

Hannah Sprague

Print Name

3/13/24

Date

JEFFERSON SCIENCE ASSOCIATES, LLC/
THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY
JSA/Jefferson Lab High School Summer Honors Program Application

Address: 506 Las Gaviotas Blvd. Telephone No. 360 689 9244
Chesapeake, VA 23322 Date of Birth: 12/23/2006
e-mail Address: hsprague314@gmail.com
Citizenship*: U.S. Citizen

*Participants must be U.S. citizens or to Permanent Resident Aliens. The latter requires a copy of both sides of the alien registration card to be submitted WITH THIS APPLICATION.

Parent/Guardian Contact Information

Name: Suzanne Sprague
Phone: 360 551 3153
email: nsprague@yahoo.com

Parent/Guardian Signature and Date: _____

I am aware that my minor dependent is submitting an application for the JSA/Jefferson Lab High School Summer Honors Program, beginning June 26 to August 4, 2023. I understand that transportation is not provided and participants are expected to fulfill the attendance and program requirements.

How did you learn about this program? word-of-mouth

Have you attended any educational programs at Jefferson Lab? _____ Yes _____ ☒ No

If yes, describe or list which program(s): _____

Have you been previously employed by JSA/Jefferson Lab? _____ Yes ☒ No Dates: _____

Do you have any relatives working at JSA/Jefferson Lab? _____ Yes ☒ No

Name: _____ Relation: _____

DEPENDENTS OF JSA/JEFFERSON LAB EMPLOYEES ARE NOT ELIGIBLE FOR THIS PROGRAM

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Name and Location of High School: Oscar Smith High School, Chesapeake, VA 23320

Counselor's Name: Laquita Riddick

Current Grade Level: 11

Grade Point Average: 4.4250

List the courses you have taken and your grades in the following subject areas:

Science

Math

English

Solms Honors LT: Honors Biology (A-)*

AoPS Geometry (A)*

Honors English 9 (A)*

AP Chemistry (A)*

AoPS Intermediate Algebra (A)*

Honors/PleIB English 10 (A)

AP Biology (A)*

AoPS Precalculus (A)*

IB English I (A)

Honors Physics (A)

AoPS AP Calculus BC (A)*

IB Physics I (A)

IB Applications and Interpretations HL (A)

* indicates that the grade is a P on my school transcript since I took the course outside of public school
Other classes and/or special interests JSA/Jefferson Lab may consider relevant:

AP Computer Science A (A), AoPS Intermediate Python (A)*, currently taking IB

Theory of Knowledge. I have a special interest in machine learning; I have studied

this on my own and did the Inspirit AI summer Scholars program in 2022.

I have also taken AoPS' Number Theory and Counting and Probability courses (A for each.)
I also speak a good amount of German.

What computer operating systems do you have experience with?

If this question refers to operating systems, then Windows and MacOS. If it refers to
important programs, then I have experience with Excel, Fire Alpacal (and other graphic
design software), the full Google suite, Workday, Graphical Analysis, and Notion.

What programming languages do you have experience with?

I have extensive experience with Python, including data science and machine learning
libraries such as pandas, numpy, matplotlib, and keras. I am also proficient in Java,
JavaScript (primarily with ProcessingJS), HTML/CSS, C, and SQL.

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List any academic or community service awards or special recognition you have received:

3rd Prize in Skills USA Programming competition for Germany DoDEA region

35 ACT, 1500 PSAT

President's Award for Educational Excellence

AP Scholar with Distinction

List any extracurricular activities you are involved in, especially those in which you have a leadership role:

Varsity cross country, Varsity tennis (I am the team captain), National Honor Society

Vice President, Scholastic Bowl (we won regionals and went to state this year), Science

National Honor Society, Debate team, Creative Writing Club, and the IB Leadership Committee's

recruitment team.

