

# sefh

## Judge Training

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Tuesday, February 11, 2025

Thursday, February 13, 2025



**UH STEM Center**  
UNIVERSITY OF HOUSTON





# The Judging Process

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Andrew Kapral, SEFH Judge Chair

[Judges@sefhouston.org](mailto:Judges@sefhouston.org)



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# Agenda - Logistics

- 5:30 - 6:00 **The Judging Process**
- SEFH Introduction & Sponsors
  - Judge Teams & Assignments
  - Interviews & Scoring
  - Caucusing
  - Special Cases
- 6:00 - 6:30 **Overview & Event Logistics**
- Location, Schedule, Parking
  - Arrival & Check-in
  - Materials
  - Electronic Scoring Pilot
- 6:30 - 7:00 **Lead Judges**
- Overview & Check-In
  - Round 1 (interviews/caucuses/scoring)
  - Round 1 Results
  - Round 2 (interviews/caucuses)

The logo for SEFH, consisting of the lowercase letters 'sefh' in a bold, blue, sans-serif font.

# SEFH Overview

## 66<sup>th</sup> Annual Science & Engineering Fair of Houston

- 23 Counties - 150 school & district fairs
- 800+ Projects & ~1100 Students
- 600+ Registered Judges

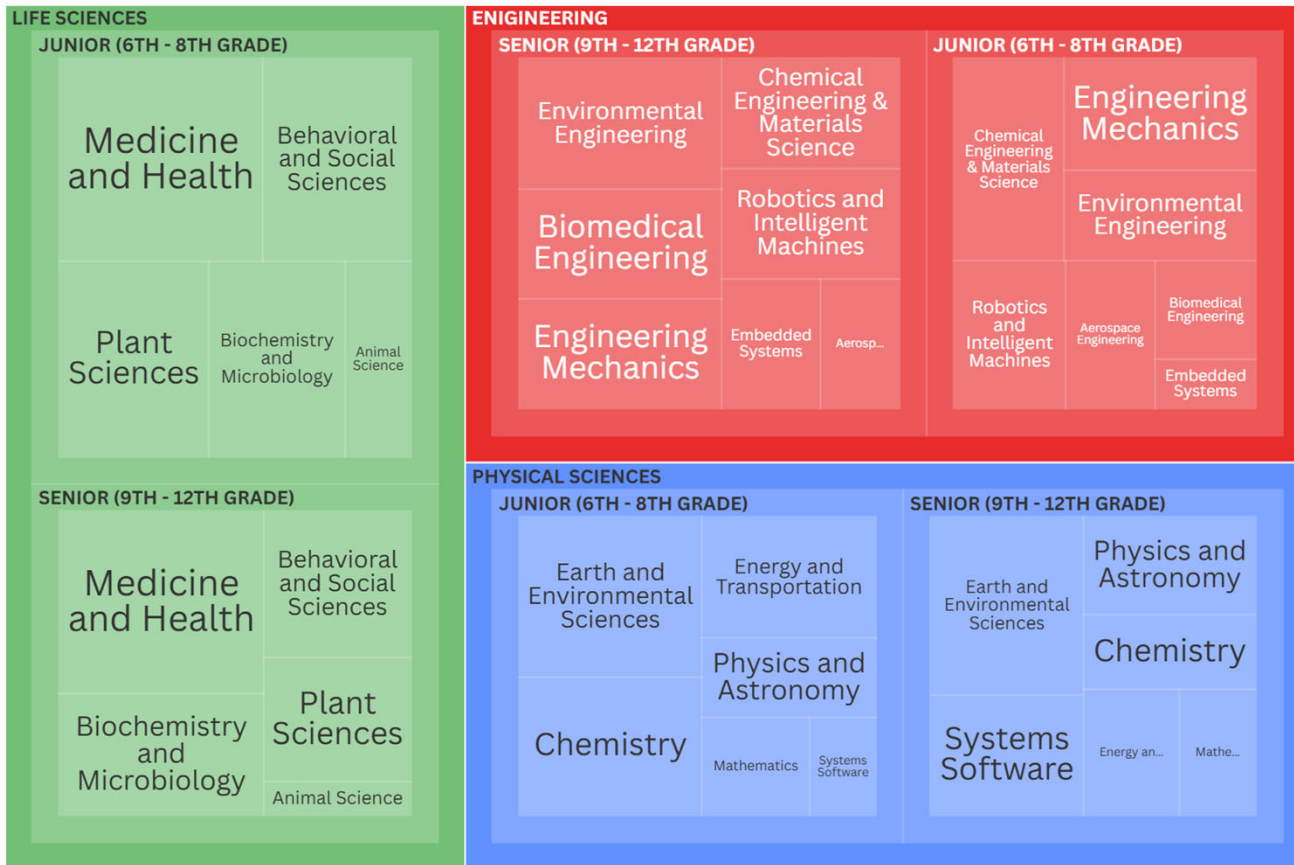
### Feeds into:

