



Survey Results: National Troubleshooting Competition

**Held at Lone Star College
Atascocita Center**

Students, Coaches, Judges, Proctors, and Sponsors

April 22, 2017

Introduction

Lone Star College Kingwood was awarded a grant from the National Science Foundation (NSF) in 2015 to complete a project entitled: *Developing Students' Troubleshooting Skills in Energy Programs*. One goal of the grant is to hold an annual competition among qualified colleges and universities across the country that offers process technician programs. The goals of this grant were completed and the grant closed October 31, 2016. The effort to sustain the project goals, the two most important being the National Competition and the Troubleshooting Module materials fell naturally to a local organization, the North American Process Technology Alliance (NAPTA). This organization accepted responsibility for these project items and will work to keep them evergreen. This was the first year the competition was hosted by the NAPTA. The teams came together and competed against each other as they attempted to solve troubleshooting computer-simulated scenarios. Thirty eight teams from fifteen colleges registered for the competition. Twenty eight teams completed the Qualifying Round of the competition. This was the fourth National Competition.

This was the third year that a Qualifying round of competition was conducted and the top eight teams from across the country were then invited to the National Competition. A separate study was conducted of those schools that competed during the Qualifying round, this study reports on the perceptions and indicators of those students who competed in the National Competition.

The Competition consisted of four timed rounds of competition with each round getting progressively more challenging. The Competition was held in two computer classrooms where the simulation scenarios were preloaded onto the computers. The students had the opportunity to try a practice scenario and ask questions of the Simtronics Corporation and Systran Training & Technical Services representatives. (Simtronics was the vendor that supplied the simulation software, Systran developed the scenario simulations). Five judges were present for the competition, all experts from their representative industry fields, also present were the Simtronics and Systran representatives. At the end of each round they would score the teams. This year saw an increase in observer activity during the competition rounds. Previously, while the competition was taking place, no one was allowed in the computer room except the teams and the judges. Lastly, at the end of the four rounds, the team with the highest cumulative score was declared the winner. The teams in the competition were:

Bellingham Technical College
Bismarck State College
Kenai Peninsula College – Anchorage Extension Campus
Kenai Peninsula College – Kenai River Campus
Mississippi Gulf Coast Community College
San Jacinto College Central Campus
South Central Louisiana Technical College
University of Alaska – Fairbanks

Sponsors for the Competition included BASF, Bayport Technical, INEOS, Lone Star College, Marathon Petroleum Company, RISC, Shell Oil Company, Systran Training & Technical Services and Simtronics Corporation. The agenda for the competition is attached as an appendix.

This report will consist of feedback from the students, coaches, judges, proctors, and sponsors. The students and coaches in the National Competition were asked to comment on the Qualifying Round as well.

Method

Student competitor feedback was collected via an online survey using Survey Monkey. Immediately following the fourth round of competition, the students went to an adjacent computer laboratory where they completed the survey. In this way, all 24 student competitors were able to complete the survey in a timely manner and while their impressions were still fresh. The results are from 23 respondents, one student did not submit the survey upon completion.

The survey asked the students about their perceptions of various aspects of the competition such as difficulty of the scenarios, practice time, comfort using the software as well as thoughts about the venue, lodging, food, etc. Results will be reported in percentages or whole numbers in addition to written comments that were provided.

The coaches were surveyed overall on the competition, including the Qualifying round asking for their feedback about the competition. Eleven responded to some of the questions. Their responses follow the student responses.

The Qualifying round proctors were surveyed concerning the delivery of the test materials to their teams and nine responded. That response is summarized following the coaches' responses.

A separate survey was sent to the judges and four responded. That response is summarized following the proctor responses.

A separate survey was sent to the sponsors and six responded. That response is summarized following the judges' responses.

In some cases the survey results are summarized in text, some show the results via tables and relevant written comments are included with obvious spelling errors corrected.

