



# VJAS VOICE

THE VIRGINIA JUNIOR ACADEMY  
OF SCIENCE'S QUARTERLY PAPER

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2021 EDITION, ISSUE 1

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"ALL TRUTHS ARE  
EASY TO  
UNDERSTAND  
ONCE THEY'RE  
DISCOVERED:  
THE POINT IS TO  
DISCOVER THEM,"  
**GALILEO GALILEI**

## WHAT'S NEW?

- **VIRTUAL SYMPOSIUM**

As a byproduct of COVID-19, the Virginia Academy of Science has decided to transition the Annual Symposium to a virtual alternative this year. Check the VJAS website for more details.

- **JUDGING**

Please help us to make the 2021 VJAS Symposium an event to remember and register today to judge. To sign up, please see *page 3*.

- **X-STEM**

Registration for the FREE X-STEM All Access Virtual Conference Series is now open! X-STEM All Access will take place on April 20-23 at 1:00 pm ET daily. See *page 9* for more details.

## VJAS STUDENT GOVERNMENT

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• • •

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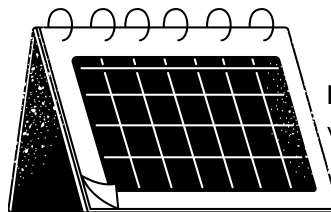
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**EDITOR IN CHIEF:**  
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**COMMUNICATIONS LIAISONS:**  
LAASYA KONIDALA  
ANDREW QI

## UPCOMING DATE



**May 15th, 2021**

Virtual Symposium

## WHAT'S INSIDE?

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### 2021 VIRTUAL SYMPOSIUM

KARLY RAMNANI

We made it! It's that time of year again. VJAS is eager to hold its second virtual symposium! This year, we have had more time to prepare and adjust to this new format. Our 2021 virtual symposium will contain more of the elements from our in-person symposia that students know and love.

The College of William and Mary is virtually hosting us this year. Presentations will be via Zoom meetings with the judges, who will be present in William and Mary virtual classrooms. They will all be held on May 15, 2021.

The deadline for paper submissions has been extended to March 10, 2021. For guidelines on writing and formatting the paper, see the VJAS handbook. We are using the platform Reviewr to facilitate this process - visit this link (<https://vjas.org/online-submission.html> [vjas.org]) for instructions on submitting your paper.

VJAS is offering various resources and mentorship programs to guide students in conducting research and writing the paper, as well as further opportunities to connect with the scientific community. Additionally, we need more reviewers and judges for the 2021 symposium; you can follow this link to volunteer. Any submissions are greatly appreciated, as these volunteer efforts keep VJAS running smoothly, especially in these different times.

Although, nothing can ever replace

meeting in-person on a college campus, we have used our knowledge of science and technology to adapt as best as we can. A huge thank you goes out to William and Mary for hosting us, and to the students for their hard work.

Good luck to all of you. No matter what the official results are, you are all winners for putting in the effort and still working hard in these difficult times, which is not an easy thing to do.



### JUDGING AT THE VJAS VIRTUAL SYMPOSIUM

SUSAN BOOTH

The Virginia Junior Academy of Science will hold its 2021 VJAS Research Symposium in conjunction with the Virginia Academy of Science Annual Meeting virtually on May 15th, 2021. The purpose of this meeting is to give approximately 750 students in grades seven through twelve from throughout the Commonwealth the opportunity to present papers, which will report original research they have conducted. At least a month before the virtual presentations, judges will receive research papers to read and score online, via the Reviewr web platform. On a date to be determined, papers will be virtually presented every 15 minutes from 9 a.m. through 4:30 p.m. More information about the online judging process and virtual presentations including web links, will follow in early Spring.

#### How can we accomplish this goal?

In order to achieve this monumental task many volunteers are needed. Each of the sections requires a Head Judge and 2 or 3 judges. Experts from all fields of science are needed. Each of the sections requires a Head Judge and judges, in which they are needed in all fields. There are both middle and high school categories from which you may choose.

Categories are evaluated and revised each year so you may note different categories below than were available last year. Judging requires one to read and evaluate no more than twenty-two papers, which will be available for access online via Reviewr platform. The judges are asked to be present in the virtual meeting with those papers, on the day of virtual presentations to complete the scoring.

Help us to make this an event to remember and register today by filling out and by submitting this form. Registering today will secure your first choice in categories. You will, at a later date, receive notification of the category you will be judging, access to online research papers to read, scoring rubric, schedule, and other important information. We will update you with more details as the logistics are worked out. We truly

appreciate all that you do and hope that you will be willing to contribute your time and effort again.

