



JANUARY MEETING NOTICE

SCIENCE MUSEUM OF VIRGINIA

Richmond, Virginia

Friday, January 25, 2019

RECEPTION: 5:30 p.m.
Rotunda, Science
Museum of Virginia
2500 West Broad Street

PROGRAM: 7:00 p.m.
RF & P Forum
Science Museum of
Virginia

MENU: Cheese Display, Fruit Display, Crab Dip, Beef Brisket, Chicken Skewers,
Grilled Vegetables, Assorted Dessert Bites, Iced Tea, Lemonade

PRICE: ACS Members and Guests - \$ 20.00
High School & College Students, High School Teachers & Spouses - \$ 10.00
Retired ACS Members & Spouses, Retired Teachers & Spouses - \$ 15.00

DINNER RESERVATIONS: Please make reservations for the reception by **NOON on Friday, January 18**
by calling Rhea Miller at (804) 827-0352 or by email to rmiller3@vcu.edu

HOST: Dr. M. Samy El-Shall; (804) 828-2753; mshelshal@vcu.edu

SPEAKER: **Dr. Eric Herbst, University of Virginia**

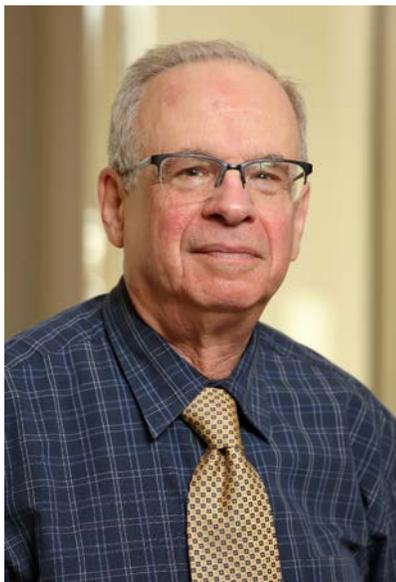
TOPIC: **“Chemistry Among the Stars”**

JANUARY 2019

S M T W T F S

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					<i>reservations</i>		
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					<i>meeting</i>		
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Dr. Eric Herbst



Professor Eric Herbst is a Commonwealth Professor in the Departments of Chemistry, Astronomy, and Physics at the University of Virginia. He received his A.B. degree in Chemistry from the University of Rochester and a Ph.D. from Harvard University. He did postdoctoral research at Harvard University and also at the University of Colorado-Boulder, before he joined the faculty in the Department of Chemistry at the College of William and Mary in 1974. He then moved to Duke University from 1980-1991 and then to Ohio State University in 1991 where he was a Distinguished University Professor until 2011 when he moved to UVA.

Dr. Herbst's major research field lies in the interdisciplinary area of molecular astronomy, which is the study of molecules throughout the universe, especially in regions in between stars known as interstellar clouds. These objects eventually collapse to form new generations of stars and planetary systems, so the molecules found in interstellar clouds are related to the molecules found in planets such as our own. Dr. Herbst is specifically interested in the chemical processes by which molecules grow, in using these chemical processes to predict the actual concentrations of molecules, and in the role of molecules in the understanding of their physical environments. A fellow of the American Physical Society and the Royal Society of Chemistry (U. K.), Dr. Herbst has won a number of international prizes including the Centenary Award of the Royal Society of Chemistry.

