

Are Undergraduates Ready for a Career?

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Background

- Undergraduate education should prepare students to understand and deal intelligently with the world and societal problems (Chickering & Gamson, 1987).
- Today's fast paced, ever changing, highly competitive, and knowledge-based global economy demands students to acquire a wide range of skills necessary and remain competent.

Seven Vectors of Student Development

- **Developing competence**
- **Managing emotions**
- **Moving through autonomy toward interdependence**
- **Developing interpersonal relationships**
- **Establishing identity**
- **Developing purpose**
- **Developing integrity**

(Chickering and Reisser, 1997)

Skills and Competencies Employers Look for New Hires

- Verbal communication
- Teamwork
- Plan, organize and prioritize work
- Decision making and problem solving
- Proficiency with computer software programs
- Obtain and process information
- Quantitative data analysis
- Technical knowledge related to job
- Create and edit reports
- Influence others

(National Association of Colleges and Employers Job Outlook, 2013)

Career Preparedness Learning Outcomes

- Knowledge applicable to anticipated career path
- Skills required for anticipated career
- Critical thinking and problem solving skills
- Written communication skills
- Verbal communication skills
- Teamwork skills
- Research skills
- Computer technology and database research skills
- Diversity
- Leadership and interpersonal skills

(Shrestha, 2009)

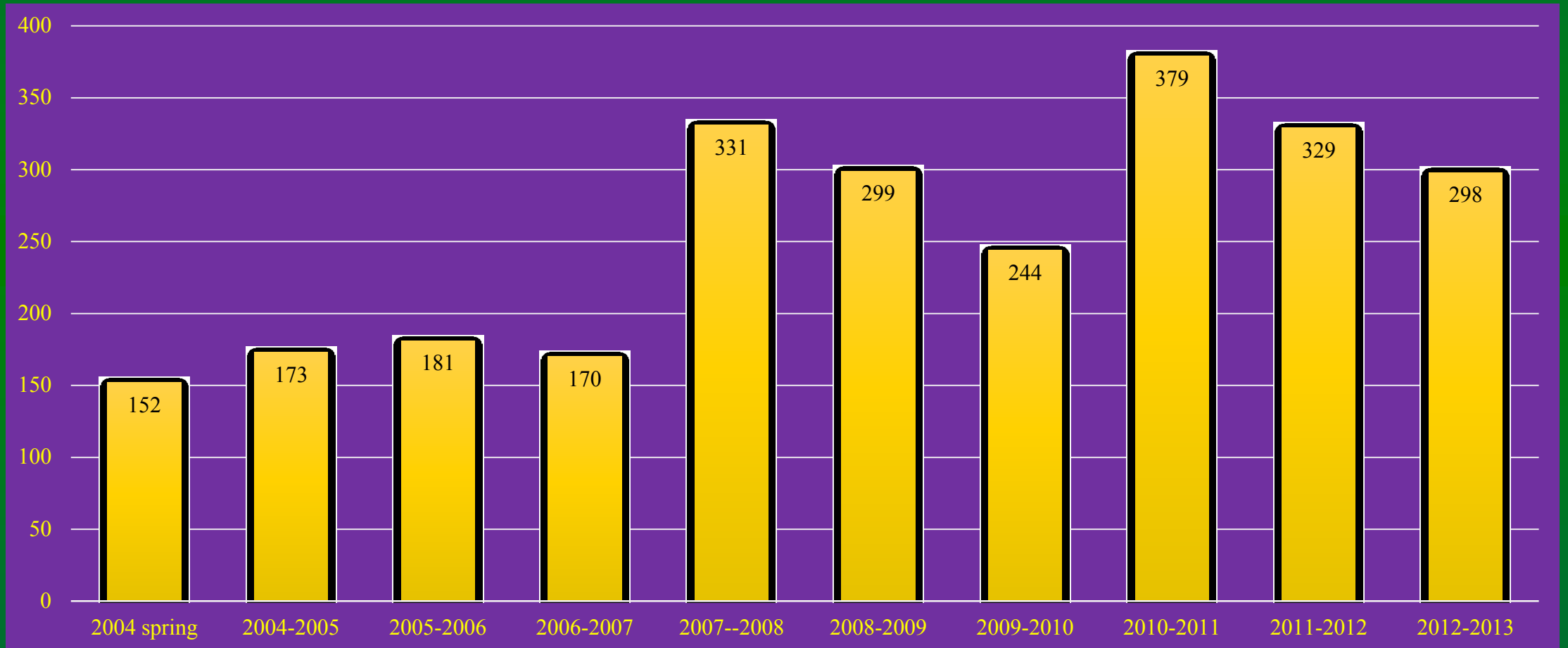
Objectives

- Identify the trend of students' perceptions of their career preparedness learning outcomes;
- Identify whether students' perceptions of their career preparedness learning outcomes differ by their research experience, specialization, academic years, and demographics; and
- Solicit inputs to improve career preparedness learning outcomes.

