



Outreach Playbook

University of Southern California's SWE Spring High School Conference

Metrics:

Grade Level: 9 th – 12 th Grade	# of Student Participants: 33 Students	Duration (hrs): 5 hours	# of SWE Volunteers: 20 volunteers	Partner orgs (if any): MEDesign & METRANS
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Overview of Activity

The Spring High School Conference event that we executed in April of 2022 was designed to expose high school girls within the Los Angeles area to STEM pathways at the collegiate level. In order to give the students a full picture of engineering at the collegiate level, we tailored our event to include a presentation from both a female faculty member as a keynote speaker as well as two other engineering organizations (representing different engineering disciplines on campus). Students rotated through the keynote presentation, three engineering workshops hosted by our three different organizations, a student panel led by SWE, as well as a tour of the school. The main takeaways for the high school students attending the conference were to gain experience in the wide variety of engineering involvements on campus including network-building organizations (SWE), design teams (MEDesign), and professional organizations (METRANS). In addition, high school students left the event recognizing the strength of women in the field through our faculty member/keynote speaker, Trina Gregory. In the METRANS workshop, students were exposed to the upcoming electric vehicle industry as the girls were tasked with thinking about the infrastructure (charging stations, battery disposal/reuse) needed to support the growing trend. In the MEDesign workshop, students worked towards developing more cost-effective methods for supporting ACL injuries (a Makeathon-modeled challenge). Finally, the student panel led by SWE offered students an opportunity to ask questions about these workshops and how they will apply to their future work in college. Overall, the students gained valuable advice for preparing for college through the student-led panel.

Outline and Script



After picking a Saturday to host the conference, the next step was creating a detailed schedule for the day. Here is a screenshot of our master schedule:

	A	B	C	D	E	F	G	H	I
1	High School Conference Schedule								
2									
3	9:00-9:30 AM				4 Groups of ~15 girls each				
4		Set Up							
5	9:30-10:15 AM								
6		Check-In							
7	10:15-10:25	Passing							
8	10:25-11:00 AM								
9		Group 1 Medesign CPA 101	Group 2 METRANS CPA 102	Group 3 SWE Activity CPA 201	Group 4 SWE Panel CPA 203				
10	11:00-11:10AM	Passing							
11	11:10-11:45AM								
12		Group 4 Medesign CPA 101	Group 1 METRANS CPA 102	Group 2 SWE Activity CPA 201	Group 3 SWE Panel CPA 203				
13	11:45-11:55AM	Passing							
14	11:55-12:20PM								
15		Group 3 Medesign CPA 101	Group 4 METRANS CPA 102	Group 1 SWE Activity CPA 201	Group 2 SWE Panel CPA 203				
16	12:20-12:30PM	Passing							
17	12:30-1PM								
18		Group 2 Medesign CPA 101	Group 3 METRANS CPA 102	Group 4 SWE Activity CPA 201	Group 1 SWE Panel CPA 203				
19	1-1:30PM	outside CPA? Can sit on the grass outside Doheny or sit at table outside Taper							
20		Lunch							
21		Keynote: Professor Gregory. THH 202							
22	1:30-2PM								
23	2:00 PM	Bus Pick Up							
24	2:10-2:30PM	Clean Up							
25									
26									

As you can see from our schedule, we sectioned the girls into different groups in which they rotated through the different activities at the given time intervals. Once we established a schedule, we reached out to the University to reserve classrooms for the workshops, a lecture hall for the keynote speaker, as well as an outdoor space for lunch. Once all of the rooms were reserved, we reached out to several different potential partner organizations as well as keynote speakers before securing Trina Gregory as a Keynote and MEDesign/METRANS as workshops.

As you approach the event, it is crucial that you assign one SWE committee member to different engineering organizations and the keynote speaker. Make sure to send multiple follow-up emails confirming their participation, approving their workshop/lecture, and reiterating arrival/set-up instructions. Below I have included a mock follow-up email that was sent to both our keynote speaker and one of our partner organizations:



Hello Professor Gregory,

I hope that you are enjoying the weather and spending time outside as we approach Spring Break. I am contacting you on behalf of the Society of Women Engineers to confirm your commitment as our keynote speaker on April 2nd at our annual high school conference. I have attached a copy of the schedule below for your reference, but your keynote address will take place from 1:30 pm to 2:00 pm. In addition, the keynote address will be held in **THH 202**. You don't need to arrive until roughly 1:15 pm; however, lunch will be served from 1:00 pm to 1:30 pm outside CPA if you are able to attend. We would love to have you!

As far as the keynote address, I think the high school students would love to hear about your path to become a professor as well as the most important advice you have received along the way. The SWE mission is to empower women to achieve their full potential in careers as engineers and leaders; expand the image of the engineering and technology professions as a positive force in improving the quality of life, and demonstrate the value of diversity and inclusion. Thank you so much once again for offering to participate in the conference. I know that the high school girls are very excited to hear from you! Let me know if you have any additional questions and I will see you on April 2nd!

