

MATERIALS AND HUMAN CREATIVITY THROUGH TIME & PLACE

Tour of the Baltimore Museum of Art for Chemists



Dr. Camilo Rojas is an Assistant Professor in the Department of Molecular and Comparative Pathobiology and Director of Assay Development and Screening at the Johns Hopkins Drug Discovery Program. Before joining Hopkins, he worked for 17 years in the pharmaceutical industry. He carried out work in drug discovery research on enzymes involved in cardiovascular and neurological disorders. Dr. Rojas was project leader for preclinical drug discovery projects through target proposal, assay development, high throughput screening, lead nomination and lead optimization. One major focus of his current work at Hopkins has been on the identification and optimization of inhibitors of the enzyme neutral sphingomyelinase 2 for the treatment of Alzheimer's disease. In his parallel life he has been a docent at the Baltimore Museum of Art for 15 years.

Saturday, June 30, 2018 at 2:00 P.M. Baltimore Museum of Art, BMA No cost, RSVP Beatrice Salazar, Chair-2018 E-mail: beatricesalazar1@gmail.com



2018 Section Officers:

2018 SECTION COMMITTEE ON NOMINATIONS

Nominated by current Chair, Congratulations!

COUNCILORS/COMMITTEES

| UNCILORS/COMMITTEES | | | | | |
|---------------------|----------------------------|---|--|--|--|
| 1. | 2018-2020 Dana Ferraris | Chair of the Section Program Committee (McDaniel College), <u>dferraris@mcdaniel.edu</u> | | | |
| 2. | 2018-2020 Jan Kolakowski | Chair of Section Finance/Investment Committee, jek6042@gmail.com | | | |
| | | Member of ACS Committee on Economic and Professional Affairs | | | |
| 3. | 2017-2019 Merle Eiss | Member of ACS Meetings and Expositions Committee, meiss32@aol.com | | | |
| 4. | 2017-2019 Paul Smith | Member of ACS Local Section Activities(LSAC) Committee | | | |
| | | Associate/Chair of Long Range Planning Committee (MARM-2019) (UMBC), pjsmith@umbc.edu | | | |
| 5. | 2018-2020 Stephanie Watson | Member of the ACS Committee on Committees (ConC) Liaison on | | | |
| | | Nomenclature, Terminology and Symbols (NIST), stephanie.watson@nist.gov | | | |

ALTERNATE COUNCILORS/COMMITTEES

| 1. | 2017-2019 Kelly Elkins | Member of the ACS Ethics Committee, <u>Kmelkins@towson.edu</u> |
|----|------------------------------|--|
| 2. | 2017-2019 Pumtiwitt McCarthy | Chair of Publicity Committee, <u>pumtiwitt.mccarthy@morgan.edu</u> |
| 3. | 2017-2019 Sandra Young | Chair of Community Outreach Activities Committee, sandra.k.young26.civ@mail.mil |
| 4. | 2018-2020 Michele Foss | Committee TBA, Foss.Michele@gmail.com |
| 5. | 2018-2020 Sarah Zimmerman | Chair of Member Assistance Committee,* scatzim@gmail.com |

^{*}New 2018 Committee as per Maryland Section Governance Bylaws, nominated by current Chair, Congratulations! https://www.acs.org/content/dam/acsorg/about/governance/charter/lsbylaws/maryland.pdf

MEMBERS-at-Large

Suzanne Procell, Edgewood Chemical Biological Center, suzanne.a.procell.civ@mail.mil
Rose A. Pesce-Rodriguez, Army Research Laboratory, rose.a.pesce-rodriguez.civ@mail.mil
Sara Narayan, Stevenson University, SNARAYAN@stevenson.edu
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George Farrant, gfarrant@yahoo.com

Awards Committee Chairs & Local Section Committees Chairs

Maryland Section on the Web: Webmaster:

<u>maryland.sites.acs.org</u> Pumtiwitt McCarthy, <u>Pumtiwitt.McCarthy@morgan.edu</u>

Chesapeake Chemist Editor-in-Chief: Contact us at:

Pumtiwitt McCarthy, <u>Pumtiwitt.McCarthy@morgan.edu</u> <u>acsmarylandsection10@gmail.com</u>

Message from the Chair

Dear colleagues:

What a wonderful year so far!