Methodology

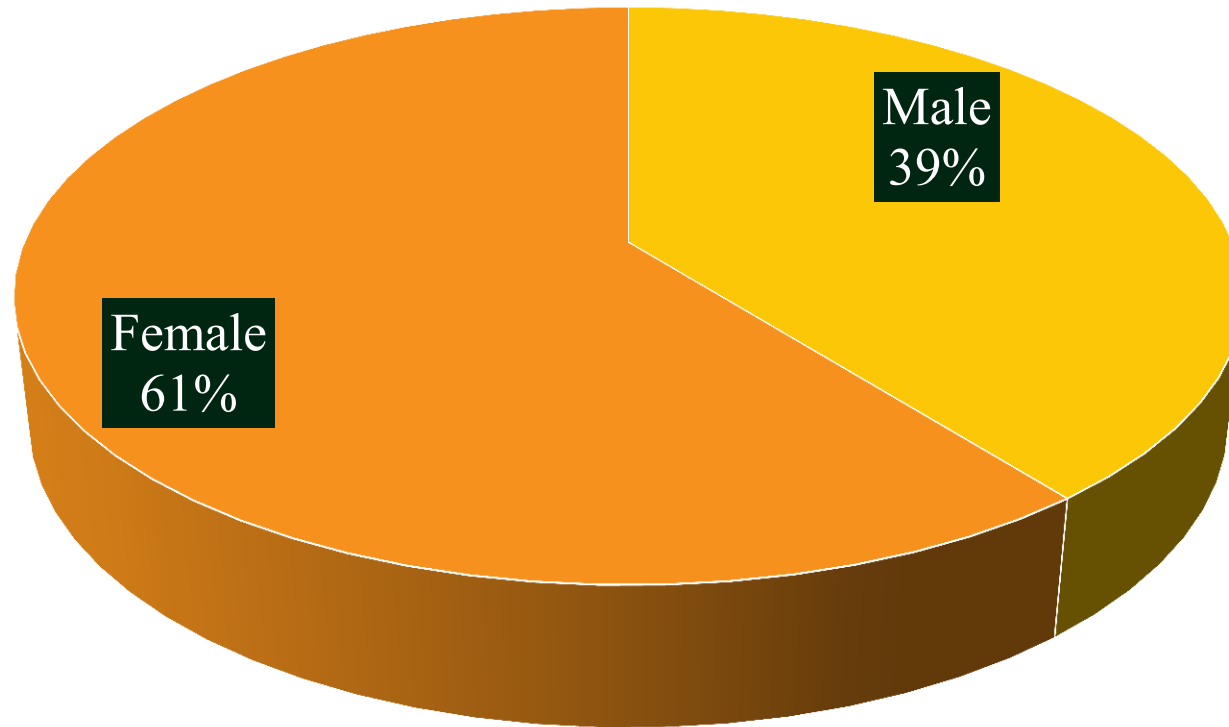
- Population: The CANR seniors from 2004-2013
- Data collection: Online survey in Fall and Spring (voluntary participation, i.e., no random sampling done)
- Likert type scales used:
 - 1=made no contribution, 2=made some contribution, 3=made moderate contribution, 4=made considerable contribution, 5=contributed a great deal
- Reliability coefficient (post-hoc): .91
- Data analysis: Descriptive statistics, *t*-test, ANOVA.