- Texas Science & Engineering Fair (TXSEF)
- Regeneron International Science & Engineering Fair (ISEF)
- Thermo Fisher Scientific Junior Innovators Challenge

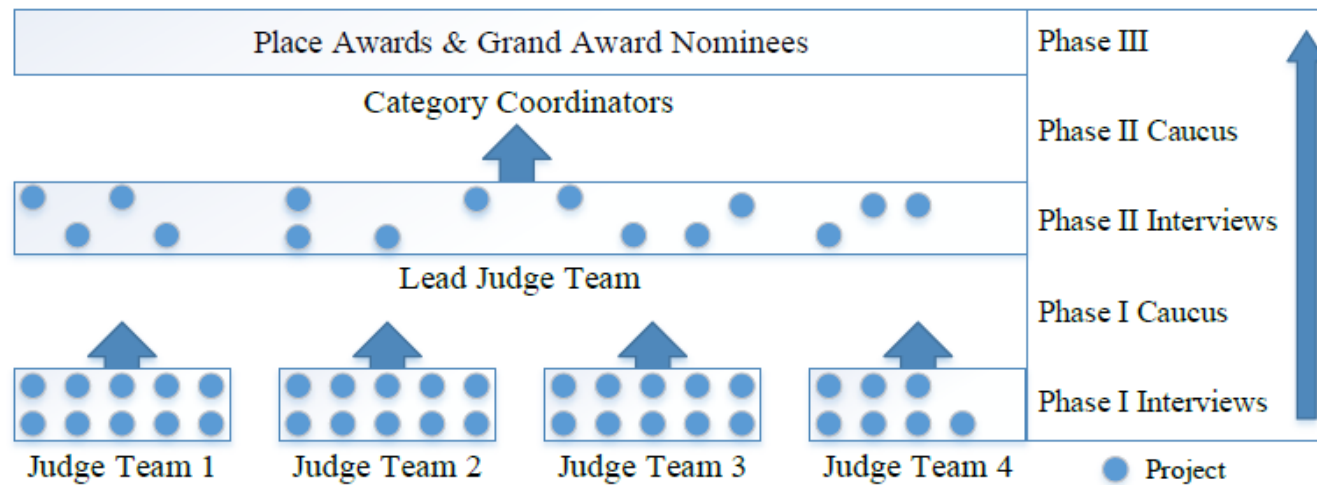
\$5 million of scholarships and prizes.

The logo for the Science & Engineering Fair of Houston (SEFH) consists of the lowercase letters "sefh" in a bold, blue, sans-serif font. The letters are closely spaced and have a slight shadow effect. The background of the slide features abstract geometric shapes in various shades of blue, creating a modern and dynamic aesthetic.

# Categories



# The Judging Process



Round 1: Judge Teams (3-4 judges) score 7-12 projects & select 15-25% for Phase 2

Phase II: Most Judges provide feedback to project which did not advance.  
Lead Judge Teams review projects & select Place Awards.

Phase III: Most Judges are not involved.  
Category Coordinators review 5-6 projects & select Grand Awards

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# Judge Teams & Project Assignments

- Judges will work in teams of 3-4 people to evaluate the same set of projects
- A Lead Judge heads each Judge Team
- Judge Teams should not interview as a team and should discuss projects only during the caucus.
- Project category assignments are determined by students and mentors, not by SEFH.



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SEFH 2024 Place Awards – Phase 1 Assignments

J	Aerospace Engineering	1
Division	Category	Judge Team Number

Please conduct a 10 minute interview for each project. Projects do not need to be interviewed in the order they appear on this sheet. Please coordinate an interview rotation with your judge team.