Results

Students

Qualifying Round

80% of the students reported hearing about the Competition from their instructor. Most also reported they had enough time to work on their scenario. Note there were only 5 responses from students in the overall field who were not selected as National Finalists. Table 1 shows how the students felt about various aspects of the Qualifying round.

Table 1 For the Qualifying Competition; please respond to the following statements

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
<i>It was easy to logon to the system.</i>	0%	0%	0%	0%	100%
<i>The Learning Management System (LMS) used in the Qualifying Competition was easy to navigate.</i>	0%	0%	0.00%	0%	100%
<i>The screen shots illustrating the scenario were clear and readable.</i>	0%	20%	20%	40%	20%
<i>The instructions for submitting our answers were easy to comprehend.</i>	0%	0%	20%	40%	40%
<i>There were no technical issues submitting the test answers.</i>	0%	0%	0%	40%	60%

- *Participated in Nationals in 2016 and thought we would give it another shot*
- *The trend history pages were difficult to read due to a lack of contrast between the trend lines and the background.*
- *We didn't get explicit instructions to open anything other than the test though on screen - other teams mentioned this after the test. We just had the printouts.*

The students were asked about the most valuable aspect of the competition for them as individuals and why they wanted to participate in the event. Responses are listed here.

- *I was able to take my experiences from competing last year and use that knowledge to help some of the newer students prepare for qualifying. Also, I enjoyed sharing my knowledge of troubleshooting with others to help them succeed.*
- *To look at different scenarios that we have in class. Was much more difficult looking at a picture than seeing the process actually change in front of me.*
- *testing my comprehension of the concepts we've been taught*
- *Trouble shooting is very important in the industry and being able to test how well I can diagnose a problem correctly will help me in my job later on.*
- *I wanted to bolster interest in the competition among my cohorts by sharing with them my experiences from last year's national competition. Also, it would have been fun to go back a second time knowing what to expect.*
- *To get more experience and see other upsets in the process. Also, to work as a team was pretty fun and cool putting our heads together to come up with one answer.*
- *to try and place to go make friends in Texas*
- *To really test myself to see how far I have come from the beginning of the program to now to see how well I truly understand it.*

Comments were generally positive. Lastly the students were asked how the Qualifying Round could be improved. Those comments are listed.

- *The only improvement that I could suggest is that the qualifying round could have at least one live simulation exercise to more closely mirror the Finals.*
- *It was San Jacinto Community College's first time running the competition so it was slow and didn't really know what was going on so I would say just to know the rules and how we can figure out the problems before we start.*
- *I wish my instructor had all the modules so we could of practice a head of time. Also know what we got wrong and why. On the test would of help too.*
- *I can't think of much that could be done to make it better, aside from the minor things mentioned above. To clarify question #19, I graduated the PTEC program at Bellingham Tech in late March. If there are any questions, please feel free to email me at m.g.matta5150@gmail.com.*
- *For the rules to be more clear in order for the competition to run smoothly.*
- *Just because able to have all the modules so I can practice and see how they run and work.*

Most comments are positive with only minor issues expressed.

National Competition

All 24 students reported that they had access to Simtronics software. All but two students reported feeling comfortable using the software. No comments were offered on the negative responses received.

The next several items asked questions directly about the competition itself. Students were asked to rate their level of agreement on several statements. The responses were Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree. Table 2 below shows the score for each individual item.

