



The VJAS Voice

Written by Students for Students

April 2015

A Publication of the Virginia Junior Academy of Science

Vol. 4, No. 2

Salutations Friends,

And congratulations! On behalf of our entire VJAS Executive Committee, we would like to both thank and commend you for all of the hard work you have done these past few months. We have been proud to serve you, the exceptionally talented students of the Virginia Junior Academy of Science, as your 2014-2015 Presidents. Last year's Research Symposium was fantastic, but this year at James Madison University we are even more thrilled to see the research you have been tirelessly conducting for many months; and for some of you, many years. The research presented at our annual Symposium seems to grow more and more impressive, groundbreaking, and intriguing by the year. In fact, we have had the pleasure to watch many of you present your first paper and continue to improve as writers, presenters, and researchers over the years.

Therefore, with this in mind we ask for your support in continuing to make VJAS a success. We want you to embrace all that this year's Symposium has to offer- whether you're a senior or a middle school student; whether you're presenting for the first time, or you've been presenting for years- it is imperative that you engage in all of the wonderful opportunities you will be presented at James Madison University in May. The relationships you foster can last a lifetime, and the knowledge you gain could perhaps shape your outlook on science; even, on your future.

Naturally, being highly driven and high achieving, many of you will be unable to attend the Symposium on account of AP/IB examinations, but we encourage you to look for ways to expand your knowledge and augment your scientific education in your communities. Get active in your school's science club or seek out leadership in the VJAS. Follow the VJAS on Twitter and spread the word not only about our most venerable organization, but about your own passion for science and the importance of STEM in society. Look forward to opportunities to get involved with the VJAS *Voice*, but most importantly, continue to conduct research. Research, and the passion that accompanies it, is the heart of the VJAS: the heart that pumps blood to the assorted limbs that make up our organization.

This Symposium will be fantastic if we all embrace our mutual love of science and take advantage of the abundance of opportunity that lies before us. Let's join together to make this year another success. In short, it has been an honor to serve as your 2014-2015 Presidents. We have been thrilled to see you all grow and develop, and to be comforted by the fact that you are truly the leaders of tomorrow. We are confident that you will continue to astound your parents and astonish our judges- who of course appreciate your help in keeping their minds sharp. We know that you will continue to conduct research, continue performing well academically, and most importantly, continue inquiring for the greatest trait among all scientists is curiosity.

Excelsior,

Chris Bolton and Ben Rhoades



Professional Voice: An Interview with Dr. Martin Smith-Rodden

Interview Conducted and Compiled by Kevin Zhan (Editor-in-Chief)

Dr. Martin Smith-Rodden is an accomplished and talented psychologist who also balances an extremely busy job as a photojournalist. We recently sat down with Dr. Smith-Rodden and asked him a few questions regarding science fairs, like VJAS, and the future of his fields.

How has your experience as a professional photographer and psychologist shaped the way you view the world? Also, how are photography and psychology related?

Being a photojournalist has given me a three-decade opportunity to witness quite a lot of history and human behavior. Being a photojournalist means that you are documenting important events, crises, and especially the human condition. Also, as a photojournalist, your work resides in the domain of human visual sensation and perception. Psychology, as a science, addresses all of these things. Therefore my work as a photojournalist highly informs my work in psychology and vice versa.

I teach both college psychology courses as well as journalism courses. Quite a lot of journalism makes its way into my psychology classes and also a lot of psychology is thrown at my journalism students. My “dual citizenship” is a unique perspective that I hope benefits and informs my students. This perspective helped me land a job at Ball State University, teaching journalism. The department there is a forward-thinking one, which appreciated my hybrid-disciplines and research interests. The very first thing they did after my accepting the position was set up a cross-listed media psychology course. It’s exciting to work in an institution, like Ball State, that understands that successful work in journalism and mass media is as much a science as it is an art.

Do you think it is important for children to be engaged in scientific research and science fairs at a young age?

