?
- What were pre-entry influences of the SEA and SEI participants?

Sample

	MITE	LEAD	SCEEP II	SCEEP III	PTP	M-STEM
Total # of program enrollees, Summer 2009	39	29	29	27	13	49
# of focus group interview participants	9	10	10	10	7	7

Evaluation Framework and Methodology

The evaluation process of the Academy and Institute involved conducting focus group interviews with participants to examine programmatic areas based on the Action Inquiry Model (St. John, McKinney, & Tuttle, 2006). Evaluative assessments were provided that include students' career aspirations, levels of high school preparation, and patterns of civic engagement. In addition, the framework examined relationships between summer curriculum offerings and program outcomes. Content analysis was employed to evaluate the SEA and SEI data collected from six focus groups in July and August.



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Results

Recurrent themes from a portion of the interview data suggest that participants had multiple reasons and influences for attending SEA and SEI.

Codes	References
Parental Support	36
Major and Career Interests	27
Participation in Other Summer Programs	26
Interest in UM	19
College and Engineering Exposure	16
Reputable Campus and College	14
Financial	13
Peer Influence	13
College Preparation	7
Experience "Big School" Environment	6
Prior Involvement in SEA	6
Math and Science Improvement	5

Discussion

Overall, this evaluation illuminates students' primary familial considerations, parental support, for participation in SEA and SEI. In addition, findings reveal that further exploration of major and career interests were important to attendees which may be a result from prior participation in summer programs. Another point of interest was the University of Michigan as a whole.

References

- St. John, E. P. (2003). Keeping the promise: The impact of Indiana's Twenty-first Century Scholars Program. *The Review of Higher Education*, 17(1), 103-123.
- St. John, E. P., McKinney, J. S., & Tuttle, T. (2006). Using Action Inquiry to Address Critical Challenges, In St. John, E. P. & M. Wilkerson, *Using persistence research to improve academic success*. New Directions for Institutional Research, no. 130. San Francisco: Jossey-Bass, 63-76.