

**2019 National TEAMS Research Presentation Competition****Overview:**

Participants prepare a poster and oral presentation describing their solution to the design challenge.

*“Everything we love about civilization is a product of intelligence, so amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before – as long as we manage to keep the technology beneficial.”*

**-Max Tegmark**, President of the Future of Life Institute

Artificial intelligence (AI) makes it possible for machines to learn from experience, adjust to new inputs and perform human-like tasks. Most AI examples that you hear about today – from chess-playing computers to self-driving cars – rely heavily on deep learning and natural language processing. Using these technologies, computers can be trained to accomplish specific tasks by processing large amounts of data and recognizing patterns in the data.

AI research uses tools and insights from many fields, including computer science, psychology, philosophy, neuroscience, cognitive science, linguistics, operations research, economics, control theory, probability, optimization and logic. AI research also overlaps with tasks such as robotics, control systems, scheduling, data mining, logistics, speech recognition, facial recognition and many others.

**Challenge:**

Design an innovation in artificial intelligence in compliance with Asilomar AI Principles. The innovations can be fundamental in nature (e.g. development of methods or techniques to improve the AI field as a whole or in a specific way), or application in nature (e.g. the use of an AI system or tool in a novel application).

The presentation must include:

- Nature of the innovation
  - What is the tool or application and how will it work?
- Design rational
  - An effective design will (1) be guided by one or more Asilomar AI Principles, (2) consider related issues such benefit/risk analysis as well (3) adhere to appropriate codes, laws and standards.
- Implementation plan, including estimated costs and timeline
- Implications for the environment, the economy, and society

**Session Format – preliminary round:**

- There will be two sessions. Each session will have competitors from each level - MS, 9/10 and 11/12.
- Each team will be assigned a session time and a table number.
- Teams will choose two representatives who will give the presentation and who must be at their table during the entire session.
- Judges will visit the tables and representatives must give a 2-3 minute presentation.

**Procedure - prior to competition:**

1. The coach announces the topic and provides a copy of the competition regulations to team members.
2. All team members assist in producing the presentation.
3. All teams must choose two team members to give the presentation at the competition.

4. An email is sent to coaches with each teams' assigned session time.

**Procedure – preliminary round:**

1. The two designated team members arrive twenty minutes before the schedule time. Team members check in at the table outside the competition room. At check in, team members will be advised of their table number.
2. Team members place their display board on their assigned table. Additional visuals are not allowed during the preliminary round.
3. Judges will review and rank presentations and will be instructed to spend no more than three minutes with each team.
4. All display boards must be left on the table following the judging period where they will remain until after the open showcase. TSA will store all display boards until the semi-final round.
5. A list of semi-finalists (up to fifteen, in random order) will be posted on the TEAMS website by Sunday afternoon. Semi-finalists coaches will be directed to sign up for a competition time.

**Session Format – semifinal round:**

1. Semi-finalists teams report for the event 15 minutes prior to their assigned time slot. After check-in, teams will wait in the holding until their name is called.
2. Each team will present to two judges and participate in a group interview. The room will have a podium and a table for placing the display board and any optional visuals.
3. Teams may choose to invite coaches/parents/guests to view their presentation in the semifinal round. Observers will not be admitted once the presentation has started.

**Procedure – semifinal round:**

1. Teams will check in outside of the holding room. Team posters will be distributed to semi-finalists at the check-in. All team members must be present.
2. Semi-finalists wait in the holding room until their team is called. Semi-finalists will present using the same information and display board used during the preliminary round. Optional visuals may be used for the semi-final round. The presentation may include up to two additional visuals that add to the effectiveness of the presentation. Additional visuals may not exceed 12" (h) x 12" (w) x 12" (d). Teams will take all visual aids with them when they leave the competition room. Visual aids that are not taken following the competition will become the property of TSA and will be discarded immediately.
3. Participants are allotted a two-minute set up time before their presentation begins.
4. In addition to the presentation (no more than three minutes), a group interview including all team members (approximately two minutes) will be held.
5. Judges will review and rank presentations.
6. Ten finalists will be announced during the TEAMS award ceremony.

**Competition attire:**

- Shirt or blouse: button-shirt with a turned down collar or a polo/golf shirt. The TEAMS shirt (red) or the official TSA shirt (royal blue) may be worn (unacceptable: t-shirts, halter tops, tank tops)
- Dress skirt or pants: (unacceptable: jeans, baggy pants, exterior pocket pants, shorts)
- Shoes: dress shoes worn with dark socks, hosiery (optional); open-toe shoes or sandals are acceptable (unacceptable: athletic shoes; flip-flops; military boots; or work boots)

## Regulations:

1. Presentations must be original and the result of the participating team's efforts.
2. The presentation must include:
  - a. [One tri-fold display board](#)  
Maximum size: 36" (width) x 48" (height)

Teams have three options regarding the display board. Teams may:

- 1) Bring their tri-fold display board with them to the conference.
- 2) Request that TSA provide them a complimentary tri-fold display board on site\*. Teams that have requested a tri-fold display board will pick it up at conference packet pick up (Saturday morning, 7:15 AM – 7:45 AM). Teams must bring supplies (i.e. glue, tape, pins, etc.) needed to mount their information on the board. TSA will not supply materials.
- 3) Ship their tri-fold display board directly to their hotel. Contact the hotel for instructions on doing so and the applicable shipping and handling charges.

\*If you would like to have your display board supplied on site, please email [Jenn Glover](mailto:jglover@tsaweb.org) no later than May 15, 2019.

- b. The Team Identification Form with completed team identifier information must be securely attached to the back of the poster:
    - State
    - School name
    - Level
    - Identifier number
    - Coach name
    - Team member names(This form will be posted to the website in late April.)
  - c. Teams are responsible for placing the display board on the table upon entering the competition room.
  - d. After preliminary round presentations are complete, teams must leave their display board on the table where it will remain until after the open showcase. (All teams and guests are invited to attend the showcase). TSA will store all display boards until the semi-final round.
  - e. Semi-finalists display boards will be available at semi-finalist check-in.
3. Hazardous materials, chemicals, lighted or open flames, combustibles, wet cell batteries, helium, or other similar materials may not be used in the presentation or brought to the national TSA conference. Any questions regarding materials should be emailed to Jenn Glover ([jglover@tsaweb.org](mailto:jglover@tsaweb.org)) no later than May 30, 2019.

## Evaluation:

Evaluation is based on the quality of the presentation and display board, the recommendations, the accompanying rationale for the solution, and adherence to regulations.

## Resources:

- <https://futureoflife.org/ai-principles/>
- <https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/>
- <https://cacm.acm.org/magazines/2018/2/224630-teaching-artificial-intelligence-and-humanity/abstract>