Table 2

	<i>Yes</i>	<i>No</i>
<i>The time allowed for the Practice/Warm-up session was adequate.</i>	86.96%	13.04%
<i>The Q&A with Simtronics support was helpful.</i>	96.65%	4.35%
<i>The time allowed for the first round of competition was adequate.</i>	100%	0%
<i>The level of difficulty was challenging.</i>	95.65%	4.35%
<i>I believe my team got the correct answer in round one.</i>	82.61%	17.39%
<i>The time allowed for the second round of competition was adequate.</i>	26.09%	73.91%
<i>The level of difficulty in the second round was greater than the first round.</i>	95.65%	4.35%
<i>I believe my team got the correct answer in round two.</i>	47.83%	52.17%
<i>The time allowed for the third round of competition was adequate.</i>	78.26%	21.74%
<i>The level of difficulty in the third round was greater than the previous two rounds.</i>	39.13%	60.87%
<i>The level of difficulty was manageable.</i>	86.96%	13.04%
<i>I believe my team got the correct answer in round three.</i>	78.26%	21.74%
<i>The time allowed for the fourth round of competition was adequate.</i>	86.96%	13.04%
<i>The level of difficulty in the fourth round was greater than the previous two rounds.</i>	47.83%	32.17%
<i>The level of difficulty was manageable.</i>	95.65%	4.35%
<i>I believe my team got the correct answer in round four.</i>	60.87%	39.13%

As can be seen, the students thought the second, third, and fourth exercises presented a more difficult challenge.

A new unit was introduced again this year, and 100% of the students responded that it was very challenging in its complexity. The Virtual Field Operator (VFO) was utilized in two exercises, an increase over its use last year. Those exercises were completed with one of the team members being assigned as the outside operator who worked on the VFO and communicated with his/her team mates via two-way radio from a computer located in another room.

The next set of statements asked about the Competition accommodations (Holiday Inn Express), competition venue, time of year, food, etc. All topics, hotel, competition venue, computers and food, in this question were positively rated.

A series of statements asked general impressions regarding the competition such as what could have been done to enhance the experience for them, and what was the most valuable aspect of the event to them. Their comments are presented here.

- *I really liked the networking and the virtual field operator. It was interesting to simulate the isolation you can feel as an outside operator. It's a hard choice between radioing in to find out what's going on and waiting for instruction to avoid distracting the board operator.*
- *I would have liked more time and instruction on round three. It's really hard to bring a unit up without operating procedures and next to impossible when things are working against you while that's going on.*
- *I wanted to participate in this completion mostly for the networking contacts I would make. After competing though. I would have really wanted to be here even if there were no contacts. I've gotten a lot better at troubleshooting and just operating in general.*
- *Simtronics program should look at incorporating from envision as well.*
- *trouble shooting and working well with my teammates was probably the most valuable aspect*
- *The opportunity to participate in a challenging competition that enhanced my potential as an operator*
- *using the virtual outside operator*
- *having the opportunity to work with new simulations*
- *learning new systems and networking.*
- *Working with others*
- *Gaining experience not only from the classroom but also against others.*
- *Testing my skills in troubleshooting from my classes I have taken at KPC-Kenai*
- *Getting to network*
- *teamwork skills*
- *Getting basic experience in working as a field operator with a board operator.*
- *Getting a chance to practice process troubleshooting skills in a different setting and networking with industry professionals.*
- *The contacts that we made while attending the competition.*
- *I believe the most valuable aspect of the competition was the fact that you had to study and work with the simulator before hand.*
- *The extra troubleshooting practice*
- *networking and being able to show prospective employers my skill set*
- *the experience*
- *The industry networking*
- *Networking (3)*
- *Lived in TX*
- *Allow adequate time to complete all of the rounds, or do not make the task in the round impossible to complete*
- *I would have liked more time and instruction on round three. It's really hard to bring a unit up without operating procedures and next to impossible when things are working against you while that's going on.*