Please pass this information on to any others who may be interested in assisting VJAS. The entire program is made possible by your volunteer efforts, and its success rests on your willingness to help.

If you have any questions, please do not hesitate to contact me at: 757-897-3104 (phone).

Thank you in advance for your assistance.

**Susan Booth**

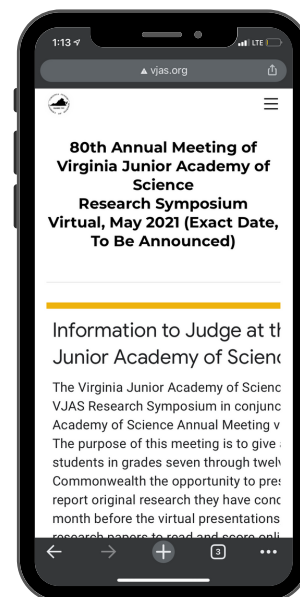
VJAS Director

susan.science@gmail.com

Disclaimer: Completion of form and reply email from the Academy does not mean you have been accepted to judge.

#### Link to the form:

<http://vjas.org/judges.html>



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## VIRGINIA ENVIRONMENTAL ENDOWMENT SCHOLARSHIP SHAN LATEEF

The Virginia Environmental Endowment (VEE), a nonprofit, independent grant-making foundation, has worked for more than four decades towards improving environmental quality, advancing our environmental literacy, and partnering to establish known land trusts, conservation networks, and even a statewide mediation center.

VJAS is very excited to partner with VEE to provide two scholarships to our young scientists who are currently excelling in environmental research.

There are two scholarship opportunities to students who present a project at the VJAS annual symposium:

-The Frances & Sydney Lewis  
Environmental Science Scholarship

- The Henry W. MacKenzie, Jr.  
Environmental Scholarship

Details on eligibility criteria and application procedures for both can be found on the VJAS website and in the VJAS handbook

Virginia  
Environmental  
Endowment

### SCHOLARSHIPS PROVIDED BY THE VIRGINIA ENVIRONMENTAL ENDOWMENT

The Frances and Sydney Lewis  
Environmental Science Scholarship

This \$5,000 four-year college scholarship may be awarded to the student whose project presented at the VJAS Research Symposium evidences the most significant contribution in the field of Environmental Science. The purpose of the award is to stimulate interest in environmental sciences and to enable promising young students to pursue undergraduate studies in a related field. The Virginia Environmental Endowment (VEE) and the VJAS offer this scholarship in tribute to the outstanding and generous services of VEE Directors Emeriti, Frances A. Lewis and Sydney Lewis.

The Henry W. MacKenzie, Jr.  
Environmental Scholarship

This \$5,000 four-year college scholarship may be awarded to the student whose project presented at the VJAS Research Symposium evidences the most significant contribution in the field of Environmental Science dealing with the James River Basin and the Chesapeake Bay. The purpose of the award is to stimulate interest in 41 Return to Table of Contents environmental sciences and to enable promising young students to pursue undergraduate studies in a related field. The Virginia Environmental Endowment (VEE) and the VJAS offer this scholarship in tribute to the outstanding and generous services of Judge Henry W. MacKenzie, Jr. one of the founding directors of VEE who had a great interest in the James River and the Chesapeake Bay.

### INTERVIEW WITH MRS. RACHEL KELLER AND MRS. MARIVIC MITCHELL NITYA KUMAR

Although it seems the COVID-19 pandemic has taken over our lives, it is important to remember that we will rise above and get through these devastating times. During this pandemic, people in the healthcare profession and other essential workers have put their lives on the line to keep us safe. What many people do not realize is that teachers and educators have also had to change many aspects of their teaching style to accommodate for this pandemic while still keeping the interest of young learners. Teaching science has become increasingly harder as many science teachers and mentors usually taught “hands-on” by planning labs and writing scientific diagrams on the board in their classrooms. Now, they are completely dependent on the computer and strive to see the sparkle in their students’ eyes as they understand the intricacies of science. Also, science fairs like VJAS have changed to virtual platforms for the 2020-2021 school year. Two science teachers have been interviewed on their experience of mentoring projects and teaching science in the virtual world.

Mrs. Rachel Keller is an honors level biology teacher as well as an AP Biology teacher at Douglas S. Freeman high school. Mrs. Keller has been teaching for sixteen years. She has been teaching twelve of those sixteen years at Freeman High School. Mrs. Keller is beloved science teacher who has been known to teach biology with a great passion.