In April, the Maryland Section of the American Chemical Society held the U.S. National Chemistry Olympiad (USNCO) at the Community College of Baltimore County (CCBC). It was a success. Fourteen high school students competed with about 1300 students nationwide for the opportunity to participate in the International Chemistry Olympiad (IChO). Out of 1300 students, 20 students were selected to participate in a chemistry Camp in preparation for the international competition. The list of the first 144 students (honors list) with high scores in the national competition was recently announced. Kevin Wang, a Maryland participant was in this list!

May brought plenty of rain, flowers and chemistry. Our annual tour to a local beer brewery was well attended and the beer was great! This year we toured the Peabody Heights Brewery in the center of Baltimore near Johns Hopkins home-campus. See our tour report in this issue.

We also celebrated our senior chemists (50/60/70-years ACS- involvement) with a luncheon at Matthew's 1600. Good food and atmosphere to enjoy a conversation with our senior chemists. The power point slide "50-Years Then and Now" presentation by Dr. George Peter Lozos, one of our senior chemists is enclosed in this issue. It made us laugh; I hope you will laugh when you go over it too. The presentation can also be accessed in the website's menu, "Virtual Workshops" tab. We also included the interesting career story of Dr. Ronald William Berninger, read the article in *Successful Activities*, May issue.

We are looking forward to a couple of events for chemists this June:

- Tour of the Montebello Water Filtration Plant-I The tour will take place on Friday, June 22, 2018 at 9:00 A.M. at 3901 Hillen Rd. Baltimore, MD 21218. Join us and bring a friend or your students! See details in the HOME page of the Maryland section's URL http://www.maryland.sites.acs.org
- Tour of the Baltimore Museum of Art (BMA) BMA Highlights The theme will be "Materials and human creativity through time and place." Saturday, June 30, 2018 at 2:00 P.M. save the date!

Continue to look for the 2018-Information is key calendar - It will keep you informed in detail about activities at the Maryland local section. Our webpage has been updated. Keep in touch. Give us ideas on what you would like to see that could help address your chemistry needs. Your views on past activities are also welcome.

Beatrice Salazar

Maryland Section Chair-2018

Information is Key

The following includes a background on ACS and the Maryland Local Section, information on our website, and executive committee meetings and more section's programs for 2018. Please check the *2018 Year Events* to see in detail each month of activities. For information on previous month's events or other past activities please refer to Chesapeake Chemist publications: <u>January</u>, <u>February</u>, <u>March</u>, <u>April</u> and <u>May</u>.

III. Executive Committee Meetings

Plans for this year include four regular executive committee meetings:

First executive committee meeting: **Monday Feb. 12, 2018** at Notre Dame of Maryland University **Second** executive committee meeting: **Tuesday, April 24, 2018** at Stevenson University

Third executive committee meeting in September 2018, exact date TBA

Fourth executive committee meeting in December 2018, exact date TBA

Exact dates will be announced approximately two weeks prior to each meeting. Please allocate time in your schedules. An extra meeting will be assigned to discuss MARM-2019. Dates could change. Please use our website to stay informed on exact dates. For minutes of previous meetings please check the website.

If you have any event to be considered please contact us before each month's meeting.

The Maryland Section Program for 2018 continues...

All ACS members are welcome to our local section activities, lectures and events. They could bring new initiatives to us and ask for support on their activities. We are good at collaborating.

JUNE

- 1. June 22, 2018 at 9:30 A.M. Montebello Water Filtration Plant-I Tour for Chemists. Speaker Richard Nuss, Chemist III, Baltimore City Department of Public Works, DPW

 The Local Maryland Section has been giving a tour at the Montebello Water Filtration Plant-I (MWFP-I) since 2015 to high school chemistry students, teachers and the community. This is the first year the tour is being offered to members of the local ACS Maryland section (adults only). The tour will include: history of the plant since its construction in 1915, its impact on public health and includes a guided tour through the plant following the process of water treatment and water purification. MWFP-I is the oldest of three water filtration plants in Baltimore. It is 100% operational and provides clean drinking water to more than 1.8 million residents of Baltimore and surrounding counties. Chemists will appreciate the science involved in each step of the process of water treatment and purification. This exciting and unforgettable tour showcases how chemistry is effectively applied for the benefit of the community. See home-page or upcoming events. Contact/RSVP Beatrice Salazar
- 2. <u>June 30, 2018 at 2:00 P.M. BMA Tour</u> "Materials and human creativity through time and place." The tour will focus on different media (wood, ceramic, bronze, marble, oil, steel, etc.) used by artists to express their creativity in different places and at different times. Saturday or Sunday <u>Contact/RSVP Beatrice_Salazar</u>

