

## **Chemists Celebrate Earth Week by the ACS Virginia Section April 27, 2019 at the Science Museum of Virginia**

*Reported by Andrew Yeung & Julian Bobb*

### Executive summary

Chemists Celebrate Earth Week organized by the ACS Virginia Section was held at the rotunda of the Science Museum of Virginia on April 27<sup>th</sup>, 2019. 421 people attended our event, that had a total of 7 teams presented, staffed by 54 volunteers (16 ACS members).

Turn-out was good, and the volunteers had positive experiences. The team leaders were satisfied with the event organizers as well. Suggestions for improvement include a shorter, more focused event (10 am or 11 am through 3 pm). Questions remain regarding how well we reached our target audience (K-12 students & families), and how we can make this event attractive to them. Answering these questions can help maintain the long-term viability of this recurring event.

### Publicity efforts

Publicity for Chemists Celebrate Earth Week and the concurrent illustrated poetry contest were pursued through the following venues:

1. ACS VA section Facebook page
2. ACS VA section meeting at Afton Chemical Corporation
3. Science Museum of Virginia website & Facebook page
4. MathScience Innovation Center
5. LinkedIn
6. Pfizer email and winscreens
7. Various Afton meetings and events
8. Flyers at Richmond, Henrico, Chesterfield public libraries
9. Richmond Family Magazine Calendar of Events
10. WTVR Channel CBS6 along with 9 other community calendars in the SpinGo network including RVA Hub, and the RVA Event Spot
11. Henrico Magazine

## Exhibits and volunteers

Various local organizations were approached, and we were quite successful at getting local businesses to participate. Academia was represented by J. Sargeant Reynolds Community College, and the ACS VA section's table had many volunteers from Virginia Commonwealth University.

There were a total of seven teams that participated, and the list of exhibitors and their corresponding topics for presentation are listed in Table 1.

Table 1. List of participating teams and the topics or activities they presented.

Organization	Topic/activity
ACS VA Section	<ul style="list-style-type: none"> <li>• A demonstration of distinguishing colorless liquids.</li> <li>• Nature printing with nature print paper.</li> <li>• Illustrated poetry contest</li> </ul>
Afton Chemical Corporation	<ul style="list-style-type: none"> <li>• Making butterflies using chromatography and</li> <li>• The application of paper filters to protect engines and machines.</li> </ul>
J. Sargeant Reynolds Community College	<ul style="list-style-type: none"> <li>• Making paper pulp from recycled paper and turning it into jewelry and bookmarks.</li> </ul>
Central Virginia Waste Management Authority & TFC Recycling	<ul style="list-style-type: none"> <li>• Education focus on the recycling process.</li> </ul>
Waters Corporation	<ul style="list-style-type: none"> <li>• Chromatography experiment for kids using grape cool-aid and solid phase extraction (SPE) plates</li> <li>• A separation game and make displays out of paper</li> </ul>
WestRock Company	<p>"Connecting people with products"</p> <ul style="list-style-type: none"> <li>• Introduction to the paper making process (project board display) and identifying different fibers using microscope.</li> <li>• Showcasing our products.</li> <li>• Box folding activities.</li> </ul>
Pfizer Consumer Healthcare	<ul style="list-style-type: none"> <li>• Poster with hands on touch information about a tree and the chemistry of the tree.</li> <li>• A physical tree made of paper.</li> <li>• A station where children can learn about the strength of paper and build their own paper bird nest.</li> <li>• A poster about the Pfizer wildlife program.</li> <li>• A display about vermicomposting and how shredded paper can be used in a worm bin.</li> </ul>

These events were manned by a total of 47 enthusiastic volunteers on-site (Appendix I), of which 16 were ACS volunteers (34 %). Seven additional volunteers from the various groups

helped make this event a success, but were not present at the event, making a total of 54 volunteers.

### Illustrated poetry contest

The section received 5 entries to the poetry contest, 4 of the 5 were received at the Science Museum event. One entry was selected from the K-2<sup>nd</sup> entries received. Scores generated on a scale of 1-5 for the criteria in the National Contest were as follows in Table 2. The winners for the 3-5<sup>th</sup> and 6-8<sup>th</sup> were the only contestants to enter.

Table 2. List of participants and their scores.

Criteria	Bhavika	Sophia	Jack
Artistic Merit	4	3	2
Poem Message	3	1	1
Originality	2	2	3
Neatness	3	3	1
Total Points	12	9	7

The winners are:

- K-2<sup>nd</sup> Bhavika Bhardwaj - Rivers Edge Elementary
- 3-5<sup>th</sup> Navya Bhardwaj - Rivers Edge Elementary
- 6-8<sup>th</sup> Hazel Lowery - Home School

The local section winning entries were submitted to the National Office by Kristine Smetana. None of the VA Section winners won at the National Level. Winnings submissions will be printed in the summer edition of The Bulletin.

### Attendance

421 visitors were served at our event, which is at the high end of typical turn-out (200-400). April 27<sup>th</sup> was a nice day for outdoor activities, which was expected to suppress turn-out otherwise.