Data Collection: Respondents by Years

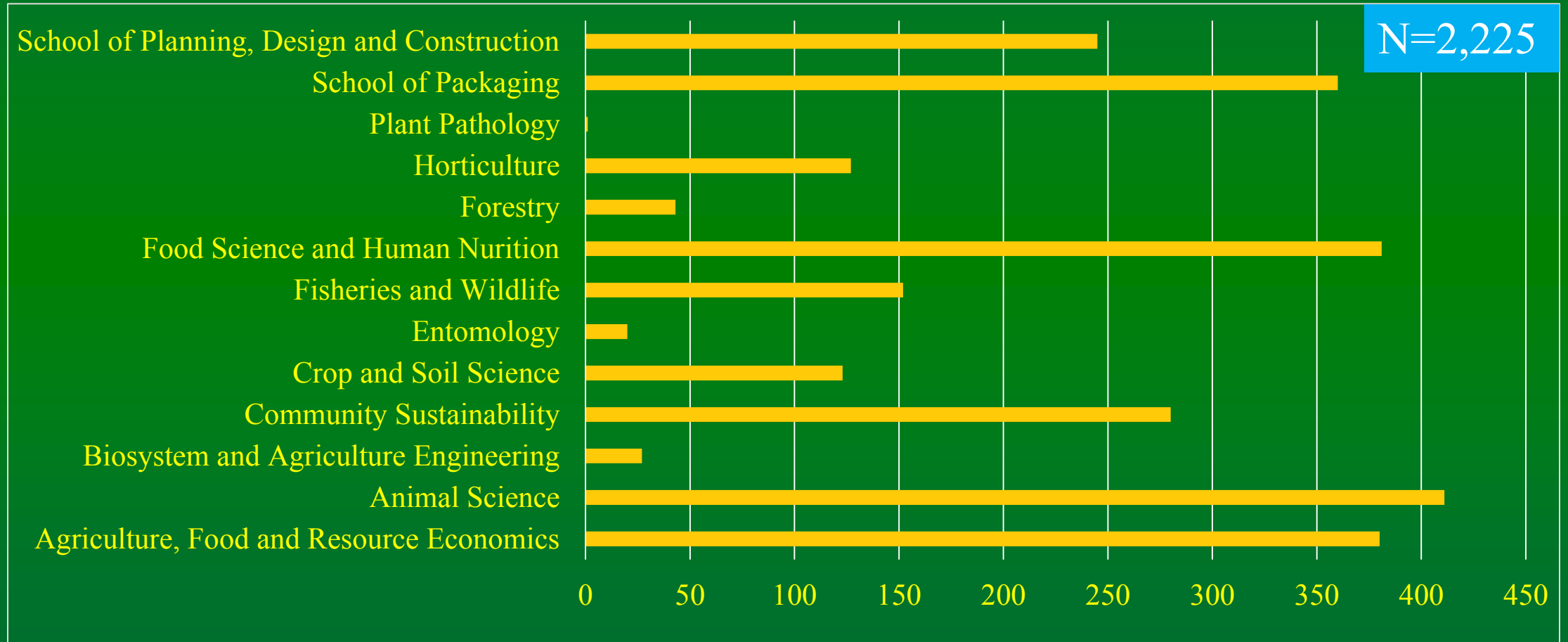


Demographics

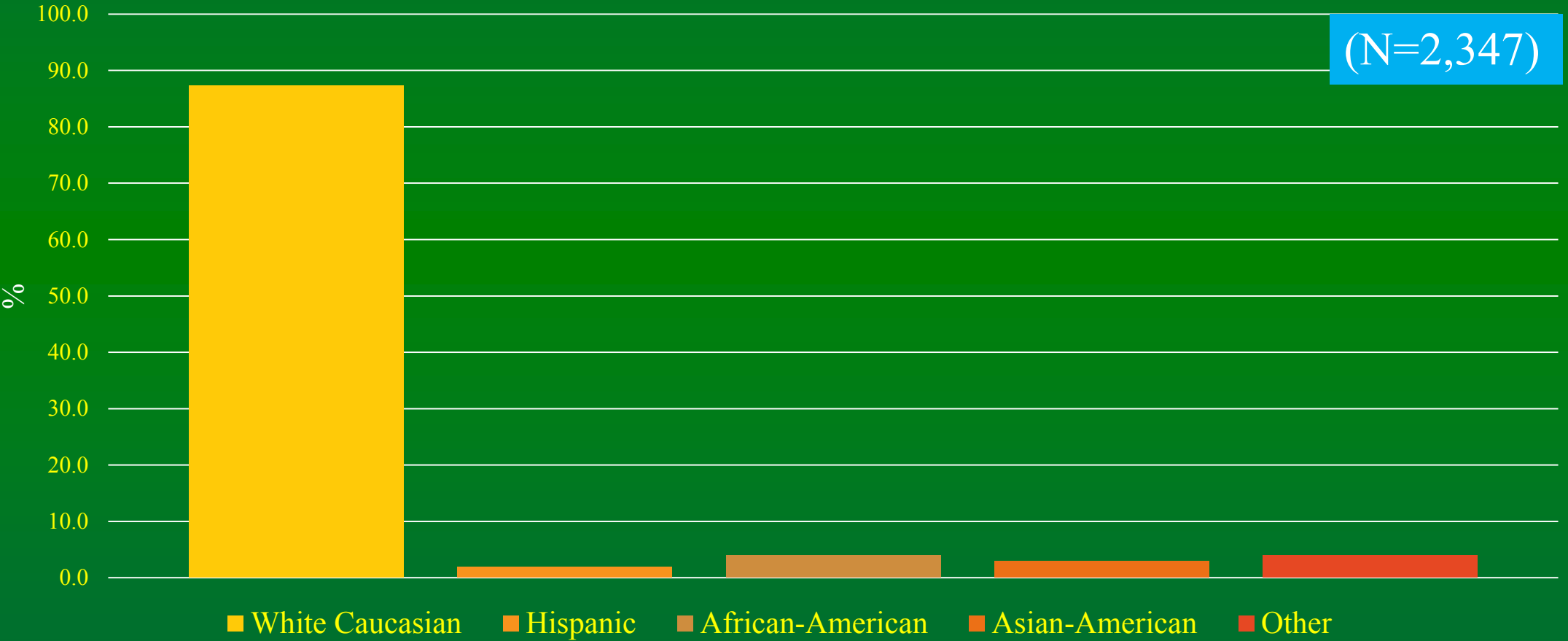
(N=2,490)