I’m active with a few groups that promote science to young people. I think emerging scientists are key to the future, prosperity and general health of our society and country. For whatever reason, science is made inaccessible to significant portions of our population. Many of our own elected officials are ambivalent about funding science. Introducing young people to science, and showing that they can do meaningful work in that field, can do a lot to building trends that encourage science careers, science mindedness, and better critical thinking skills among our citizens.

What do you think the future of psychology entails? What is one specific field of study that should be emphasized now more than ever?

There’s some exciting work going on in Media Psychology, which is my primary area of interest. As a sub-field of psychology, it’s fairly new in its development, and is a field populated not only by psychologists, but people from the social sciences, including journalists, mass communication scholars and especially sociologists. While I’d hesitate to say that it should “be emphasized now more than ever,” I do feel that there is a certain feeling of zeitgeist for that line of study at this time. A surprising number of the VJAS student researchers present projects focused on media research, and their interest is clear regarding these topics. The study of media effects is rigorous research, so I’m encouraged by the apparent interest among the VJAS presenters.

For more information on Media Psychology, please visit the APA website at:
<http://www.apa.org/divisions/div46/>



Student Voice: An Interview with Jack Lohmann

Interview Conducted and Compiled by Kevin Zhan (Editor-in-Chief)

Jack Lohmann, a current senior at the Center for Leadership, Government, and Global Economics at Douglas S. Freeman High School, attended this year's AJAS symposium held in San Jose. We recently spent some time inquiring Jack about his experience at this year's AJAS as well as his ambitions.

How was this year's AJAS symposium in San Jose? What was the most exciting aspect of this experience?

This year's AJAS conference was a phenomenal experience for me. Since AJAS is held in conjunction with the Annual Meeting of the American Association for the Advancement of Science, there were thousands of attendees from all fields of science, with academics, researchers, policymakers, businesspeople, Nobel Laureates, and pretty much anyone else you could imagine. In the span of about an hour one night, I had the opportunity to speak with two MIT professors (one the President of AAAS, the other a Nobel Laureate), a former Congressman (and the current CEO of AAAS), and Arizona's former Governor.

And that was just one hour.

Throughout the course of the week, we were presented with opportunities to present our research to dozens of peers and mentors, to tour amazing facilities in the San Jose area, and to learn about the newest frontiers in modern science. We attended a plenary lecture on genetics as the scientist who in 1993 discovered RNA sat in the audience. We toured Google with the man who in 1973 invented the internet. And, throughout our poster presentations, we were interviewed by national figures relevant to our research who were committed to offering us the advice and mentoring necessary to take our work to the next level.

After AJAS this year, I devoted four days to following up with the amazing people I met throughout the week. Those sorts of connections are absolutely critical to supporting not just young scientists but young professionals of any stripe, and AAAS/AJAS did a fabulous job of fostering an atmosphere conducive to their formation.

Of all of the VJAS symposiums you have participated in the past, which one was the

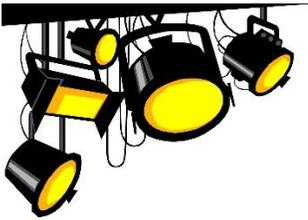
best and why? What do you think needs to be improved upon this year?

My first VJAS Symposium five years ago was definitely an eye-opening experience. I arrived over-whelmed and stunned even to have made it that far; throughout the event I was energized and inspired by the impressive array of lectures, presentations, and events that made all of us feel welcomed and motivated to continue our research. I remember feeling incredibly nervous for hours before my presentation, then sitting in the plenary lecture that evening realizing that I had surpassed a major barrier that day and, in doing so, crossed a meaningful threshold in my own intellectual development. Every symposium I've attended since then has been fantastic at bringing us all together, showing us what science can do, and propelling us forward in our research and work.

That said, many of my best memories from AJAS were the AAAS receptions, speeches, and events that gave me the opportunity to meet incredible researchers and mingle with people at the top of their field. I think that any efforts VJAS makes toward connecting VAS members with VJAS presenters will go a long way to continuing that spirit of shared innovation.

As a senior, you must be extremely busy thinking about your future. In college, are you going to pursue something in a STEM-related field or in a non-STEM one?

