COMPETITIVE EVENTS INFORMATION

2012 WESTERN REGIONAL NC TSA – APPALACHIAN STATE UNIVERSITY

February 24, 2012

MIDDLE SCHOOL EVENTS

ADVISORS: REFER TO THE TSA EVENTS GUIDE OR www.tsaweb.org FOR FULL EVENT DESCRIPTIONS!

1. **Career Prep** Participants (three individuals per chapter) conduct research on a selected technology-related career and use the knowledge gained to prepare a resume and cover letter, complete a job application, and participate in a mock interview.
   Choose one of these careers:
   Mechanical engineer
   Architect
   Construction manager

2. **Challenging Technology Issues**: Participants (three teams of two members per chapter) prepare and deliver an extemporaneous oral presentation, with team members explaining opposing views of a current technology issue that has been selected on site from a choice of three options. Bring non-electronic reference materials to assist with on-site preparation.

3. **Community Service Video** Participants [two teams per chapter (entries may be submitted by an individual or group)] create and submit a finished video that highlights their chapter's involvement with the American Cancer Society, national TSA's service partner

4. **Digital Photography** Participants (five individuals per school) produce an album of color or black and white digital photographs that represent or relate to a chosen theme and place the album on a storage device for submission. Judging based on album presentation and interview only; there will be no on-site challenge. Theme: The Art and Science of Technology

5. **Dragster:** Participants (five individuals per chapter; one entry per individual) design, produce working drawings for, and build a CO2-powered dragster according to stated specifications and using only certain specified materials. Cars will be judged on the drawing, dragster's appearance, and final position in the race.

6. **Engineering Structure** Participants (two teams of two members per chapter) work to determine superior engineering as they conduct research and then model and test a structure that is designed to hold the greatest weight. Testing conducted on site. ***The 2012 Bridge Span is 8inches.***

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7. **Essays on Technology** Participants (three individuals per chapter) conduct research on specified subtopics of a broader technological area and, using the knowledge and resources gained through that research, write a comprehensive essay on the one subtopic that is designated on site.

   Topic: The Impacts of Ever-Changing Technology on Schools
   Subtopics:
   Budgets
   Computers
   World Wide Web
   Classroom technology

8. **Flight** (five individuals per chapter; one entry per individual) Glider will be judged on the drawing and the length of time it stays aloft. Completed gliders should be brought the day of the competition (no on-site construction). Launcher will be provided on site.

9. **Go Green Manufacturing** Participants (two teams of at least three individuals per chapter, one entry per team) design and manufacture a product using recycled or reused materials. The chapter submits documentation of chapter activities and two product samples made during the manufacturing experience.

10. **Leadership Strategies** Participants (two teams of three individuals per chapter) work in teams to develop a plan of action that addresses a specific challenging situation provided on site and present their solution.

11. **Multimedia Production** Participants (three individuals per chapter, one entry per individual) create and design a stand-alone multimedia presentation to promote TSA. Topic: My School's Dress Code: Do's and Don'ts

12. **Prepared Speech:** (three individuals per chapter; one entry per individual) Deliver a 3-5 minute oral presentation, using audio/visual support, on this year's theme – "The Road to Success".

13. **Problem Solving:** Two-person teams solve problem on site using materials provided. *Must be pre-registered to participate*. Limit two teams per chapter (additional allowed if space permits).

14. **Technology Bowl:** Teams of three students each participate on site in written test and oral "quiz bowl" team competition. One team per school limit, unless conference coordinator has approved additional teams.

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15. **Transportation Systems** Participants (two individuals per chapter, one entry per individual) apply and document the engineering design process and mathematical principles and scientific concepts used in the research, design, construction, testing and evaluation of a rubber band-powered boat. Performance ratings of the boat will be based on a combination of speed and payload capability measurements.

16. **Video Game Design** Participants [two teams (of at least two participants) per chapter, one entry per team] develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging. A working, interactive game is submitted for evaluation.

17. **Website Design** Participants (one team of three to five members per chapter, one entry per team) are required to design, build and launch a World Wide Web site that features the team's research about a science, technology, engineering or mathematics (STEM)-related topic. Interviews will take place on –site.

18. **TSA VEX Robotics Competition** Participants (teams of three to six students) engage in a signature head-to-head robotics competition that promotes student understanding and skills in science, technology, engineering, and mathematics (STEM) areas. In the 2011-2012 school year, registered teams will compete by playing the VEX game entitled *Gateway*.