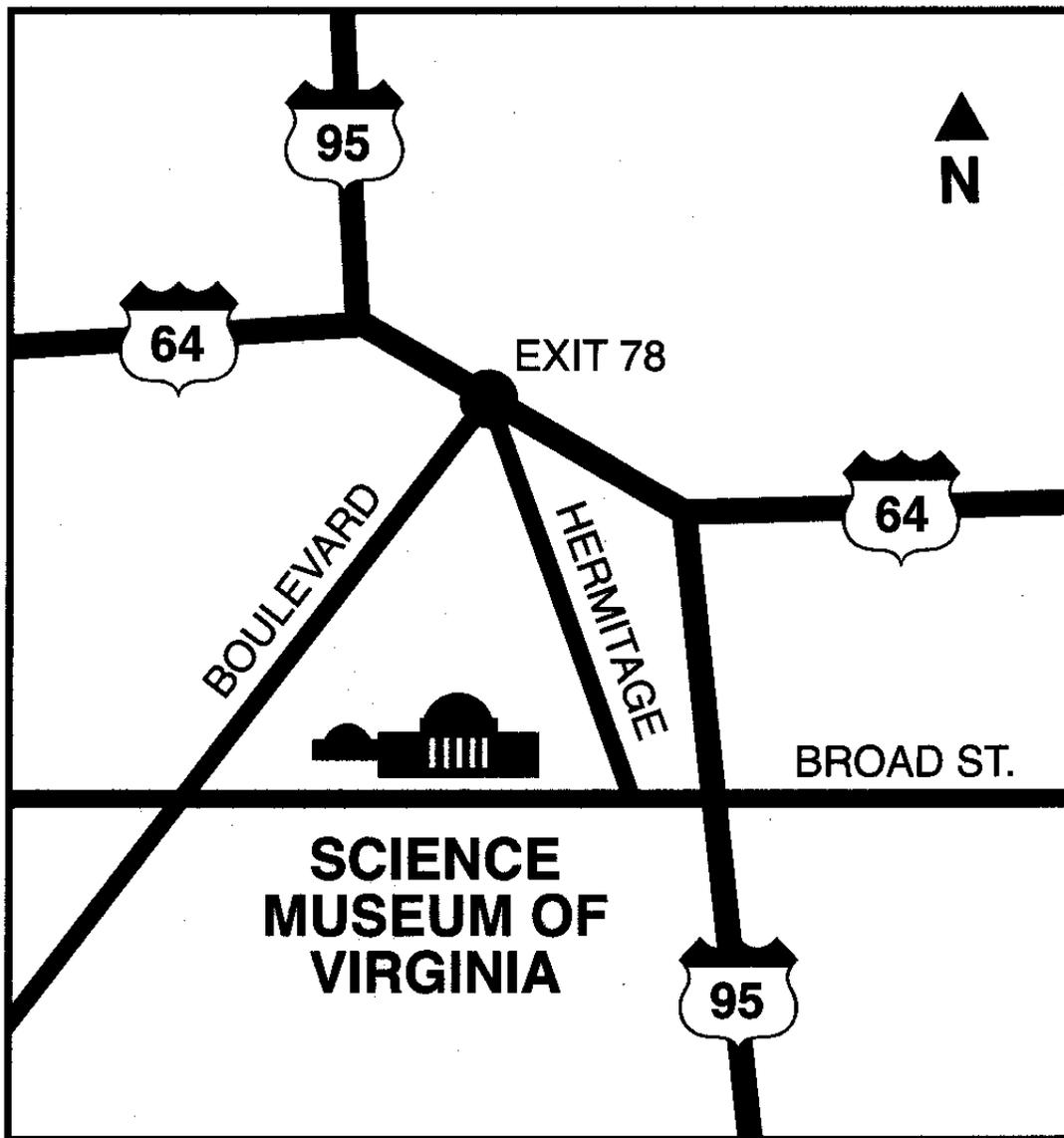
“Chemistry Among the Stars”



Stars and planets form from the collapse of portions of dense interstellar clouds, which are large assemblies of cold gas and dust (10 K) in interstellar space. The gas-phase is mainly molecular and contains many exotic species, including radicals, unusual isomers, and anions, most of which are organic in nature, while the dust particles, composed mainly of silicates or amorphous carbon, are the size of nanoparticles. The chemistry that produces these molecules from atomic precursors include both unusual gas-phase and solid-state reactions, some quite exotic. Although hydrogen is the

dominant element and H_2 the dominant gas-phase molecule, some organic molecules are very unsaturated and are labeled “carbon chains” by astronomers. The dust particles are covered with ices, mainly in the form of water, CO, and CO_2 . During the collapse, the material evolves through a number of stages starting with an isothermal era, followed by a warm-up during which the gas-phase molecular inventory changes from a mainly exotic one to one in which most organic molecules resemble standard laboratory solvents, albeit in the gas phase. Eventually a so-called protoplanetary disk is formed around the young star, and the disk can lead to the formation of planets via coagulation of the dust particles, with an initial molecular inventory at least partially determined by the chemistry that has already occurred.

MAP AND DIRECTIONS



The Science Museum of Virginia is located in mid-town Richmond, Virginia, at 2500 West Broad Street in the historic Broad Street Station designed by renowned architect John Russell Pope. The Museum is easily reached via Interstate 95 and Interstate 64.

From the north or west: Take I-95 South or I-64 East to Richmond (I-95 and I-64 run together through Richmond). From I-95, take the Boulevard exit (# 78), bear right onto Boulevard. Take Boulevard to West Broad Street (US 250 - 4th traffic light). Turn left onto West Broad Street and go two blocks. The Museum is on your left.

