



Bolstering Latino Undergraduate Retention Through Faculty Mentored Student Research

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LATIN AMERICAN RECRUITMENT & EDUCATION SERVICES (LARES)

LARES History

- ▶ In the early 1970s, University of Illinois at Chicago Latino students, faculty members & community leaders began protesting the **lack** of Latino services.
- ▶ Not only where Latino students being admitted to the university in low numbers, but many were **dropping out** due to a **lack of academic support systems**.
- ▶ In 1975, UIC administrators **responded** to ongoing protests by **establishing** the Latin American Recruitment & Educational Services program.

LARES was **tasked** with:

1. Addressing the educational needs of the Latino community.
2. Assisting UIC in the recruitment of Latino students.
3. Providing academic support to increase Latino retention & graduation rates.

Broken Education Pipeline...

Figure 1. The U.S. Education Pipeline by Race/Ethnicity and Gender

2015



Note: The first number in each column represents females; the second number, males.
Source: UCLA CSRC, drawn from American Community Survey Data, compiled by the U.S. Census Bureau

LARES Mission

“To empower students by providing personal growth and educational opportunities **AND** to prepare leaders who will make individual and collective contributions towards the cultural and social advancement of the Latino community.”



LARES Services



Recruitment & Admission: Partnerships with high schools & community colleges, college fairs, assistance with admissions application & financial aid, tele-counseling, freshmen & transfer orientations.



Holistic Advising: Academic, career, financial, social & personal.



Retention: ASP courses, tutoring, workshops, study center, scholarships, tuition & book waivers.



Leadership Development: LARES Summer Institute, LARES Leaders Seminar.

LARES 40 Year Legacy

Today, LARES has grown to become the **premier** Latino academic support program in the State of Illinois & the **largest** academic support unit on UIC's campus.

LARES' work with Latino students has also been **nationally recognized**:

- ▶ 2014 Excelencia in Education Award (Excelencia in Education)
- ▶ 2014 Outstanding Institutional Advising Program Award (National Academic Advising Association)


LARES References in Academic Works

Although no in-depth study has been done assessing LARES' support services, the work performed by LARES has been referenced in numerous studies:

- ▶ **ASP SUPPLEMENTAL INSTRUCTION***: Students who enrolled concurrently in ASP 063 & Math 070 had a **higher passing ratio** than those who did not (Tello, 1999).
- ▶ **UNDOCUMENTED SERVICES**: LARES' undocumented **student recruitment & retention strategies** can be modeled by universities desiring to make college access easier for undocumented students (Rohde & Couperus, 2011; Bell, 2014).
- ▶ **RECRUITMENT & RETENTION**: Universities (HSIs & Non-HSIs) can **boost Latino student enrollment & graduation rates** by replicating the LARES "one shop stop" approach to Latino student services (recruitment, financial aid assistance, holistic advising, supplemental instruction, tutoring) (Resto, 2015; Lopez, 2016).

Undergraduate Student-Faculty Research Partnerships: Literature Review

- ▶ (+) Participation in Undergraduate Research Opportunity Programs (UROP) increases **retention rates** among students of color whose academic performance falls below the median for their counterparts (Nagda et al., 1998; Craney et al., 2011).
- ▶ (+) Research experiences **enrich classroom learning** – analytical skills, problem identification, technical skills & theoretical understandings (Ishiyama, 2002; Lopatto, 2010).

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- ▶ (+) Undergraduate research experiences have a positive effect on a student's **confidence, leadership, discipline, emotional growth & ability to overcome obstacles** (Godreau et al., 2015).
 - ▶ (+) Research experiences **enhance educational experience** of undergraduate students in a variety of disciplines including **Anthropology** (Brooks, 2016), **Bioengineering** (Morales, Gromeslo & Collins, 2017), **Engineering** (Zydney et al., 2002; Carter et al., 2016) & **Science** (Kardash, 2000; Lopatto, 2002 & 2004).

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- ▶ (+) Undergraduate research experiences **clarify & reinforce graduate career paths** (Craney et al., 2011) & **career objectives** (Russell, Hancock & McCullough, 2007).
 - ▶ (+) Undergraduate research experience leads to **better prepared & motivated graduate students** (Hartmann, 1990).
 - ▶ (+) Students who engaged in undergraduate research tended to **enroll in graduate programs** at a higher rate when compared to those who did not engage in undergraduate research (Hathaway, Nagda & Gererman, 2002; Bauer & Bennett, 2003).

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- ▶ (-) While Honors College students tend to be recruited for undergraduate research courses & programs, greater efforts need to be made to target **at-risk students** or those **underrepresented in particular fields** (Kinkead, 2003).
 - ▶ (-) Exploration of faculty-student research **barriers** (lack of student awareness, lack of publicity, late discovery of opportunities, lack of space) & solutions (Wayment & Dickson, 2008).
 - ▶ (-) Faculty-student collaborative research & **authorship determinations** (Welfare & Sackett, 2010; Welfare & Sackett, 2011).

LARES ASP 088 Advanced Research Course: Logistics

- **Fall Semester:** original research posters & abstracts.
- **Spring Semester:** conference presentations.



LARES ASP 088 Advanced Research

Course: Syllabus

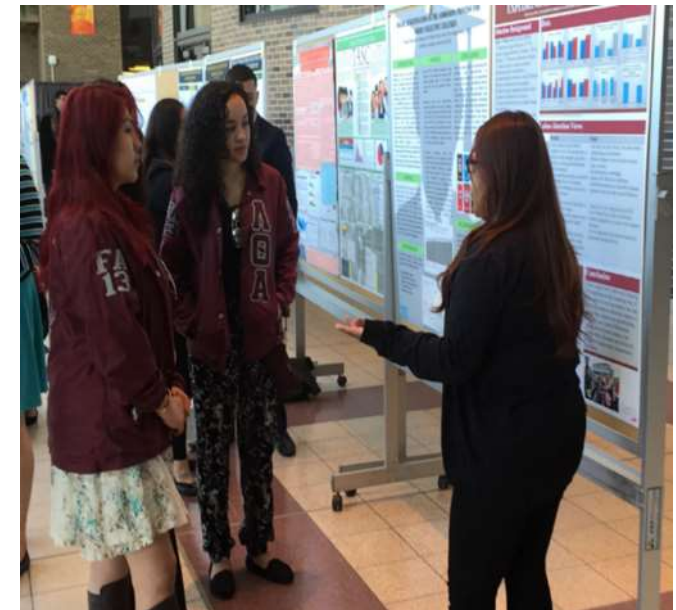
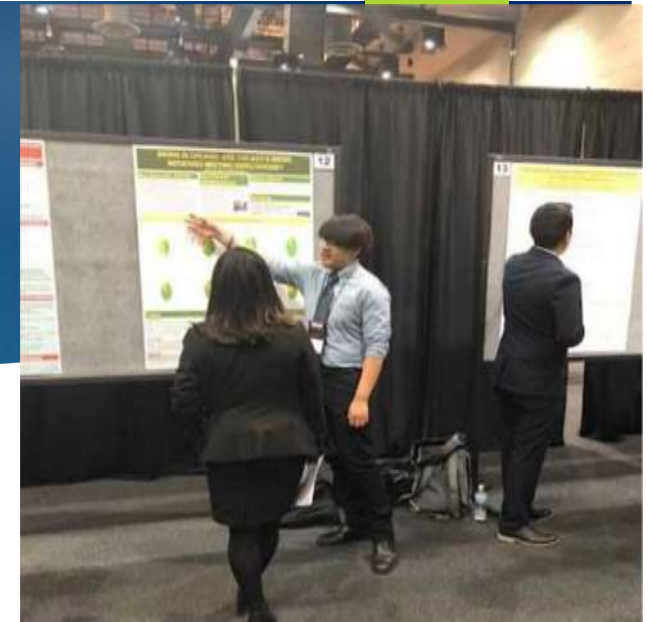
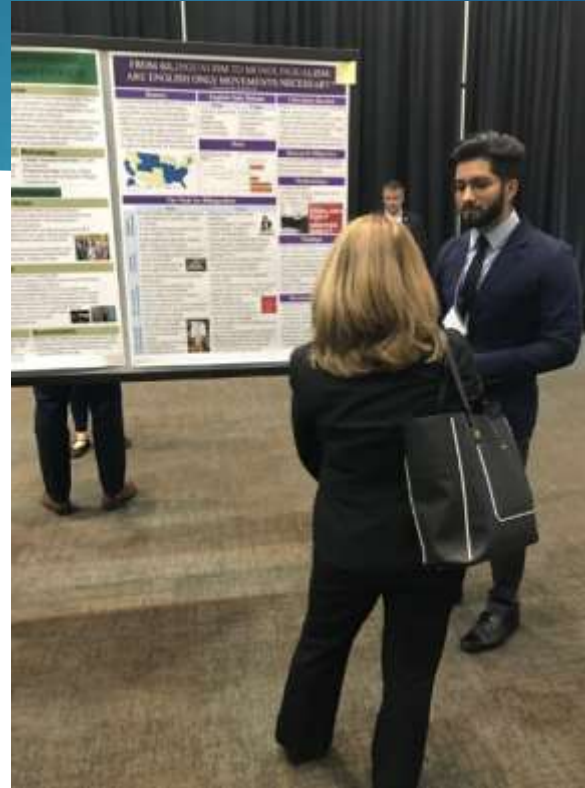
FALL SEMESTER: Independent study; students meet one-on-one with professor each week for an hour-long session.