Outline any previous work experience, including volunteer work:

Employer	Supervisor	Your Responsibilities	Dates	Phone
AI Blocks	Brendan Mah	writing educational AI content	9/23 - Present	mahbrendan@gmail.com
University of Washington	Kathryn Higgins	Robinson Center summer TA	July 2022 - 2023	757-509-3435
Patch Middle School	Merrill Watson	volunteer TA for Beginning Strings	9/21 - 4/22	+49 171 2874669

Provide two adult references we may contact (not family members), at least one of whom is a math or science teacher who has taught you at school*:

Name

Phone

Daniel Shomaker

daniel.shomaker@cpschools.com

Lynn Wasinger

lynn.wasinger@cpschools.com

*HAVE THE TWO ADULT REFERENCES COMPLETE REFERENCE FORMS
AND RETURN THEM TO YOU IN SEALED ENVELOPES.

ONE OF THE REFERENCES **MUST BE** A MATH OR SCIENCE TEACHER
WHO HAS TAUGHT YOU AT SCHOOL.

Use the space below to describe what you expect to gain from an experience at Jefferson Lab - how will it be a benefit to you? (use up to one additional page, if necessary)

As an IB student, I have some experience with research, but without the resources and support that Jefferson Lab can provide. The idea of working on things that will actually matter to scientific advancement, with experts, is incredibly exciting to me and something I would love to immerse myself in - not just this summer but throughout my life. I am passionate about artificial intelligence and my goal is to become a researcher of it. This experience would give me a valuable glimpse at what a life in research might look like. I hope to learn about this path as I plan for my future.

Use the space below to indicate what contributions you believe you would make to Jefferson Lab. What special skills or attributes would you bring to the organization?

First, I know how to work hard. I have always sought out extra challenge, be it an extra calculus class on top of my regular coursework, interning for AI Blocks, studying machine learning in my "free time", or taking the IB Diploma Program. All of these things have taught me to work hard, both independently and in groups, especially on things I care about. I also think that my knowledge of various programming languages and machine learning systems can provide value - it is my passion precisely because I think it is so powerful. Due to my experiences as National Honor Society VP, an IB student, and summer program TA (I helped with a physics class most recently), I've also gained valuable communication skills including presenting in front of groups of ~100, collaborating on major projects, and clearly explaining complex topics.

JSA/Jefferson Lab High School Summer Honors Program

Student Reference Form

Hannah Sprague has identified you as a reference on his/her application to participate in the JSA/Jefferson Lab High School Summer Honors Program. Please complete this reference form, seal it in an envelope, and sign across the flap before returning it to the student.

How do you know this student? IB Higher Level Math Teacher

How long have you known this student? 1 year

Please rate this student's academic performance in comparison to his/her peers: superior good average poor

Please rate this student's overall character in comparison to his/her peers: superior good average poor

On a scale of 1 (lowest) to 5 (highest), rate the student on the following:

<u>5</u> self discipline	<u>5</u> originality	<u>5</u> academic ability
<u>5</u> ability to follow directions	<u>5</u> leadership	<u>5</u> integrity
<u>5</u> initiative	<u>5</u> independence	<u>5</u> professionalism
<u>5</u> cooperation	<u>5</u> reliability	<u>5</u> work ethic

Please add any information you would like us to consider in evaluating this student.

see attach letter

Please indicate one of the following:

☒ I recommend this student without reservation ☐ I recommend this student with reservation*

☐ I recommend this student ☐ I do not recommend this student*

* If you have reservations or do not recommend the student, please explain:

Print Name: Lynn Marie O. Wasinger Position: Mathematics Teacher

Signature: [Signature] Date: 3/14/24

School: Oscar F Smith HS

Thank you for your cooperation.

JSA/Jefferson Lab High School Summer Honors Program
Office of Science Education, c/o Carol McKisson
Thomas Jefferson National Accelerator Facility
628 Hofstadter Road, Suite 6
Newport News, VA 23606

I am pleased to write this letter of recommendation for Ms. Hannah Sprague. She is a wonderful young woman, as well as an exceptionally strong mathematics student. I believe Hannah has the qualities that will allow her to flourish within your program.

I have the pleasure of currently teaching Hannah IB Applications & Interpretations Higher Level Year 1. The Mathematics Applications & Interpretations HL course is the highest level of mathematical study offered by the IB Diploma Program. It is a 2-year curriculum that covers a variety of mathematical topics at the collegiate level. It is an extremely difficult course of study that constantly pushes students in the development of their mathematical abilities. Hannah has never shied away from the difficulty of the coursework. As evidenced by her grades, Hannah worked very hard to correctly complete her work, submitting assignments that are clear, concise, and accurate.

