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District Office  
620 East University Avenue  
Gainesville, Florida  
32601-5498

www.sbac.edu  
(352) 955-7300

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## NEWS RELEASE

For more information, contact:  
Tommy Scott / (352) 363-9109

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### ***GHS Junior David Cagle Places Top 15 in Climate Science Olympiad***

In an international climate change competition which began with 12,400 competitors from 149 countries, Gainesville High junior David Cagle and his out-of-state partner finished 14th, which was the third-highest finish for a high school team in the world.

Cagle competed in the Climate Science Olympiad, a problem-solving tournament in which youth (ages 14-25) find solutions to climate change.

The tournament consisted of four rounds (qualifier, quarterfinal, semifinal, final) of competition held over 10 months, from entry to the final round, with a \$10,000 prize pool for the top three teams. The final round was comprised of the final 50 participants.

Rounds consisted of problem statements for solving and interview questions from several climate experts around the world, allowing candidates to explain and defend their solutions to specific climate issues.

Though Cagle's team narrowly missed out on the prize money and a trip to the United Nations' Climate Summit, he is proud of their efforts.

"The Climate Science Olympiad has been an amazing experience for my partner and I," Cagle said. "It's allowed us to build on our friendship and learn to use our skills in order to help the world to combat one of its most prominent problems. I feel both honored and incredibly grateful to have made it so far in the competition, and hope that I can keep contributing to the field of climate science."

Cagle's journey through the competition even involved juggling a band competition during the final round.

With permission from the competition coordinators, Cagle was able to share some of the content from the tournament:

**The Qualifier Round (Sept. 5, 3 hours):**

We were instructed to write a proposal to improve South Africa's public transportation system. Our solution also had to reduce emissions by 50%. For some context, the current system is unsustainable and uses a minibus system, which is a high-emission system that relies on localized vehicles that are not always directly affiliated with the government.

*Our original summary:*

Our 10-year plan to improve South Africa's public transportation system will involve the employment of new innovations in lanes and sidewalks, as well as the switch from the minibus system to public buses. The challenges arising from the current minibus infrastructure will be amended through tax credits funded by heavier taxes placed in order to discourage citizens' use of individualized transportation (which increases carbon emissions). This switch will not only decrease emissions, but will have positive social implications that involve a reduction in income inequality and the opening of new, much-needed jobs.

*Some added info:*

The proposal also organized a system in which the minibus drivers that are unemployed as a result of the switch to other modes of transportation would be integrated into the solution through their recruitment as drivers within the new system.

**The Semi Finals Round (Sept. 29, 3 hours)**

We were instructed to create a proposal to help Bihar, India move toward sustainable development while adapting to the effects of climate change. Bihar is an Indian state with an extremely low HDI rating that experiences heavy floods and droughts. More than 20% of its area is also located in Seismic Zone V.

*Our original summary:*

Our proposal for Bihar's adaptation to climate change, along with their movement towards more sustainable development, utilizes the irrigation and distribution of water from their flooded northern regions to the droughted southern regions, as well as the establishment of micro hydropower and the continued development of solar power.

Micro hydropower systems can be built in regions that will not be affected by flood plains, and are specialized to help rural communities, such as those in Bihar, prosper. In a combined effort, all of our solutions will help to increase the HDI index of Bihar and drastically increase their overall sustainability.

*Some added info:*

We also integrated into the proposal the use of canals to more evenly distribute water as well as plans to expand employment rates through the installation and maintenance of solar power and micro hydropower systems. Additionally, we elaborated on the improvement of the standard of living of the people of Bihar, and particularly the women of Bihar. This, in turn, would help to increase motivation and allegiance to the plans and combat gender inequality.

Micro hydropower is a development in the field of hydropower that uses a smaller-scaled system in order to generate energy for smaller amounts of people. It works to the advantage of more localized and rural populations because it uses drastically smaller reservoirs and downsizes the generation of emissions and the usage of fossil fuels, among other benefits.

### **The Finals Round (Oct 23 - 26, 29 hours)**

In this last round, we were asked to create a proposal for the entirety of Southeast Asia that would allow them to develop sustainably while adapting to climate change (it is a very similar assignment to the one we received in the semifinals round, but instead encompasses a much larger area. Southeast Asia is also unique in that the countries of the region are *vastly* different in wealth, social structures, governments, beliefs, land, etc.). While the proposal is supposed to plan for all of the countries in the region, it was emphasized that we should draw particular attention to low-income and middle-income countries.

To accommodate these differences, our solution covers local level, national level, and international level foci. At the local level, we once again used micro hydropower. This is because the solution was extremely suitable to many of the countries' rural prominence. While this wasn't as applicable to places such as Singapore and Brunei, which are higher-income countries, it was fitting for the vast majority. Because I already discussed this solution earlier in the email, I won't go in-depth with it right here.

*Some context for the following solution that I got mostly from the proposal directly:*

A prevalent issue in Southeast Asia that advances climate change can be seen in the use of solid fuels to provide heating, lighting, and especially cooking. Several billion people (many of whom are in this area) use open fires to cook food. These issues, in turn, lead to negative environmental impacts. Air pollution is one of the main factors that make rural communities a contributor. This air pollution is largely due to the fires used by rural communities for cooking. Indoor air pollution is also extremely harmful to people's health. Fuel gathering not only accounts for much of the women's and children's health complications, but also limits them from other activities. These issues also contribute to worsening air quality.

Our other solution at the local level was to implement solar ovens, and particularly the box oven solar cooker. These cookers can easily capture UV rays and are simple and efficient (and therefore easily produced in bulk). In the right conditions, these are just as effective as standard ovens and fires, and are easily maintainable. While our plan specified that they would be pre-made before distribution, we made sure to mention that these can also be homemade. Additionally, we planned to send informational materials (such as pamphlets, instructions, etc.) in order to ensure that this solution is long-lasting.

*Some context for the next solution (from the proposal):*

As Southeast Asian countries develop and continue to modernize, they are increasingly moving away from traditional fuel sources and relying more heavily on crude oil and natural gas. This is a direct byproduct of increasingly available capital and a growing middle class clamoring for reliable transportation (ex. personal vehicles) and commercial products. This has led to huge increases in carbon emissions within Southeast Asian countries. More specifically, Crude Oil is now the largest energy source in several South East Asian nations according to a 2012 study.

At the national level, in order to plan for the middle-income and high-income countries in Southeast Asia, we proposed a plan to implement an electrified rail line. We used the example of a successful rail line that was recently built in Malaysia. The rail line would alleviate traffic jams, have very low oil usage and emissions, and would provide opportunities for large amounts of economic growth, among other benefits. A large component of this portion of the plan focused on the notion that it can be scaled up or down in order to best suit its situation, much like micro hydropower. While the costs of building the rail lines are large, the economic growth they allow compensates.

At the international level, we focused on coordination. Essentially, this phase builds on the foundations of ASEAN (Association of Southeast Asian Nations) to organize the entire process and help coordinate the funding of our plan (I won't get into funding, though). This partnership would encourage sustainable development and investment, and would be integrable with ASEAN's current plan to mitigate climate change. With these frameworks, we could also align local and national projects with ASEAN-specific frameworks and aid nations in developing sustainable proposals for funding by NGOs and other outside organizations.

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