- ▶ **Week 1:** Brainstorm 3 Research Topics
- ▶ **Week 2:** Select Research Area & Formulate Research Question
- ▶ **Week 3:** Identify Methodology
- ▶ **Week 4:** Term Conceptualization or History
- ▶ **Week 5:** General Data Collection
- ▶ **Week 6 & 7:** Literature Review
- ▶ **Week 8 & 9:** Survey Construction & Testing
- ▶ **Week 10:** Conduct Surveys
- ▶ **Week 11:** Synthesize Survey Findings
- ▶ **Week 12 & 13:** Poster Creation (Publisher)
- ▶ **Week 14 & 15:** Abstracts



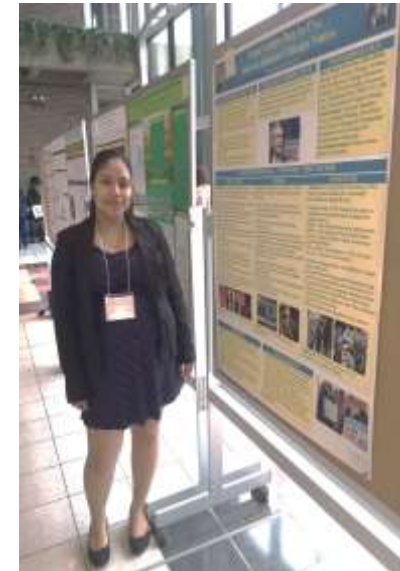
SPRING SEMESTER

- ▶ **January:** Abstract & Poster Final Review
- ▶ **February & March:** Conference Selection & Abstract Submission
- ▶ **April:** Conference Rehearsals
- ▶ LARES ASP students typically present at IALHEA, ILACHE & UIC Undergraduate Research Symposium.



LARES ASP 088 Advanced Research Course: Student Composition

- ▶ Between the Spring 2011 & Spring 2017 semesters, **58** students **enrolled** in the ASP Advanced Research Course & **completed** their research posters & abstracts.
- ▶ Of the 58 that completed their posters & abstracts, **57** (98%) **presented** at a conference.
- ▶ Of the 58 students that enrolled in the course, **6** (10%) reenrolled in the course the subsequent semester. (4 continued to build upon their previous studies, 2 conducted new studies.)



- ▶ **GENDER (n=58):** Male: 21 (36%) / Female: 37 (64%)
- ▶ **CLASS STANDING AT TIME ASP TAKEN (n=64):** Freshmen: 30 (47%) / Sophomores: 17 (26.5%) / Juniors: 9 (14%) / Seniors: 8 (12.5%)
- ▶ **CUMULATIVE GPA: PRIOR TO ASP:** 3.02 / **AFTER ASP:** 3.07

ENGLISH GRADES WHEN COURSE TAKEN CONCURRENTLY WITH ASP 088

- ▶ **ENGLISH 161 (n=13):** A = 6 (46%) / B = 6 (46%) / W = 1 (8%)
- ▶ **ENGLISH 160: (n= 11):** A = 4 (36%) / B = 6 (55%) / C = 1 (9%)
- ▶ **ENGLISH 071 (n=1):** Satisfactory = 1 (100%)

DEGREE PROGRESS (n=58)

- ▶ **Degrees Awarded:** 34 (59%)
- ▶ **Degrees in Progress:** 22 (38%)
- ▶ **Dropped Out:** 2 (3%)

LARES ASP Research Course: Survey Results

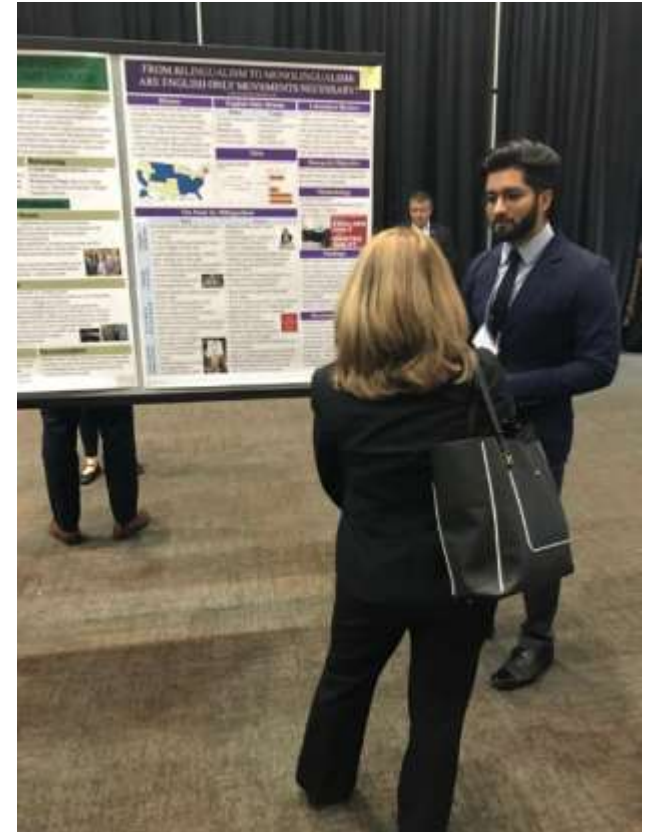
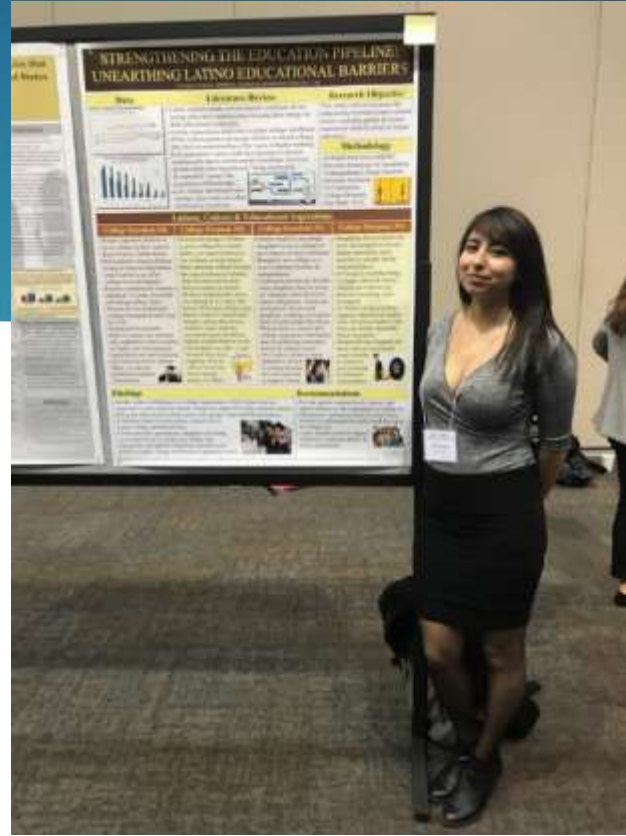
- ▶ **1st** attempt to assess the impact of this course on students.
- ▶ Difficult to track students as many have already graduated; contact information obtained through Facebook, LinkedIn & UIC directory.
- ▶ Of the **58** students who took this class between the **Spring of 2011** & the **Spring 2017**, I was able to track down **46 (79%)** students.
- ▶ Of these 46 students, **44 (96%)** completed the online survey (multiple choice responses, Likert scales & open-ended questions).

GENDER (n=44):

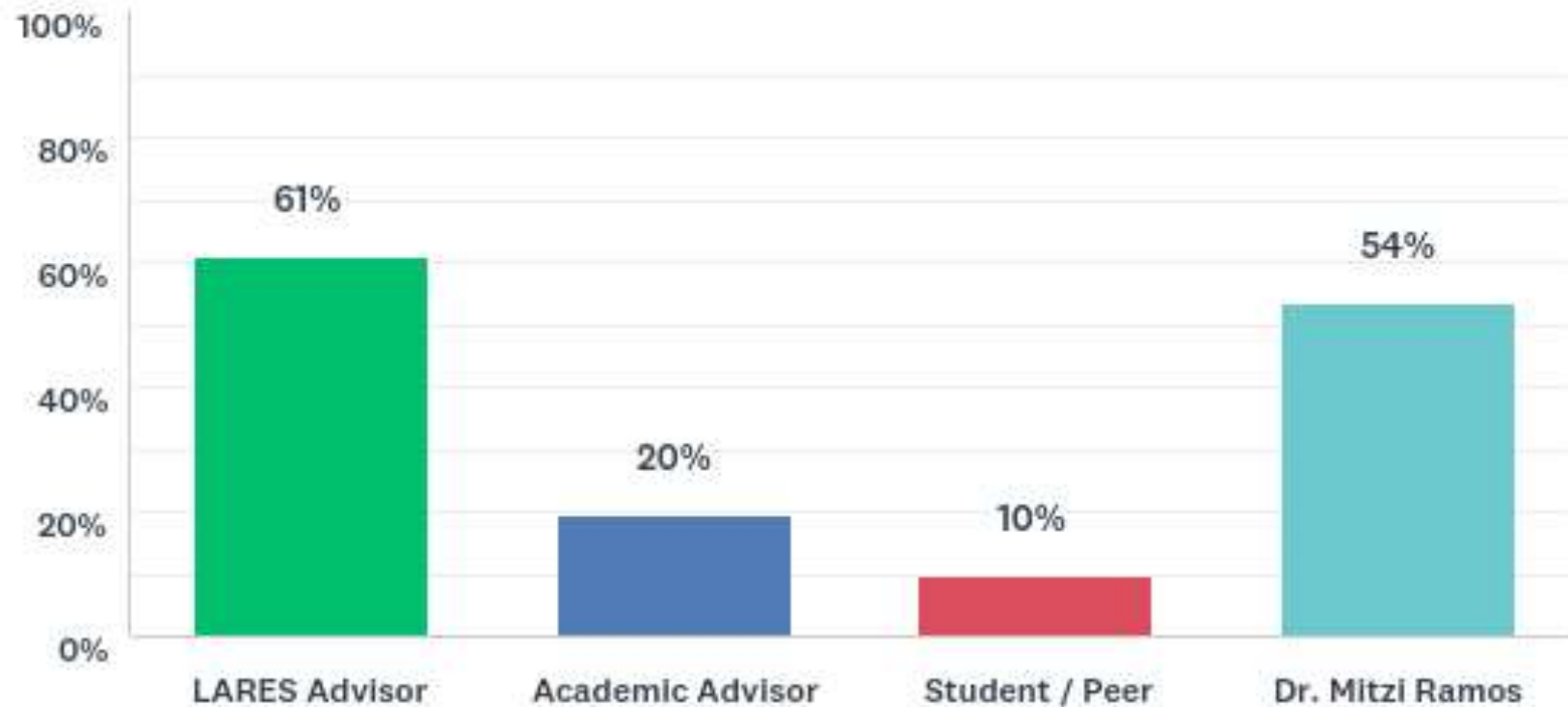
- **Male:** 16 (36%)
- **Female:** 28 (64%)

