NOTE: This will be a virtual meeting. You may participate via Zoom. See instructions on Page 3 below.

PRE-MEETING SESSION: 6:00 pm - presentation by U of R

PROGRAM: 6:30 pm - talk by Dr. Joseph Francisco

MEETING HOST: Dr. Raymond Dominey, rdominey@richmond.edu

ZOOM HOST: Dr. Raymond Dominey, rdominey@richmond.edu

SPEAKER: Dr. Joseph S. Francisco, University of Pennsylvania

TOPIC: “A Fresh Look at the Chemistry Behind Acid Rain and Implications for Climate Geoengineering”

Dr. Joseph S. Francisco

Joseph S. Francisco is the President's Distinguished Professor of Earth and Environmental Science and Professor of Chemistry at the University of Pennsylvania. He received his B.S. at the University of Texas at Austin, and he received his Ph.D. from Massachusetts Institute of Technology. Francisco was a Research Fellow at University of Cambridge in England, and a Visiting Associate in Planetary Science at California Institute of Technology. His research has focused on bringing new tools from experimental physical and theoretical chemistry to atmospheric chemical problems to enhance our understanding of chemistry in the atmosphere.
occurring at the molecular level. This work has led to important discoveries of new chemistries on the interfaces of cloud surfaces as well as fundamental new chemical bonding controlling these processes. He was awarded an Alexander von Humboldt U.S. Senior Scientist Award; appointed a Senior Visiting Fellow at the Institute of Advanced Studies at the University of Bologna, Italy; Professeur Invité at the Université de Paris-Est, France; a Visiting Professor at Uppsala Universitet, Sweden; an Honorary International Chair Professor at National Taipei University, Taiwan; and an Honorary Professor, Beijing University of Chemical Technology, China. He served as President of the American Chemical Society in 2010. He is a member of the National Academy of Sciences and a Fellow of the American Academy of Arts and Sciences. Dr. Francisco currently serves as Associate Editor of the *Journal of the American Chemical Society*.

Additionally, this year’s *Powell Lecturer* is an eminent physical chemist, past President of the National *American Chemical Society* (2010), past President of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (2005-2007), as well as an inspiring speaker.

“A Fresh Look at the Chemistry Behind Acid Rain and Implications for Climate Geoengineering”

The two major components of acid rain are sulfuric acid (H$_2$SO$_4$) and nitric acid (HNO$_3$). Sulfur dioxide (SO$_2$) is the main precursor of H$_2$SO$_4$. Atmospheric sulfur dioxide is oxidized homogeneously by reaction of SO$_2$ with OH and O$_2$ leading to SO$_3$, which then reacts with water to form sulfuric acid. This is the now accepted acid rain mechanism for generation of atmospheric sulfuric acid. In this talk we will review the traditional acid rain mechanism and we will introduce a new acid rain mechanism that relies on the photochemistry of SO$_2$ and show how this new chemistry can be an important ingredient in the overall mechanism of acid rain formation not yet considered by current atmospheric models.

Sulfur dioxide has been proposed in solar geoengineering as a precursor of H$_2$SO$_4$ aerosol, a cooling agent active in the stratosphere to contrast climate change due to the anthropogenic emissions of greenhouse carbon dioxide. Considering the introduction of SO$_2$ in the stratosphere, the photochemistry of HOSO is critical to understanding the role of SO$_2$ mitigating climate change. The spectroscopy and photochemistry of this new species provide important insights that help in understanding the SO$_2$ cycle in earth’s upper atmosphere and the effect of its injection to cool our planet.

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**MARCH MEETING OF THE VIRGINIA SECTION**

**ANNUAL AWARDS MEETING**

March 19, 2021 (virtual meeting)

Distinguished Service Award - **Dr. M. Samy El-Shall**, Virginia Commonwealth University

Distinguished Research Award - **Dr. Hani El-Kaderi**, Virginia Commonwealth University

Industrial Leadership Award - **Dr. Greg Grover**, Contraline, Inc.