From the south or east: Take I-95 North or I-64 West to Richmond (I-95 and I-64 run together through Richmond). From I-95, take the Boulevard exit (# 78) and bear left onto Hermitage Rd. Take Hermitage south for 1.3 miles to West Broad Street (US 250). Turn right onto West Broad Street and proceed for one half mile. The Museum is on your right.

There is ample free parking adjacent to the museum.

THE SCIENCE MUSEUM OF VIRGINIA



The **Science Museum of Virginia** has, since 1977, occupied the building that opened in 1919 as a railroad station for use by several railroads. The building was designed by the renowned architect John Russell Pope.

Through experiential exhibits, awesome artifacts, interactive technologies, innovative programs, dynamic films, impressive live animals and interesting lab demos, the Museum inspires hundreds of thousands of guests each year to enrich their lives through science.

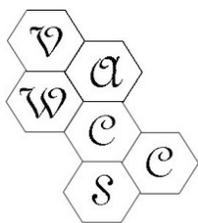
The Museum is a catalyst for inspiration, a place that sparks curiosity, encourages discovery and generates ideas in science, technology, engineering and math.

The Museum features permanent hands-on exhibits about wellness, innovation and speed—to name a few—and hosts touring exhibitions from around the world. At 76 feet, The Dome theater is the largest screen in Virginia and provides guests with the ultimate "you are there" experience. The Museum also hosts hundreds of special events throughout the year, such as overnight adventures, talks and summer camps.

The Speed Gallery features the SR-71 Blackbird, unveiling the intersection of motion and time across a world of science and technology. In 2017, the Museum opened the Dewey Gottwald Center, a sleek new structure that serves as a flexible venue for community events and blockbuster traveling exhibitions. Last September, The Forge, the Museum's new permanent makerspace was opened. The Forge harnesses the power of the maker movement, celebrates innovation and encourages guests to roll up their sleeves to create. For more information on the Museum, including a schedule of events, check out the Museum's website: <http://www.smv.org/>. The Museum has something for curious-minded guests of all ages!



WCC MEETING



The Women Chemists Committee (WCC) will hold its bimonthly lunch meeting at noon on **Friday, February 1** at Chili's on the Virginia Commonwealth University campus in Richmond (355 W. Cary Street). Free parking is available in the lot across the street. No rsvp is necessary. Contact **Kathryn Diebler** at kdd3@cornell.edu if you have any questions.

Stacey Sank will be the chair of the WCC for the Virginia Section in 2019. She is a Senior Associate Analytical Chemist at Pfizer Consumer Healthcare in Richmond. She can be reached at (716) 515-8773 or by email at Stacey.Sank@Pfizer.com. Stacey enjoys CrossFit, traveling, and spending quality time with her friends and family.

2019 OFFICERS OF THE VIRGINIA SECTION OF THE ACS

Past Chair - **Kathleen Sink Spangler** - kms2uu@virginia.edu; (804) 370-8097
 Chair - **Joseph Pompano** - joepomapano@comcast.net; (804) 852-6896
 Chair Elect - **M. Samy El-Shall** - mshelshal@vcu.edu; (804) 828-2753
 Vice Chair - **LaChelle Waller** - lmwaller@vcu.edu; (804) 828-5946
 Secretary - **Sarah E. G. Porter** - portersg@longwood.edu; (804) 334-9836
 Treasurer - **Rob Davidson** - rob.davidson@aftonchemical.com; (804) 788-6327

EXECUTIVE COMMITTEE MEETING

The Executive Committee of the Virginia Section will meet at 9:00 a.m. on Saturday, **January 26**, 2019 at Virginia Commonwealth University in Richmond, Virginia. All members of the section are invited to attend.

For questions regarding the agenda and meeting, contact the 2019 Chair of the Virginia Section, **Dr. Joseph Pompano**, at (804) 852-6896; joepompano@comcast.net. Officers and committee chairs should prepare reports for posting on the Section website and for distribution at the meeting.