DEGREE PROGRESS (n=44):

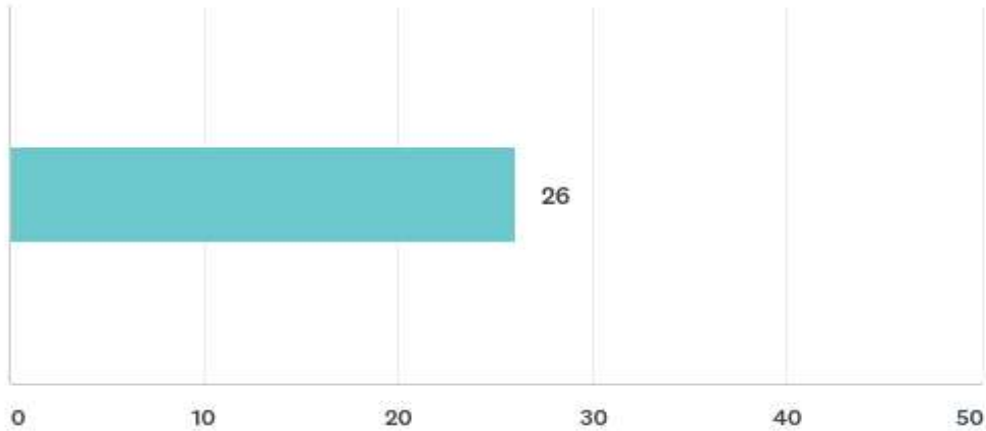
- **Degrees Awarded:** 29 (66%)
- **Degrees in Progress:** 15 (34%)



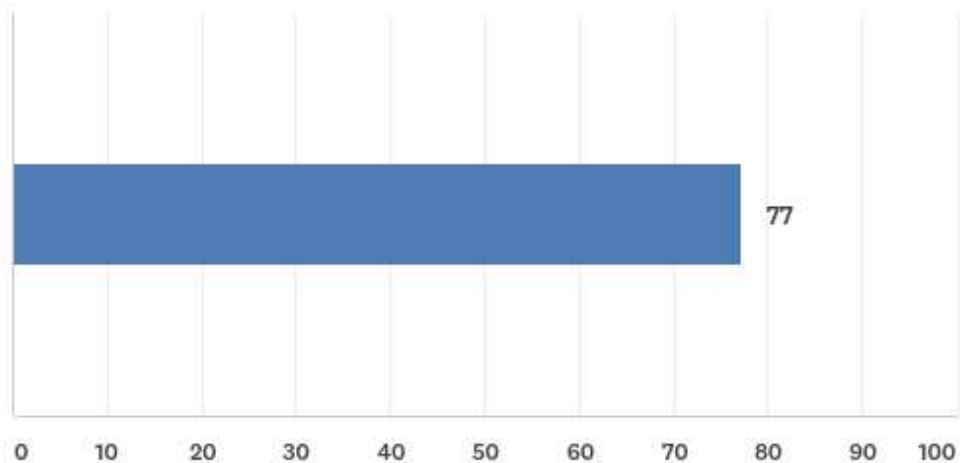
How did you learn about LARES' ASP Advanced Research course?



On a scale of 1 to 100, how comfortable were you conducting original research PRIOR to enrolling in LARES' ASP research course? (1 = Not Comfortable, 100 = Extremely Comfortable)

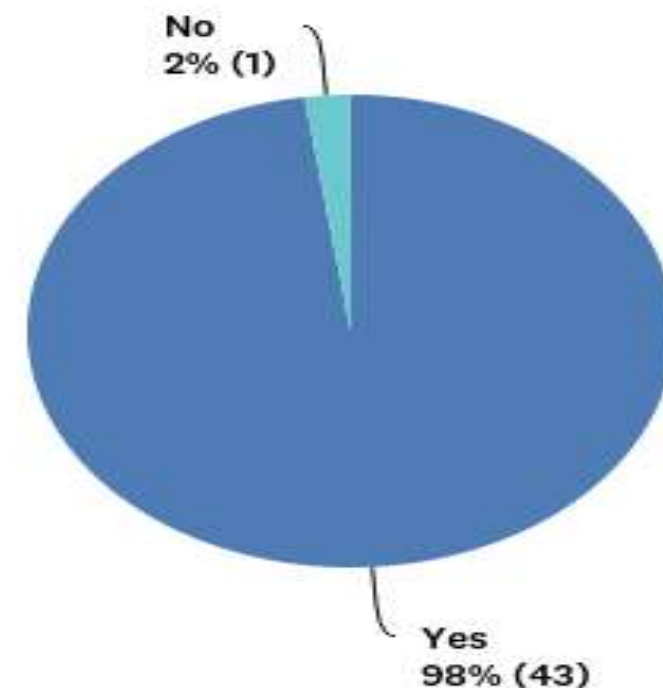
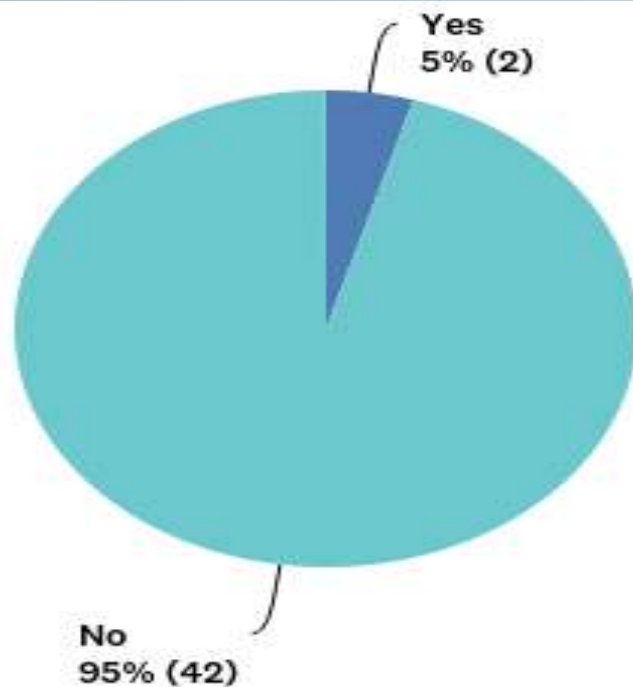


On a scale of 1 to 100, how comfortable were you conducting original research AFTER taking LARES' ASP research course? (1 = Not Comfortable, 100 = Extremely Comfortable)



+51

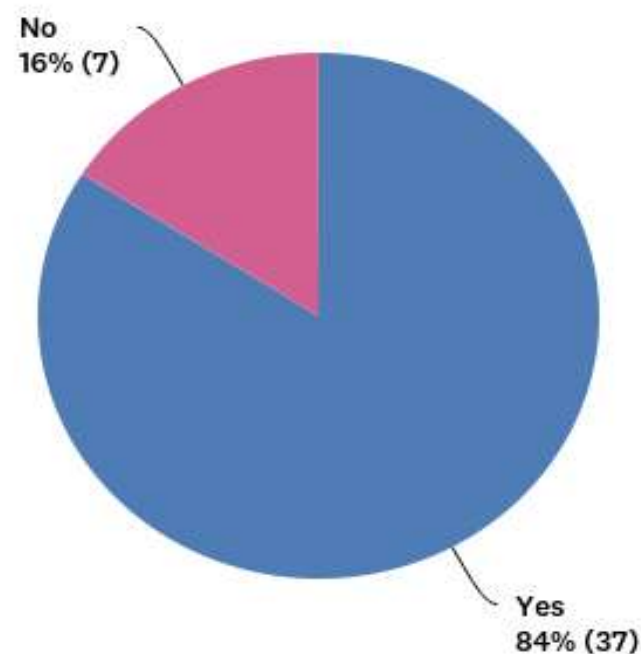
PRIOR to enrolling in LARES' ASP research course, had you ever considered presenting a research study at an academic conference?



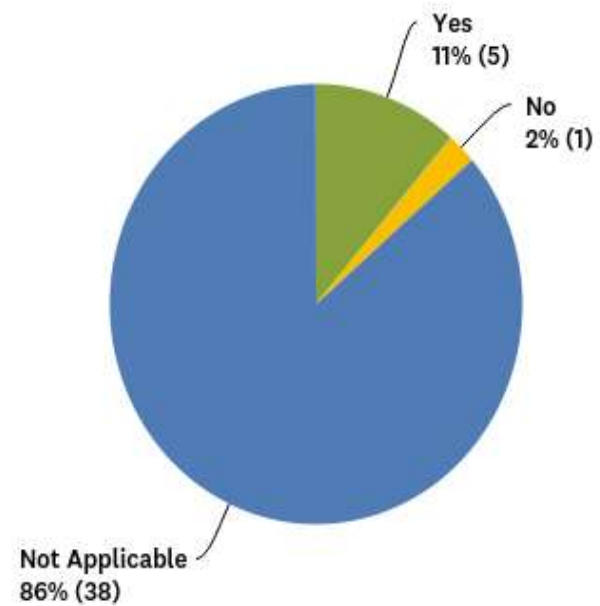
+93%

AFTER having enrolling in LARES' ASP research course, did you become more interested in presenting research at an academic conferences?

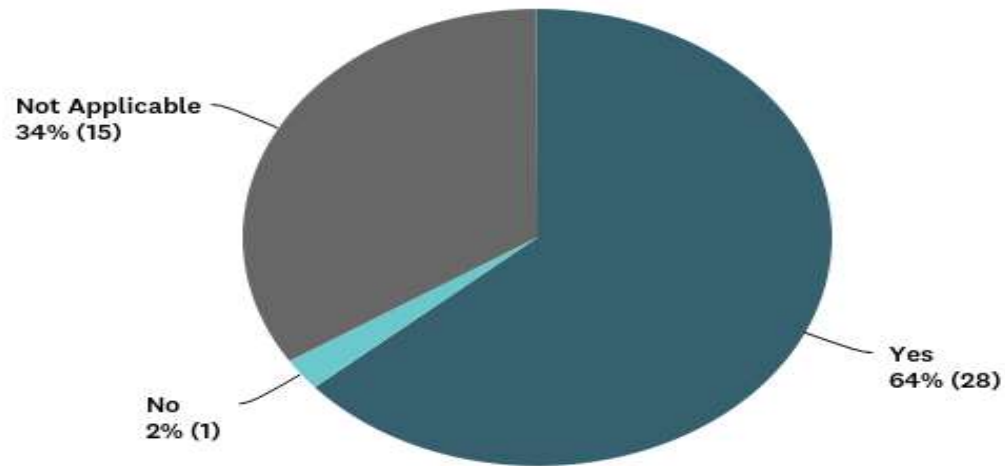
Did enrollment in LARES' ASP research course encourage you to consider pursuing a graduate degree?



