Tuesday, October 16, 2018

Dear TSA Advisors and Technology, Engineering and Design Teachers,

Attached is the tentative schedule for the Eastern Region NC TSA Conference, to be held on the campus of Wayne Community College on Friday, February 8, 2019.

All TSA chapters including Guilford County and west are encouraged to attend. Schools from these regions that are interested in starting a TSA chapter are also encouraged to participate as well.

I am also attaching the event information, A TENTATIVE SCHEDULE, registration link and the medical/photo release form. Please make sure that you turn in the medical/photo release form when you check-in at registration. **This year we are asking that each school provide at least ONE COORDINATOR (Two are preferred) for this event. Registration will open on December 18, 2018.**

Please note that some of the events will operate **differently** than described in the TSA Competitive Events Guides. Due to time constraints, some events that normally involve on-site construction of projects will deviate from the event guidelines.

Costs:
Student Registration: $15.00 (includes lunch and a shirt)
Advisor Registration: $10.00 (includes lunch and a shirt)
Chaperone Registration: free (includes lunch)

As many of you know, weather in North Carolina is naturally unpredictable. If Wayne Community College is closed or if the roads are deemed unsafe by the event coordinator, the event may be delayed or canceled. If the conference is canceled, then schools will receive a maximum of a 50% refund. Refunds will not be given to schools that decide not to attend due to weather or any other unforeseen events. *There will be no on-site registration.* Schools facing financial hardships should reach out to Dr. Taylor for assistance.

We can only *guarantee* spaces in events to those schools/students that have **pre-registered by January 25th.** Payment should be postmarked no later than **January 29th.** Failure to submit payment prior to the conference will result in elimination from the event.

For additional information about the events, contact the event coordinator, Jerianne Taylor (Jerianne.taylor@dpi.nc.gov), via phone or email.

We look forward to seeing you on February 8th.

Sincerely,

Jerianne S. Taylor

Jerianne Taylor, EdD, DTE
NC TSA Executive Director and State Advisor
Professor & Career & Technical Education Program Director
Appalachian State University
828-262-6352 (phone) 336-692-4794 (cell) 828-265-8696 (fax) jerianne.taylor@dpi.nc.gov (email)

PERSONAL LIABILITY RELEASE FORM

North Carolina Technology Student Association
2019 Regional Competitive Events Conference
February 8, 2019
Wayne Community College   Goldsboro NC

Name of Student Participant:

Name of School: Advisor:

NOTE: <u>EVERY STUDENT</u> MUST HAVE A COPY OF THIS FORM SIGNED BY PARENT OR GUARDIAN IN ORDER TO PARTICIPATE.

I hereby agree to release Wayne Community College and the North Carolina Technology Student Association, Inc., its representatives, agents, servants, and employees from liability for any injury to the above named person, resulting from any cause whatsoever occurring to the above named person at any time while attending the North Carolina Technology Student Association Eastern Region Conference, including travel to and from the conference, excepting only such injury or damage resulting from willful acts of such representatives, agents, servants and employees.

I do voluntarily authorize the North Carolina Technology Student Association's Eastern Region Conference Chair, assistants and/or designee to administer and/or obtain routine or emergency diagnostic procedures and/or routine or emergency medical treatment for the above named person as deemed necessary in medical judgment.

I agree to indemnify and hold harmless the North Carolina Technology Student Association, Inc., Wayne Community College, said medical service coordinator and/or assistants and designees   from any and all claims, demands, actions, or rights of action, on account of said procedures and/or treatment rendered in good faith and according to accepted medical standards.

Having read and understood completely the "Student Code of Conduct" for the North Carolina Technology Student Association, Inc., I do hereby agree to follow the conduct described. I fully understand that this is an educational activity and will, to the best of my ability, apply myself for the purpose of learning and will uphold at all times the good qualities of a person representing the North Carolina Technology Student Association, Inc.

_____	_____
Participant	Date
_____	_____
Parent or Guardian	Date

PUBLICITY: I agree to allow pictures of my child from this conference to be used for NC TSA and Lenoir Community College promotional purposes.

_____	_____
Parent or Guardian	Date

☐   **I DO NOT** give NCTSA the right to collect self- reported data that will be used for educational purposes only, from my child.

<u>Participants: please bring a signed copy of this form to the Conference</u>

Below is a summary description of the 2018 and 2019 MIDDLE School level TSA competitive events. Detailed specifications and rules regarding each event can be found in the *2019 & 2020 Middle School Technology Activities, National TSA Conference Competitive Events Guide.*

Career Prep: Participants **(three individuals per chapter)** conduct research on a selected technology-related career and use the knowledge gained to prepare a letter of introduction and a chronological skills resume. Top 5 Semifinalists participate in a mock interview.