Of the 421 visitors, 27 % were elementary school-age or younger, 19 % were middle school-age, 4 % were high school-age, and the remainder (51 %) were adults. The number of visitors we had as a function of time is presented in Figure 1, and they indicate that most visitors came between 11 am and 3 pm.

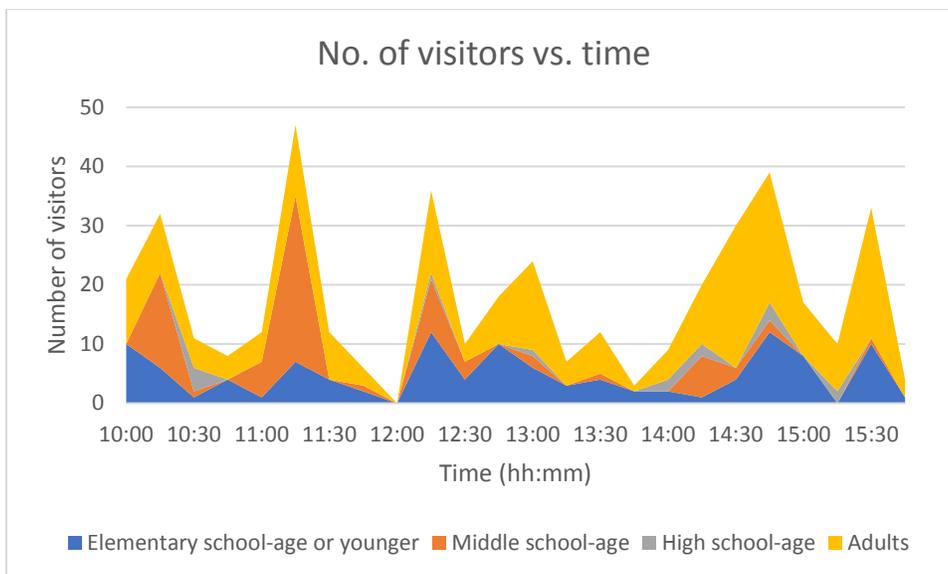


Figure 1. Number of visitors to CCEW 2019 broken down by age group, plotted as a function of time.

## Budget

Expenses incurred by the ACS VA section were minimal because each of the teams covered their own costs. Some supplies were consumed from existing stores as well, so no costs were incurred. The ACS supplied English and Spanish copies of the CCEW newsletter, as well as some stickers and pencils.

The costs attributable to the ACS VA section are listed in Table 3.

Table 3. Expenses attributable to the ACS VA section.

Gift cards for winners of the Illustrated Poetry Contest	\$ 75.00
Postage for publicity materials	\$ 30.15
Supplies for distinguishing liquids, and safety glasses	\$ 13.73
<b>Total</b>	<b>\$ 118.88</b>

## Feedback & lessons learned

Close to the end of the event, we managed to speak with the leaders of each team except for the Reynolds team that left at 2 pm. One recurring theme was that the event is best held from 10 or 11 am through 3 pm, as the greatest crowd came during this time.

The rest of their feedback is summarized as follows:

- Volunteers were happy and had a good experience, and the event went well
- Good communication and support from organizers, and good logistics support from the Science Museum of Virginia
- Looking for more effective ways of reaching out to attendees (e.g. despite heavy internal advertising within companies, few people came)

- Need to plan ahead for permissions regarding corporate branding since they take time
- Need to set expectations about the use of goggles in accordance with the ACS broader policies
- Appreciated the sandwiches that Afton provided

## Acknowledgments

The organizers thank all the organizations and volunteers for their role in making this event the success that it was. They recognize the Science Museum of Virginia for providing the free use of the event space. Timshel Purdum of the Science Museum was especially helpful in providing coordination prior, and for facilitating logistics needs on the day of the event.

The organizers also thank WestRock for providing grocery bags for visitors to collect goodies from the various tables, and Afton Chemical Corporation for providing sandwich lunches for the event volunteers.

## Concluding remarks and thoughts for future events

The organizations approached were very enthusiastic about the opportunity to be a part of this event, and those that ultimately participated were the most enthusiastic. The organizers are gratified by feedback from these organizations indicating that their volunteers had positive experiences.

Having local organizations cover their costs and staff their tables greatly reduced the strain on the ACS VA section's resources. Most importantly, the quality of the exhibits was high because the volunteers developed their own content, and were invested in their exhibits and activities. The ACS VA section may benefit from deepening these relationships that have been formed, and a list of people to contact is listed in Appendix II for future reference.