Table	Project Title
1001	Blade Design With Weight Lifted
1002	Aquatic things flying over the sea
1003	Applying Keplers Third Law
1004	Aerodynamic Possibilities
1005	How does the airfoil shape affect lift?
1006	How do different jet engine nozzles affect jet engine thrust?
1007	What Is The Most Effective Material For A Spacecraft Heat Shield?
1008	Aerospace Engineering
1009	Under Pressure
1010	Determining Which Propellant Will Bring a Model Rocket to the Highest Altitude
NA	NA
NA	NA



# Interviews

- Locate the project - use floor maps and signs
- verify the project table number and title match your assignment sheet.
- If the project is unattended, move on to a new project and return later. Make three attempts to begin the interview, do not judge the project and notify the Category Coordinator.
- Interviews should last 10 minutes each. Give participants 3-5 minutes to present their project, then ask questions.
- Take some time to look at the science notebook and project board
- Before leaving the project, place a sticker on the project

# Scoring

- Use the scoresheet to provide a score for **every project** visited during Round 1.
- Use the comment space below each project score to take notes.
- Score each project immediately after the interview
- Projects are scored using six indicators ranging from 10 to 25 points each.
  - Research Question (10 pts), Design & Methodology (15 pts), Execution: Data Collection, Analysis & Interpretation (20 pts), Creativity (20 pts), Presentation: Poster (10 pts), Presentation: Interview (25 pts).
- Refer to the judging criteria sheet for details on scoring.



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## PLACE AWARD JUDGE SCORESHEET

Category: \_\_\_\_\_

Division: \_\_\_\_\_

Criteria					
I. Research Question	IV. Creativity				
II. Design and Methodology	V(a). Presentation: Poster				
III. Execution	V(b). Presentation: Interview				

PROJECT NUMBER	PROJECT TITLE	Score each project relative to total points listed.						TOTAL
		I.	II.	III.	IV.	V(a)	V(b)	
1		10	15	20	20	10	25	
Comments:								
2		10	15	20	20	10	25	
Comments:								
3		10	15	20	20	10	25	
Comments:								



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## JUDGING CRITERIA FOR PROJECTS

### SCIENCE

- I. **Research Question** (10 points)
  - clear and focused purpose
  - identifies contribution to field of study
  - testable using scientific methods
- II. **Design and Methodology** (15 points)
  - well designed plan and data collection methods
  - variables and controls defined, appropriate, and complete
- III. **Execution: Data Collection, Analysis, and Interpretation** (20 points)
  - systematic data collection and analysis
  - reproducibility of results
  - appropriate application of mathematical and statistical methods
  - sufficient data collected to support interpretation and conclusions
- IV. **Creativity** (20 points)
  - project demonstrates significant creativity in one or more of the above criteria
- V. **a. Presentation: Poster** (10 points)
  - logical organization of material
  - clarity of graphics and legends
  - supporting documentation displayed
- VI. **b. Presentation: Interview** (25 points)
  - clear, concise, thoughtful responses to questions
  - understanding of basic science relevant to project
  - understanding interpretation and limitations of results and conclusions
  - degree of independence in conducting project
  - recognition of potential impact in science, society and/or economics
  - quality of ideas for further research
  - for team projects, contributions to and understanding of project by all members

### ENGINEERING

- I. **Research Question** (10 points)
  - description of a practical need or problem to be solved
  - definition of criteria for proposed solution
  - explanation of constraints
- II. **Design and Methodology** (15 points)
  - exploration of alternatives to answer need or problem
  - identification of a solution
  - development of a prototype/model
- III. **Execution: Construction and Testing** (20 points)
  - prototype demonstrates intended design
  - prototype has been tested in multiple conditions/trials
  - prototype demonstrates engineering skill and completeness
- IV. **Creativity** (20 points)
  - project demonstrates significant creativity in one or more of the above criteria
- V. **a. Presentation: Poster** (10 points)
  - logical organization of material
  - clarity of graphics and legends
  - supporting documentation displayed
- VI. **b. Presentation: Interview** (25 points)
  - clear, concise, thoughtful responses to questions
  - understanding of basic science relevant to project
  - understanding interpretation and limitations of results and conclusions
  - degree of independence in conducting project
  - recognition of potential impact in science, society and/or economics
  - quality of ideas for further research
  - for team projects, contributions to and understanding of project by all members