However, grades are not a focus for Hannah. Her high scores are a natural consequence of her pursuit of understanding. Hannah is not satisfied with merely computing an answer, she wants to know the reasoning. She consistently analyzes how the new concept relates to previous knowledge, and how it can be used in other applications. Many of these applications are outside the scope of our coursework. I have watched her independently examine connections with fields such as Computer Programming and Artificial Intelligence.

Hannah's inquisitive nature is not limited to Mathematics. Hannah is pursuing her International Baccalaureate Diploma, and in doing so has taken on the task of going above and beyond the normal coursework required for high school students. This program is the most rigorous course of study offered in the state of Virginia. For example, in IB Applications & Interpretations HL, this includes developing a mathematical analysis covering a topic of the student's choosing. This independent research paper, along with the comprehensive international exams, is completed in addition to the accelerated traditional coursework. Hannah will be completed similar studies in Higher Level English, Higher History, Foreign Language, Art and Science. Hannah is committed to a well-rounded education, recognizing the connection between all the academic fields of study. This type of determination and self-direction shows a strong commitment to her education.

Furthermore, a significant portion of the IB program involves working corporately to solve problems. Hannah can confidently assert her own opinions while still respecting the opinions of her peers. Hannah naturally emerges as a leader during group projects without being an overbearing force within a group. In this way, she is an integral part of establishing a positive classroom atmosphere.

As Hannah's high school career has progressed, it is obvious she has been able to maintain this level of motivation. As evident in her resume, she has been able to balance academics and extracurricular activities without sacrificing success in either area. Hannah tries to give her very best to every activity in which she participates.

Hannah's strong academic abilities, commitment to education, natural leadership abilities, and inquisitive nature will enable her to excel in whatever path she chooses. Not only will she be an asset while she is enrolled, but Hannah will also be an outstanding representative of your program for years to come.

Sincerely,

Lynn Marie Overton Wasinger, NBCT

IB Mathematics Teacher

Oscar F. Smith High School

JSA/Jefferson Lab High School Summer Honors Program

Student Reference Form

HANNAH SPRAGUE has identified you as a reference on his/her application to participate in the JSA/Jefferson Lab High School Summer Honors Program. Please complete this reference form, seal it in an envelope, and sign across the flap before returning it to the student.

How do you know this student? TEACHER - BOTH HONORS PHYSICS AND IB PHYSICS

How long have you known this student? 19 MONTHS

Please rate this student's academic performance in comparison to his/her peers: superior good average poor

Please rate this student's overall character in comparison to his/her peers: superior good average poor

On a scale of 1 (lowest) to 5 (highest), rate the student on the following:

<u>5</u>	self discipline	<u>5</u>	originality	<u>5</u>	academic ability
<u>5</u>	ability to follow directions	<u>5</u>	leadership	<u>5</u>	integrity
<u>5</u>	initiative	<u>5</u>	independence	<u>5</u>	professionalism
<u>5</u>	cooperation	<u>5</u>	reliability	<u>5</u>	work ethic

Please add any information you would like us to consider in evaluating this student.

HANNAH IS ONE OF THE MOST INQUISITIVE STUDENTS I HAVE EVER TAUGHT,
LAST YEAR (IN 10TH GRADE) SHE WORKED DILIGENTLY ON AN ONLINE COURSE CALLED
"THE ART OF PROBLEM SOLVING" TO LEARN CALCULUS. IN CLASS SHE OFTEN ASKS
INSIGHTFUL QUESTIONS IN CLASS TO "GET TO THE HEART" OF WHATEVER PHYSICAL

PRINCIPLE WE ARE DISCOVERING.
Please indicate one of the following:

<input checked="" type="checkbox"/>	I recommend this student without reservation	<input type="checkbox"/>	I recommend this student with reservation*
<input type="checkbox"/>	I recommend this student	<input type="checkbox"/>	I do not recommend this student*

* If you have reservations or do not recommend the student, please explain:

Print Name: DANIEL SHUMAKER Position: PHYSICS TEACHER

Signature: [Signature] Date: 3/13/24

School: OSCAR SMITH HIGH SCHOOL

Thank you for your cooperation.

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