- *better radios*
- *Less computer issues and a better method of communication with the outside operator.*
- *More time on the problems, and more time on the virtual operator.*
- *I really enjoyed having the VFO and Board operator in separate rooms with the use of walkie-talkies was great but we had issues every once in a while where we would get feedback from other teams over ours which made it difficult to talk to my teammate.*
- *better communication devices, more time for VFO exercises*
- *Better preparation of equipment to lessen equipment failure, like controllers losing battery, programs failing to work properly, and radios running out of charge*
- *Having some way of understanding what was happening in scenario 3 better.*
- *I really liked the experience, nothing in my opinion.*
- *Better directions on free time and speakers*
- *Practice scenarios with the outside operator*
- *the controls actually work properly.*
- *Individual rooms for each team.*
- *Give an hour time slot for the VR trials instead of 45 min. Food was great!!*
- *I'd like there to be an alarm that sounds on the board if you trip an interlock. There is a few things that the simtronics program should look at incorporating from envision as well.*
- *If an issue arises with one system, I.e. the outside operator screen, the teams exercise should be completely restarted as well as the time. Head sets should be used to communicate instead of the hand held radios. The software should better reflect real life conditions.*
- *Really, really difficult when you haven't seen any of the modules. Liked the idea of giving the modules information packets the night before.*
- *I would just work on the communication difficulties and try to improve. And I would love to see the shift change back with those that start have a period of time to change over then leave the room and have the other person finish or something along those lines.*
- *yes, have the virtual operator work properly next time and avoid the walkie talkies because of all the static interference.*
- *Individual rooms and working means of communication*
- *work on the field operator controller and add headsets to radios*

All these statements had a very high degree of agreement. Many of the comments are constructive criticism to be shared with the planning committee as they may be helpful in preparation for the next event.

Next the students were asked why they wanted to participate in this competition and their responses are presented here.

- *Looks good on the resume and a good chance to get my name out there in the work force.*
- *To enhance my skills and to further decorate my self as a student seeking a job in the industry*
- *I wanted to participate in this completion mostly for the networking contacts I would make. After competing though. I would have really wanted to be here even if there were no contacts. I've gotten a lot better at troubleshooting and just operating in general.*
- *to push my self and network*
- *for the experience*
- *For the challenge and the experience. For the challenge and the experience.*
- *For the challenge and the experience.*
- *To improve my troubleshooting skills and represent Bismarck State College*
- *To better my troubleshooting skills. Wanted to be the best there is in this competition.*
- *To challenge, enhance, and be able to show off my skills in troubleshooting to help make me more marketable for finding work in the oil and gas industry.*

- *won at school and was invited to finals*
- *To put it on my resume*
- *List it on my resume.*
- *To test and improve my troubleshooting skills and to build my resume.*
- *It was a chance to test my knowledge against the other bright students around the nation. I feel that the real life situational and competitive experience was good.*
- *I wanted to compete with high level process tech students from around the nation*
- *Resume enhancement*
- *To meet industry reps. and see how my schooling compared to other schools*
- *good for resume*
- *I like a challenge*
- *Experience*
- *To better myself*
- *I like to win*
- *Networking, Resume, Trip to Texas*

A couple of themes emerge from this question. Experience, competition, build skills and resume building are all items that have multiple mentions. These all are valid reasons for wanting to participate in the competition. The majority of these comments is positive and relates the importance of this event to the student competitors. The presence of industry representatives during this event has consistently rated high among the student competitors.

Demographic Data

The majority of the students fell into three age categories, eight in the 20-24 age range, nine in the 25-29 age range, and four in the 30-35 age range. One competitor reported in the category of under 20 and one reported as being in the 35-40 age range.

There were 19 total females participating in the Qualifying Round this year including two all-female teams. There were 3 females on the National Finalist teams this year.

This competition event was ethnically diverse. Representation included those of Native American/Native Alaskan, Mexican American/Latino/Hispanic, multiple ethnicity, and White ethnicities. No student responded as being Black/Afro American.

The following table shows which semester the students were in for their Process Technician program.