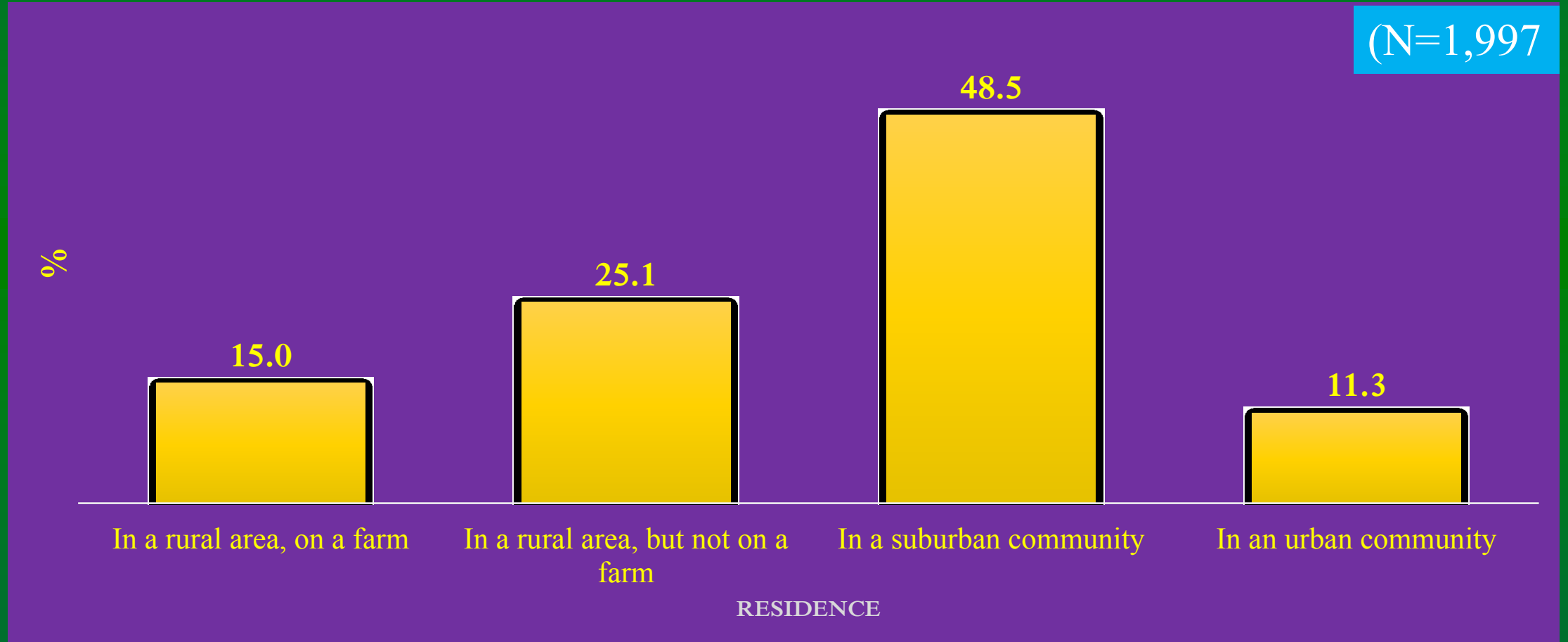
Respondents by Departments



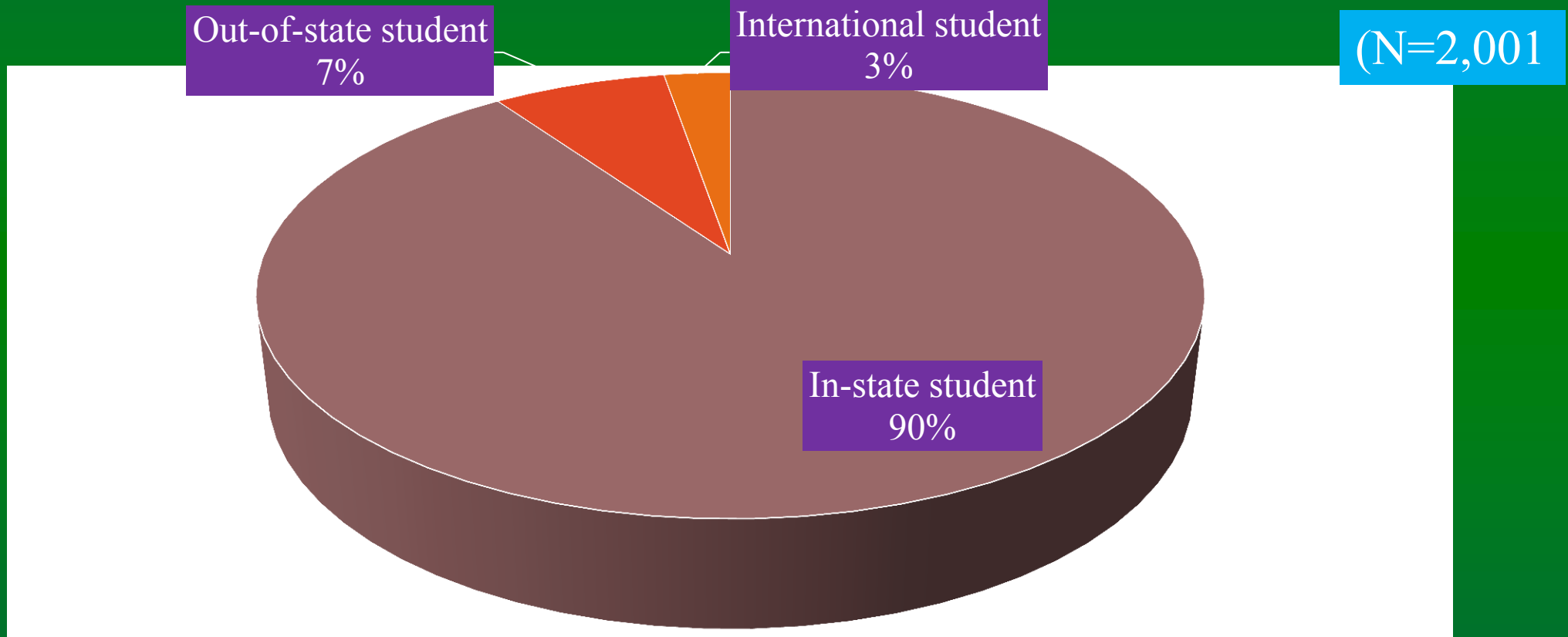
Respondents' Ethnicity



Residence

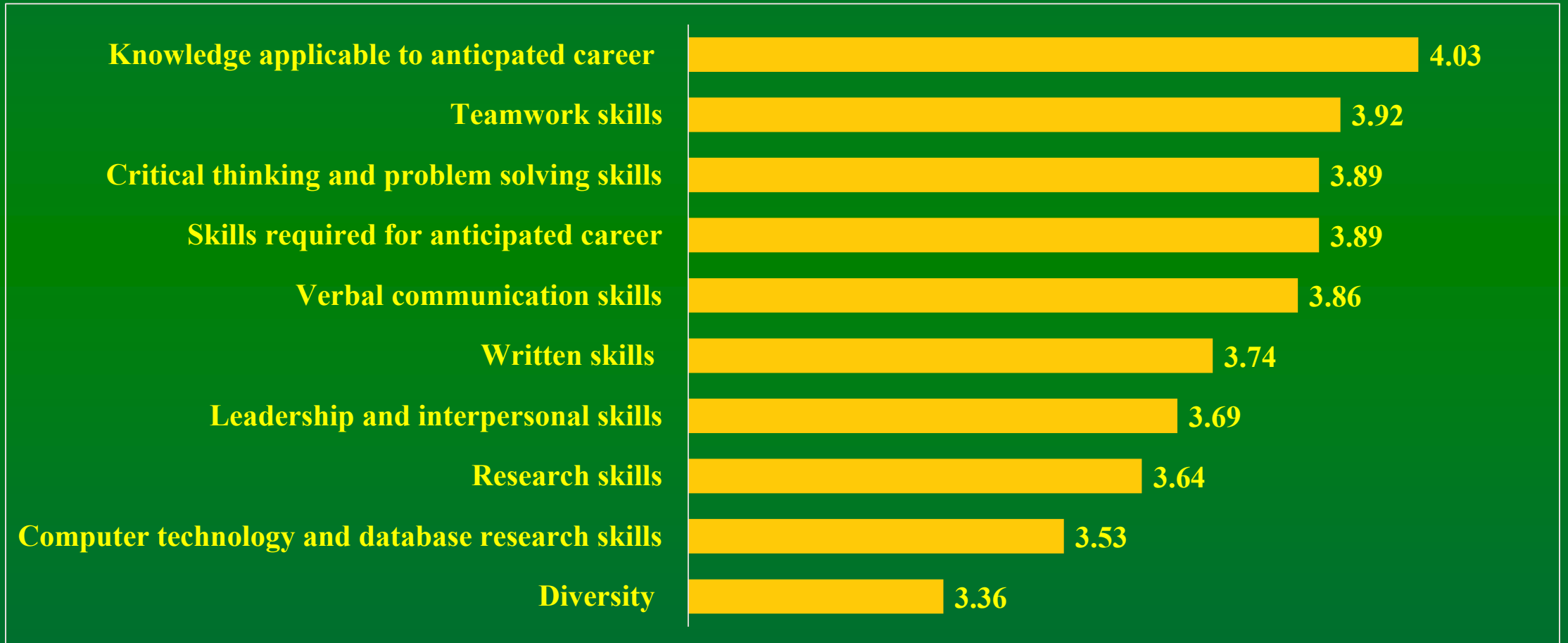


Type of Residency

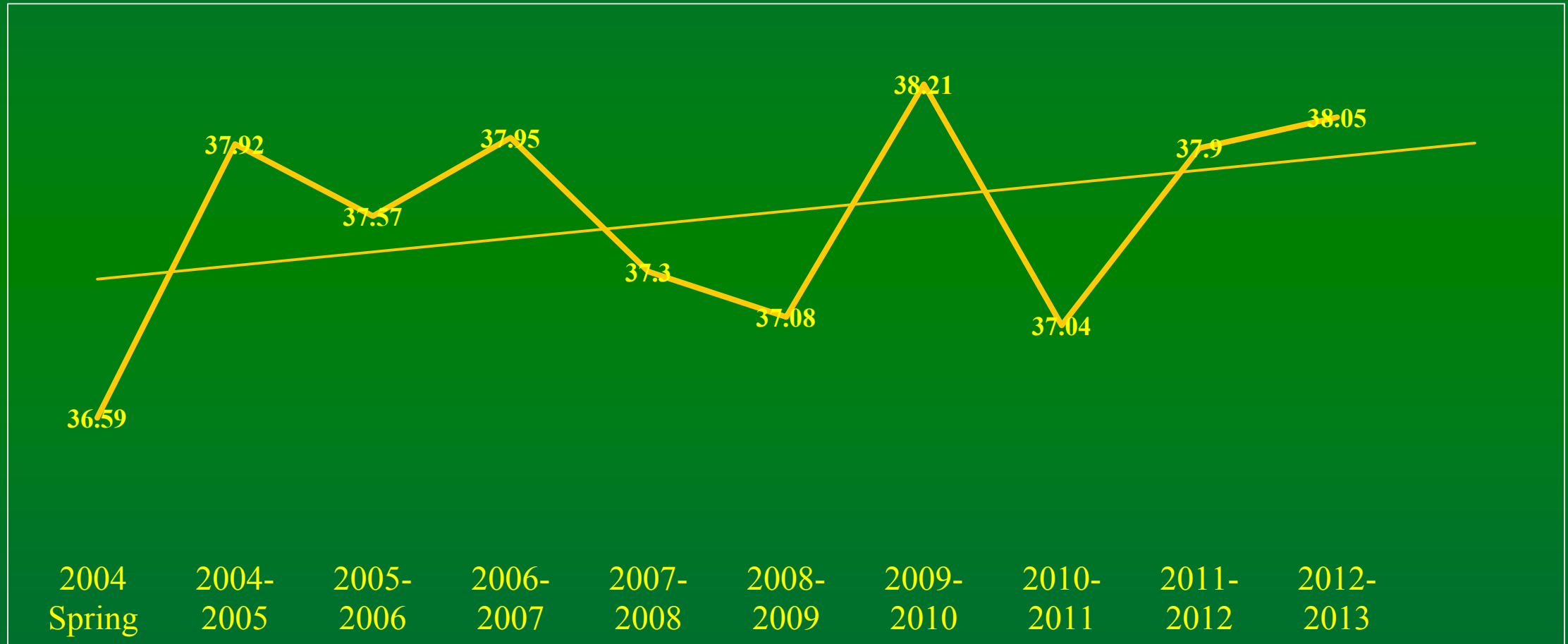


Results

Overall Perceptions of Career Preparedness Learning Outcomes



Summated Score of Perceptions of Career Preparedness Learning Outcomes



Perceptions by Participation in Undergraduate Research

Career preparedness learning outcomes	Participation in Research	N	Mean	<i>t</i> value	<i>p</i> value
Knowledge applicable to anticipated career path	Yes	519	4.16	3.848	.000
	No	885	3.98		
