

# THE CAPITAL CHEMIST

*A Publication of the Chemical Society of Washington Section of the American Chemical Society*

## Join us December 9<sup>th</sup> for the CSW Meeting and Presentation of the Hillebrand Prize and Gordon Award

The next CSW Monthly Meeting will be held on December 9, 2020 at noon. This will be a virtual meeting using Zoom. You must register to participate.

Dr. Terrence R. Burke, Jr. will be presented the 2019 Hillebrand Prize for his many contributions to medicinal chemistry that have significantly advanced several areas of biomedical-related research.

Dr. Philip R. DeShong will be presented the 2019 Charles L. Gordon Memorial Award, given in recognition of exemplary service by a CSW member to the profession of chemistry, to the science of chemistry, and/or to the Chemical Society of Washington.

Following the awards presentation, Dr. Terrence Burke will present on the following topic.

### Abstract, "Taking a Bead on HIV: Developing HIV-1 Integrase Inhibitors that are Broadly Effective Against Resistant Viruses"

Human immunodeficiency virus type 1 (HIV-1), the causative agent of AIDS, was first isolated in 1983. Since then, approximately 80 million people have been infected with HIV-1 and more than 30 million people have died from AIDS-related illnesses. Approximately 40 million people are currently infected. That number continues to increase, with approximately 2 million new infections occurring every year. There is no cure and without treatment, the average life expectancy is on the order of one decade. HIV-1 is a retrovirus, and like other retroviruses, it encodes three enzymes that are essential for viral replication. Drugs that target these three enzymes are widely used in the combination anti-retroviral therapies (cART) that have dramatically improved patient outcomes. Drugs directed against the polymerase activity of reverse transcriptase were first developed in the 1980s, and protease inhibitors were developed in the 1990s. However, developing clinically relevant inhibitors of the third viral enzyme, integrase (IN) has been much more difficult. It wasn't until 2007 that raltegravir (RAL) became the first IN inhibitor to receive FDA approval. However, the high mutation rate of HIV-1 (averaging about one mutation per 10 replicative cycles) means that there are some drug-resistant variants already present in a patient when therapy is initiated. To make matters worse, HIV can develop resistance to all the known classes of drugs. Understanding the resistance mechanisms and developing drugs that are broadly effective against the known resistant variants is an important and ongoing objective of HIV research. In a more than 25-year collaboration with a team of pharmacologists, virologists, and structural biologists, we have worked to develop therapeutically relevant IN inhibitors. Much of this research has been conducted within the Intramural Program of the NIH. Our work has culminated in the discovery of potent IN inhibitors that are not cytotoxic in cultured cells. Some of our best inhibitors retain greater antiviral potency against known drug resistant mutants than the best FDA-approved IN inhibitors. X-ray crystal structures of our inhibitors bound to the prototype foamy

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#### Inside this issue:

- Join us virtually for the December CSW Meeting
- Attend the ChemLuminary Awards and support your local section
- See the results of the CSW election
- View the Illustrated Poem winners from NCW
- Read about October's Mad Spooky Science Expo



**Dr. Terrence R. Burke, Jr.**  
Head, Bioorganic Chemistry Section  
Chemical Biology Laboratory  
Center for Cancer Research,  
National Cancer Institute  
National Institutes of Health

**Register in advance for this meeting:**

After registering, you will receive a confirmation email containing information about joining the meeting.

**Please Join CSW at the ChemLuminary Awards Ceremony  
December 9<sup>th</sup>**

22<sup>nd</sup> Annual  
**ChemLuminary**  
Awards

- Chemists with Disabilities Inclusion Award
- Outstanding Ongoing CCEW Event
- Outstanding Sustainability Activities
- Outstanding Local Section Programming Related to the Promotion of Ethics in Chemistry
- Best Event or Activity Organized by, or Benefiting, the Applied Chemical Technology Professional Community

The ceremony will include a keynote address by Janet L. Bryant, recipient of the 2020 Award for Volunteer Service to the American Chemical Society. Don't miss the exciting live winner announcements and presentations of all ChemLuminary Awards given by 23 committees of the Society. Registration is complimentary for this event – register now!

