



# **NAC 2022 Talking Points**

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## **Facilitator Starts the Meeting**

- Introduce yourself (Name, Grade, School, Team, Role on Team)
- We are here representing <LIST ANY OTHER TEAMS AND THEIR SCHOOLS/CITIES>, <FIRST Robotics and/or VEX Robotics/REC Foundations> and the Student Association for STEM Advocacy.
- Each person who will be speaking during the meeting introduces themselves (Name, Grade, Position).
- Thank you for meeting with us and thank you for <specific things that you can thank them for such as: supporting last appropriation that increased Title IV-A funding (if they voted for it), visiting your school, attending a competition>.

## **I want to give you a little background on what the Student Association for STEM Advocacy, or SASA is:**

- We are all members because we want to further, grow, and expand STEM advocacy efforts nationwide.
- SASA's mission is to educate, engage, and mobilize students to promote the expansion of and access to STEM programs, especially to underserved and underrepresented populations which tend to be really rural areas and really urban areas.
- SASA represents students and teams from the largest extracurricular robotics programs, including *FIRST* and VEX/REC who reach more than 1.67 million students worldwide.

## **Let us tell you about <FIRST and/or VEX/REC>**

- *FIRST*
  - Started 30 years ago to inspire kids to become STEM professionals.
  - Adopted sports model and created four programs (briefly describe each).
    - FLL Discover (ages 4-6), FLL Explore (ages 6-10), FLL Challenge (ages 9-16), FTC (ages 12-18), FRC (ages 14-18).
  - Over 679,000 students participated in the 2019 season with 320,000 coaches / mentors / volunteers though 3,700 events.
    - Over 70K people attended the Championship events in Houston & Detroit in 2019.
- VEX/REC
  - The Robotics Education and Competition Foundation (REC Foundation) supports a variety of robotics tournament platforms including the VEX Robotics Competition. Students design, build, and program robots to compete in events across the United States and around the world.
  - There are over 1 million students from over 24,000 teams worldwide that participated in REC programs this year.

- Typically, the annual VEX Robotics World Championship event attracts more than 35,000 attendees from across the nation, and represents more than 60 nations around the globe.
- There are approximately <NUMBER OF TEAMS/SCHOOLS> in your <CONGRESSIONAL DISTRICT/STATE>.

**We have had some awesome experiences in Robotics and we think every student should have the opportunity to experience Robotics or STEM in some way shape or form regardless of where they live.**

**Telling them about your team and what your team does**  
***(Customize to your team and program)***

- How your team gets the game challenge and design and build a robot.
- How your team is structured into different subteams (i.e. students can participate in design, manufacturing, electrical, strategy, business, media, or any number of other areas to make this happen).
- Each team then competes at Regional/State Championship/District/Local competitions with their robot and for judged awards hoping to ultimately make it to one of the World Championship events.
- Team trainings (i.e. We hold trainings year round in engineering, programming, safety, communications, resume writing and about a dozen others).
- Public/Private Partnership for Funding (Does any funding come from school/state? How many different sponsors do you have? What are some of them? Do they provide internships, mentors, financial support, etc.?)
- Year-round outreach events (i.e. summer camps, parades, volunteer activities, community events, robot demos, presentations to sponsors).
- Advocacy: We are also now getting more involved with advocacy (or you've been involved for years) to make sure that everyone has a chance to be exposed to STEM regardless of their background or where they live. We think the diversity of STEM workers should reflect the diversity in our general population (include any specific goals around Diversity, Equity, and Inclusion such as initiatives to get more girls/minorities/special education students/etc. involved on your team).