An afternoon at the Peabody Heights Brewery

The fourth brewery tour sponsored by the Maryland section of the American Chemical Society took place on Saturday, May 12, 2018. Twenty-one people attended this tour. There was a great tour on the history of baseball at the original baseball stadium: the <u>Old Oriole Park</u> located where the brewery is located today. Babe Ruth played on these grounds where people were introduced to the game that keeps families and friends together as of today. Today, the beer of the Peabody Heights Brewery continues this tradition!

Entrance, bar and Baseball tour ...



The baseball tour was given by the company's owner Mr. Richard O'Keeffe, who explained the history of the team, the stadium and the evolution of the



team to the new Orioles stadium. The brewery moved to Baltimore in 2012; since then they have improved their beer products as well as their





sales. The trademark beer is the Bohemian beer but the brewery have about 30 different types and flavors.

The brewery tour by Graam Crisler:



In this area the beer ingredients are mixed; sugar (determines the amount of alcohol, it may come from Barley), water, hops (added for the first time in Germany around the 1300's determines the bitterness of the beer and gives aroma) and yeast (added in the cones, fig.1 below, produces fermentation, which is allowed 2-3 times; as the yeast eats sugar it produces Carbon dioxide and ethanol). The first mixture is transferred to larger tanks by hoses. The temperature is kept down to avoid bacteria growth when wort is formed and to control the amount of alcohol formed (wort is the first liquid after mashing during beer brew; wort contains the sugars that will be fermented by yeast to produce alcohol. After yeast, malt and different grains are added to produce different flavors. Pilsner contains the most basic hops, about half the amount of stronger beers which use about a full pound of grains. After 21 days beer oxidizes and loose flavor (except stout that could age).

C₆H₁₂O₆ in the presence of the yeast enzyme zymase reacts to produce 2C₂H₅OH +2CO₂







The temperature, pressure and amount of CO_2 is monitored here (fig.2 center). The beer goes through filters (fig.3). Finally, the tanks are cleaned between batches with caustic chemicals that chew on organic matter, this occurs for about 30 min. The Ca deposited with bacteria is mixed with H_2O_2 which breaks down into H_2O and CO_2 . The filters fossilized algae forms a cake inside the micron-filters so the liquid is pressurized to go through them. As the desired product is obtained the beer is packed in Aluminum cans or glass bottles.



At the end of the tour... enjoy the beer flights and taste the different types of beer! This was a good Saturday afternoon, we enjoyed learning about baseball and beer, meeting friends of ACS Maryland and drinking beer!





The annual beer tours in the Maryland area to show the process of beer making has become of interest among chemist. Maryland section is preparing a Science café where we will discuss the chemistry of beer in more detail. The science café will be announced in the Chesapeake Chemist in the near future. Keep in touch!

http://www.peabodyheightsbrewery.com/ Contact: Louise Hellwig

June, 2018

CONGRATULATIONS Senior Chemists!

Mr. Orley R. Bourland Jr.

Frederick, MD Emeritus Member

Mr. D. N. David

Annapolis, MD Emeritus Member

Dr. Warren W. Hillstrom

Bel Air, MD Emeritus Member

Dr. Yuan Chuan Lee

Johns Hopkins Univ. Baltimore, MD Emeritus Member

Mr. Herman Adolph Bode

Street, MD Emeritus Member

Dr. Richard L. Hall

Towson, MD Emeritus Member

Dr. Irving Wender

University of Pittsburgh Pittsburgh, PA Emeritus Member Mr. Harold L. Gotoff

Baltimore, MD Emeritus Member

Mr. John K. Detrick

Cockeysville, MD Emeritus Member

Mr. Clare L. Milton Jr.