<http://app.connect.discoveracs.org/e/er?s=341921710&lid=6319&elqTrackId=2FD81A2E65DE9016A1CB6C9B2A81A4D5&elq=eb56919adfb4a398cd48a3782766fb4&elqaid=2399&elqat=1>

# Results of the 2020 Chemical Society of Washington Election

Congratulations to all our new representatives for 2021! Thank you very much to all candidates for your efforts and service to the section. Thank you to all members who voted in this election!

**President-Elect, 2021**

LaKesha Perry

**Treasurer, 2021-2022**

Vacant (to be filled by appointment)

**Councilor, 2021-2023**

Raychelle Burks

Wesley Farrell

Sara Orski

**Alternate Councilor, 2021-2023**

Novella Bridges

Monika Konaklieva

Judith Faye Robinson

**Manager, 2021-2022**

Seth Cohen

Rodrigo Lazo-Portugal

Ashley Pennington

Lauren Ragle

Jacqueline Smith

Alessandra Zimmerman

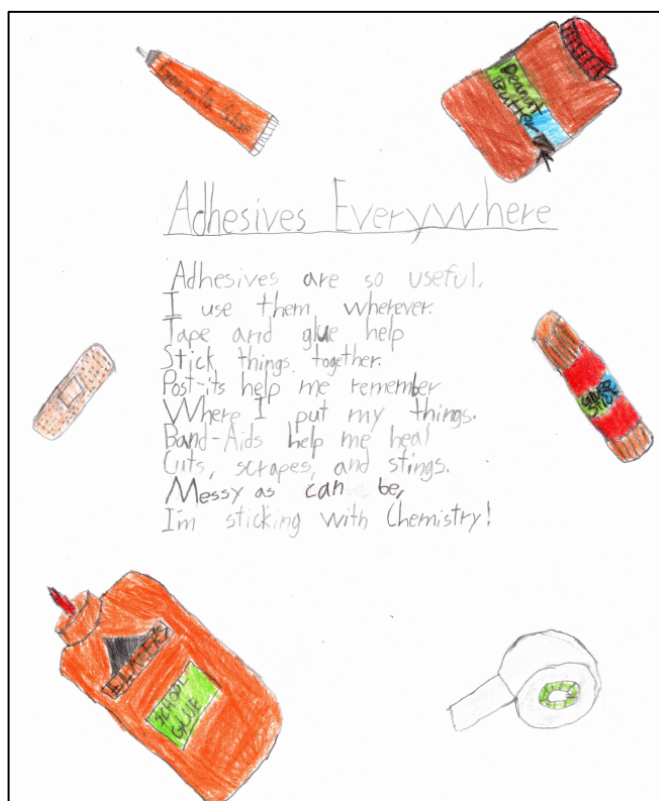
# Results of the Illustrated Poem Contest for National Chemistry Week 2020

As part of NCW 2020, students from grades K-12 were invited to share their interpretation of the theme, "Sticking with Chemistry," in the form of illustrated poems. Winners at the local section level qualified for the national contest. At the national level, first- and second-place prizes were awarded in four categories. Thank you to all schools and local sections that participated!

Evelyn Colbert, who is a second grader at Maryland International Day School, took home **second place** in the national contest for her submission in the Grades K-2 category. We also had a submission from 5<sup>th</sup> grader Nicholas Murphy. Please see their illustrated poems on the following page. Thank you to all who participated, and congratulations to Evelyn!



Submission by Evelyn Colbert



Submission by Nicholas Murphy



## CSW Table a Hit at the Mad Spooky Science Expo in October

Carissa Hunter volunteered at the Mad Spooky Science Expo in Alexandria, VA (hosted by the community Science Club) held on October 17th. The event was held outside and had COVID-19 protocols in place. The CSW table was a favorite and had a lot of participants. Thank you to all who participated!



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The **Chemical Society of Washington (CSW)** is the local ACS Chapter for the Washington, DC area and serves approximately 3,500 members.

### **2020 Officers**

#### **President**

Darryl A. Boyd

#### **President-elect**

Jennifer Tanir

#### **Past President**

Christopher W. Avery

#### **Secretary**

William Hickling

#### **Treasurer**

Wesley Farrell

Connect with us on Facebook at  
[www.facebook.com/ACSCSW](https://www.facebook.com/ACSCSW).

## CSW Calendar of Events

December 9: CSW Meeting (Virtual)/Hillebrand Prize Presentation

December 9: ChemLuminary Awards