Outstanding Innovator Award - **Dr. Georgious Karles**, Altria Client Services
INSTRUCTIONS FOR ACCESSING THE FEBRUARY 26 MEETING USING ZOOM

The online presentation of the February 26 meeting will use the Zoom format. Dr. Raymond Dominey of the University of Richmond is the meeting host.

Topic: Virginia Section of the American Chemical Society (ACS) - February Meeting 2021

Time: 06:00 PM Eastern Time (US and Canada)

Date: February 26, 2021

You are invited to the 2021 W. Allan Powell Lecture as a Zoom meeting.
Pre-Meeting Session - 6:00; Presentation by Dr. Francisco - 6:30

Use this link to register in advance for this meeting:

https://urichmond.zoom.us/meeting/register/tZYkdeGqrTsiE9S5DvV0qU0aqshP0zZ1KxUi

After registering, you will receive a confirmation email containing information about joining the meeting. If you have problems registering, contact Dr. Raymond Dominey at the University of Richmond: rdominey@richmond.edu; (804) 289-8761 or (804) 289-8242.

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Chemistry at the University of Richmond

The Chemistry Department at the University of Richmond is located in the Gottwald Center for the Sciences along with the Departments of Biology and Physics. Offering both the B.S. and B.A. degrees in Chemistry and Biochemistry/Molecular Biology (BMB), the department provides excellent preparation for work or professional studies in chemistry, biochemistry, the health sciences, and chemical engineering, as well as for teaching or for legal careers. The department meets certification requirements by the American Chemical Society for the B.S. in Chemistry and in Chemistry/Biochemistry.

Our students receive a strong background in chemistry in an atmosphere of activity and support from an able and enthusiastic faculty. Class sizes are never greater than 40 and upper level classes and teaching laboratory sections generally have fewer than 20. Students enjoy the use of a wide variety of modern instrumentation both in their teaching laboratories and in research experiences. Many of our students present the results of their research work to the scientific community both by presentation at meetings on and off campus and in publications. They have the opportunity to grow and learn in an exciting and supportive setting, and when their undergraduate days are over, they find that they are well prepared for their next endeavor. The chemistry major at the University of Richmond provides a strong basic background in the major sub-disciplines of chemistry (analytical, inorganic, organic, physical and biochemistry). Richmond graduates are ready to enter the best chemistry graduate programs in the country, to enter the work force as chemists in industry and
During the Pre-Program part (6:00 - 6:30 pm) of the Zoom meeting on February 26, there will be a presentation on chemistry at the University of Richmond and the W. Allan Powell Lectureship. Dr. W. Allan Powell served the University of Richmond continuously for 34 years. For 23 of those years, he was chairman of the Chemistry Department. Dr. Powell served as the premedical and pre-dental advisor from 1959 to 1986. He was a very important part of the scientific community in Virginia, serving both on a national and regional basis in the American Chemical Society and in numerous capacities for the Virginia Academy of Sciences.

In honor of Dr. Powell, the Department of Chemistry established the W. Allan Powell Lectureship. The endowed lectureship is a regional program devoted to specific advances in the chemical sciences and each year complements the Virginia Section of the American Chemical Society at the University of Richmond. Dr. Powell passed away in 2010, but his legacy lives on in the annual celebration of the Powell Lectureship.
REPORT ON THE JANUARY MEETING OF THE SECTION

The January 29 meeting of the Virginia Section was held in a virtual format using the Zoom platform. It was organized by the Section’s Younger Chemists Committee (YCC) and hosted by Dr. Julian Bobb, Chair of the YCC. The Zoom meeting began with two pre-program sessions. Dr. Bobb welcomed the Zoom participants and described the format for the meeting. The first session involved networking using the theme of “Diversity, Equality, and Inclusion in the Workplace.” Dr. Bobb and Ms. Vanessa Lopez, Vice Chair of the Virginia Section, hosted the discussion; breakout rooms were available to facilitate interaction by the participants. In the second part of the pre-program, Dr. Bobb provided information on the Younger Chemists Committee and its recent activities, including the Virginia Section’s participation in the Eastern US YCC Partnership. Participants were asked to evaluate the pre-program sessions. About 33 persons participated in the meeting.