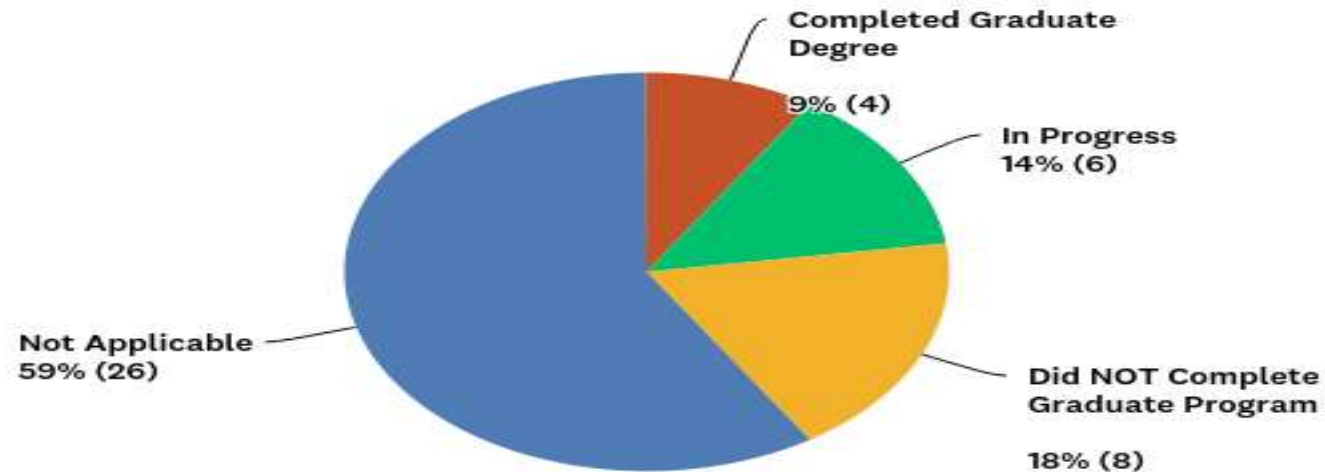
Q13 If you are currently in your Senior year, have you applied or are you in the process of applying to graduate school?



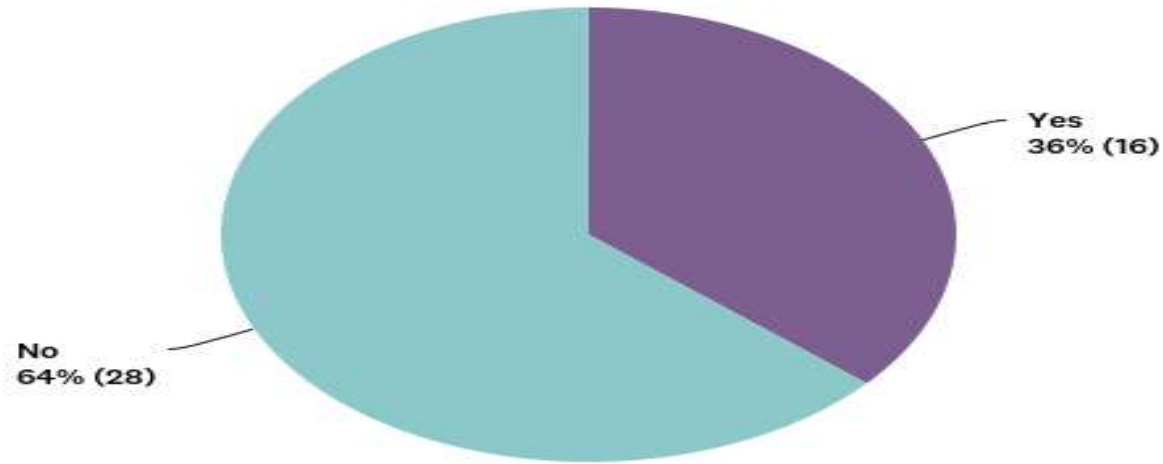
If you have already graduated, did you pursue a graduate degree or are you considering pursuing a graduate degree?



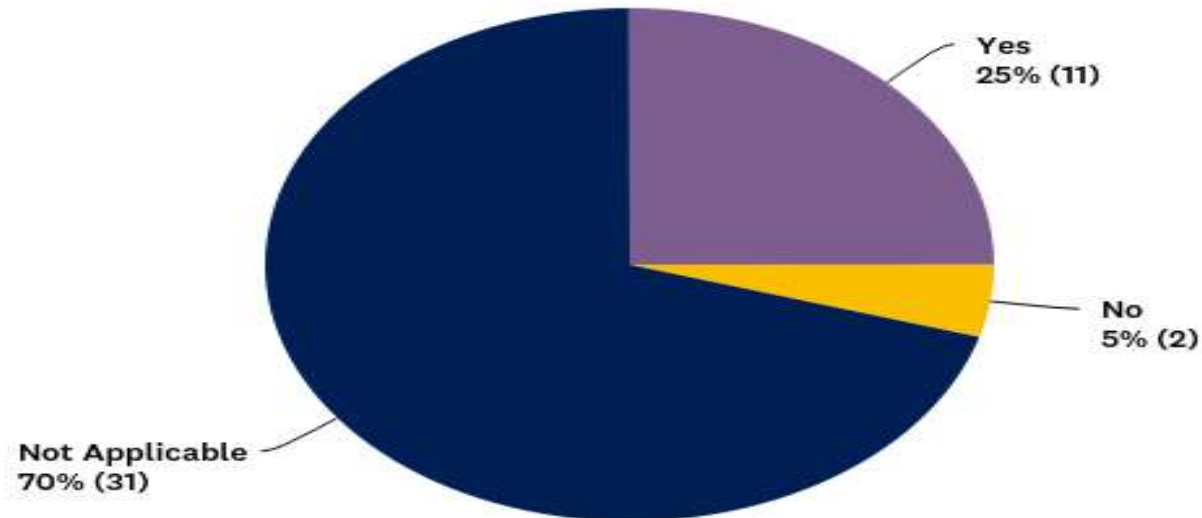
If you DID enroll in a graduate program, have you complete your graduate degree?



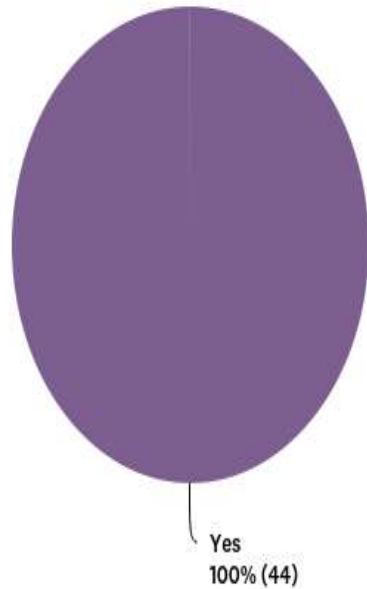
AFTER completing LARES' ASP research course, did you apply for SROP, McNair, UPPF or any other research fellowship?



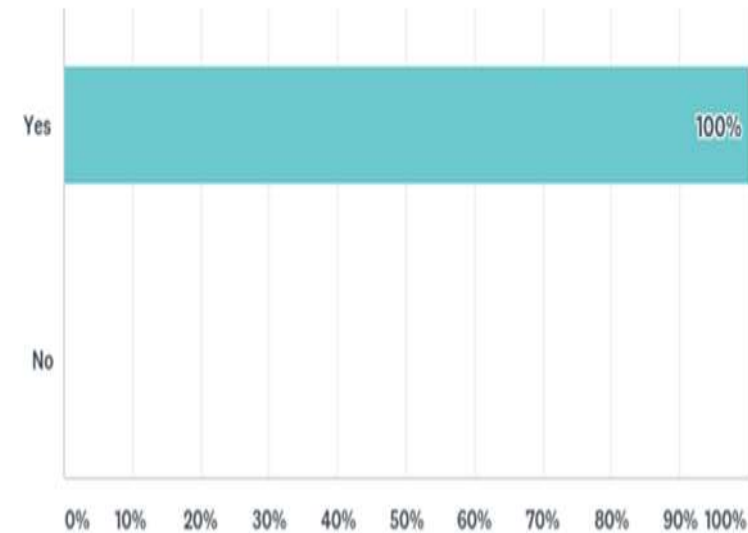
If you applied for SROP, UPPF, McNair or another fellowship, where you accepted?




Did enrollment in LARES' ASP research course boost your confidence in your academic abilities?