> In 2019, students choose one (1) of these careers:
> - Health Science
> - Information Technology
> - Science, Technology, Engineering & Mathematics
> - Transportation, Distribution & Logistics

Children's Stories: Participants **(three teams per chapter; a team of one individual is permitted)** create an illustrated children's story that will incorporate educational and social values. The story must revolve around the theme for a given year that is posted on the TSA website. Top 5 semifinalists will present their stories to the judges.

> **Theme:** Tactile STEM Book
> Design a tactile picture book that explains a STEM concept of your choice for children with a disability.

Coding Participants **(two [2] teams of two [2] members per chapter)** will demonstrate their knowledge of computer science and coding by taking a written test. Semifinalists will further demonstrate their programming knowledge by participating in an on-site programming challenge. Details about the on-site challenge (e.g., programming language to be used and practice problems) can be found on the TSA website under Themes and Problems.

Construction Challenge: Participants **(three teams per chapter)** submit a scale model/prototype with a portfolio that documents the use of their leadership and technical skills to fulfill an identified community need related to construction. *Top Five Semifinalists will be interviewed.*

Digital Photography: Participants **(three individuals per chapter)** produce an album of color or black and white digital photographs (representing or relating to a chosen theme) and place the album on a storage device for submission. Semifinalists produce a series of digital photographs taken at the conference that are edited appropriately for an on-site task. *No on-site problem.*

> **Theme:** "*Landscape of Seasons"*

Dragster: Participants **(five individuals per chapter; one entry per individual)** design and produce a CO_2 powered dragster according to stated specifications, using only specified materials.

Electrical Applications: Participants **(two [2] teams of two [2] individuals per chapter)** assemble a specific circuit from a schematic diagram using their own kit and make required electrical measurements, and explain their solution during an interview.

Flight: Participants **(five individuals per chapter, one entry each)** study the principles of flight and design in order to fabricate a glider that stays in flight for the greatest elapsed time. Flight duration of the gliders and documentation of the design process are the primary elements of evaluation.

Inventions and Innovations: Participants **(three teams of at least three individuals per chapter; one entry per team)** investigate and determine the need for an invention or innovation of a device, system, or process, and then brainstorm ideas for a possible solution. Top 5 Semifinalists make an oral presentation to a panel of judges (who act as venture capitalist investors) to persuade the panel to invest in their invention/innovation.

Junior Solar Sprint: Participants **(three teams per chapter, one entry per team)** apply STEM concepts, creativity, teamwork, and problem-solving skills as they design, construct, and race a solar-powered model car.

Mechanical Engineering Participants (two [2] teams of three to six [3-6] individuals per chapter; one [1] entry per team) will design and build a "Rube Goldberg" mechanical device. This device will contain three (3) subsystems within a larger system. Each subsystem will contain all six (6) simple machines in a fun and inventive way. The final solution or grand finale is open-ended to maximize creativity. The transfer of energy in a device will travel a specific path from start to finish for a minimum of seven (7) seconds per board. The device must be self-powered utilizing kinetic energy. The device must be capable of repeated demonstrations without long setup times. *Top Five Semifinalists will be interviewed.*

Medical Technology: Participants **(three teams of at least two individuals per chapter; one entry per team)** conduct research on a contemporary medical technology issue of their choosing, document their research, and create a display. If appropriate, a model or prototype depicting an aspect of the issue may be included in the display. *No Onsite Presentations or Interviews.*

Prepared Speech: Participants **(two individuals per chapter)** deliver a speech that reflects the theme of the current year's national conference.
    Theme: Model the Way

Problem Solving: Participants **(one team of two individuals per chapter)** use problem solving skills to develop a finite solution to a problem provided on site.

Promotional Marketing: Participants **(three individuals per chapter, one entry per individual)** design a three-part **TSA Marketing Toolkit** that must include

1. Printable : a banner 96"x 48" advertising a fundraiser for a new 3D printer and materials for the chapter to use for conferences
2. Wearable: a 1" lanyard for chapter members to wear at conferences
3. Digital Signage: The local school board has approved the beginning of a new TSA chapter at a new middle school in your county. Your chapter is going to assist them in getting started. The board has given your chapter 10 minutes to speak at the next board meeting. The advisor has required that you show the digital advertisement that will play in the lobby of the new school announcing the first meeting of this year. *No on-site problem.*

Structural Engineering: Participants **(three teams of two individuals per chapter)** apply the principles of structural design and engineering through basic research, design, construction, and destructive testing to determine the design efficiency of a structure. *No on-site construction.*

Link to 2019 Challenge: http://tsaweb.org/docs/default-source/themes-and-problems-2018-2019/themes/tsa-middle-school-structrual-engineering-problem-statement-2019.pdf?sfvrsn=6b61c31e_0

Link to Assessment Form: http://tsaweb.org/docs/default-source/competition-forms-2018-2019-(from-vv-8.29.18)/ms-structural-engineering-analysis-and-assessment-form.pdf?sfvrsn=3a35b609_2

Link to Verification Form: http://tsaweb.org/docs/default-source/competition-forms-2018-2019-(from-vv-8.29.18)/ms-structural-engineering-verification-form.pdf?sfvrsn=c7101704_2

Tech Bowl: Participants **(one team of three individuals per chapter)** take a written objective examination to qualify for the oral question/response, head-to-head team competition phase of the event.