**We are here representing SASA and <FIRST and/or VEX> because these programs work. Extracurricular Robotics Programs Generate 21st Century STEM Workers**  
***(Do not list all of these results, pick data points to mention that you will backup with personal stories)***

- **FIRST data:**
  - Longitudinal Study from Brandeis University based on 10 years of Data say *FIRST* Students:
    - 2.2x more likely to be interested in STEM
    - 2.1x more likely to show higher interest in STEM careers
    - 1.9x more likely to show higher involvement in STEM activity
    - 1.8x more likely to score higher in understanding of STEM
    - 81% of *FIRST* Alumni Declare Majors in STEM
    - 83% of *FIRST* Alumni have Confidence to Take Leadership Roles
    - 2x more likely to major in engineering or science (41% in engineering)
    - 87% more interested in doing well in school
    - 87% plan to take a more challenging math or science course
    - 89% more interested in going to college
    - 93% increase conflict resolution skills, 95% time management skills, 98% problem solving skills, 76% communication skills
    - 75%+ of Alumni are in STEM field as a student or professional
  - Major corporations supporting *FIRST* and teams (examples of corporate support for your team)
    - *FIRST* sponsors include more than 200 of the Fortune 500 companies
- **VEX/REC data:**
  - VEX participants performed better in math than their peers. Students in grades 6-10 performed higher than their peers on math exams.
  - 93% of program participants are more confident in their ability to learn STEM subjects.
  - 90% of program participants are more likely to take elective STEM courses in high school.
  - 95% of VRC students report positive growth in creative problem-solving, seeing possibilities and opportunities in design challenges.
  - Students learn valuable programming skills that prepare them to enter the STEM workforce.
    - Program Conditional Statements: 90%
    - Troubleshoot Programs: 84%
    - Update Programming Software: 84%
    - Commenting in Programming: 72%
    - Binary: 41%
  - VEX Robotics students increase interest in STEM careers as a result of their participation in the program.
    - 85% in engineering
    - 75% in programming
    - 75% in science
    - 70% in mathematics

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## Talking About Your Personal Experiences (include 3-5 student stories based on time left)

- **Introduction:** *What grade are you in? How long were you on the team? What is your role on the team?*
- **Where did you start:** *What were you like before the team? Why did you join the team? What were you expecting and is that what you experienced?*
- **The transformational moment:** *What experiences did you have on the team and how did they change you? What did you learn?*
- **Outcomes:** *How is your future now different? What is your career path or future plan and how was it affected/changed by your experience on the team?*

## US STEM Challenges - The problem we as a country face

- Not enough US STEM graduates to fill all STEM related jobs.
- The diversity of the STEM workforce does not reflect the diversity of the general population.
- Our challenges in workforce development are a challenge to the security of our national economy and defense of our country.
- To compete in the world economy, we need workers with 21<sup>st</sup> Century skills, such as robotics, programming, leadership, teamwork, problem solving, entrepreneurship, etc.
  - We are in a rapidly accelerating global economic competition where a nation without a STEM trained workforce will lose.
- Some of the enterprises very interested in robotics students—the Air Force, NASA, even Silicon Valley—need more STEM workers, particularly robotics experts. Include any local examples of sponsors or companies in your area struggling to hire qualified STEM workers who would be interested in robotics students.
- **We are not looking for Federal funds to flow to <FIRST and/or VEX/REC>, but we want funds for schools so they can start and support participation in programs with an emphasis on under-represented and under-served populations in STEM.**

## The Every Student Succeeds Act, or ESSA, Title IV Part A can support schools and provide funding for Robotics Teams

- ESSA includes a flexible block grant program called Student Support and Academic Enrichment (SSAE) grants under Title IV Part A, which was authorized at \$1.6 billion when the law passed. Title IV Part A authorizes activities in three broad areas:
  - **Well-rounded education** including programs in STEM including but not limited to extracurricular robotics.
  - **Safe and healthy** students/schools.
  - **Technology** (professional development, blended learning, and devices).