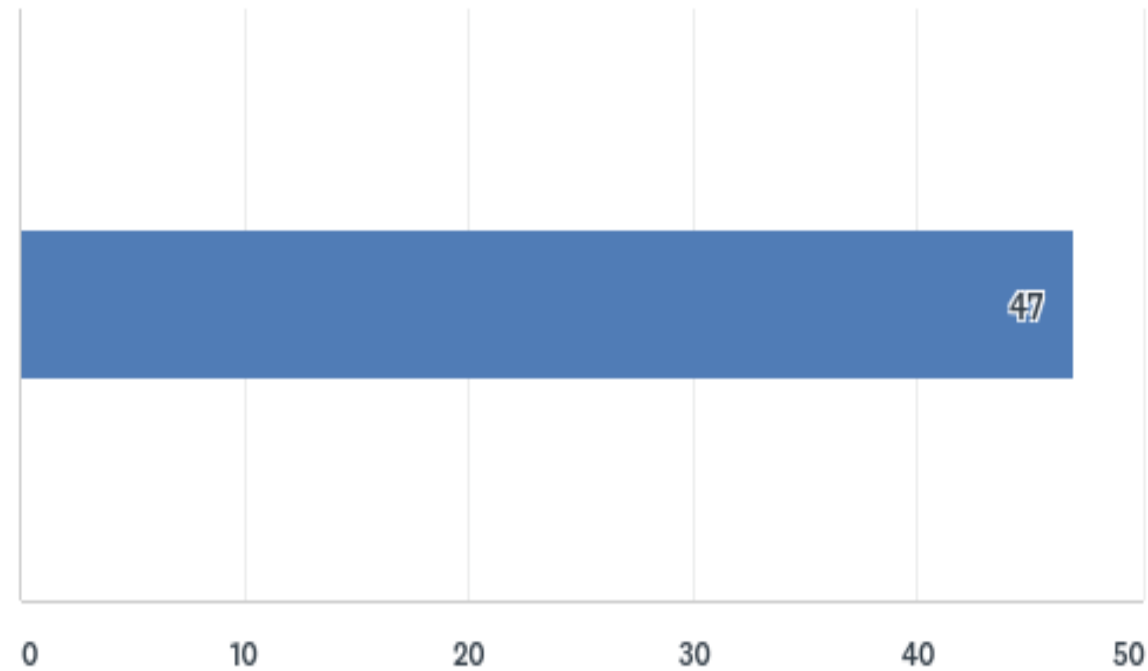


Did conducting original research under the supervision of a faculty advisor boost your academic confidence? Why or why not?

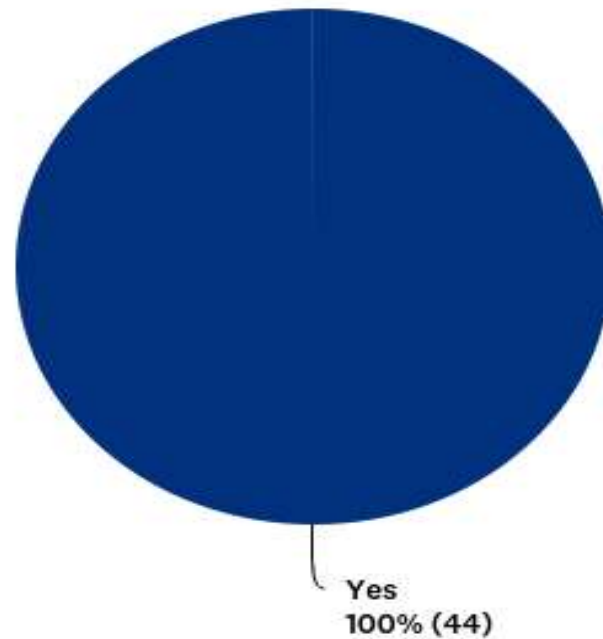


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- ▶ “Having this one-on-one help is great because it makes students comfortable enough to **approach** professors.”
 - ▶ “I am a 1st generation college student who came from an inner-city school that did not prepare me for college. I came in not knowing what to expect or how to even achieve my goals. Having a faculty advisor to guide me throughout my research & also **mentor** me through my first year of college allowed me to grow as a student and an individual.”
 - ▶ “Prior to this ASP course, I was not very interested in research mainly because it intimidated me. I felt that only professors could create research. Thanks to my professor’s guidance, research no longer feels that foreign. Thanks to this course, I was actually able to **see myself as an academic**.”

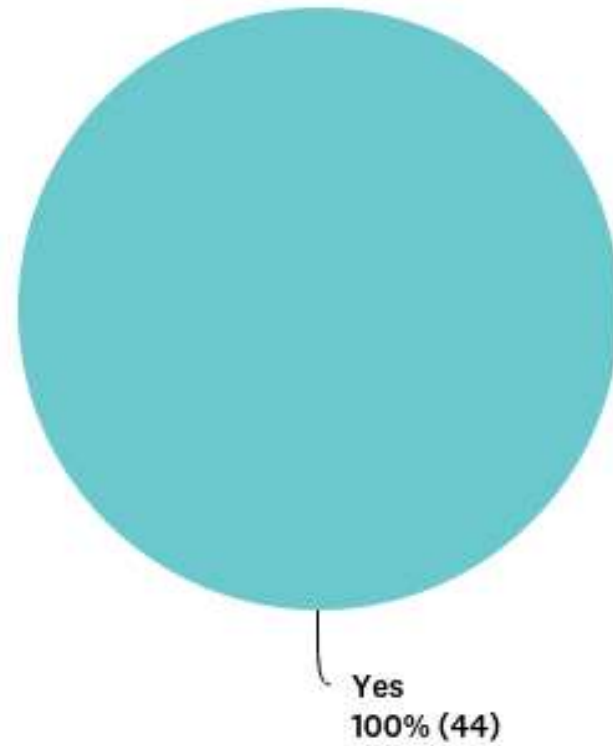
On a scale of 1 to 100, how would you rate the pace of LARES' ASP research course? (1 = Too Slow, 100 = Too Fast)




Did enrollment in LARES' ASP research course fuel your desire to complete your academic studies?

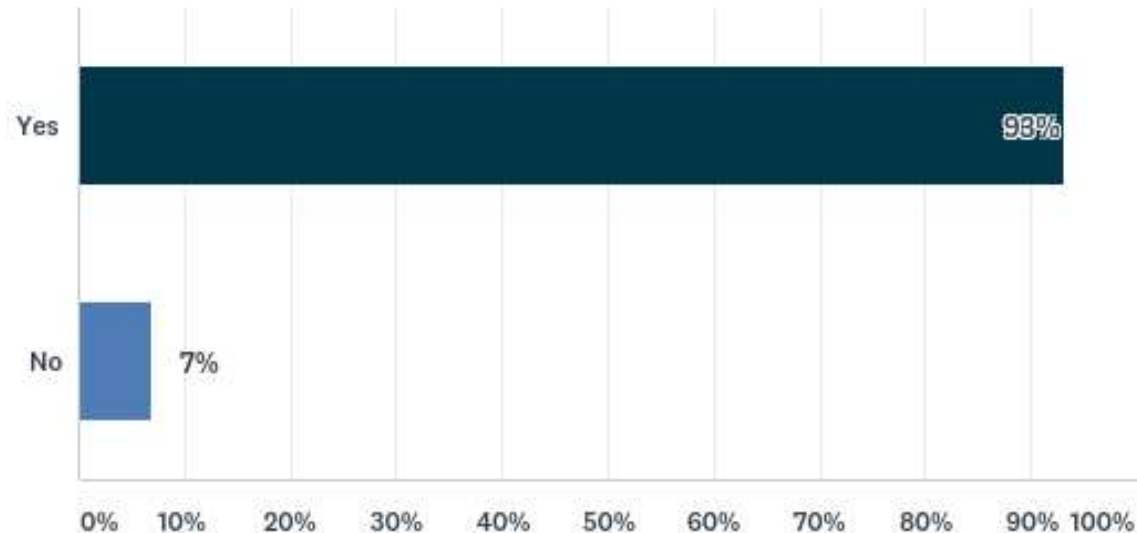



Would you recommend this course to an undergraduate student? Why or why not?



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- ▶ “The LARES ASP research course provides students with the opportunity to develop essential analytical, writing & research skills which they’ll come to use in both their **academic & professional careers.**”
 - ▶ “This course allowed me to grow as a student & scientist. It exposed me to what research consists of & walked me through research in a manner that was suited for a student who had never been exposed to research. It exposed me to conferences & allowed me to become **confident in college.**”
 - ▶ “Excellent introduction into research & presentations. Also helps rid students of anxiety & **eases transition into college** since your self-assurance elevates with this course.”

Q21 Did you derive any benefits from your enrollment in LARES' ASP research course? Why or why not?



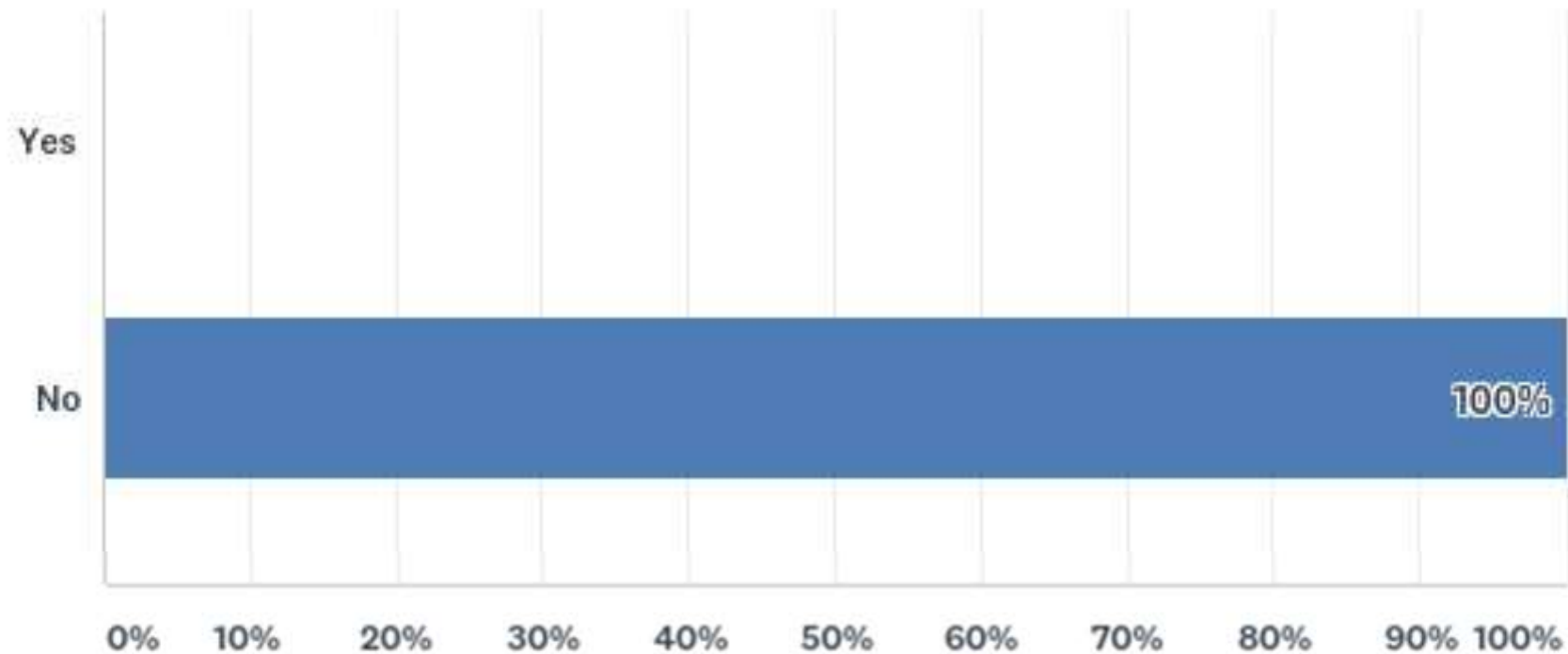
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- ▶ “I gained more **confidence** in myself & my abilities.”
 - ▶ “I became a **better researcher & writer.**”
 - ▶ “LARES ASP course served as a **gateway** for other research opportunities.”
 - ▶ “I was able to get accepted into the **UPPF program** thanks to having done 2 research posters in this ASP course. This really helped my application since my GPA was not the most competitive.”
 - ▶ “As a **graduate student**, I have more confidence in my work because I had the right guidance when I learned how to conduct my own research.”
 - ▶ “I have landed 2 **internships** which have both required me to do some kind of research. By having this experience under my belt, my supervisors were much more confident in my abilities & repeatedly told me how impressed they were with the fact that I conducted my own research at such an early stage of college.”


