

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Impact of a Summer STEM Program in Enhancing Understanding of Agriculture and Related Sciences for Pre-College Students

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NACTA Annual Conference 2017



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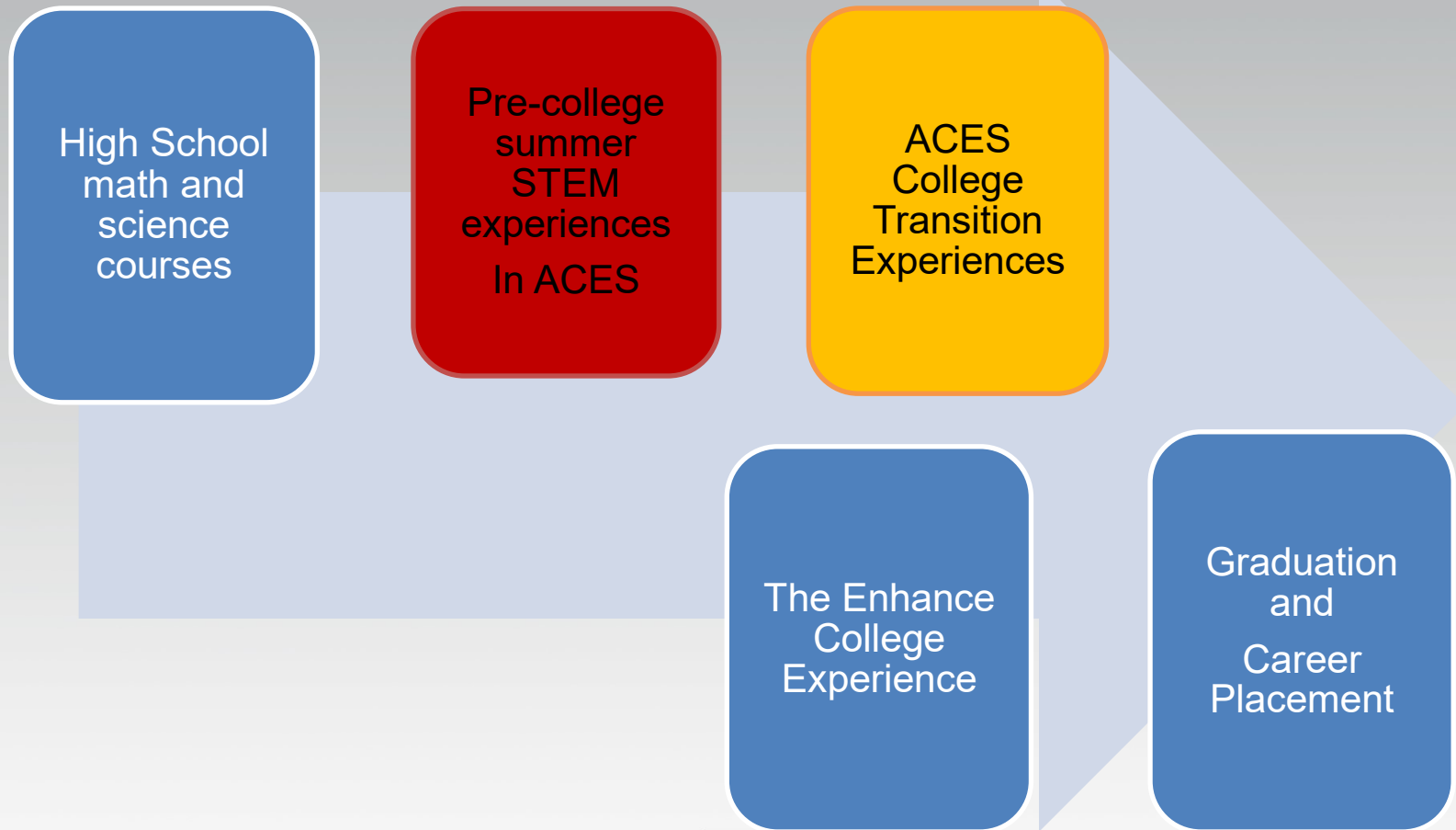