# Caucuses

- Following interviews, please return to your judge table to discuss projects with your team.
- **Advance ~20-30% of projects** (e.g. 3 of 11). The lead judge will record which projects advances use the summary form
- All judges need to
  - sign the summary form
  - add a numbered sticker to the form
  - turn in their scoresheet if using paper
- Peggy Levy Creativity Award Nominations
  - Max 1 per judge team (not required)
  - Only if truly creative/deserving



## SEFH 2025 Place Awards — Round 1 Results Summary

Division \_\_\_\_\_ Category \_\_\_\_\_ Judge Team Number \_\_\_\_\_

In the boxes below, please record the table numbers and project titles selected to advance to round 2.

**Reminders:** Only **20-30% of projects should advance** from round 1 to round 2 (e.g. 3 of 11 projects) it is **not necessary** to rank projects.

Table Number	Project Title
Table Number	Project Title
Table Number	Project Title

By signing below, a judge certifies the following: (1) they have reviewed and scored all assigned round 1 projects; (2) they submitted their round 1 scoresheet, which will be attached to this results summary; (3) they agree with decision to advance the projects listed above to round 2.

Lead Judge Name	Signature	Numbered Sticker Here
Judge Name	Signature	Numbered Sticker Here
Judge Name	Signature	Numbered Sticker Here
Judge Name	Signature	Numbered Sticker Here

**Peggy Levy Creativity Award Nomination:** Each judge team may nominate a single project for this award, which focuses on the creativity of the project idea. To nominate a project, **please request a nomination form from your category coordinator**. Nominations for this award are not required and should be reserved for projects that are particularly novel with respect to topics, questions, or design.

## Providing Feedback (Round 2)

- Interview projects you did not see during Round 1 and conduct the interview the same way.
- Use feedback form on the project table to record comments for participants based on the scoring criteria.
- **Forms should be left on the project table. All judges providing feedback will use the same form.**
- Be sure to scan the feedback provided by other judges. Try to offer new feedback. If you see feedback from another judge that concerns you, please let us know.



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### PHASE 2 JUDGE FORM

**Directions and Codes**

Use the project criteria codes listed below to identify the topic for each comment.

A. Research Question	C. Execution	E. Presentation - Poster
B. Design & Methodology	D. Creativity	F. Presentation - Interview

Project ID #:						
Judge ID #:	Code:	Comments:	Code:	Comments:	Code:	Comments:
Judge ID #:	Code:	Comments:	Code:	Comments:	Code:	Comments:
Judge ID #:	Code:	Comments:	Code:	Comments:	Code:	Comments:
Judge ID #:	Code:	Comments:	Code:	Comments:	Code:	Comments:

## Category Placement & Special Cases

- Team Projects: Should not be held to an artificially higher standard. It is reasonable to expect team members to explain their contributions to the project.
- Continuation Projects: Students choosing to extend their work from a previous year should be able to demonstrate advancement from one year to the next. Continuation projects are identified by a form.
- Regulated Research: Projects conducted outside the home, school, or the field (e.g. research institution, industrial) will be identified with a form. These projects should be the students own work but may be connected to the ongoing work of the larger organization. **It is not your responsibility to determine whether a student did the work on their own.**

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# Overview & Event Logistics

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Andrew Kapral, SEFH Judge Chair  
Judges@sefhouston.org



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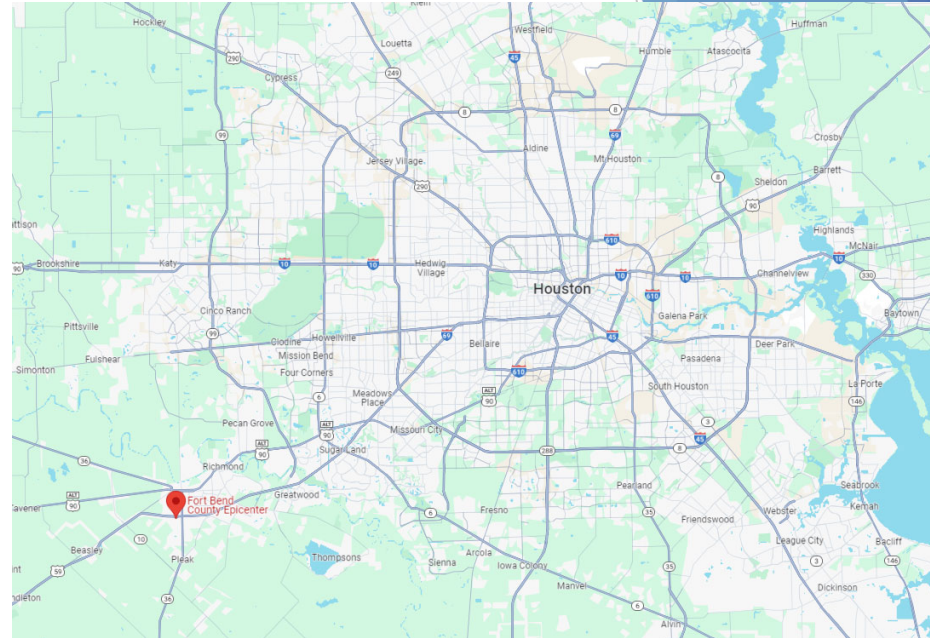