What can be done to improve LARES' ASP research course?

- ▶ More interactions with other students conducting ASP research.
- ▶ Addition conference preparation.
- ▶ More advertisement.
- ▶ Update course description.
- ▶ Graduation credit hours.
- ▶ Follow-up course to learn publish research.



Should UIC eliminate LARES' ASP research course? Why or why not.

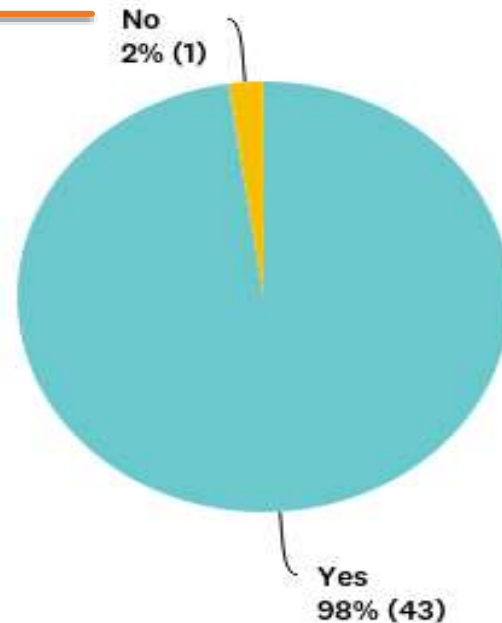


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- ▶ “Getting rid of the course would be a great disservice to its students. This ASP course has **opened doors** not only for me, but for many of my peers; doors that go beyond our time as undergraduates.”
 - ▶ “I took this ASP course my sophomore year. My freshman year had started off on a rocky start & I felt I was not good enough for college. This course reinforced that I was in the right place & that my socioeconomic status did not matter. I attribute my change in attitude to this course. Like me, many other 1st generation students need this **motivation & encouragement** to continue pursuing their college education.”

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- ▶ “When I speak of the research I conducted & the fact that I presented at academic conferences, my peers & mentors are genuinely surprised at how much an undergraduate can accomplish. They speak of how **impressive** it is for an undergraduate to step out of their comfort zone & investigate overlooked topics that are important to the student.”
 - ▶ “This class allowed me to learn about **research** & gave me the proper background to do addition research at Northwestern University's Feinberg School of Medicine, Northeastern Illinois University & the University of Chicago's Comer Children's Hospital.”

Students who enroll in LARES' ASP research course do not receive graduation credit hours. Do you believe that students who enroll in this course should receive graduation credit hours?

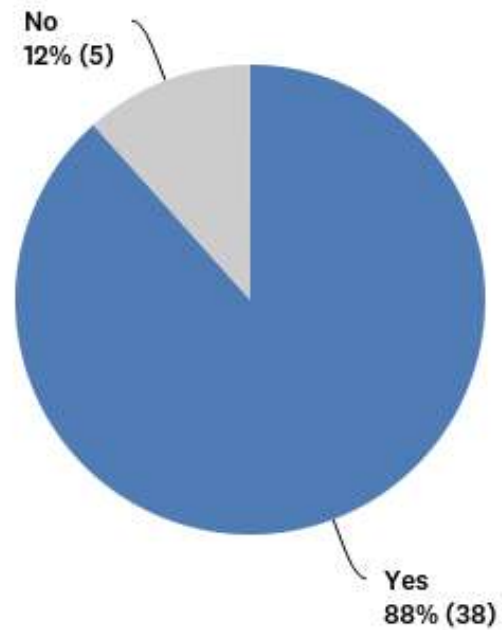
"Credits shouldn't matter. This research course was a great one. I learned a lot about conducting research, locating reliable sources, presenting information, using Publisher, public speaking, etc."



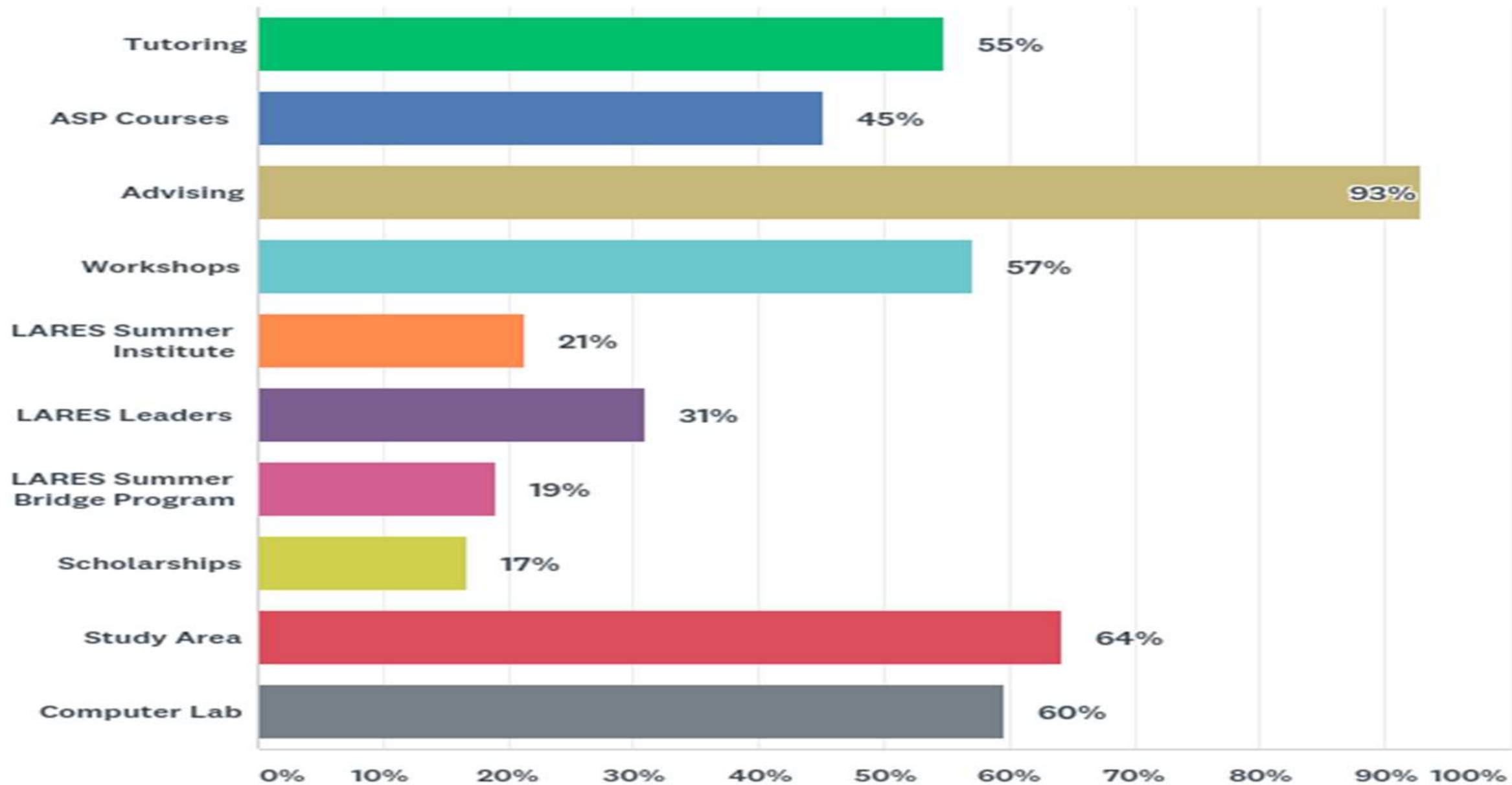
Additional comments on LARES' ASP Advanced Research course

- ▶ “This course **boosted my confidence in conducting academic research** & helped me seek out scientific research in my field. I am currently doing research with a professor in the Mechanical Engineering Department.”
- ▶ “This course helped me gain more **knowledge** on research, public policy, public speaking & writing. It also gave me the confidence to apply for UPPF & **continue my research.**”
- ▶ “This course is a necessity to put more Latinos on the path towards **research & graduate school.**”
- ▶ “Given its importance, this course could be improved by granting it **graduation credit hours**”

