

Year One of the Physics Summer Camp for Students with ASD at Mississippi State University

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NSAC Long Range Plan Town Hall on Nuclear Structure, Reactions, and Astrophysics

Diversity, Equity, Inclusion, and Belonging (DEIB) working group

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(CAREER)



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DEPARTMENT OF PHYSICS
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NSF

PHYSICS SUMMER CAMP

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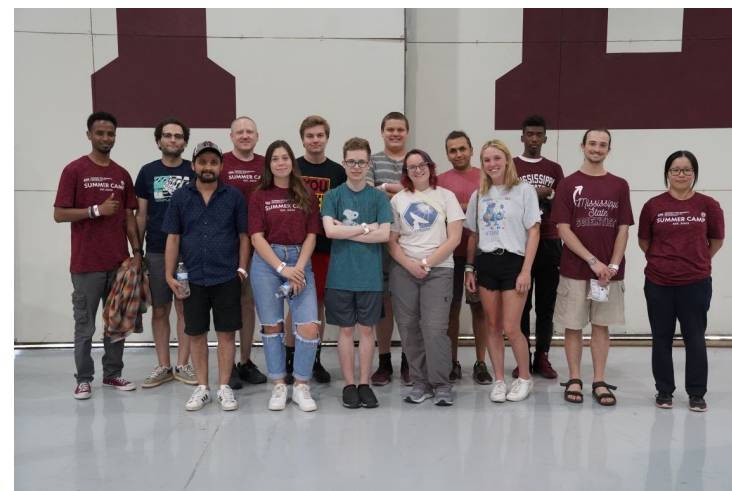
JUNE 6 - 10, 2022

<https://www.physics.msstate.edu/phycamp>



Motivation of the Physics Summer Camp for Students with ASD at Mississippi State University

- Goal: provide a week-long physics summer school as a comprehensive postsecondary inclusive transition program for students with ASD
 - CDC report [1]: Of 8-year-olds in 11 communities across US, 1 in 59 found to have ASD
 - In MS, nearly 5,000 school-age children diagnosed with ASD, yet 80 of 82 counties identified as having a shortage of mental health professionals and programs targeting individuals with ASD [2]
 - STEM fields more attractive to students with ASD compared to general population [3]
 - Students with ASD can find it difficult to adjust to the changes in routines and schedules, lack of external monitoring and guidance, increased socialization, and independent living that accompanies college life [4]
- We worked closely with MSState Autism and Developmental Disabilities Clinic
 - MSState is an excellent match to support this camp!

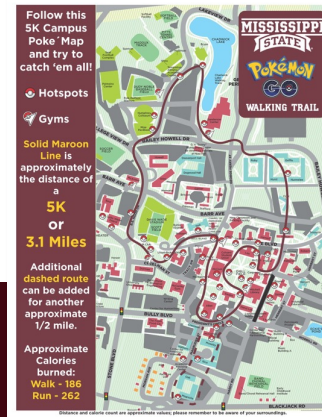


- [1] J. Baio *et al.*, "Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014," *MMWR Serveill Summ*, vol. 67, no. SS-6, pp. 1–23, 2018.
- [2] "Mississippi Autism Advisory Committee 2020 Report to Legislature." <https://www.dmh.ms.gov/wp-content/uploads/2020/10/Final.-2020-MAAC-Report-to-the-Legislature.pdf>
- [3] Harvard Law School Mississippi Delta Project, "Mental Health in Mississippi: Analysis and Recommendations.", https://egrove.olemiss.edu/deltadirections_pub/18/ March 2014.
- [4] X. Wei *et al.*, "Science, technology, engineering, and mathematics (stem) participation among college students with an autism spectrum disorder," *Journal of Autism and Developmental Disorders*, vol. 43, pp. 1539–1546, Jul 2013.



Camp Overview and Student Experiences

- Camp structure: each day centered on a physics topic
 - Morning lectures + hands-on demos
 - Afternoon excursion
 - Evening fun + social activity
 - Students stayed overnight in MSState dorm
- Overall, student experiences reported to be immensely positive
 - Impact on parents/guardians also positive (all expressed challenges due to lack of opportunities for their students)
 - Excursions and hands-on demos were a big hit
 - Morning lectures not so much...
 - We kept them busy, and they liked that!
 - But they did get tired too...



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Challenges we look forward to engaging in Year 2

- On final day of camp, we ran a "mini" Physics Olympics
 - Paired campers with a counselor to form 3 groups
 - Worked together to perform fun tasks related to physics
 - Teamwork challenges arose that informed us to consider working on that more in year 2
 - Despite that, many students still listed the Physics Olympics as their favorite activity
- Other challenges:
 - Cost per student is high
 - Need many counselors
 - Identify early each student's individual focus (or "intense interests") and implement effective strategies to engage them outside of that interest
 - Tracking outcomes, maintaining communication with students challenging
 - Half the students didn't have a phone or use a phone for anything other than games/videos
 - Almost none engaged in social media or large communication platforms (we set up a camp Discord channel, only one used it)



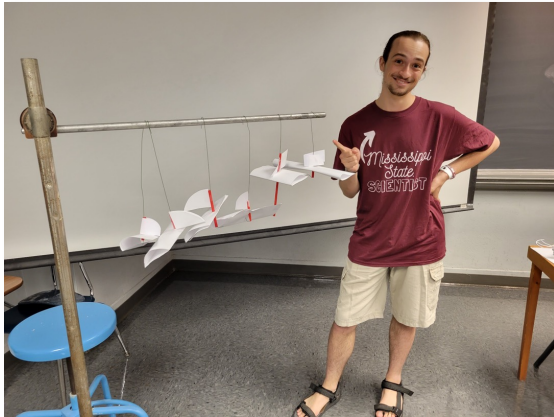
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We are preparing for Year 2 now!

The Physics Summer Camp for Students with ASD will return in 2023! Thanks to the NSF for the support and we hope to be able to continue hosting this camp for a long time to come!

<https://www.physics.msstate.edu/physcamp>



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