## Location & Schedule

### Location:

Fort Bend Epicenter  
28505 Southwest Fwy  
Rosenberg, TX 77471

Saturday, February 15, 2025



<b>Schedule:</b>	Judge check-in:	7:30 AM - 8:30 AM
	Opening Ceremony	8:30 AM
	Round 1:	9:10 AM - 12:30PM
	Lunch(for all judges):	12:30 PM - 1:15 PM
	Round 2:	1:15 PM - 3:45PM

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## Parking

Free for all judges

- Park in lots C & D
- The parking pass is available in at: <https://tinyurl.com/SEFH25parking>
- Show the parking pass on your phone or print it out.

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**PARKING PASS  
JUDGES**

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Science and Engineering Fair Of Houston

**February 15, 2025**

Please show pass to  
parking attendants

FORT BEND  
**EPICENTER**  
TEXAS

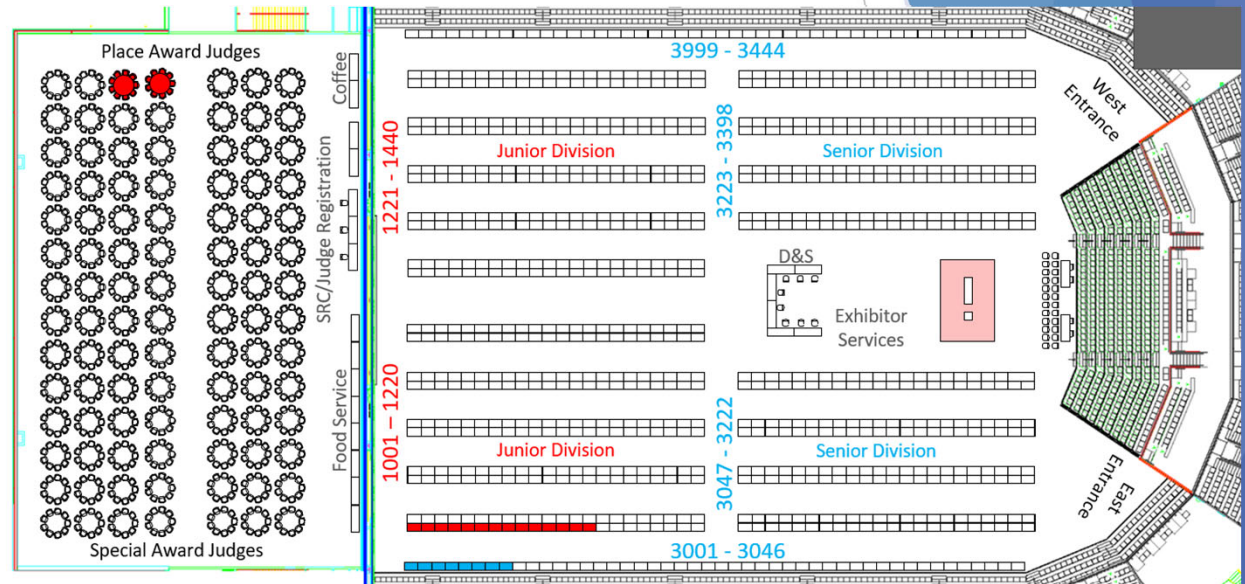
## Arrival & Check-in

Enter through West Entrance and walk to the back of the arena.