Slack Assoc.
Baltimore, MD
Emeritus Member

Dr. Robert Caldwell Badger

Frederick, MD Emeritus Member

Dr. Ronald William Berninger

Baltimore, MD Emeritus Member

Dr. James Anthony Kelley

NCI Frederick Chem Bio Lab 376 RM 106 Frederick, MD (H) Silver Spring, MD Regular Member

Dr. George Peter Lozos

Baltimore, MD Regular Retired Member Dr. John F. McCarthy

Adamstown, MD Emeritus Member

Mr. Thaddeus John Novak

Bel Air, MD Emeritus Member

Dr. Joseph E. Saavedra

Thurmont, MD Regular Retired Member

Dr. S. Stoney Simons Jr.

Galesville, MD Emeritus Member

Dr. Richard Roman Smardzewski

Bel Air, MD Emeritus Member

Dr. Stanley A. Sojka

Frederick, MD Emeritus Member

Dr. Robert E. Tarney

Rising Sun, MD Emeritus Member

Dean W. Robinson

Bradenton, FL Emeritus Member

Maryland Celebrated its Senior Chemists

On Friday, May 25th the Maryland Section honored 50/60/70-year members. These Senior Chemists were recognized for their loyalty and service to ACS at the local and national levels. We had a luncheon at *Matthew's* 1600, 1600 Frederick Road Catonsville, MD 21228. The honorees received a Certificate Award from ACS recognizing the loyalty, enthusiasm for chemistry and scientific research of these fantastic Chemists who are members of the society for more than 50 years! Two of our honorees talked to

us about their life experience as chemists: Dr. George Peter Lozos presented several slides recognizing the chemistry achievements and changes in the chemistry field in the past five decades. We laughed and enjoyed Dr. Lozos Power Point Presentation which is also available to all in our website. In addition, Dr. Ronald Berninger talked to ACS Maryland Section members about his career. He included several entertaining anecdotes on his research experience

at Deidrick's. You can enjoy the short video of this entertaining experience (<u>virtual workshops</u>). During the luncheon we learned of



one of our most popular outreach programs and enjoyed some of the experiments (<u>virtual workshops</u>) that our local section members prepare for children in the community.



Click matthews1600.net/more-about-us/ to learn about the history of this building erected circa 1862.

Presentation: STEM Outreach in our communities

Our speakers Dr. Sandra Young and Dr. Rose Pesce-Rodriguez have been active in K-12 for nearly 20 years. They have established programs for children and adults in Baltimore City, Howard, Hartford and Carroll counties. They presented the development of their STEM outreach programs and involved the audience in some hands-on activities that spread excitement about chemistry, *the central science*.



Congratulations to ACS Emeritus Members: Dr. George Lozos, Dr. Clare Milton and Dr. Ronald Berninger (50, 79, 50 year-members of American chemical society)

For more photos of the event please see section's URL: http://www.maryland.sites.acs.org and the Chesapeake Chemist 2018 May and June issues - click on Event-photos.















June, 2018

New Program for Senior Chemists



Announcement from your Maryland Local Section:

ACS Senior Chemists: Message from the Senior Committee Chair

https://www.acs.org/content/acs/en/membership-and-networks/senior-chemists.html

Start a New Senior Committee at your Local Section:

https://www.acs.org/content/dam/acsorg/membership/senior-chemists/senior-chemists-starter-kit.pdf



The Senior Chemists Committee has a NEW HOME on ACS.org! Visit us

at www.acs.org/seniorchemists

Get Information on How You Can Make a Difference!



SHARE YOUR EXPERIENCE/EXPERTISE



HELP THE NEXT GENERATION



GIVE CAREER ADVICE

VISIT US TODAY and GET INVOLVED!

If you have any questions, would like to share your thoughts, or would like to know more about engaging your Local Section senior chemists, send a message to seniorchemists@acs.org.