Sincerely,
Grace Sampson

Hello Medesign,

I hope that you are enjoying the weather and spending time outside as we approach Spring Break. I am contacting you on behalf of the Society of Women Engineers to confirm your commitment as one of our workshop leads on April 2nd at our annual high school conference. I have attached a copy of the schedule below for your reference, but workshops will take place from 10:25 am to 1:00 pm. In addition, your workshop will be held in **CPA 101**. Try to have all members of your workshop team present outside of CPA by 9:45 am for set-up. Once again, lunch will be provided, so don't worry about packing a lunch.

Each workshop is roughly 35 minutes long and high school students will rotate through the different workshops. For the first 10-15 minutes of the workshop be prepared to give a brief presentation about your organization. Then, for the last 20 minutes of the workshop, you will lead a group activity. If you need any materials for your group activity, please let me know ASAP so that we can order the supplies for you. Some examples for a group activity for your organization might include, a "mini Makeathon" where you present students with a health problem and have them sketch/present a solution. Unfortunately, we won't have access to computers so the activities cannot be digital.

Thank you so much once again for offering to participate in the conference. I know that the high school girls are very excited to hear from you! Let me know if you have any additional questions and I will see you on April 2nd!

Sincerely,

One important thing to note from these mock emails: we clearly conveyed the workshop restraints to our partner organizations. For our event, we didn't have access to computers for the high school students to use; therefore, MEDesign had to use physical modeling tools to

create the ACL support (paper towel rolls, cotton, filler, wooden dowels, pipe cleaners, etc.). The METRANS team ended up using recycled cardboard/battery operated toy cars as the medium from which students built a roadway and planned EV infrastructure.

Once everything had been secured, we distributed marketing flyers to our high school partners (if you have a K-12 STEM office at your engineering institution they will assist you in contacting high schools). In addition, we reserved the bus to pick-up/drop-off students as well as securing lunch for students, volunteers, and faculty visitors. Below is the marketing we sent to the schools:



If you decide to do a student-led panel as one of your activities in the rotation, I suggest sending out a google form to get SWE volunteers roughly a month in advance. One other

thing that made our panel run more smoothly is creating a PowerPoint slide to be displayed behind the panelists sharing a little bit more about their background. Here is the PowerPoint background used for our panelists:

Panelists



Brooke Rios
Sophomore
Astronautical
Engineering



Emily Lai
Freshman
Biomedical
Engineering



Pooja Kowshik
Sophomore
Computer
Engineering
Computer Science



Premalatha Premkumar
Sophomore
Electrical and
Computer
Engineering

Finally, I know it may seem self-explanatory, but this is a wonderful event to take pictures at. Make sure to get approval with the high schools BEFORE the day of the event. Also, if you have a large group—and have access to a drone—that is a great way to get a good aerial shot of the entire group. Our marketing picture from the event is shown below.





Lessons Learned

The biggest recommendation I have for executing this event is proactive, not reactive communication. Make sure you have one member in your committee devoted to each of the partner organizations as well as the keynote speaker and coordinating the panel. Another thing that was extremely beneficial was creating a detailed schedule beforehand. In addition, we purchased name tags for each of the students to list their names, pronouns, and group numbers for the day.

Moving forward, our biggest restraint was cost. We were fully prepared to host between 100-150 students; however, to make the event free for the students, we needed to apply for more funding. In the future, I recommend applying for grants in the planning phase if you would like to supply attendees with a t-shirt/lunch during the day. One other major recommendation that the high school students brought to our attention was the lack of a presentation surrounding the college admissions process. For the future of this event, I would recommend hosting it in the fall with a workshop devoted to reviewing college essays, taking a campus tour, and an admissions presentation. In the Fall, organizations on campus also seem to be a little more energized and willing to participate than towards the end of the year which would make getting partner organizations involved a lot easier.

Accessibility Adaptations

Although this was mentioned in the planning phase, I feel it is important to mention it again. For our event, the students didn't have access to any computers or the internet. Therefore, our workshops needed to accommodate the lack of technological resources. Our activities featured more physical modeling type work versus virtual which ended up being a lot more engaging and interactive for the students on a Saturday morning. In order to accommodate a smaller budget, SWE organizations could scale the event back to just half a day and conclude prior to lunch to avoid the cost of supplying it. As far as accessibility accommodations go, we made sure to communicate with our partner high school as well as our K-12 STEM office about any potential adaptations we would need to make. Initially, there was going to be a student participating in a wheelchair and in that case we would have reserved rooms all on the main level as well as a lecture hall with handicap accommodations. The best advice I can give as far as accessibility adaptations go is making sure to communicate with the high schools far in advance to figure out any changes that need to be made to the schedule prior to finalization.

Materials and Costs:



Item	Quantity	Where to Buy (link if applicable)	Total Cost (Approximations)
Pizza/Drinks	10 pizzas, 4 liters of drinks	Pizza	\$300
Bottled water	2 pack	Bottled Water	\$14
Silverware (plates/napkins/forks/ etc)	2 pack	Plates/Napkins/Silver ware	\$40
Reserving the Bus:	1	Depends on your location (communicate with your college)*	\$500
Name tags	3 packs	Name Tags	\$6
Sharpies for the nametags/check-in	3 packs	Sharpies	\$15



NOTE: Our partner organizations supplied/funded their own materials for their own workshops. If you are tight on cost this is one way to cut down; otherwise, SWE can offer to reimburse partner organizations for their money spent.