Politics has always been my passion, and I plan to frame my education around the study of public policy as it relates both to civil liberties and to the environment. My environmental interests are heavily informed by the research I've continued throughout high school and presented at VJAS and AJAS, from which is derived my passion for water policy. Ultimately I plan to take my scientific experiences and apply them to a politics- and policy-related career, probably in D.C. but perhaps somewhere else. My experiences presenting at AJAS, VJAS, and other fairs and conferences have been crucial to helping me understand the crucial confluence of science and policy.



Speaker's Spotlight: Dr. Eric J. Pyle

Every year, VJAS invites experts in various fields of science to present captivating and cross-disciplinary seminars to the student audience, and this year's symposium is no exception. The Age of Enlightenment of the 17th and 18th Centuries provided a framework of thinking that led to modern science as we understand it today. This new capacity for reason allowed Western Civilization to measure the physical world and the heavens with greater precision than had been known in all of human history before. But measuring the heavens led people to measure the Earth in ways that resolved both practical questions of borders between peoples but opened up new questions on the structure of the Earth. This focus on precision in measurement made possible the machinery of the Industrial Revolution. Appearing as a Surveyor in Colonial Virginia, Dr. Eric J. Pyle of the JMU Department of Geology & Environmental Science will share how a measuring the Mason-Dixon line depended on a 6-foot tall telescope and a fir rod, why lodestones were worth their weight in silver, and how determining the mass of the Earth relied on a really good clock. These stories share how solid science could be conducted under extraordinary circumstances and how important field-based science is to science as a whole.





Upcoming Dates

This year's VJAS symposium at James Madison University is coming up soon and we want all of you to be prepared. Below are some important deadlines/dates of which you need to be informed:

VJAS Special Interest Awards	April 25
VJAS College Scholarships	April 25
E.C.L Miller Teacher of the Year Award	April 25
VJAS Junior Officer Applications	April 25
Confirmation of participation	April 26
VEE-Environmental Scholarships	April 30
Symposium registration	TBD
Accepted paper abstract submission	May 18
VJAS Symposium	May 20-22

Please refer to the VJAS Handbook and Appendix for any of the appropriate forms, and remember due dates are closer than they appear!



VJAS Special Interest Awards for Students (Grades 7-12)

Was your paper accepted for presentation at VJAS? Are you committed to presenting at James Madison University on May 21? Does your project relate to the listed topics? If so, apply for a special interest award by **April 25, 2015**. Use the “Special Interest Award Application” found in the appendix to the *VJAS Handbook, 2014-15*. For details, read the “Special Interest Awards” section of the handbook (p. 38-40). If you apply for more than one award, you must submit a separate application for each award. Winners receive a cash award and certificate. Remember, you can access the handbook and forms at http://66.147.244.216/~vacadsci/vjas-1_files/handbook.html

- **Applied Chemistry** – use of chemistry to provide better things or better living. Apply for the Dr. and Mrs. Preston H. Leake Award in Applied Chemistry.
- **Cancer** – uncontrolled division of abnormal cells that leads to disease. Apply for the Cancer Research Award. Apply for the Gamma Sigma Delta Award.
- **Caving and Karst Geology** – topics related to bats, caves, carbonate geology, paleoenvironments, limestone fossils, sinkholes, etc. Apply for the Speleological Society Award.
- **Crops, Trees, or Animals** – research involving new concepts and technologies in agriculture, forestry, or veterinary medicine. Apply for the Gamma Sigma Delta Award.
- **Genetics** – transmission of inherited traits and variation of traits among similar organisms. Apply for the Roscoe Hughes Genetics Award.
- **Infectious Diseases** – disorders caused by bacteria, viruses, fungi, and other organisms and their transmission modes. Apply for the Smith Shadomy Infectious Diseases Award.
- **Marine Environments** – research on marine and coastal environments. Apply for the Virginia Sea Grant College Program Award.
- **Virginia’s Natural Heritage** – organisms and their habitats, ecosystems, geology, and landforms of Virginia. Apply for the Virginia Museum of Natural History (VMNH) Award.