Use signs & the map for your category to find your check-in table.

Category maps will be posted on our website by 2/12:

<https://sefhouston.org/for-judges/>



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## What do I wear (clothing)? What do I eat (not clothing)?

### Clothing

- Presentable but not fancy
- Team polos/shirts are great
- Comfortable shoes are a must

### Food & Drink

- Coffee, tea, water
- No breakfast ☹️ - Bring a snack
- Lunch will be served 😊
  - Yes, we know what happened last year.
  - Yes, we were mad.
- Vegan/Gluten Free for those who indicated needing it. (ticketed)
- Plenty of vegetarian

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## Judge Materials

### Sign-in:

- Get a folder & find the numbered stickers inside.
- Place a sticker next to your name on the roster & sign-in
- Get a badge (put a sticker on it) & project assignment sheet
- Find the table with the rest of your judge team & get coffee!

### Folder:

- Scoresheet
- Quick Reference & Floor Map
- Judging Schedule
- Stickers

### Other Documents:

- Badge (numbered sticker)
- Phase I Assignment Sheet - organized by judge team





# Lead Judges

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Andrew Kapral, SEFH Judge Chair  
Judges@sefhouston.org



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  - **Round 2 (interviews/caucuses)**

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# Overview

## Responsibilities

Round 1 - organize a judge team (3-4 judges)

- Meet with judges or your team as they check-in
- Do the same set of interviews as your team
- Chair round 1 caucus
- Submit round 1 results to category coordinator

Round 2 - be a member of a lead judge team (2-3 judges)

- Interview only projects you did not interview during round 1
- Participate in the round 2 caucus to select place award winners

Done by 4:00 pm



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# Overview

## Check-in & Round 1 Preparation

- Plan to arrive around 8:00
- Go directly to your category's tables in the judging area (see category maps online)
- Welcome judges as they arrive
- Review the judging process with new judges (use quick reference guide)
- Walk to the area where your projects are located.
- Make sure everyone is ready by 9:00am

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**PLACE AWARD JUDGE QUICK REFERENCE GUIDE**

Judging Process — Round 1

Purpose	Interview every participant, score every project, and advance approximately 30% of projects to round 2.
Timing	Round 1 lasts a total of 2.5 hours; Judges have <u>a maximum of 12 minutes at each project</u>
Judging Teams	Judges will work in teams of 3-4 people to evaluate the same set of projects; judge teams <u>should not interview</u> as a team and should discuss projects only during the round 1 caucus.
Locating Projects	Use the list of assigned projects, floor map, and signs to locate a project; verify the project table number and details match your assignment sheet. If the project is unattended, move on to a new project and return later. <u>If the participant is still missing after the third attempt to begin the interview, do not judge the project and notify your category coordinator.</u>
Interviews	Write the project's Table ID on the next line of your scoresheet before the interview begins. Give participants 5 minutes to present their project, then ask questions. <u>Before leaving the project, place a round sticker on the project indicating it has been viewed.</u>

## Round 1

### Interviews

- Keep judges on pace of 10-12 minutes per interview
- Remind judges to score projects after each interview
- Each interview should be done by a single judge
- Remind judges to put a numbered sticker on the project after the interview

### Caucus

- More than computing averages and picking the highest scored projects
- Make sure everyone has an opportunity to be heard
- Keep judges focused on projects and presentation merits

# Round 1 results

- **Advance ~20-30% of projects** (e.g. 3 of 11). The lead judge will record which projects advances use the summary form
- All judges need to
  - sign the summary form
  - add a numbered sticker to the form
  - turn in their scoresheet
- Summary forms and scoresheets go to the category coordinator
- **Peggy Levy Creativity Award**



## SEFH 2025 Place Awards — Round 1 Results Summary

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## Round 2

### Assignments

- Lead judges will interview projects advanced from round 1
- All other judges will conduct feedback interviews
- Fill out a blank scoresheet with your round 2 assignments

### Interviews

- Follow the same process/timing as round 1
- Only interview projects you did not see during round 1

### Caucus

- We need projects ranked for top 3 awards (no ties)
- You do not have to issue honorable mentions
  - especially for small categories
- Coordinators will lead caucuses



## Wrap Up

- Questions?
- Reach out to your category coordinator or to me (Andrew) with questions

Andrew Kapral  
Judges@sefhouston.org

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