Challenges

- Competing with other STEM disciplines
- Families and culture – image of the food and agricultural industry
- Understanding the Ag Sciences as STEM
- Professional images of the food and agricultural sciences among counselors and science teachers

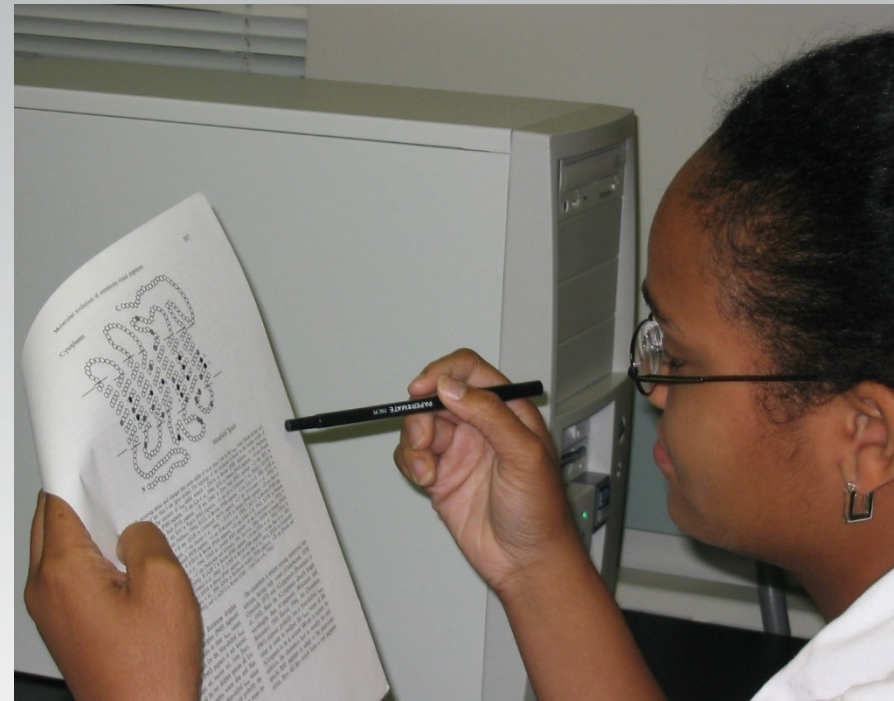


Creating the Pipeline



Pre-College STEM education

- Hands-on learning with real projects and experiments
- Has math and science learning as its core
- Is technology driven



Pre-College STEM education

- Emphasizes Mentoring
- Promotes creativity and inspires critical thinking
- Promotes STEM careers



Enhancing presentation skills



Building writing skills



Pre-College Summer STEM Experiences in ACES

A week at
ACES
Experience

Research
Apprentice
Program (I)
and Ag
Discovery
Program

Research
Apprentice
Program
(II)

Young
Scholars
Program
(college
transition)



Research Apprentice Program

- Math and Science Based
- Team-Based Approach
- Project-Based Learning



Business and Industry Based



Recruitment of Applicants

- High School Sophomores and Juniors
- Underrepresented and urban-based
- Email announcements and posters
- Apply via secure website
- Application: Basic information, essay, transcript, recommendation forms



Evaluation of Applicants

- Top 15 percent of high school class
- B grades in all core subjects: Math, Science and English
- 3.0/4.0 overall grades
- Recommendation from math/science teacher and counselor
- STEM based essay



Selection of Participants

- Invitation to Interview based on Essay related to Areas Offered and/or Specific Project
- Personal Interviews to Match
- Offer Based on Program/Project Match
- Acceptance to Specific Area



Stage 1: Academic Assessment

- Two weeks of skill assessment and enrichment activities
- Math Skills: On-line Program Review
- Science Skills: Teaching Advanced Biology Skills
- Communication Skills: Writing and Research Assessment