19. **Middle School Wind Energy Competition (Pilot)** – Contact Chris Guttenberg for details. chris.guttenberg@gmail.com

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HIGH SCHOOL EVENTS

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1. **Computer-Aided Design (CAD) 2D, Architecture:** Participants (two individuals per school) create representations, such as foundation and/or floor plans, and/or elevation drawings, and/or details of architectural ornamentation or cabinetry. Students may be expected to animate a presentation of their entry. Each event involves a one-hour on-site drawing. Computers with AutoCAD 2007 and Rhino are provided, or contestants may bring their own laptop computers.

2. **Computer-Aided Design (CAD) 3D**, **Engineering:** Participants (two individuals per school) create 3D computer model(s) of an engineering or machine object, such as a machine part, tool, device, or manufactured product. Students may be expected to animate a portion of their model. Each event involves a one-hour on-site drawing. Computers with AutoCAD 2007 and Rhino are provided, or contestants may bring their own laptop computers.

3. **Desktop Publishing:** (three individuals per school) Prepare and bring a tri-fold pamphlet, a three-column newsletter, and an 8.5"x 11" poster promoting the Technology Education program at your school (no on-site work). Theme: Beyond Tradition

4. **Dragster Design:** Cars will be judged on the drawing, dragster's appearance, adherence to specifications, and final position in the race. Four cars per school.

5. **Digital Video Production:** Participants (three teams per school, one entry per team) develop a digital video/film that focuses on the given year's theme. Sound may accompany the film. *The theme for Suspense.*

6. **Extemporaneous Presentation:** Deliver a 3-5 minute speech 15 minutes after drawing a card identifying the topic. You may bring reference materials. Two individuals per school.

7. **Flight Endurance:** Bring a rubber band powered model aircraft and a drawing of the model. Two aircraft per school.

8. **Music Production** Participants (three teams per chapter) produce a musical piece that is designed to be played during the national TSA conference opening or closing general sessions.

9. **Photographic Technology;** Students (three individuals per chapter, one entry per individual) capture images and process photographic and digital prints that depict the current year's published theme. *The theme for 2012 is Perspectives.* No on-site work; judging of static display only.

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10. **Promotional Graphics:** Participants (three individuals per chapter, one entry per individual) develop and present a graphic design that can be used to promote participation in TSA competitive events. The design will promote competitions offered in the TSA competitive events guide. Two entries per school. Participants will choose one (1) of the three (3) competitions listed below for the given year.

    For 2012 the options are: On Demand Video; Biotechnology Design; Prepared Presentation

11. **Scientific and Technical Visualization (SciVis):** (three individuals per chapter, one entry per individual) Bring prepared visualization (3 minutes maximum) along with all presentation equipment needed, plus portfolio. 10-minute on-site presentation. See TSA guide for additional details.

12. **Structural Engineering:** (three individuals per chapter, one entry per individual) 2012 regional challenge: Create a tower with a height of 10 inches. Follow additional specifications in TSA competitive events guide. Include a structure plan with your model. *Structures should be built at home site and will be tested at conference site.*

13. **Technical Sketching and Application:** Students (two individuals per chapter) will be given a written test (1/2 hour) and solve an engineering graphic problem on site (one hour). Contestants must bring their own drawing tools. Paper will be provided.

14. **Technology Bowl:** Teams of three students each participate on site in written test and oral "quiz bowl" team competition. One team per school limit, unless conference coordinator has approved additional teams.

15. **Technology Problem Solving:** Two-person team event to solve problem on-site. Materials will be provided but teams are responsible for bringing their toolbox with the 10 items listed in the TSA guide. *Must be pre-registered* to enter. Limit two teams per school; additional teams may be allowed as space permits.

16. **TSA VEX Robotics Competition** Participants (teams of three to six students) engage in a signature head-to-head robotics competition that promotes student understanding and skills in science, technology, engineering, and mathematics (STEM) areas. In the 2011-2012 school year, registered teams will compete by playing the VEX game entitled *Gateway*.

17. **Video Game Design** Participants (three teams per chapter) develop an E-rated game that focuses on the subject of their choice. The game should be interesting, exciting, visually appealing and intellectually challenging. The game should have high artistic, educational, and social value. A working, interactive game will be submitted on a DVD for evaluation.

20. **High School Wind Energy Competition (Pilot) –** Contact Chris Guttenberg for details. chris.guttenberg@gmail.com