Table 3 – Semester of Program

<i>Semester</i>	<i>Number of students</i>	<i>Percentage</i>
<i>1st</i>	0	0
<i>2nd</i>	0	0
<i>3rd</i>	1	4.35%
<i>4th</i>	16	69.57%
<i>5th</i>	2	8.70%
<i>6th or greater</i>	4	17.39%

Sixteen of 24 students reporting having a GPA of 3.50 or higher. One respondent listed as being a veteran and two received scholarship money to attend their PTEC program. Five said they were a double major, all of them in instrumentation and controls. Ten students reporting having earned a previous degree. The degrees noted included:

- *Associates of Science- Audio Engineering. Bachelors of Science- Entertainment Business*
- *Automotive Technology and Auto Body Collision & Repair*
- *Welding*
- *Applied Science in Electronics*
- *BA, music performance*
- *BA in Criminal Justice*
- *biological science*
- *instrumentation and controls*
- *Communications*
- *criminal justice*

Coaches

The eleven coaches that responded to the survey heard about the competition from multiple sources including, North America Process Technology Alliance, email, and the PTSE website. Five coaches responded they had access to the software at their school; six coaches skipped the question. One commented *“Yes, but we don't have some of Simtronics' more complicated systems.”*

Eight of the respondent coaches were selected as National Finalist, three were not.

The next several questions asked questions directly about the Qualifying competition. The coaches were asked to rate their level of agreement on several statements. The responses were Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree. All coaches either Strongly Agreed or Agreed on each statement regarding the Qualifying round. Their comments included:

- *NO changes*
- *Maybe some way to recognize the alternates that put in a lot of extra work also.*
- *it is difficult, we had exactly 9 students interested. just enough for 3 teams with no alternates. No one wanted to be an alternate, when they had an opportunity to compete.*
- *Team members should only be eligible for one year of competition. There was at least one person who had participated last year. That not only provides an advantage but takes the experience away from another student, Alternates are left out of the entire process except to be named. They should be able to compete with their team in the preliminary round to learn from the experience.*
- *I like the three team members with one alternate.*
- *The systems for the competition were more complicated then what I practice the team on. This was a lot for young students to learn overnight.*
- *As a first time participate, we had no idea what to expect. Need better samples. Something related to the industry.*
- *Team size was good. Maybe do some checking into background. Some from other teams seemed work experienced. Have them submit resumes.*

There were mixed comments concerning the questions about holding a webinar as a helping tool, and about being well prepared for the competition. The majority of responders rated a Strongly Agree but two responses stated the instructions were confusing to them.

The coaches were asked what features they wished to see added to the competition. Their responses are as follows:

- *a score metrics display, better than "0" failed.*
- *The industry networking dinner was awesome, if we could get more industry reps/participation that would be huge for the students.*
- *There is a disconnect between using paper copies vs working on an actual simulator. Maybe logging into a web based simulator would be beneficial for one of the scenarios.*
- *Remote Simtronics access for the qualifying round instead of the paper trend method.*
- *Less emphasis on the VFO. This is not used by most schools.*
- *The virtual field operator was a twist they were not prepared for. They were also very challenged by the level of the scenario.*

Travel expense for the teams was not compensated in the 2017 competition event. Coaches were asked how they raised funds to attend the event. Their responses are listed in Table 4.

Table 4

<i>Source</i>	<i>Number of teams</i>	<i>Percentage</i>
<i>College Funds</i>	4	100%
<i>Industry Donations</i>	2	50%
<i>Crowd Source Funding</i>	2	50%
<i>Team Member/Family Donations</i>	1	25%

There were mixed opinions on the issue of communicating via radio. Comments on that question are presented here.

- *Could have used a better quality of radios.*
- *all part of being an operator*
- *The radios were not sufficient. The teams encountered many problems.*

With few exceptions, all coaches responded Strongly Agree or Agree with the following statements regarding the National Competition:

- Your team felt they had sufficiently prepared for the competition.
- The time allowed for the Practice/Warm-up session was adequate.
- The Question and Answer sessions provided were helpful.
- The time allowed for the first round of competition was adequate.
- Based on feedback from my students, the level of difficulty was challenging.
- My team got the correct answer in round one.
- The time allowed for the second round of competition was adequate.
- Based on feedback from my students, the level of difficulty in the second round was greater than the first round.
- My team got the correct answer in round two.
- The time allowed for the third round of competition was adequate.
- Based on feedback from my students, the level of difficulty in the third round was greater than the previous two rounds.
- My team got the correct answer in round three.
- The time allowed for the fourth round of competition was adequate.
- My team got the correct answer in round four.
- The levels of difficulty were manageable for my students.
- My students' troubleshooting skills in general improved by preparing for the competition
- The Virtual Field Operator presented a good challenge for the competition.