Mrs. Keller was gracious enough to be interviewed on her experience of teaching high school biology to students during these virtual times.

Mrs. Marivic Mitchell is a seventh grade Physical Science teacher at George H. Moody Middle School. She has been teaching for 21 years and 20 of those years have been at Moody Middle School. Mrs. Mitchell is very passionate about scientific research, and trains all of her students from seventh grade onwards to have a passion for research and apply to prestigious science fairs in Virginia, including the Virginia Junior Academy of Science. Mrs. Mitchell was gracious enough to be interviewed on her experience of mentoring projects in the virtual world.

Q&A with **Mrs. Rachel Keller** (Douglas S. Freeman HS):

**Do you think that you have kept the interest alive in young biologists while teaching during these virtual times? Why or why not?**

I think that it is really challenging to know the answer to that because there is a lack of engagement, and in the science classroom there is a lot of engagement that takes place. Part of the excitement is doing labs, and it is very challenging to do labs virtually in classrooms. I think that it is very challenging as a teacher to keep the interest in young students especially during these virtual times. As a teacher, I prefer to teach in the classroom. It is much easier for kids to ask questions, and teachers to see faces. In the virtual environment most of my students do not turn their cameras on, even though I urge them to do so. Because of this, it is more difficult to address confusion and it is harder for me to teach while looking at initials on a screen.

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## INTERVIEW WITH MRS. RACHEL KELLER AND MRS. MARIVIC MITCHELL, CONT.

NITYA KUMAR

**Do you think that children are learning better or worse (grade wise)? Class scores, classwork and homework grades, etc?**

I think that for some students the high level of organization that is required during virtual learning is really helpful. It helps them know when assignments are due and the clear cut directions on the computer screen helps guide them through the whole process of doing and turning in their work. In my classrooms at Freeman, students are keeping up really well and are turning in their work, which I am hoping translates into understanding. On the other hand, in the virtual world it is easy to lose focus. During class time, it is easier to lose focus because there are many other distractions in the students' workplaces.

**What is by far the most difficult aspect of teaching biology class in the virtual world?**

There are not really "difficult" aspects of teaching biology in the virtual world. Everything is pretty do-able. I would say that the thing that takes the most of my time is the time it takes to prepare on a daily basis.

**What is by far the easiest aspect of teaching biology class in the virtual world?**

The easiest or most appealing aspect of teaching biology class in the virtual world is that teachers have more flexibility. People in the teaching profession do not have much flexibility with their schedules, etc. It is nice to have that flexibility in the virtual world. For example, I can stay home or come and teach from the classroom. I do not have to worry about running to the restroom and leaving my students in my

classroom alone. This is something that we normally do not get in this profession.

**How are you feeling about teaching in the virtual world? It is a whole different way of teaching, or are you enjoying it more? Do you feel like it is more difficult for you personally with the way you teach biology?**

It is difficult to teach the way I normally teach science. I am a stand in the front of the room teacher. I draw a lot of pictures. I walk around the room a lot. That helps me focus and make it relatable to the kids. Virtual world is all about how to best convey information to the students. It is difficult for me to know if my students are truly understanding or not. I can't see their faces, and it is so easy for them to use outside resources. Sometimes it is hard to tell whether they are scoring well because they understand or if they are using outside resources.

**How do you feel about operating the computer all day? Is that a struggle? Is there a lot of technical difficulties or is it mostly going okay?**

It is mostly going okay for me. The main issue was figuring out the best way to prevent eye fatigue. I have reading glasses but the blue light glasses help a lot. I also use another separate bigger monitor to help my eyes. I think that I personally have adjusted to it as well. There is a lot of the use of the screen all of the time, but we are going through a global pandemic so we are doing the best that we can. In the technical standpoint it is all going pretty well. Of course there are hiccups, but there would still be hiccups if we were face to face in school as well.



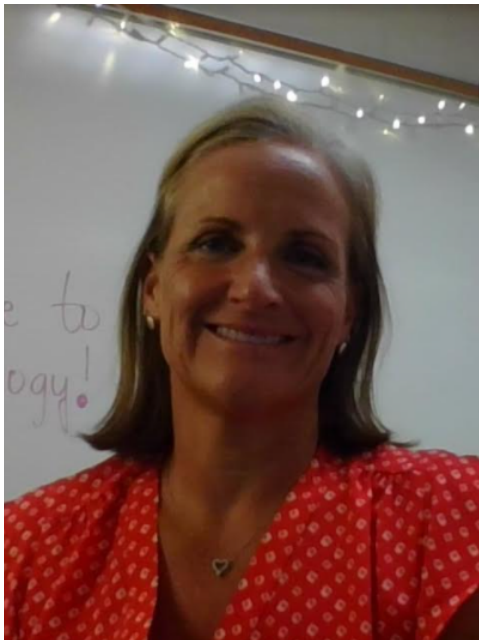
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## INTERVIEW WITH MRS. RACHEL KELLER AND MRS. MARIVIC MITCHELL, CONT. NITYA KUMAR