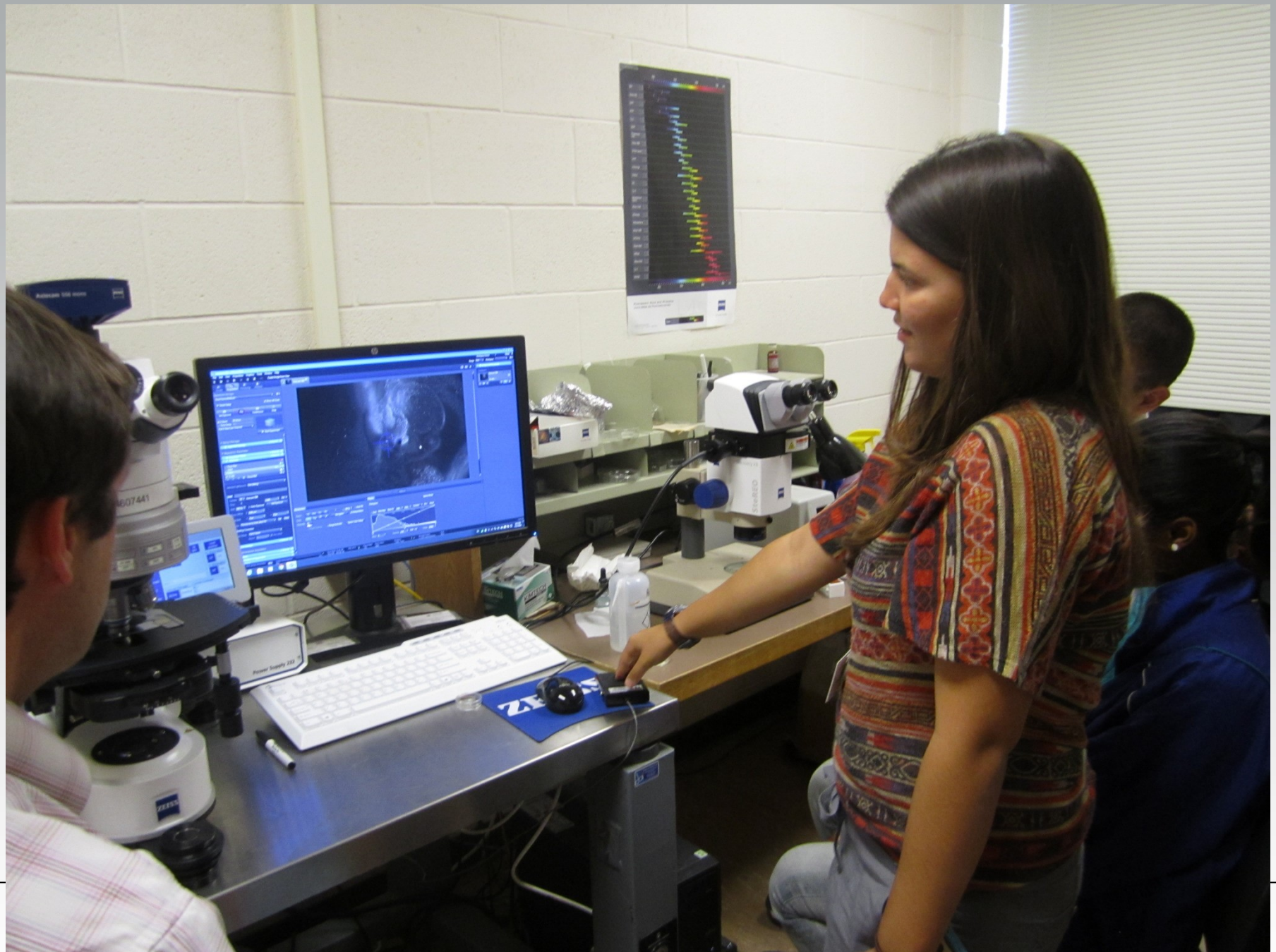
Stage 2: Application of Math and Science through lab projects





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Stage 3: Application of Math and Science through industry field trips







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Stage 4: Presentation of Team Projects