Ms. Lopez introduced Dr. Samy El-Shall, the 2020 Chair of the Virginia Section. Dr. El-Shall introduced Dr. Jeffrey I. Seeman, from the University of Richmond, who presented an enlightening program on the history of the Nobel Prize in Chemistry. Dr. Seeman’s talk was followed by a Question and Answer Session. The symbolic Jefferson Cup that the Section presents to each speaker will be sent to Dr. Seeman.

[Editor’s Note: This was the seventh time that Dr. Seeman has addressed the Virginia Section, going back to 1980.]

Dr. Bobb invited everyone to join the Global Women’s Breakfast on February 9. More information is on the Section website. Ms. Lopez closed the meeting by thanking Dr. Seeman for his talk and all the participants who joined the meeting by Zoom.

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ACS VIRGINIA MENTORSHIP PROGRAM

Guiding the Future of Chemistry!

Mentors provide a valuable link between younger chemists and the professional community

- To Volunteer: sign up by scanning the QR Code with your smartphone camera or copy the link
  https://www.surveymonkey.com/r/HKL2PNL
- Sign up by April 2021 for the initial 2021 roll-out
- Mentoring tools will be available for guidance

“Participating in the ACS Virginia Mentorship Program as a mentor has been a wonderful experience....I have enjoyed getting to know some younger professionals as they have begun their career journey. My mentees came with intriguing questions allowing me to reflect on what worked and didn’t work for me in my career. It has been so rewarding to see them contemplate and grow. I am proud of their progress, as they have encroached on new stages in their careers....The benefits to me have been many including opportunities to reflect, renewed look at my career, and satisfaction of giving back in a way I have received support.”
Principal Scientist, GSK Consumer Healthcare

Email Julian Bobb (YCC Chair, bobbja@vcu.edu) if you have any questions.
REPORT ON THE 2020 ACS VIRGINIA WOMEN'S LEADERSHIP WORKSHOP

The ACS Virginia Section Women Chemists Committee (WCC) and Younger Chemists Committee (YCC) hosted the ACS Virginia Women’s Leadership Workshop two-part series virtually via Zoom this past Fall. This program was designed to empower and promote current and emerging women leaders in STEM. Part I was held on September 26, 2020, featuring keynote speaker Ms. Susan Stanitski, Director of the Norfolk Virginia Department of Forensic Science. Part II was held on October 24 with keynote speaker Ms. Chanté Summers, Scientist at Pfizer Inc. in the Bioprocess Research and Development Division of Pharmaceutical Sciences. Ms. Summers currently serves as co-chair of the Minority Affairs Committee of the St. Louis ACS local section.

Breakout session topics were led on both days by various women leaders including the following:

**Part I:**
1. Leadership at Every Level by Ms. Linda Berardi, Dr. Stephanie Mabry, and Dr. Denise Walters.
2. Navigating Your Career at Every Stage by Ms. Heather Lourenco, Ms. Megan Hollis, Ms. Stacey Sank, and Dr. LaChelle Waller.

**Part II:**
1. Equality in the Workplace by Ms. Christina Haase and Ms. Kim Peerman.
2. Work/Life Balance by Ms. Liz Garrett and Dr. Sarah Golding.

There were about 50 participants per each Zoom event. Dr. Julian Bobb, Chair of the YCC, hosted Part I and opened the workshop with brief introductions, goals for the event, the workshop outline, info on YCC & WCC, and sponsorship acknowledgment. He then turned it over to the keynote speaker, Susan Stanitski. Susan spoke heavily on resilience and the skills necessary for successful leadership, including communication, awareness, honesty/integrity, relationship building, and innovation. She also emphasized that all leaders could learn empathy, patience, and caring instincts from female leaders.