- School districts (LEA's) can use Title IV-A grants to provide students with a well-rounded education and improve instruction and student engagement in STEM by:
  - Increasing access to STEM for underserved and at risk student populations;
  - Supporting the participation of students in STEM nonprofit competitions (such as robotics, science research, invention, math, computer science, and technology competitions);
  - Providing hands-on learning opportunities in STEM;
  - Integrating other academic subjects, incl. the arts, into STEM subject programs;
  - Creating or enhancing STEM specialty schools;
  - Integrating classroom based and afterschool and informal STEM instruction.
- This program was **funded at \$1.28B in FY22.**
- This is formula based funding that targets underserved and underrepresented areas and the schools that get the most funds here typically have the most need to start and increase STEM opportunities for kids.
- **We support the increase in funding and specifically the targeting of the funds to underserved and underrepresented areas.**
- **Can we count on you for your support to continue to fund ESSA Title IV, Part A Student Support and Academic Enhancement Grants above the current \$1.28 billion?**
- **STOP and wait for a response.**
- **Follow up if supportive: Could you write a letter or call on our behalf to...**
  - SENATE: **Chair Leahy and Vice Chair Shelby, and Labor-H Subcommittee Chair Murray and Ranking Member Blunt to request increased funding for Title IV, Part A?**
  - HOUSE: **Chair DeLauro and Ranking Member Granger and Labor-H Subcommittee Ranking Member Cole to request increased funding for Title IV, Part A?**

## IF TIME ALLOWS: United States Innovation and Competition Act, HR 4521

- One more issue that we want to cover is the United States Innovation and Competition Act, HR 4521
  - ***Different versions of this bill have passed the House and Senate and it is currently in conference committee.***
- Section 2114 - The Hands On Learning Program provides grants to nonprofit programs for supporting hands-on learning opportunities in STEM education, including extracurricular activities and innovative learning opportunities such as robotics competitions.
- ***See if your Representative/Senator is a conferee by checking the USICA-COMPETES Conference Committee document in the Supporting Documents section of the material book.***

- *If they **are** a conferee:*
  - Please continue to push forward in reconciling differences and preserving Section 2114 and bring this to the floor for a vote. What can you do to push this forward for us?
- *If they **are not** a conferee:*
  - Please push for your colleagues on the committee to complete their work and bring this bill to the floor for a vote. What can you do to push this forward for us?
- **STOP and wait for an answer**
- **Follow up question (if time permits):** What can we do to push this forward and get it to the floor for a final vote?

## Closings

- **Thank them for their past and continued support on the issues you discussed. Thank them for their time. Offer to be a STEM resource for them.**
- **Invite Senator or Member to your school/build site. Get the contact information of the district scheduler to make that happen.**
- **Confirm the best email to follow up with (make sure their email in the portal is the right one to use or get the correct one).**
- **Leave Behinds**
  - **LEAVE BEHIND SASA FOLDER - Let them know it includes information on SASA and your team.**
  - **LEAVE RECEPTION INVITE - and Verbally invite them to the reception:**

We are having a reception with robots tonight and you and your entire office staff is invited. We will have some refreshments, a lot of awesome kids like us, and some robots for you to check out. It is 5pm to 7pm at the Holiday Inn Capitol behind the Dept of Ed. Your office should have seen an email invitation, we would really love if you can stop by.

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## Pre-Meeting Homework

- **Look up and estimate how many teams are in your particular State and Congressional District(s).**
  - **When estimating teams in your Congressional District, look up your Representative by name, find their website, and look at the map/cities/areas included in that district.**
  - **Search the state/area on program websites at:**
    - **VEX/REC:** <https://www.robotevents.com/map> (click “Filter” and select “Teams”)
    - **FIRST:** <https://www.firstinspires.org/team-event-search>
  - **Include an estimated summary of the number of teams (you can include all levels/ages of teams in this area) and/or schools in your Congressional District (House meetings) or State (Senate meetings).**
- **Consult your school district’s website to determine how much Title IV-A funding your school district received for the previous fiscal year. All school districts in the United States that receive Federal funds are required to publish this information.**
  - **Look for the Transparency Report, Financial Report, or another report that details funds your school district received or its budget.**
  - **The information you are looking for is specifically required by OMB Circular A-133 and some school districts may denote it that way.**
  - **If you can’t find the information, contact your school district’s administration.**