Getting ready for the Presentation



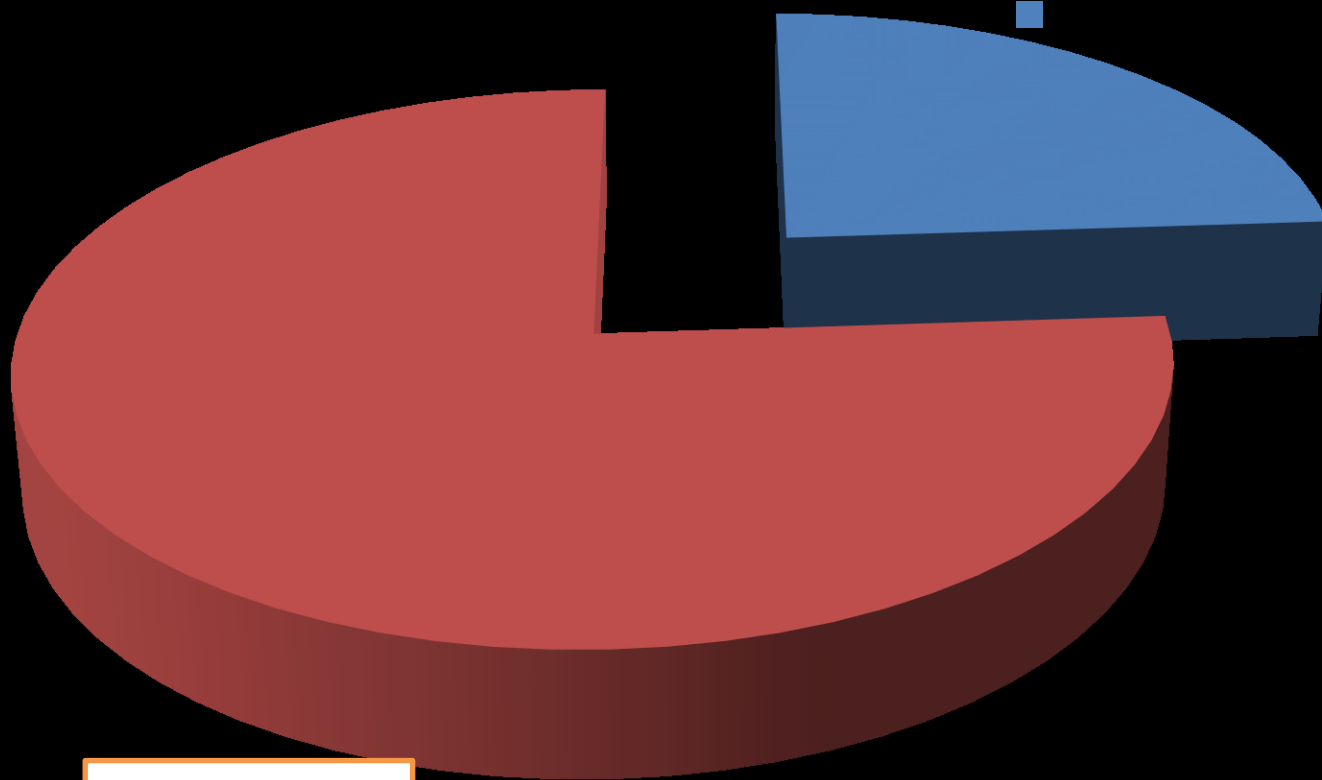
Important Topic!!!