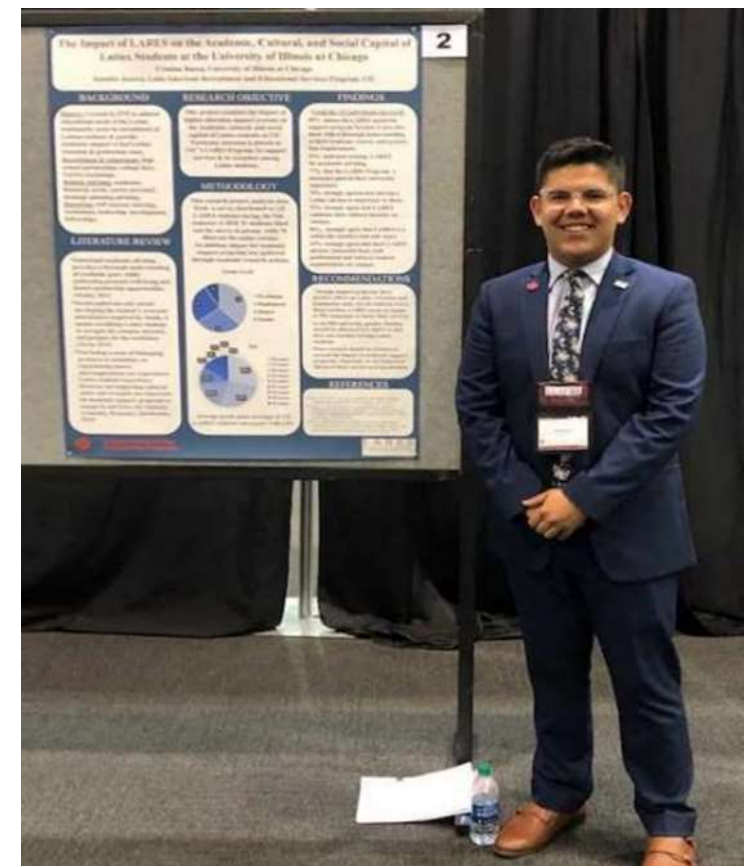
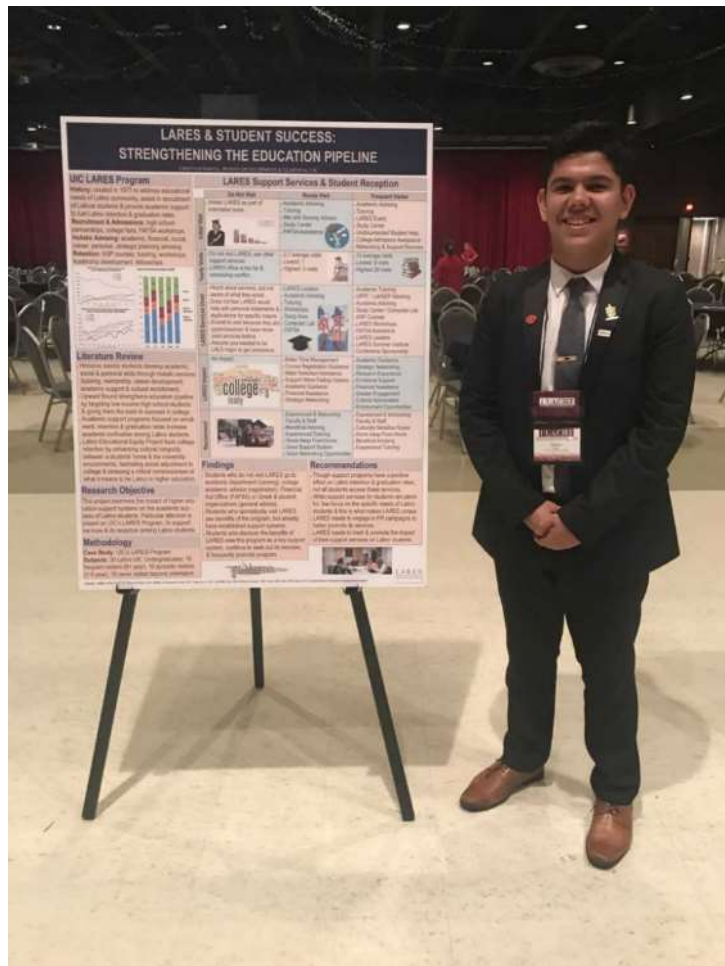
Q19 Did you continue taking advantage of LARES support services AFTER having completed the research course?

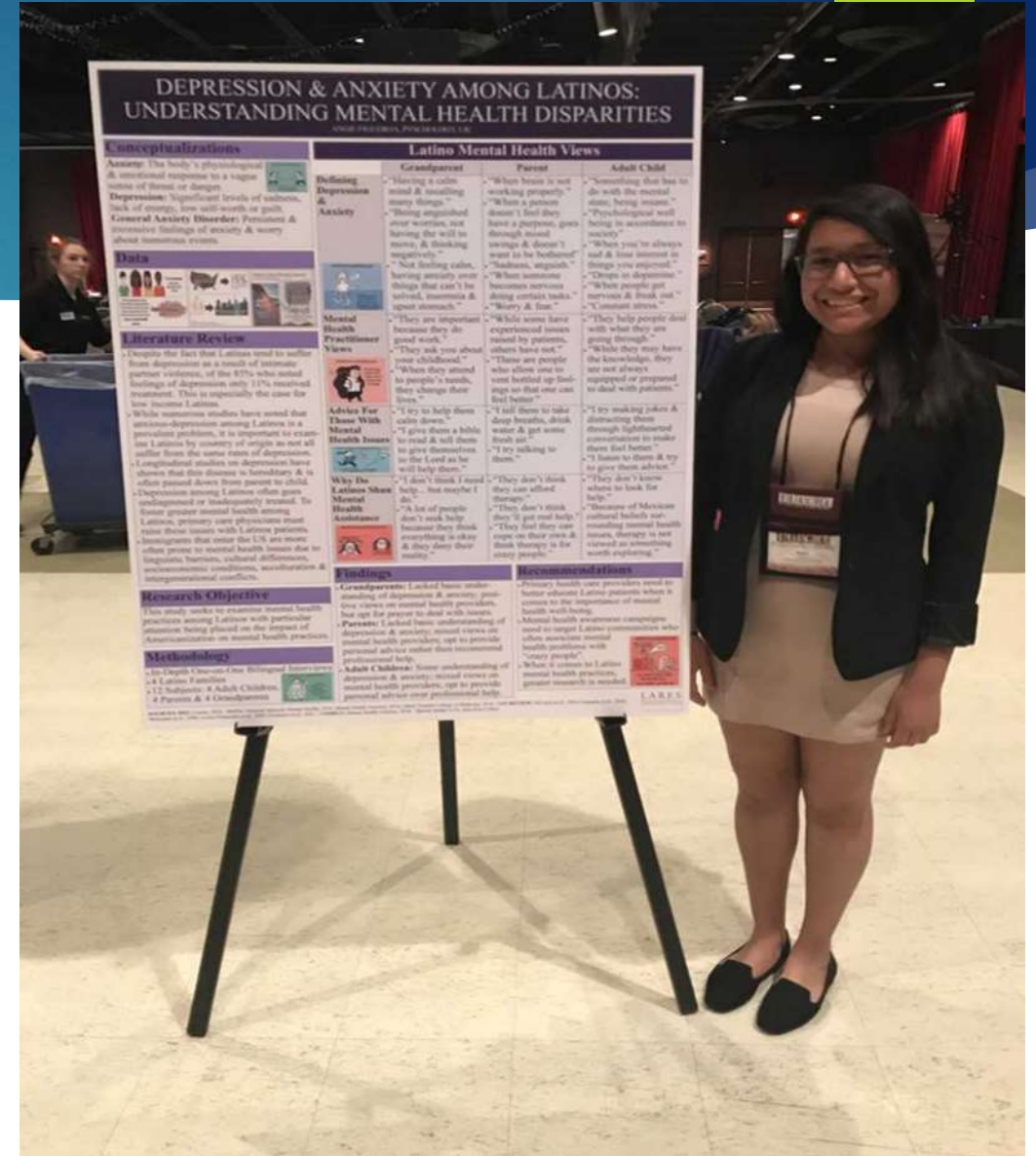


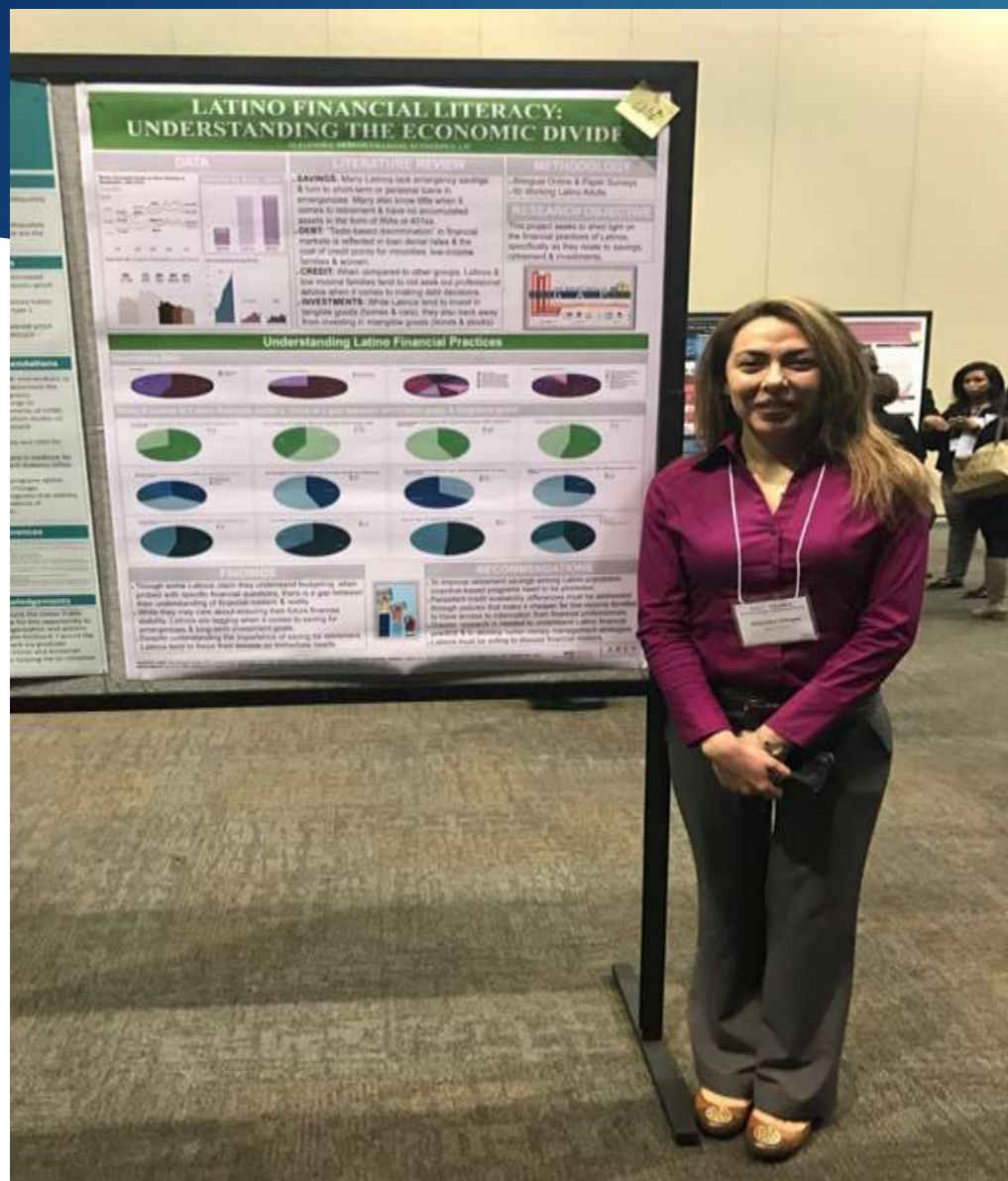
In addition to enrolling in LARES' ASP research course, what other LARES support services have you taken advantage of as an undergraduate? If you have already graduated, what LARES services did you take advantage of during your time at UIC?