Ms. Stacey Sank, Chair of the WCC, hosted Part II, following a similar format as Part I. Ms. Cathy Andrews introduced the keynote speaker, Chanté Summers, who discussed self-discovery and how it impacts your career. Chanté had an interactive presentation that focused on equality in the workplace. Passionate about social justice and equity, Chanté engages with her community to promote diversity in the sciences and to inspire youth to explore STEM.
The events encouraged participants to network and engage with each other on a more intimate smaller group setting during the breakout sessions after the keynote addresses. The breakout sessions were set up to have one female leader lead an open discussion with no more than 10 persons per group. There were multiple sessions on the same topic running simultaneously with the mentioned leaders. A lot of good conversation, questions and learnings came from the event.

Participant feedback was overall positive, and all look forward to leading and executing future related events. Excitingly, 100% of the participants found this event helpful and they all rated it as excellent or very good.

Special thank you to all the women leaders and volunteers for their time, dedication and commitment in making this event a great success. Thank you for grant funding support through ACS Corporation Associates.

Linda Berardi  Denise Walters  Stephanie Mabry  Heather Lourenco  Megan Hollis

“The event was wonderful! There was so much I learned about how to choose a workplace, networking, self-confidence, how to describe yourself and your capabilities, and how to set apart time for work and life balance. The topics and the time we had today worked great too.

Something I really appreciated was that there were people from all academic and professional levels, and that contributed a lot of different perspectives to the discussions. Made me realize a lot of us are often exposed to similar situations at different levels, and we can help each other give support and succeed.”

...Quote from a VCU M.S. Forensic Science Student

[This report and the photos were provided by Stacey Sank, Chair of the WCC for the Virginia Section]

**THE VIRGINIA SECTION MENTORING PROGRAM**

The ACS Virginia Mentoring Program provides a link between younger chemists and professional scientists. More information can be found in the article on page 5 of this issue of the *Bulletin*. Here are some comments about the program from past participants.

**MENTOR-MENTEE SPOTLIGHT #1**

**Dr. Sean Platt (Senior Scientist, Altria Client Services)**

1. **What types of activities/discussions did you participate in with your mentee?**

   Mike and I have met for a drink on the weekends as a way to get to know one another as well as set expectations. In addition, we have met after work/research to discuss whatever topic was of interest that day (whether it be questions about industry or how to tackle recent things in graduate school).

2. **How has the relationship impacted you as a mentor thus far?**

   So far, this experience has allowed me to develop a broader skill set of mentorship skills and even to reevaluate past experiences.

3. **What have you gained thus far from mentoring?**

   See response for question 2.
Michael Moody (Chemistry Graduate Student, Virginia Commonwealth University)

1. What goals did you set with your mentor? How have you progressed with your goals?
   One goal was to have meaningful discussions about industry research. We have progressed, having meetings with Sean not only gives me insight to industry research, but as I learn/progress through the PhD program I have additional insight to research as a whole.

2. What types of activities/discussions did you participate in with your mentor?
   We met in person and discussed the PhD program, industry research, and graduate school experiences.

3. How has the relationship impacted you as a mentee thus far?
   It’s inspiring talking with someone who has completed the PhD program, it has been a positive impact.

MENTOR-MENTEE SPOTLIGHT #2
Dr. Malithi Wickramathilaka (R&D Engineer, Porex Filtration Group)

1. What types of activities/discussions did you participate in with your mentee?
   Lunch out, and resumé editing.

2. How has the relationship impacted you as a mentor thus far?
   It is a very rewarding use of my downtime.

3. What have you gained thus far from mentoring?
   A friendship, and established trust with a college student who looks up to me.