Impact and Outcomes 2006 - 2015



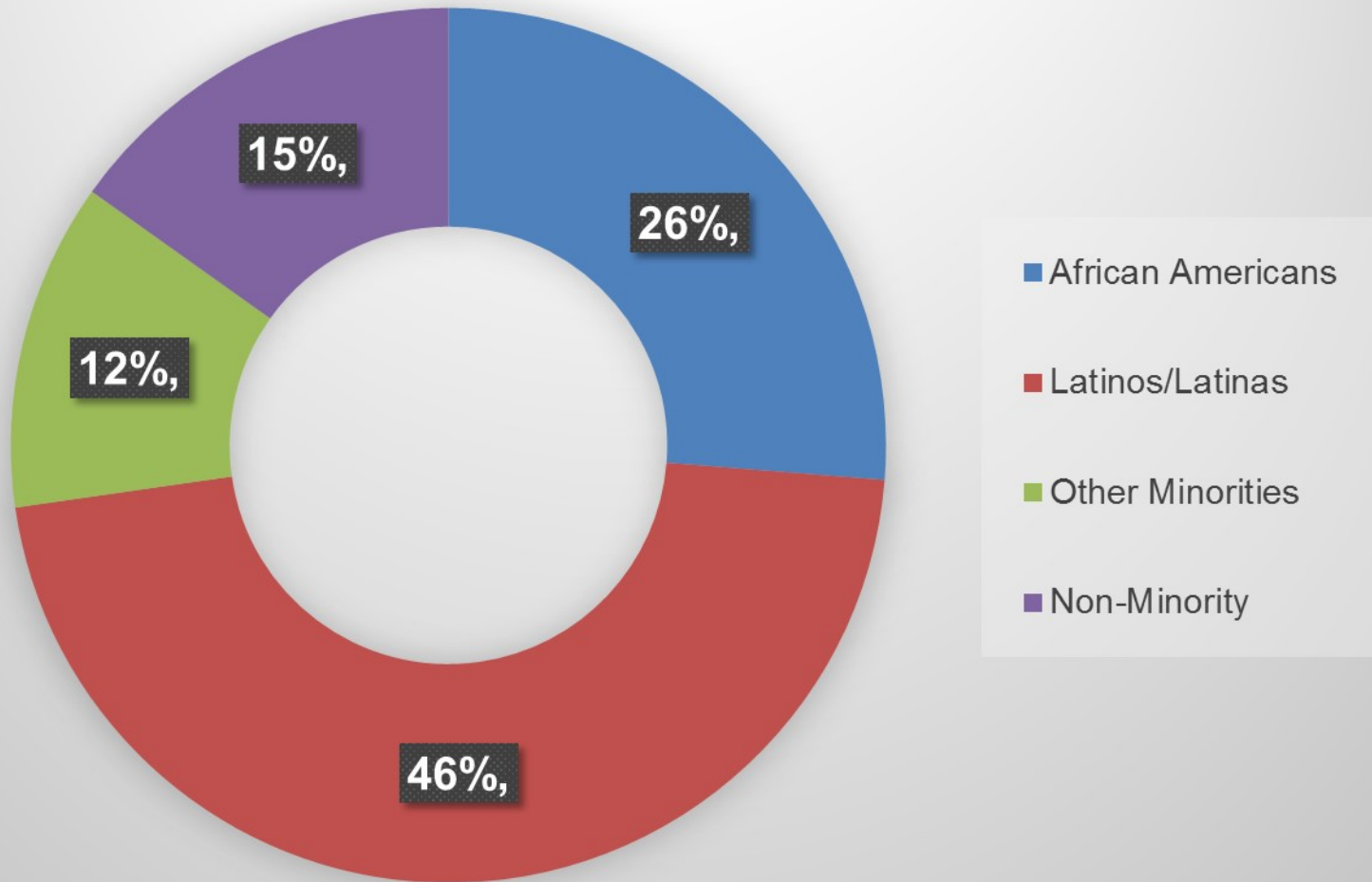
GENDER OF BAR PARTICIPANTS



Female, 77%

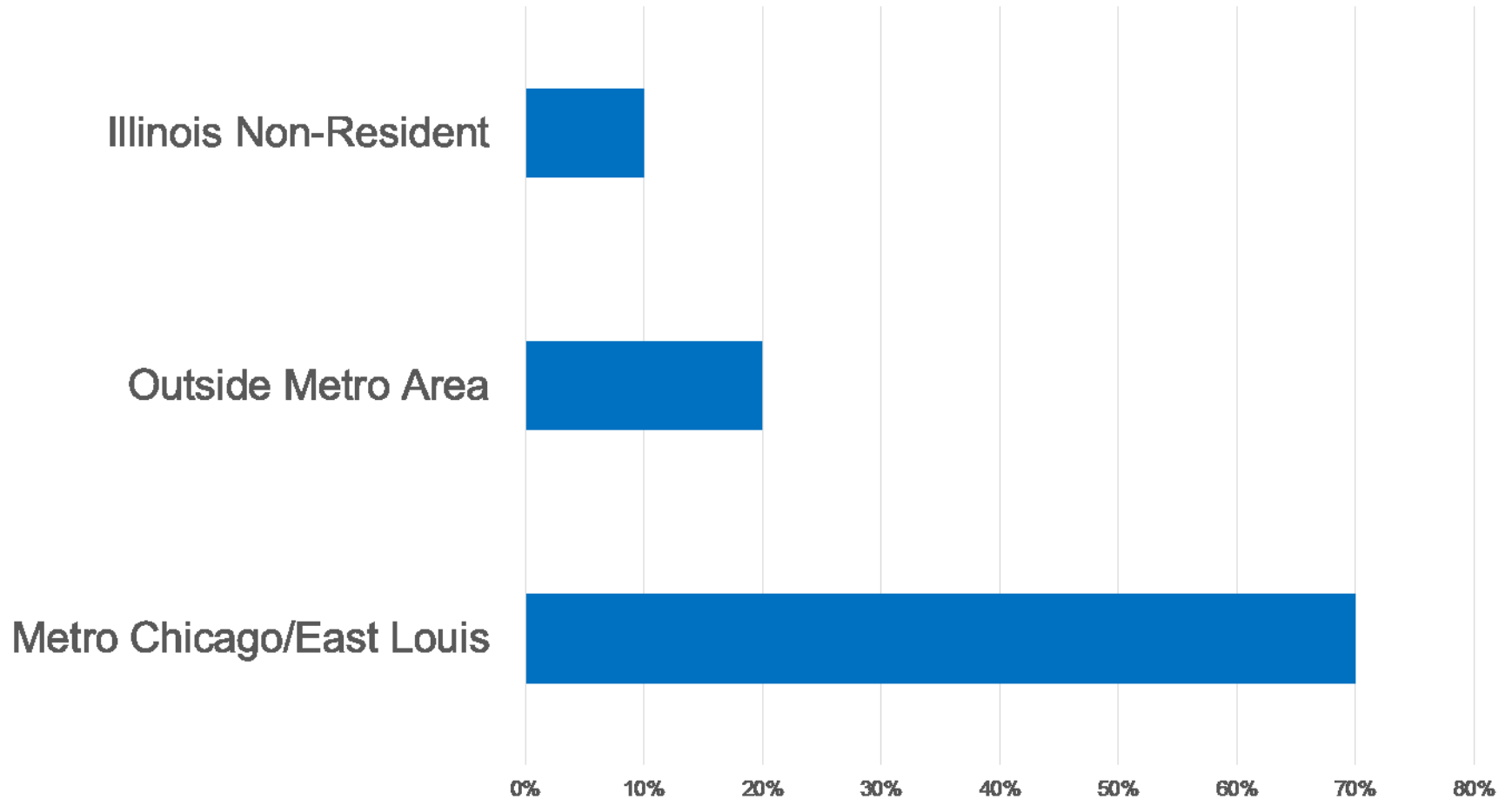


RAP Ethnicity -2006-2015



RAP Place of Residence

Chart Title



RAP I Participants 2006-2015

ACES Dept	Dept Participation	Enrolled UIUC	Enrolled in RAP Dept	% Graduated same major	% Graduated ACES
Ag and Biological Eng	50	28	17	58%	75%
Ag & Consumer Economics	55	30	20	64%	80%
Animal Sciences	100	70	60	70%	90%
Crop Sciences	50	21	15	47%	80%
Food Science & Human Nutrition	125	91	75	67%	90%
Human Development & Family Studies	55	30	20	50%	80%
ACES Total	435	270	207	64%	80%

RAP II Participants 2006-2015

ACES Dept	Dept Participation	Enrolled UIUC	Enrolled in RAP Dept	% Graduated same major	% Graduated ACES
Ag and Biological Eng	30	19	14	71%	84%
Ag & Consumer Economics	33	23	18	72%	87%
Animal Sciences	60	48	40	76%	92%
Crop Sciences	36	23	19	53%	87%
Food Science & Human Nutrition	80	57	50	79%	94%
Human Development & Family Studies	38	25	18	75%	80%
ACES Total	277	195	159	74%	89%

End Goal

- Over 1300 RAP Alumni College Graduates
- 65% pursuing careers in Food, Ag and Environmental Sciences
- 37% of RAP Alumni received/pursuing graduate/professional degree