2019 MEETINGS OF THE VIRGINIA SECTION

February 22 - University of Richmond - **Professor Chad A. Mirkin**, Northwestern University (**Powell Lectureship**)

March 21 - **Annual Awards Meeting**

April 12 - University of Virginia, Charlottesville - **Professor David Hudson**, University of Virginia; **Undergraduate Research Poster Session**

FEBRUARY MEETING

DATE: **February 22, 2019**
 LOCATION: University of Richmond
 Richmond, Virginia
 HOST: Dr. Raymond Dominey
 PHONE: (804) 289-8242
 E-MAIL: rdominey@richmond.edu
 SPEAKER: **Dr. Chad A. Mirkin**
 Northwestern University
 TOPIC: "Rational Vaccinology: In Pursuit of the Perfect Vaccine"



THE CHAIR'S CORNER



Happy New Year! It is an honor for me to represent the Virginia Section as its Chair for 2019. First of all, I would like to thank **Kathleen Spangler**, the Chair of the Virginia Section for 2018, for a job well done. I appreciate all the help she has given me in preparation for the upcoming year.

The section held the second annual update on our Strategic Plan on Dec. 1, 2018 at the Altria Center for Research and Technology (thanks Altria!) where several of our Executive Committee members and the Champions of our four Goals and 11 Strategies met to discuss plans to keep the Virginia Section vibrant, relevant, growing and meeting the needs of our members and our community.

Now it is time for us to focus on the new year. I hope that some of you who have never attended one of our functions will find the time to enjoy fellowship and a good meal with your fellow chemists. Over the next four months we have something for everyone. We need local section members' participation to make these events as successful as possible. On January 25th we will be meeting at the Science Museum of Virginia in Richmond, where Professor **Eric Herbst**, (University of Virginia) will be speaking about "Chemistry Among the Stars." On February 22 we will be at the University of Richmond for the W. Allan Powell Lectureship featuring Professor **Chad A. Mirkin**, (Northwestern University) speaking on "Rational Vaccinology: In Pursuit of the Perfect Vaccine." Our awards meeting will be held in March (more information coming soon), and we finish the spring meeting series at the University of Virginia, along with the Undergraduate Research Poster Symposium, on April 12, 2019. Finally, I would encourage all interested members to attend our Executive Meeting on January 26th at Virginia Commonwealth University in Richmond.

As the incoming Section Chair, I would especially like to thank the incoming officers of our 2019 Executive Committee: Chair-Elect - **Dr. Samy El-Shall**; Vice Chair - **Dr. LaChelle Waller**; Secretary - **Dr. Sarah Porter**; and Treasurer - **Dr. Rob Davidson**.

I also send a special welcome message to all high school chemistry teachers who are considering attending our meetings. I myself taught high school chemistry for 19 years at Goochland High School and Mills Godwin High in Henrico. We have much to offer you, and invite you to become aware of many of the benefits of becoming active in the Virginia Section, including the Chemistry Olympiad and the Franklin D. Kizer Distinguished High School Chemistry Teacher Award, given to a section teacher deserving recognition for excellence in teaching chemistry. We encourage you to apply for one of our grants for Virginia Section chemistry teachers of up to \$500 to support chemistry instruction. I also encourage increased participation in section activities by all under-represented groups in science, including persons with disabilities, minorities, women, the LGBT community and younger members. I urge you to contact me with recommendations of speakers, events and activities for the coming years. Also, please visit our website: <https://virginia.sites.acs.org> for the latest information about the Virginia Section.

Hope to hear from you soon,

...**Joe Pompano**, Virginia Section Chair

joepompano@comcast.net



The Visible Difference In Laboratory Science Expositions

Join thousands of chemists and scientists from around the world at Pittcon, an all-in-one event offering a high-caliber technical program, skill-building short courses and a dynamic exposition showcasing the latest scientific instrumentation and services. We are proud to have the ACS as a co-programming partner again for Pittcon 2019. Don't miss the ACS Poster Session, Symposia, Awards Lecture and other presentations led by your fellow members.

Pennsylvania Convention Center | Philadelphia, PA | March 18 - 21 | www.pittcon.org



CHEMISTRY OLYMPIAD 2019

Dear Colleague,

As chair of the Virginia Section of the American Chemical Society (ACS), I am pleased to announce that we will be participating in the 2019 U.S. National Chemistry Olympiad (USNCO). The primary goals of this program are to stimulate interest and achievement in chemistry among high school students throughout the United States and to provide recognition of outstanding young chemistry students, teachers, and schools.