Aya Djebari (Undergraduate Chemical Engineering Student, Virginia Commonwealth University)

1. What goals did you set with your mentor? How have you progressed with your goals?
   The goals we set were oriented around me finding an internship. This included resumé review, interview prep, and building a CV and resumé. In terms of applying for internships, I have outlined all the companies and positions I would like to apply for, and successfully put together a good resumé, as Mali reviewed it and I got valuable feedback.

2. What types of activities/discussions did you participate in with your mentor?
   We had met up for dinner and discussed long term and short-term goals, and got valuable feedback on my undergraduate experiences that Mali was able to input based on her undergraduate experiences.

3. How has the relationship impacted you as a mentee thus far?
   It is very helpful knowing that I have a valuable contact in a field that I want to go into as well as my mentor having the same major as me, and knowing I can contact her with any questions big or small relating to my career.
The Virginia Section provides small grants ($50 - $500) to teachers for projects involving science teaching. The grants can be used to purchase materials and equipment for activities in science classrooms and laboratories. No funds are provided for personnel costs. More information and a proposal form can be found on the Section website: acsva.org. Look for the Chemical Education tab under “About Us,” or contact Dr. Kristine Smetana at kristine.smetana@southside.edu.

The Women Chemists Committee (WCC)

The vision of the WCC is “Empowering Women throughout the Chemical Enterprise” with a mission to attract, retain, develop, promote, and advocate for women to positively impact diversity, equity, and inclusion in the society and the chemical profession.

The WCC held one bimonthly meeting in 2020 - a lunch meeting was held at noon on January 31st at Fat Dragon, prior to COVID. Unfortunately, no virtual networking meetings were planned, but will be in 2021. On February 4, 2020, the WCC and the Younger Chemists Committee (YCC) kicked off the new year by co-hosting a social networking event at the Jasper to foster networking and to enhance local collaboration. About 12 people attended the network social. The 13th annual Girl Scout Science Day at VCU’s MCV Campus was planned as a full day of hands-on scientific learning with 100+ middle school Girl Scouts, Troop Leaders and parents. Scheduled for April 18th, it had to be cancelled due to the coronavirus pandemic. WCC was scheduled to be represented at the event.

The WCC held a two-part co-planned virtual Women’s Leadership workshop event with the YCC on September 26th and October 24th. Approximately 50 participants attended each workshop. Susan Stanitski from the Norfolk, Virginia Department of Forensic Science and Chanté Summers from Pfizer in St. Louis were the designated keynote speakers for the events. Several breakout sessions were led by incredible female leaders including the following: Linda Berardi, Stephanie Mabry, Denise Walters, Heather Lourenco, Megan Hollis, Stacey Sank, LaChelle Waller, Christina Haase, Kim Peerman, Liz Garrett, Sarah Golding, Susan Morris and Kathleen Spangler. A special thank you for all of those who helped in planning and executing the event. Your time and passion are appreciated.

The WCC was unable to plan the annual WCC Chemistry Career Discussion Panel due to COVID. The event for 2021 is tentative at this time.

WCC members impacted the scientific community by participating at events including, but not limited to, the Up and Atom Women’s Leadership Breakfast (March 4th) and the Women’s Leadership Workshop (Sept/Oct).

Networking meetings will increase in 2021. Virtual luncheons will be held on 19Mar21, 10Sept21, and 05Nov21, subject to change if time/date conflict arises.

We are open to suggestions for the annual chemistry career discussion panel for October 2021. Speaker or theme suggestions from members are welcomed.