Overall the coaches expressed a positive experience for their teams and themselves in participating in this year's competition event. All respondents rated the food, hotel, and host facility with high marks of Strongly Agree or Agree. All coaches Strongly Agreed they enjoyed the Competition, would recommend it to fellow instructors, felt that the time of year was convenient and felt that their student's knowledge about Process Technology increased as a result of participating in the competition.

Proctors

A survey was sent to eighteen proctors. These individuals proctored the Qualifying Round test. There were nine respondents from the group, eight of those worked for the college, one reported as an industry representative. The use of a Learning Management System (LMS) for the Qualifying Round was reported as Strongly Agree or Agree by all proctors. They Strongly

Agreed it was easy to navigate the system. All agreed the process went smoothly and also agreed they would proctor a Qualifying Round in the future.

The proctors were asked what could have been done to make the experience better for them. Their comments are as follows:

- *To have a packet come in the mail with the list of instructions and perhaps the printouts of material.*
- *Clearer instructions would have been better.*
- *Some of the instructions about printing were unclear.*
- *I thoroughly enjoyed watching the students deliberate the problem and the solutions.*

Judges

A survey was sent to the five judges. Four responded and were positive about the Competition. Three judges reported as being an industry representative, the fourth responded as being from a college. The judges felt well prepared for their positions in the competition. They all agreed a LMS is the best tool for conducting the Qualifying Round of the competition. The judges felt they could view the competitors without issue but expressed concern of time management for study of the data during the judging process. Concern was also expressed at the high level of traffic/observers in the competition rooms during the exercise rounds.

The judges were asked a question about improvements to both the Qualifying Round and the National Finals event. Their comments are as follows:

- *Have a mandatory webinar for all Proctors to ensure they understand their role and the rules of the competition.*
- *These are captured well in Mike Tuckers review. Radio communication, batteries, modifying the scenarios to run the full time for all teams.*
- *Radio and VFO controller battery issues.*
- *Too many people visiting the room during the competition.*
- *More understanding of the scoring system, remove any subjective variables like time console spends on outside screens.*
- *Provide a longer break between rounds so judges can review the teams logs and determine the score for each round.*

It should be noted that the judges participated in the competition debrief/critique and much more feedback was given in that meeting. Eric Newby, Executive Director, may provide this information if requested.

Sponsors

A survey was sent to the nine event sponsors. Six responded and were in agreement this event added value to the Process Technology program. The sponsors were asked about pre-communication and explanation of the event. Their responses are as follows:

- *Would be useful to add "testimonies" from students, sponsors, NAPTA from previous year's event on pre-communications*
- *I knew where to be and what time, where the closest lodging was for the competition. Communication was good.*
- *More details online would have been very helpful. When I had questions, that is the first place I went, but I was not able to get my questions answered there.*

This was the second year to hold the Industry Networking Hour as part of the competition. 100% of the respondents attended the Networking Hour and expressed that it added value to the event. There were good comments and suggestions for improvement of the logistics surrounding this segment of the event. The comments given are as follows:

- *I thought it was awesome.*
- *The value added was the groups to get to talk to industry people and they received good, honest feedback on what a process operators role is in the industry.*
- *it would have been better to have all sponsors down one hallway versus having some on off-shoot hallway-generate better traffic across all booths that way*
- *The networking space was tight when all students and staff were out and about, maybe a more open area would be better*

The sponsors were asked what improvements or changes could be made to help improve or create a better competition event. Their suggestions are stated here.