**Do you feel like many kids are not completely understanding the biology subject during virtual learning, and it might harm their basic scientific foundation as they go on to higher level classes?**

I think that the students that are ambitious and motivated learners will be fine. In reality, everyone is in the same boat. I also teach AP Biology. Next year, I might have to tweak the foundation a little bit for students who are taking AP Biology to cover material which might have not been covered. I think that so far, all of my students have a basic understanding and are comprehending the material well. Students have to put in extra work to be successful. I think that students will definitely learn a lot from this Global Pandemic.



Above: Ms. Rachel Keller

Q and A with Mrs. Marivic Mitchell  
(George H. Moody MS):

**How have you kept the interest alive in young students about the Independent Research Project (IRP) and the research aspect of science during this virtual learning experience?**

I believe in practicing science. By practicing science you will be able to learn science more clearly and faster. I show a lot of demonstrations for kids, so that they can see that through virtual learning. I usually make videos of myself for my students' so they can see how passionate

I am about my subject. Also, I hope that seeing me practicing science and demonstrating will motivate them to try it and enjoy science as well during these virtual times

**How has your experience of mentoring kids on the IRP changed from previous years of in person learning?**

It changed because there is no personal contact with my students. I try to have personal office hours set up for them to ask questions and talk to me. They can come Monday through Friday at 2:0-3:15 pm. Anyone who has questions about either the research projects or physical science can pop in and talk to me.

**How are the kids taking the process of learning how to conduct and write their research projects in the virtual world (especially seventh graders who are doing the IRP for the first time?)**

The hardest part so far has been doing

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## INTERVIEW WITH MRS. RACHEL KELLER AND MRS. MARIVIC MITCHEL, CONT. NITYA KUMAR

research. They have already submitted that so now they are testing their hypothesis. I do not know yet how they are doing, but I feel like since there is no grade attached to doing the projects, the students feel less inclined to do the best job. They are less motivated since I am not grading the projects due to the virtual learning environment. In previous years, I had graded the projects so my students also gave me their best shot at writing and conducting the paper. Also, there are only a handful of students doing the research project because 95% of the students feel like if there is no grade attached to doing the project, why do they have to do it.

**Do the students have to order all of the materials for their projects by themselves, or can they come to the school and use your lab?**

The students can come to the school. I have made the safety goggles and aprons available to them so they can conduct their experiments. We have made few materials available to the students because we do not want to discourage them from conducting experiments. If we have the materials, we let them have it or give it to them.

**How are you teaching the process of writing a science paper to the seventh graders? Are you going through the writing process step by step?**

My students receive packets full of instructions on how to write the research paper for each section. I have sample projects for them to look at virtually. I also give my students samples of other papers from my previous students of past years, so that they have something to go off of.

What are you advising the students who have more complex projects and must go work in labs or need other equipment? Labs are closed due to COVID, so are the projects much simpler than past years? With the new restrictions for COVID-19, we have so many restrictions. The students cannot do projects with human subjects, not even with the survey. That is a county rule, and we have to follow the county protocol when doing a research project.



Above: Mrs. Marivic Mitchell



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## X-STEM: VIRTUAL INTERACTIVE SPEAKER SERIES

X-STEM All Access is BACK. Register Now!

Registration for the **FREE X-STEM All Access Virtual Conference Series** is now open! X-STEM All Access will take place on April 20-23 at 1:00 pm ET daily.

X-STEM All Access - presented by AstraZeneca, DoD STEM, and the U.S. Air Force - is a virtual interactive speaker series designed to inspire students, teachers, and parents. Moderated by science educator and communicator Justin Shaifer, X-STEM All Access will be presented as a series of four daily livestream events featuring an exclusive group of visionaries aimed to empower students about careers in STEM.

View the speakers [here](#). We hope that educators and parents with students learning from home or in the classroom can utilize X-STEM All Access as a fun educational resource for kids. Save the dates and register today!

For more information on X-STEM or to register, please refer to:

[usasciencefestival.org/attend/xstem-symposium](https://usasciencefestival.org/attend/xstem-symposium)

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X-STEM ALL ACCESS

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