Skills required for anticipated career	Yes	519	3.99	3.064	.002
	No	886	3.84		
Critical thinking and problem solving skills	Yes	517	4.02	4.099	.000
	No	878	3.82		
Written communication skills	Yes	518	3.80	2.193	.028
	No	887	3.68		
Research skills	Yes	515	3.92	8.781	.000
	No	883	3.44		

Perceptions by Participation in Undergraduate Research ...

Career preparedness learning outcomes	Participation in Research	N	Mean	<i>t</i> value	<i>p</i> value
Verbal communication skills	Yes	519	3.94	1.518	.129
	No	883	3.86		
Teamwork skills	Yes	519	3.91	-.317	.752
	No	885	3.92		
Computer technology and database research skills	Yes	519	3.58	1.544	.123
	No	884	3.50		
Diversity	Yes	517	3.38	-1.000	.317
	No	885	3.44		
Leadership and interpersonal skills	Yes	519	3.77	1.757	.079
	No	886	3.67		

Perceptions of Skills by Specialization

Career preparedness learning outcomes	Specialization	N	Mean	<i>t</i> value	<i>p</i> value
Skills required for anticipated career	Yes	564	3.82	-2.530	.012
	No	844	3.94		
Verbal communication skills	Yes	562	3.79	-3.210	.001
	No	843	3.95		
Teamwork skills	Yes	565	3.79	-4.185	.000
	No	842	4.00		
Computer technology and database research skills	Yes	564	3.41	-3.553	.000
	No	842	3.61		
Diversity	Yes	563	3.33	-2.305	.021
	No	842	3.47		

Perceptions of Skills by Specialization...

Career preparedness learning outcomes	Specialization	N	Mean	<i>t</i> value	<i>p</i> value
Knowledge applicable to anticipated career path	Yes	563	4.02	-.722	.470
	No	844	4.06		
Critical thinking and problem solving skills	Yes	562	3.85	-1.545	.122
	No	836	3.93		
Written communication skills	Yes	565	3.71	-.592	.554
	No	843	3.74		
Research skills	Yes	562	3.60	-.568	.570
	No	839	3.63		
Leadership and interpersonal skills	Yes	565	3.66	-1.531	.126
	No	841	3.75		

Perceptions of Skills by Gender

Career preparedness learning outcomes	Gender	N	Mean	<i>t</i> value	<i>p</i> value
Teamwork skills	Male	966	3.88	2.238	.025
	Female	1498	3.97		

No significant difference was found on other skills between male and female respondents' perceptions.