My immediate task is to encourage you and your students to participate in this program. It is the responsibility of the Virginia Section to nominate students from this area to take the USNCO national examination. In order to identify these students, we have decided to conduct a preliminary screening of students through the following process:

- Teachers submit registration forms to participate in the Local Examination. The local examinations are designed for first year and for more advanced second year high school students who are taking or have taken chemistry at their high schools.
- The Online Registration begins **January 1, 2019**.
- Each teacher chooses a single date between **February 25** and **March 25**, 2019 to administer the local examination at his or her school.
- The names and contact information for the participating students must be submitted at least one week before the examination day.
- Teachers should fill out the [Goggle Form](https://docs.google.com/forms/d/e/1FAIpQLSfYaJwDxQluREBiqh7XfpdcPkCAkvETy60IKd6JCTHCvN51uw/viewform) <https://docs.google.com/forms/d/e/1FAIpQLSfYaJwDxQluREBiqh7XfpdcPkCAkvETy60IKd6JCTHCvN51uw/viewform>
- Deadline for receipt of this form by the local administrator is **February 20**.

Contact the Chair of the Olympiad Committee Ann Sullivan, asullivan@reynolds.edu if you have difficulties or need special consideration. More information is available on the section website: <http://www.virginia.sites.acs.org/>.

Students receiving the highest scores on the second year local examination may be nominated for the national exam. The national exam involves three parts administered to more than 1,000 students. Students can use past exams available at www.acs.org/olympiad to prepare.

I encourage your school to participate in this academic competition. All students who participate will be recognized and presented with a certificate; approximately 150 top scoring students receive recognition for outstanding performance at the national level. We hope this recognition will serve to stimulate interest in chemistry and to promote a positive attitude toward chemistry. Local Section award winners are invited to be recognized at the Virginia Section Awards meeting in September at VCU.

Students competing in the USNCO are eligible to be selected as members of the United States team for the International Chemistry Olympiad (IChO). For the past thirty-five years, the United States has sent a team of four students to compete with nations around the world at the IChO. The students participate in both theoretical and laboratory examinations over several days. Gold, silver, and bronze medals are awarded to the best performers, and the IChO provides students the opportunity to interact with their peers from other countries. This year the international event will be held in Paris, France, July 21-30, 2019.

Ann Sullivan (asullivan@reynolds.edu) has been appointed the USNCO Coordinator for this area. We encourage you to enter students from your school in this competition by completing the online registration form before February 20, 2019. Thank you for helping to promote chemical education in this country.

Sincerely,

Joseph M. Pompano, Ph.D
Chair, Virginia Local Section, ACS

SIDNEY HARRIS CARTOON FOR JANUARY

During the calendar year 2019, *The Bulletin* will include chemistry-oriented cartoons drawn by the eminent cartoonist **Sidney Harris**. These cartoons will be provided to all ACS Local Sections as part of an ACS Technical Division Innovative Grant Program awarded to the Division of History of Chemistry (HIST). Some of the cartoons will be accompanied by a relevant historical/philosophical/sociological text written by an individual specifically chosen by HIST for that particular cartoon. This month's Harris cartoon is shown below with commentary provided by **Dr. Jeffrey I. Seeman**, who is in the Department of Chemistry at the University of Richmond. Dr. Seeman wrote the proposal for the ACS Innovative Grant for the publication of Sidney Harris cartoons in local section publications and is coordinating the program. So far, 34 local sections have signed on to publish the Sidney Harris cartoons.



It's fun to enjoy Sidney Harris's cartoons at their most basic level. But Harris's cartoons typically include several levels of humor that are particularly relished by "insiders." Regarding the chemicals mentioned in this cartoon, Harris "think[s] these actually are from canned soup. Maybe more than one. Generally I make up names that I don't even know exist. Once I had an equation in a cartoon for the *New Yorker*, and they wanted me to assure them that it was gibberish. If it wasn't, they said they'd get a lot of angry and critical mail."

-- Jeffrey I. Seeman,
University of Richmond

"I'M ATTEMPTING TO TRANSMUTE CALCIUM
OXIDE, COPPER GLUCONATE, MANGANESE
SULFATE, TYROSINE AND BENZALDEHYDE
INTO CONDENSED SOUP."



CHEMISTRY SEMINARS AT THE UNIVERSITY OF VIRGINIA

- January 18 - **Professor Robbyn Anand**, Iowa State University
January 25 - **Professor Shannon Stahl**, University of Wisconsin-Madison
February 1 - **Professor Armanda Wolfe**, University of North Carolina at Asheville, "Screening, Isolation, and Characterization of Antibiotic Natural Products"
February 15 - **Dr. Rick Olson**, Bristol-Myers Squibb
February 22 - **Professor Matt Lockett**, University of North Carolina at Chapel Hill
March 29 - **Professor Dale Boger**, Scripps Research Institute (**HECHT LECTURE**)
April 5 - **Professor Lucy Ziurys**, University of Arizona
April 19 - **Professor Héctor D. Abruña**, Cornell University
April 26 - **Professor Jill Millstone**, University of Pittsburgh
Seminars are held at 3:30 PM in the Mechanical Engineering Building (MEC), Room 205.