- *Need assessment from the educators as to how much involvement was at the schools themselves (multiple teams, % class engaged, improvement in student performance, etc.) versus just evaluating at competition itself. I liked the best-of-the-best being at the competition to observe their performance and engage in discussion about industry*
- *This competition is the best of the best that participated. These guys and girls will be an asset to any company they end up working for. A neat way for new operators to test their skills.*
- *Networking event was good subject to previous comments on arrangement. I would have liked to sponsor some Door Prizes but was not aware of this opportunity.*
- *May want to limit individual company reps to 3 or 4 on Friday networking.*
- *Ensure industry rep at each table during meals.*
- *It seemed very Shell-heavy. Even in the prizes for the drawings and the banner by the podium. I'm not sure how much they donated, but this is a NAPTA event and NAPTA didn't get much press. I didn't think the Shell speaker was very focused on a clear message for the students. It seemed to be more of a sales pitch. The BASF speaker was very good. Her message was on point.*
- *I thought Systran Team did a great job and have communicated this to them. The inside/outside operator exercises are crucial and should be kept in the Competition - maybe even more emphasis. The interaction with student teams was great! Team did a great job on all logistics - felt like there was good flow and ample time for various activities.*

All the respondents felt their sponsorship was well worth the investment. 100% of the respondents stated they would contribute toward the sponsorship of another event in the future.

Conclusion

Overall, it would seem that the Competition was very successful. Several anecdotal comments mentioned that this was the best Competition to date and the results of this report support this assertion. The addition of the new process unit and the increase to two VFO exercises were good additions. The students clearly benefitted from the Competition. They seemed to greatly appreciate the networking opportunities. The coaches also saw several benefits for the students as well as ways to incorporate elements of the competition into their classes. The judges thought the Competition went well and expressed the addition of more judges was appropriate and helpful, especially given the fact that two rooms were in use at the same time for exercises.

The logistics of the Competition were all deemed adequate and wherever the Competition is held next year can copy the process and procedures from this year and be assured of a successful Competition.

Going forward, in order for future Qualifying and National Competitions, the management team will need to explore and develop several funding options. Options include seeking additional grants, seeking corporate sponsorships and general fundraising.



NAPTA National Troubleshooting Competition SCHEDULE

Friday, April 21

2:30 – 5:00 PM	Team Registration – Lobby, Lone Star College Atascocita Center
3:00 – 5:30 PM	Team Practice on Computer Simulator & Virtual Field Operator, AC 125
5:45 – 8:00 PM	Opening Ceremony AC 131 Beth Pederson Holland, BASF – Welcome Dinner and Networking at the Shell Industry Hour David Smith, Shell Oil Company – Keynote Speaker David Hirsch with Systran
8:00 PM	Return to Hotel

Saturday, April 22

6:15 – 7:45 AM	Breakfast in Hotel Dining Room
8:00 AM	Travel to Lone Star College Atascocita Center
8:30 – 9:00 AM	Welcome & Opening Remarks – David Esquibel AC 131
9:00 – 9:20 AM	Q & A with Simtronics Support – David Hirsch & Tim Judge
9:30 – 10:15 AM	First Round of Competition AC 206
10:15-10:30	Break Lobby Area - Upstairs
10:30 – 11:15 AM	Second Round of Competition AC 206
11:15 – 12:15 PM	Lunch – Lone Star College, AC 131
12:30 – 1:15 PM	Third Round of Competition AC 206
1:15-1:30	Break Lobby Area - Upstairs
1:30 – 2:15 PM	Fourth Round of Competition AC 206

2:30 – 3:00 PM

Student Online Survey AC 211

3:15 – 4:15 PM

Glenn Johnson, BASF – Keynote Speaker
Awards Ceremony AC 131
Closing Remarks – Eric Newby