Website Design: Participants **(three teams of three to six individuals per chapter, one entry per team)** design, build, and launch a website that features the team's ability to incorporate the elements of website design, graphic layout, and proper coding techniques. *No on-site interview.*

> **Link to 2019 Challenge: http://tsaweb.org/Themes-and-Problems**

> **To submit your URL, please use this link:**
> **https://goo.gl/forms/Vcp5BlfxtGbLJ6Df2**

> **Be sure to submit your URL on or before 11:59 PM on February 7, 2019.**

Be sure to refer to the following site for competition updates for any changes to the events: http://www.tsaweb.org/Competition•Updates

Below is a summary description of the 2019 and 2029 HIGH school level TSA competitive events. Detailed specifications and rules regarding each event can be found in the 2019 & 2020 High School Technology Activities, National TSA Conference Competitive Events Guide.

Architectural Design: Participants **(three teams, or one individual, per chapter; one entry per team or individual)** develop a set of architectural plans and related materials for an annual architectural design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design.

Children's Stories: Participants **(three teams per chapter; a team of one individual is permitted)** create an illustrated children's story of high artistic, instructional, and social value. The narrative may be written in prose or poetry and take the form of a fable, adventure story, or other structure. The physical storybook should be of high quality and designed to meet the year's given theme. The story must have a science, technology, engineering, and mathematics (STEM) focus. Top 5 semifinalists will read their stories to the judges.

> THEME: Multi-Modal Picture Book: Design a book with tactile and auditory features that enrich the storybook experience for children ages 4-7 who have a disability.

Coding: Participants **(two (2) individuals, or two (2) teams of two to three (2-3) members).** Participants respond to an annual coding-related design challenge by developing a software program that will accurately address an on-site problem in a specified, limited amount of time. Specific elements to be used, such as the programming language, operating system, or application programming interface (API), will be released on-site. Completed solutions will be objectively measured to determine the best and most effective solution for the stated problem.

Computer Integrated Manufacturing (CIM): Participants **(three teams of two members per chapter)** design, fabricate, and use Computer Integrated Manufacturing (CIM) to create a promotional TSA product that will showcase the current conference city and/or state.

Digital Video Production: Participants **(three teams per chapter, one entry per team)** develop a public service announcement and a digital video (with sound) that focuses on the given year's theme.

> Theme: A Mockumentary
> A mockumentary or mock documentary is a genre of film, a parody that takes the form of a serious documentary on a chosen subject.

Dragster Design: Participants **(five individuals per chapter, one entry per individual)** design, produce working drawings for, and build a CO2-powered dragster. *No Interviews.*
For 2019 ONLY: The dragster body must include at least one (1) wing, spoiler, fin or splitter as part of the finished product. It must be part of the one-piece body, not an add-on or additional piece, and must stay within all other regulated specifications as outlined in the event regulations

Engineering Design: Participants **(three teams of three to five individuals per chapter, one entry per team)** develop a solution to a National Academy of Engineering grand challenge that is posted on the national TSA website. The solution offered will be informed and designed by precise problem definition, thorough research, creativity, experimentation (when possible), and the development of documents and appropriate models (mathematical, graphical, and/or physical prototype/model). Semifinalists justify and demonstrate their solution in a timed presentation.

Theme: Practical and Cost Effective Uses for Solar Energy In and Around a Home

Flight Endurance: Participants **(five individuals per chapter, one entry per individual)** analyze flight principles with a rubber band-powered model aircraft.

Future Technology Teacher: Participants **(three individuals per chapter)** research and select three accredited colleges or universities that offer technology education teacher preparation as a major. Each participant writes a one page simulated college essay explaining why he/she would like to become a technology educator and what would constitute success in the field. Participants also develop and present a lesson plan to judges. Top 5 Semifinalists will present their lessons to the judges.

Photographic Technology: Participants **(three individuals per chapter)** capture and process photographic and digital prints that depict the current year's published theme. Semifinalists participate in an on-site event in which they capture digital images and utilize multimedia software to prepare and develop a media presentation during the annual conference. *No On-Site Problem.*
This year participants have the opportunity to show their photography skills working with different lighting conditions. Participants must create a portfolio featuring five (5) pictures. Please note that picture #1 must contain people and/or animals. All other pictures may or may not have people or animals in them. Make sure to read the event rules for further directions.