The full schedule of seminars is at chemistry.as.virginia.edu/seminars. For more information, contact the Department of Chemistry at (434) 924-3344, chem@virginia.edu.

NOMINATIONS FOR RESEARCH AWARDS

The Awards Committee is soliciting nominations for 2018 ACS Virginia Section Research Awards. To nominate individuals or teams, please submit a nomination form, a nominating cover letter with a detailed description of the research to be recognized (1000 word maximum, but sufficient for an understanding of the research or invention and its relevance), any pertinent references and patents, a biographical sketch of the nominee(s), and any materials that relate to your nominee(s) or the product (brochures, reports, articles, etc.). Nomination forms are available from **Kathleen Spangler** (Kathleen.S.Spangler@altria.com) or **Yezdi B. Pithawalla** (yezdi.pithawalla@yahoo.com) or on the Virginia Section website (<http://www.virginia.sites.acs.org/>). Nominations should be sent by email to Kathleen or Yezdi. The deadline for submitting nominations is **January 15, 2019**. The Awards ceremony will be held in March 2019. Past awards have been given in these categories: *Outstanding Innovator Award, Industrial Innovation Award, Process Engineering Award, Team Innovation Award, Industrial Leadership Award, Distinguished Research Award, and Excellence in Industrial Analytical Chemistry Award*.

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Chair of the Virginia Section: **Joseph Pompano**, (804) 852-6896;
joepompano@comcast.net

NEW MEMBERS OF THE VIRGINIA SECTION

The Virginia Section welcomes these new members. As of December 1, the Section had 1,364 members.

Leah K. Aclin	Richmond	FarenLeigh Austin Ahrens	Bristow
Abdullah Altorki	Richmond	Christine Ancajas	Farmville
Hope P. Bailey	Ruther Glen	Eucolona Bonett	Berryville
Erin Bonilla	Henrico	Sophie Elise Bray	Richmond
Emily E. Brown	Charlottesville	Emily Burdige	Harrisonburg
Rachel Collins	Fredericksburg	Nelson Cornwell	Gainesville
Charles Dotse	Woodbridge	Melanie N. Eckberg	Warrenton
Elizabeth Irene Fraser	Linden	Andrew Freeman	Warrenton
Lucas Isaac Frye	Charlottesville	Lisette Gallegos	Woodbridge
Spencer L. Giles	Woodbridge	Kelly Gilliland	Williamsburg
Philip Scott Heil	Manassas	Sam Hein	Glen Allen
Joshua Hewitt	Charlottesville	Maria Higgins	Richmond
Wendy Hobbie	Woodbridge	Rebecca Hottman	Richmond
Yucheng Huang	Charlottesville	Samantha Ann Hurst	North Chesterfield
LaCrissia Jefferson	Charlottesville	Modhi Bandar Khamis	Richmond
Sadie Kiendzior	Charlottesville	Erica Lam	Harrisonburg
Randolph Lee Mauzy	Harrisonburg	Covey J. McConnell	King George
Elizabeth Melenbrink	Richmond	Karen Miller	Woodbridge
Grace Moncure	Harrisonburg	Christine A. Moustakis-Embry	Woodbridge
Naa-Kwarley Quartey	Woodbridge	Bailey Rhodes	Rockingham
Tamera Riffle	North Chesterfield	Luke Rogers	Richmond
Kelly Rodriguez	Williamsburg	Elaine Archer Scarvey	Midlothian
Marian M. Schnepfe	Woodbridge	Dallas Rebecca Shattuck	Woodbridge
Rossana Signorelli	Charlottesville	Magdalene I. Smith	Warrenton
Matt Spencer	Fishersville	Robert Herman Stanhope	Charlottesville
Tyler William E. Steele	Richmond	Amanda Nicole H. Still	Gainesville
Rodger W. Stringham	Midlothian	Eric R. Theiner	North Chesterfield
Elizabeth Todd	Harrisonburg	Emma Walhout	Williamsburg
Katherine E. Washington	Williamsburg	Derek A. White	Stanardsville
Justin Henry Wilde	Charlottesville	Pail Michael Wilson	Harrisonburg
T. Kevin Wilson	Manassas	Dariia Yehorova	Harrisonburg
Dane Yezek	Fredericksburg	Guizhi Zhu	Richmond