ACS SENIOR CHEMISTS COMMITTEE

VISION: Improving lives using the knowledge and experience of senior chemists

MISSION: Address and support the needs and ambitions of senior chemists and utilize their experience and knowledge

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Chemistry in the Library



Final session:

Carroll County Library System Eldersburg Branch Sat 21 Jul @ 1pm https://library.carr.org/



Back by popular demand (2 new sessions):

Enoch Pratt Free Library Southeast Anchor Branch 3601 Eastern Ave, Baltimore, MD 21224 Sat 7 July 2018 @ 2pm http://www.prattlibrary.org/ Enoch Pratt Free Library Govans Branch 5714 Bellona Avenue, Baltimore, MD 21212Sat 14 July 2018 @ 2pm http://www.prattlibrary.org/

SUCCESS STORIES: 2018 U.S. National Chemistry Olympiad Participant Made Honors

High School student Kevin Wang received honors in his U.S. National Chemistry Olympiad. The competition took place at Catonsville Community College of Baltimore County, CCBC. Kevin participated in the Maryland section with other 13 nominated students. About 1300 students competed nationwide and Kevin scored among the first 144 students. He traveled from Pennsylvania to Baltimore to take the exam in the morning of April 14th. He is grateful to the Maryland section and USNCO



coordinator for allowing him to take the exam in Maryland, his efforts paid off. Congratulations Kevin! The Maryland Section is proud of you.

SUCCESS STORIES Update on Student Travel Awards and its impact to Chemistry Safety

Sarah Ashleigh Wirick and her professor Christopher Stromberg research were featured in C&EN, March 26 edition. Congratulations!

Some safety eyewear fails to protect against ultrafast lasers

Users should test eyewear under their own working conditions, researchers suggest by Jyllian Kemsley

March 26, 2018 | Vol 96, issue 13

C&EN website https://cen.acs.org/safety/lab-safety/safety-eyewear-fails-protect-against/96/i13

To Maryland Section Executive Board: "Thank you. That feature was a direct result of us being able to attend the meeting, which we couldn't do it without the Maryland Section's support! Thanks, Chris" Christopher Stromberg.

Abstract ID: 2860140

Femtosecond laser eyewear protection: Measurements and precautions Maximilian Riedel-Topper ¹, <u>Sarah Wirick</u>¹, Joshua A. Hadler², Brian G. Alberding³ Edwin J. Heilweil³, <u>Christopher J.</u> Stromberg¹

¹Department of Chemistry and Physics, Hood College, 401 Rosemont Ave, Frederick, MD 21710 ²Applied Physics Division, Physical Measurement Laboratory, NIST Boulder, CO 80305 ³Radiation Physics Division, Physical Measurement Laboratory, NIST Gaithersburg, MD 20899

Unlike continuous-wave lasers, femtosecond pulsed lasers have wide spectral bandwidths and extremely high peak power. Lasers such as Ti:Sapphire oscillators also have an adjustable center wavelength. These factors become an issue when selecting eyewear protection, as the eyewear may not protect the user from the entire laser spectrum, and the integrity of the eyewear material may be compromised by the high peak powers. This study was a continuation of a previous study that measured the effective optical densities of commercially donated filter samples. In this study, the same samples were tested to characterize their potential modes of failure using a 1 kHz Ti:Sapphire regenerative amplifier which generated ca. 80 fs pulses with various wavelengths, powers, repetition rates, and beam spot sizes. For some filters, the wide bandwidth and variable center frequency of the laser caused the observed optical densities to be significantly lower than the supplier's rating at the center frequency. The observed modes of failure included melting, burning, bleaching, and saturable absorption behavior. Several filters transmitted several orders of magnitude more light than the

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supplier's suggested optical density ratings without any physical signs of damage. In general, plastic lenses were considerably more likely to fail, while all glass samples tested maintained their integrity under the conditions tested. The results of these experiments indicate that eyewear protection should be tested under the given experimental conditions to determine their efficacy before use.

SUCCESS STORIES: Update on Project SEED Alumni

Corshai Williams, formerly a student at Western High School, was a Project SEED high school student at Morgan State University during the summer of 2013 (working with Dr. Yousef Hijji) and the summer of 2014 (Dr. Pumtiwitt McCarthy). We have now received word that she has been accepted at MIT for a PhD in Chemistry with a full scholarship and teaching assistant position! Congratulations Corshai! The ACS Project SEED summer research program allows economically disadvantaged high school students to intern in an academic, industrial, or government laboratory. Corshai's stipend was paid by the national ACS (50%) and by the Maryland

Section.https://www.acs.org/content/acs/en/education/students/highschool/seed.html

SUCCESS STORIES: 2018 Outreach Volunteer of the Year Award

Dr. Angela Sherman (Chemistry Department Chair at Notre Dame of Maryland University and Maryland Section Treasurer) has received the 2018 Outreach Volunteer of the Year Award for her commitment to the local section and the outreach programs. An announcement of the award and her picture came out in February 8th on the ACS website.