- Picture #1: Color picture that must contain a person or people and/or an animal(s) taken in bright afternoon sunlight (between 11 AM and 2 PM). In the photo's description, state the time that the picture was taken.
- Picture #2: Color picture taken outside during sunrise or sunset
- Picture #3: Black and white picture working with fluorescent lighting
- Picture #4: Black and white picture taken using candlelight
- Picture #5: Student choice as to whether it is color or black and white
  Options for the light source:
    - Moonlight
    - Starlight
    - Nighlight
    - Spotlight
    - Flashlight

Prepared Presentation: Participants **(three individuals per chapter)** deliver an oral presentation that includes a visual enhancement, based on the theme for the current year's conference.

Promotional Design: Participants **(three individuals per chapter, one entry each)** develop and submit electronically a graphic design that can be used to promote participation in TSA-related interests.

Structural Design and Engineering: Participants **(two teams of two individuals per chapter, one entry per team)** work as part of a team to build a structure that is posted on the [TSA website.](#) The structure is destructively tested and assessed to determine design efficiency.
No On-site Problem.

Technology Bowl: Participants **(one team of three individuals per chapter)** complete a written, objective test in order to qualify for oral question/response, head-to-head team competition.

Technology Problem Solving: Participants **(one team of two individuals per chapter)** work together on site to develop and create a solution to a problem using the limited materials provided and the tools allowed.

Transportation Modeling: Participants **(three individuals per chapter, one entry per individual)** design and produce a scale model of a vehicle that fits the annual design problem.
         Theme: Maglev City People Mover (for inner city point-to-point movement)

Webmaster: Participants **(one team of three to five individuals per chapter)** are required to design, build, and launch a website that features their school's career and technology/engineering program, the TSA chapter, and the chapter's ability to research and present a given topic pertaining to technology. Semifinalists participate in an on-site interview to demonstrate the knowledge and expertise gained during the development of the website - with an emphasis on web design methods and practices, as well as their research for the annual design topic. *No On-Site Interview.*

[Link to the 2019 Challenge](#)
To submit your URL, please use the following link:
https://goo.gl/forms/Fm7GxO8EI8vsdAgM2

Be sure to submit your URL on or before 11:59 PM on February 7, 2019.

Be sure to refer to the following site for competition updates:
http://www.tsaweb.org/Competition-Updates

Tentative Schedule of Events:

High School		Middle School	
Event	**Room**	**Event**	**Room**
Project Set-Up Until 9:30		**Project Set-Up Until 9:30**	
Architectural Design	Spruce 106/108	Career Prep	Spruce 106/108
Children's Stories	Spruce 106/108	Children's Stories	Spruce 106/108
CIM	Azalea CIM Lab	Construction Challenge	Spruce 106/108
Digital Video Production	Spruce 142	Digital Photography	Spruce 142
Dragster Design	HVAC lab	Dragster Design	HVAC lab
Engineering Design	Spruce 234	Flight	Hange
Flight Endurance	Hanger	Inventions & Innovations	Spruce 234
Future Technology Teacher	Spruce 232	Junior Solar Sprint	Crop Box Pad
Photographic Technology	Spruce 142	Mechanical Engineering	Spruce 234
Promotional Design	Spruce 142	Medical Technology	Spruce 106/108
		Off the Grid	
Structural Engineering	Spruce 120	Promotional Marketing	Spruce 142
Transportation Modeling	Magnolia 107	Structural Engineering	Spruce 120
Webmaster	Azalea 201	Website Design	Azalea 105

High School		Middle School	
9:30 Technology Bowl Written	Walnut 101	9:30 Technology Bowl Written	Walnut 101

Tentative Schedule of Events continued:

High School			Middle School		
Time	**Event**	**Room**	**Time**	**Event**	**Room**
Competitions			**Competitions**		
10:00	Children's Stories-Finalists	Spruce 106/108	10:00	Career Prep	Spruce 106/108
	Dragster Design-Races	HVAC lab		Coding	WLC 106
	Flight Endurance-Testing	Hanger		Dragster Design-Races	HVAC lab
	Prepared Presentation	Spruce 232		Electrical Applications	Magnolia 105
	Struct. Engineering-Testing			Flight- Testing	Hanger
	Technology Bowl-Orals	Walnut 101		Mechanical Engineering-Testing	Spruce
				Problem Solving	HVAC lab
12:00	Future Technology Teacher Finalists	Spruce 232		Structural Engineering-Testing	Spruce 120
	Problem Solving	HVAC lab	12:00	Children's Stories	Spruce 106/108
				Inventions & Innovations	Spruce 234
12:30	Coding	WLC 161		Prepared Speech	Spruce 232
1:00	Transportation Modeling-Races	Magnolia HVAC lab	1:00	Junior Solar Sprint Races	Crop Pad
				Technology Bowl-Orals	Walnut 101
Awards Ceremony 3:00 PM					