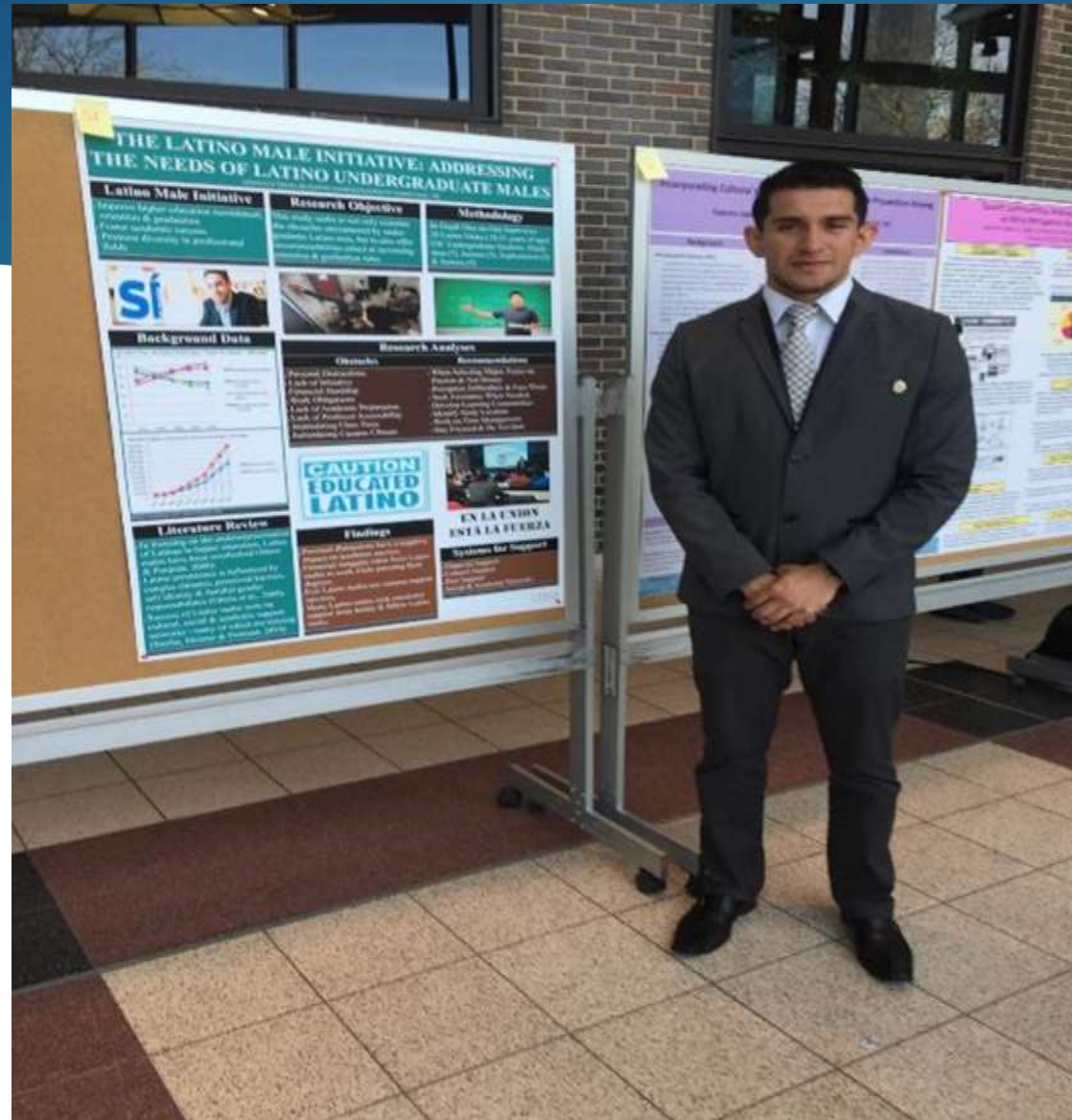


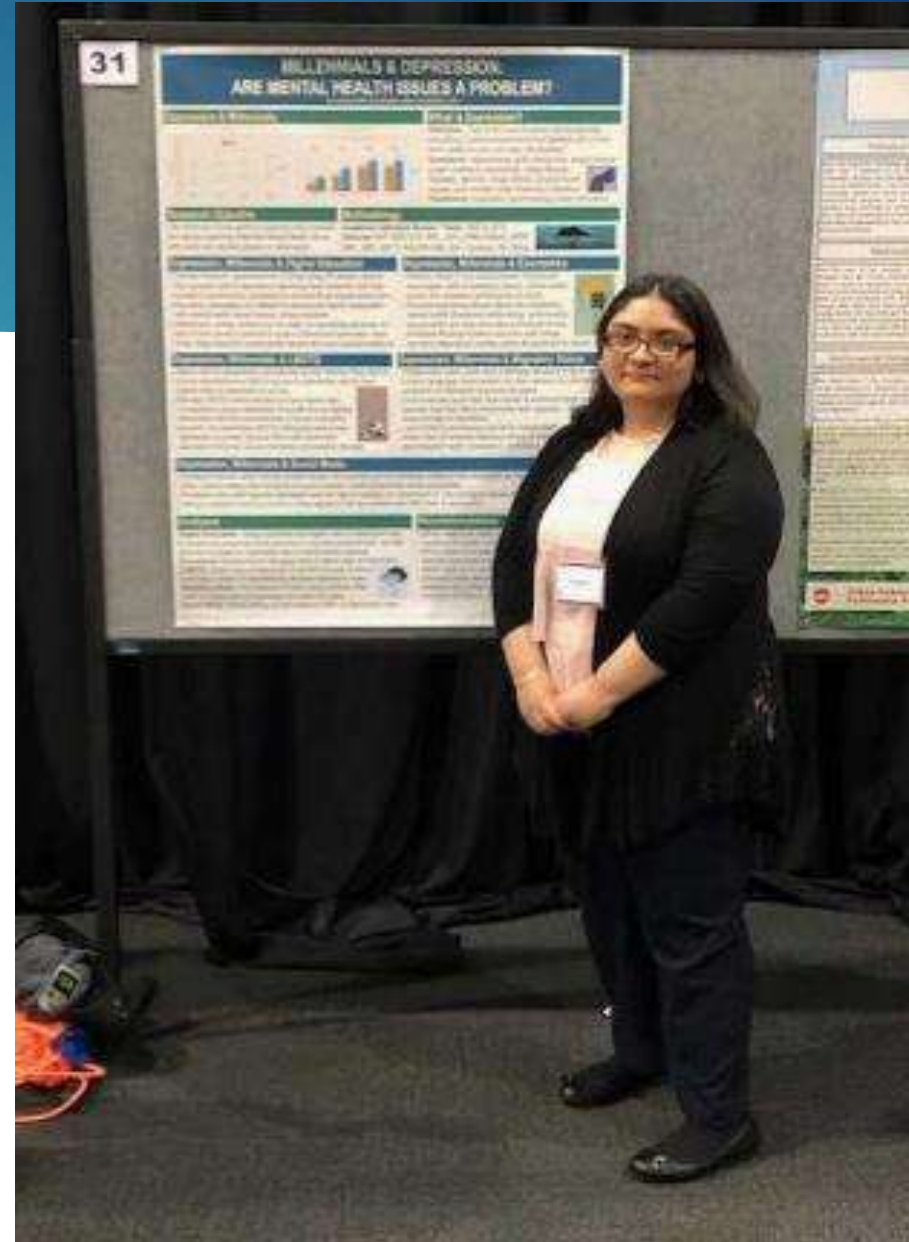
Examples of Research Poster Presentations











Concluding Thoughts

- ▶ The LARES ASP Advanced Research course has had a **positive** impact on **retention & graduation rates** for Latinos students.
- ▶ In addition to boosting a student's academic & personal confidence, this course has provided students with **skills** they can use in **other courses & professional settings**.
- ▶ Students who enrolled in this course also took advantage of the **networks** provided by LARES (internships, fellowships, scholarships, leadership development opportunities) & continued seeking out LARES **services** (tutoring, workshops, ASP courses, advising).
- ▶ The most significant issues with this course included the absences of **graduation credit hours** & the lack of **proper advertisement**.




Though this course is one that can be replicated at any institution, the individual(s) tapped to teach this course:


1. Must be committed to working with students of color who have little knowledge of the research process.
2. Must have experience conducting research & presenting at conferences.
3. Must be able to juggle working one-on-one with various students throughout the semester (this extends beyond the classroom setting).
4. Must be willing to serve as a mentor & not just an instructor.

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