[submitted by Stacey Sank, Chair of the Women Chemists Committee for the Virginia Section]
OUTREACH VOLUNTEER OF THE YEAR AWARDS

In 2013, the Committee on Community Activities of the American Chemical Society established the Outreach Volunteer of the Year awards to recognize extraordinary outreach volunteer service within local sections. Each local section can nominate a person for the annual awards. As noted in the January issue of the *Bulletin*, Stacey Sank, Chair of the Women Chemists Committee, is the recipient of the award for 2021. In the list of previous recipients that was included in the article on her award, the name of Kristine Smetana was omitted. In 2013, she received the first Outreach Volunteer of the Award. She is the Chair of the Section’s Committee on Community Activities. Here is the complete list of outreach award winners for the Virginia Section:

2021 - Stacey Sank
2020 - Michael Hunnicutt
2019 - Julian Bobb
2018 - Heather Lourenco
2017 - Stephanie Mabry
2016 - Colleen Taylor
2013 - Kristine Smetana

SCIENCE FAIR JUDGING

Judges in any STEM field are needed for the *Virginia Regional Junior Science and Humanities Symposium (JSHS)*, which will be hosted at Longwood University on **March 13, 2021** from 8:30 am to 12:30 pm. This year’s symposium will be virtual, and judges will have the option to participate from home or to come to the campus in Farmville.

The JSHS program invites high school level scholars in STEM fields from schools across the region to present their original research projects in an oral format. The program is a joint effort by supporting schools, the research arm of the Department of Defense, and the National Science Teaching Association (NSTA). Students who win at the regional competition are eligible for scholarship money and to compete in the national competition. You can learn more about the competition from the JSHS website: [https://www.jshs.org/region/virginia/](https://www.jshs.org/region/virginia/).

Participation as a judge is an excellent opportunity to encourage and develop young scholars in STEM fields and can satisfy program requirements for volunteer or service hours. If you have any questions about the judging requirements or know someone who would be interested, please contact jshs@longwood.edu for more information. If you are ready to sign up, you can register as a judge on this website: [https://cvent.me/L833K2](https://cvent.me/L833K2). You will be able to select the competition categories to judge.
CHEMISTRY SEMINARS AT THE UNIVERSITY OF VIRGINIA

February 19 - Dr. Jillian Dempsey, University of North Carolina, “Elucidating Proton-Coupled Electron Transfer Mechanisms Underpinning the Catalytic Generation of Renewable Fuels”

February 24 - Dr. Jingguang Chen, Columbia University, “Chemical Engineering Approaches for Catalytic Reduction of CO₂”

February 26 - Dr. Joshua Figueroa, University of California, San Diego

March 5 - Dr. Dan Mindiola, University of Pennsylvania

March 12 - Dr. Sloan Siegrist, University of Massachusetts

March 24 - Dr. Frank Bennett, Ionis Pharmaceuticals (Hecht Lecture)

March 26 - Dr. Robert Kennedy, University of Michigan

April 2 - Dr. Ying Wang - University of North Carolina - Wilmington

April 23 - Dr. Linda Hsieh-Wilson, CalTech (Burger Lecture)

Seminars are now being held virtually. Contact the Department of Chemistry for more information: (434) 924-3344; chem@virginia.edu.

CHEMISTRY SEMINARS AT VIRGINIA COMMONWEALTH UNIVERSITY

February 18 - Dr. Michael von Domaros, University of California at Irvine, “Human Skin oil Oxidation and Its Impact on Indoor Air Chemistry”

February 25 - Dr. Ali Coskun, University of Fribourg, Switzerland

March 4 - Dr. Carlos Casteneda, Syracuse University

March 18 - Dr. Christy Landes, Rice University

April 2 - Barry Trost, Stanford University

April 13 - Dr. Frances Ligler, NCSU/UNC Chapel Hill, “Lighting Up Biosensors” (Mary Kapp Lecture)

April 15 - Dr. Staria Glover, Uppsala University, Sweden

April 20 - Dr. Xiaonon Gao, Shandong Normal University

April 22 - Dr. Xiaojiang Xie, Southern University of Science and Technology, China

Seminars are now being held at 4:00 pm via Zoom. Contact the Department of Chemistry for more information: (804) 828-1298; chemistry@vcu.edu

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