Perceptions of Skills by Type of Residence

Career preparedness learning outcomes	Type of Residence				<i>F</i> value	<i>P</i> value
	Rural area, on a farm (n=298)	Rural, but not on a farm (n=497)	Suburban (n=958)	Urban (n=223)		
	Mean					
Knowledge applicable to anticipated career path	3.90	4.07	4.07	3.98	3.409	.017
Skills required for anticipated career	3.69	3.96	3.93	3.82	6.963	.000
Critical thinking and problem solving skills	3.76	3.90	3.93	3.85	2.849	.036
Verbal communication skills	3.72	3.86	3.90	3.87	2.972	.031
Teamwork skills	3.73	3.93	3.98	4.00	5.754	.001
Computer technology and database research skills	3.40	3.56	3.54	3.64	2.541	.055
Diversity	3.34	3.34	3.38	3.61	3.417	.017

Perceptions of Skills by Type of Residence...

Career preparedness learning outcomes	Type of Residence				<i>F</i> value	<i>p</i> value
	Rural area, on a farm (n=298)	Rural, but not on a farm (n=497)	Suburban (n=958)	Urban (n=223)		
	Mean					
Written communication skills	3.65	3.72	3.73	3.73	.635	.593
Research skills	3.55	3.64	3.65	3.79	2.216	.084
Leadership and interpersonal skills	3.70	3.68	3.68	3.72	.131	.942

Perceptions of Skills by Residency

Career preparedness learning outcomes	Residency			<i>F</i> value	<i>p</i> value
	In-state (n=1798)	Out-of-state (n=139)	International (n=50)		
	Mean				
Knowledge applicable to anticipated career path	4.05	4.04	3.51	9.523	.000
Skills required for anticipated career	3.90	3.92	3.37	8.321	.000
Critical thinking and problem solving skills	3.90	3.89	3.48	5.410	.005

Perceptions of Skills by Residency...

Career preparedness learning outcomes	Residency			<i>F</i> value	<i>p</i> value
	In-state (n=1798)	Out-of-state (n=139)	International (n=50)		
	Mean				
Written communication skills	3.72	3.72	3.51	1.315	.269
Verbal communication skills	3.88	3.76	3.63	2.608	.074
Teamwork skills	3.94	3.80	3.76	1.036	.355
Research skills	3.65	3.70	3.61	.202	.817
Computer technology and database research	3.54	3.53	3.41	.390	.677
Diversity	3.40	3.30	3.40	.491	.612
Leadership and interpersonal skills	3.70	3.64	3.42	2.105	.122

Perceptions of Skills by Ethnicity

Career preparedness learning outcomes	White (n=2040)	Hispanic (n=45)	African- American (n=91)	Asian- American (n=67)	Other (n=89)	<i>F</i> value	<i>p</i> value
	Mean						
Knowledge applicable to anticipated career path	4.05	3.89	4.10	3.94	3.73	3.406	.009
Skills required for anticipated career	3.91	3.71	4.01	3.84	3.60	3.239	.012
Critical thinking and problem solving skills	3.90	3.84	3.99	4.00	3.60	3.034	.017
Written communication skills	3.73	3.78	3.95	3.78	3.51	2.351	.052
Diversity	3.34	3.71	3.64	3.60	3.30	3.382	.009
Leadership and interpersonal skills	3.70	3.77	3.92	3.62	3.38	3.350	.010

Perceptions of Skills by Ethnicity...

Career preparedness learning outcomes	White (n=2040)	Hispanic (n=45)	African- American (n=91)	Asian- American (n=67)	Other (n=89)	<i>F</i> value	<i>p</i> value
	Mean						
Verbal communication skills	3.86	3.84	4.07	3.88	3.69	1.808	.125
Teamwork	3.93	4.04	4.12	3.92	3.80	1.463	.211
Research skills	3.64	3.69	3.92	3.75	3.54	1.960	.098
Computer technology and database research	3.52	3.60	3.74	3.70	3.43	1.703	.146

Students Inputs

- Strengths of CANR programs to acquire skills
 - Experienced, accessible, and helpful faculty
 - Dedicated and friendly staff
 - Emphasis on teamwork skill development
- Areas needing improvement
 - More opportunities for hands-on learning
 - Increase internship opportunities
 - Enhance exposure to cutting edge technologies

Implications

- Organize more educational activities/sessions on diversity;
- Provide training on computer database research;
- Collaborate with industries-solicit inputs from industry people and internship opportunities;
- Inject more resources on research and expand research opportunities; and
- Engage all students (from rural areas and international students) to actively participate in extra-curricular activities.

- Questions