Despite the good turn-out, it is unclear if our visitors came specifically for our event, or if their attendances were incidental to their Science Museum of Virginia visit. Anecdotal evidence from our heavy publicity efforts at Afton suggest a low success rate (1 family showed up despite approximately 150 fliers being given out at various events). Assuming these numbers are representative, such a poor success rate prompts additional questions:

1. Is this event attractive to our target audience (K-12 students & their families)? If so, how best can they be reached, and do we have the capability to reach them? If the chosen publicity approaches are shown to be ineffective, we might want to rationalize them to reduce the workload on our team members.
2. If unattractive to our target audience, how can we make this event more appealing? Might this event find more success as part of a bigger Earth Week event with other organizers? Is a co-branding strategy with the Science Museum of Virginia more fruitful? The potential downsides to this approach would be brand dilution and a loss of autonomy.

For the long-term viability of this recurring event, we might want to devote resources toward answering some of these structural questions and filling key gaps. That also necessitates a resilient mechanism for aggregating and disseminating our institutional knowledge as it is gathered.

Some thoughts on these questions and gaps:

1. To determine what forms of publicity are effective, we could have attendees fill out a quick survey to see how they found out about our event. Perhaps encourage responses by a gift card or some sort of sweetener. Unfortunately, this will not benefit the 2020 CCEW event, and it will help the 2021 event only if we do carry it out in 2020.
2. If K-12 students are indeed the target audience, our difficulties at engaging this target audience suggest we have a serious deficiency. One approach to resolve this would be to build relationships with K-12 teachers that can help us tailor the material to their students' interests, and that can help inform their students of our event. We may even recruit K-12 teachers into our section and asking them, as appropriate, to accept leadership roles here. That can facilitate the growth of a good working relationship between the VA section and local school systems.
3. If we are unable to successfully engage with the target audience despite our best efforts, we must not shy away from an objective cost-benefit analysis to determine the path forward in view of the VA section's broader goals.

This year's ad-hoc manner of organizing CCEW has found success, and we would likely find success if we were to do it the same way next year as well. To make CCEW relevant year after year, we may prefer a more strategic approach that inspires interest in this event in our target audience. These relationship building initiatives may be run out of the VA section, or they may be led by the next CCEW event organizer. Such work should start soon for maximum probability of success.

## Appendices

- Appendix I: List of volunteers present at the event
- Appendix II: Contacts for future events

## Appendix I: List of volunteers present at the event

<b>Table</b>	<b>Name</b>
ACS VA section	Rozalie Sharon Genevieve Corea
ACS VA section	Sahan Anuja Galbada Liyanage
ACS VA section	Shihara Dewasinghe
ACS VA section	Sophie Bray
ACS VA section	Saskia Engle
ACS VA section	Chanaka M. Amarasekarage
ACS VA section	Colleen Malone
ACS VA section	Ahkinyala Cobb-Abdullah
ACS VA section	Cathy Andrews
ACS VA section	Pratiik Kaushik
ACS VA section	Lisa McAnulty
ACS VA section	Clark Melchert
ACS VA section	Julian Bobb
Afton	Sam Hein
Afton	Madison Engel
Afton	Uma Ramasamy
Afton	Geeta Vadehra
Afton	Youhong Wang
Afton	Steve Dugent
Afton	Andrew Yeung
CVWMA & TFC Recycling	Nancy Drumheller
CVWMA & TFC Recycling	Cindy Brown
Pfizer	Doris J. Angeline
Pfizer	Heidi Arthur
Pfizer	Aaron L. Durr
Pfizer	Kathryn Deibler
Pfizer	Jessie Ewan
Pfizer	Denise Walters
Pfizer	Jonna Harrell
Pfizer	Rebecca Harrell
Reynolds Community College	Hagir Saleh
Reynolds Community College	Ryan Lingo
Reynolds Community College	Kira Atelsek
Reynolds Community College	Derek Dohetz
Waters	Tiffani Nasutovicz
Waters	Ivy Smith
WestRock	Carly De Henau
WestRock	James Faught

<b>Table</b>	<b>Name</b>
WestRock	Nichole Kilgore
WestRock	Gaytsi Sharma
WestRock	Sara Andria
WestRock	Joel Panek
WestRock	Maria Szajda-Lam
WestRock	LaDawn Matthews
WestRock	Natasha Melton
WestRock	Adele Panek
WestRock	Nyssa Thongtran

## Appendix II: Contacts for future events

<b>Company</b>	<b>Contact</b>	<b>Email</b>
Advansix	Shana Miller	Shana.Miller@advansix.com
Afton Chemical Corporation	Sam Hein	sam.hein@aftonchemical.com
Altria	Kathleen Spangler	kms2uu@virginia.edu
Central Virginia Waste Management Authority & TFC Recycling	Nancy Drumheller Cindy Brown	ndrumheller@cvwma.com CBrown@tfcrecycling.com
City of Richmond Department of Public Utilities	Jennifer Clarke	Jennifer.Clarke@richmondgov.com
Clean Harbors	Del Williams	williamsd@cleanharbors.com
Evonik	Lesley Schmid David Previs	lesley.schmid@evonik.com david.previs@evonik.com
Federal Reserve Bank	Angela Collier	Angela.Collier@rich.frb.org
Huvar Research and Consulting	Gary Huvar	gary@huvar.com