Submitted by Dr. Julia H. Cothron, VJAS Awards & Scholarship Committee



VJAS College Scholarships (High School Students)

If you plan to present your project on May 21 at James Madison University, then review the various scholarship opportunities. To receive a scholarship you must apply. Find details in the *VJAS Handbook, 2014-15*, available at http://66.147.244.216/~vacadsci/vjas-1_files/handbook.html

College and University Scholarships. Use the *VJAS Handbook, 2014-15* (pp. 46-49) to learn details about scholarships. If you are eligible, submit a completed application by **April 25, 2015**. Use the “Scholarship Application: Bethel and Virginia Colleges & Universities” form located in the handbook appendix. Submit a separate application for each scholarship.

- **Hampton University** - \$2,000 per year for four years; apply if senior planning to attend;
- **Old Dominion University** - \$2,000 scholarship for first year, which may be renewed; apply if senior planning to attend.
- **Randolph College** - \$2,000 per year for four years; apply if rising sophomore or junior planning to attend.
- **Randolph-Macon College** - \$2,000 per year for four years; apply if junior or senior planning to attend.
- **Virginia Commonwealth University** - \$2,000 for first year; apply if senior planning to attend.
- **Virginia Wesleyan College** - \$2,000 per year for four years; apply if rising sophomore or junior planning to attend.
- **ANY college or university** - \$1,000 for first year; awarded to a high school student winning a first place, but you must apply for his/her scholarship from funds raised by Bethel High School students.

Environmental Scholarships. For information, read the *VJAS Handbook, 2015* (pp. 44-46). Then, apply using the “VEE Application for the F. & S. Lewis and H. Mackenzie Scholarships” form located in the appendix. Because the application involves multiple components, check your application using the “Checklist for Environmental Scholarship Requirements.” Application packets are due by **April 30, 2015**.

- **The Francis and Sydney Lewis Environmental Science Scholarship** - \$14,000 four-year scholarship to a high school student with an environmentally-related project in any category,
- **The Henry W. Mackenzie, Jr. Environmental Scholarship** - \$5,000 four-year scholarship to a high school student whose project makes a significant contribution to environmental science related to the James River Basin and Chesapeake Bay; all projects on these topics are eligible, regardless of category.

Submitted by Dr. Julia H. Cothron, VJAS Awards & Scholarship Committee



Recognize a Teacher Who Made Your Project Possible!

Teachers who involve students in research often spend many hours outside the regular school day to make projects possible. Recognize a special teacher who inspired you to complete a research project, and who supported you throughout the process. Nominate this special sponsor or teacher, grades 7-12, for the ***E.C.L. Miller Teacher of the Year Award***. Students, science clubs, colleagues, parents, or administrators can make a nomination. Making a nomination involves several steps:

- Writing a cover letter;
- Securing letters of support from students (2), colleagues (2), and a school administrator (1);
- Getting a resume from the nominated person;
- Addressing an envelope to the sponsor's or teacher's home address.

The completed packet must be received by **April 25, 2015**. For details, see the *VJAS Handbook, 2014-15* (p. 42). The award winning teacher will be recognized at the VJAS Awards Ceremony on May 22 and will receive funding to attend the 2015 fall conference of the *Virginia Association of Science Teachers* (registration and hotel). Before nominating someone, check that the person wants to attend these events and that the principal agrees.

Submitted by Dr. Julia H. Cothron, VJAS Awards & Scholarship Committee

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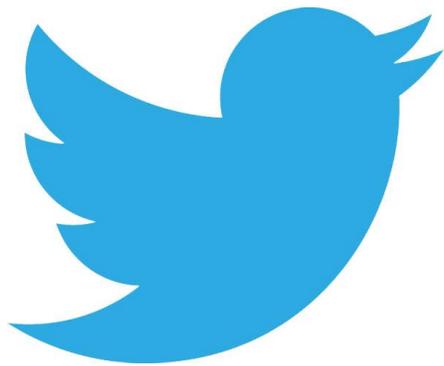
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