The Remsen Award is announced!



The Ira Remsen Award was inaugurated in 1946 in honor of Ira Remsen who was the second President of Johns Hopkins University.

The **73rd Ira Remsen Award** (**2018**) will go to Professor Chad Mirkin of Northwestern University. The award will be presented on November 15, 2018 at Johns Hopkins University.



Remsen Award to Chad Mirkin

Chad Mirkin, the George B. Rathmann Professor of Chemistry and director of the International Institute for Nanotechnology at Northwestern University, is the winner of the \$2,500 Remsen Award, presented by the ACS Maryland Section for outstanding achievement in chemistry. The award is named after Ira Remsen, Johns Hopkins University's first chair of the chemistry department.

Among Mirkin's achievements is the invention of spherical nucleic acids, which have applications including extracellular and intracellular



CREDIT: SAM WILLARD PHOTOGRAPHY (DOUDNA); COURTESY OF

molecular diagnostics, gene regulation, and immune modulation. He will present a lecture on Nov. 15 at Johns Hopkins University.—LINDA WANG

Please send announcements of awards to l_wang@acs.org.

Announcements

CALL FOR NOMINATIONS: MD ACS OFFICER POSITIONS

Nominations are solicited from the membership for positions as officers within the Maryland Section of ACS. Nominations may be send to the Chair of the Nomination Committee, Dr. James A. Saunders at jsaunders@towson.edu either as self-nominations or to nominate a colleague. Position that are elected in 2018 are: 1 Chair-Elect 1 Treasurer 1 Secretary 5 Members At Large 2 Councilors The Chair-Elect term is 3 years: candidate is Chair-Elect for one year, and then moves to Vice-Chair for one year, followed by Chair for the last year. Two Councilor positions are also open for a 3-year term in 2018. Members-at Large, Treasurer and Secretary are elected each year.

Undergraduate and Graduate Student Travel Grants

Extension of deadline for student travel grant application for ACS National Meeting & Expo,
Nanoscience, Nanotechnology & Beyond
August 19-23, 2018, Boston, MA

Undergraduate and Graduate students may apply to the ACS Maryland Section to receive up to \$200 for travel and expenses to attend the August national ACS meeting in Boston, two travel awards will be provided. This is open to ACS members who are enrolled full time in a college or university in the Maryland Section. The application should include:

- The meeting you plan to attend along with location and dates
- Your ACS membership number
- An estimated budget (cost for travel, registration, lodging, and meals)
- A 250 word essay describing your motivation for attending the meeting
- A copy of your abstract and the abstract number ACS gave it when your abstract was accepted
- A letter of support from your faculty advisor.
- Please state what would be the most convenient way for the check to be made out, in the event you are awarded a travel grant.

Applications will be accepted until **August 1**. Decisions will be announced August 3.

To a certain extent the decisions will be made on a first come, first served basis; however the goal is to allow students from as many schools as possible to attend, so special consideration will be given to the first student who applies from each college/university. We especially encourage schools which have never had a student apply for a travel grant, to consider applying for a travel grant this year. Submit your application to Louise Hellwig by e-mail: Louise.Hellwig@morgan.edu. If you are awarded a travel grant, the following items need to be submitted after the meeting: • Photocopies of receipts totaling the amount of the award. • Trip report summarizing your experience at the meeting and photos of yourself at your poster at the meeting so we can proudly post them on the section website.

ACS Call for papers Present Your Innovative Work at the 2018 Green Chemistry & Engineering

<u>Conference.</u> The call for abstracts is now open! Submit abstracts for presentation at the <u>22nd Annual Green Chemistry & Engineering Conference (GC&E)</u>, to be held June 18-20, 2018, in Portland, OR. The theme for the 2018 GC&E is "Product Innovation Using Greener Chemistries."

REMINDER:

Receiving the Chesapeake Chemist

Hopefully, if you are reading the Chesapeake Chemist this month, you are receiving it via e-mail from us. We went to electronic-only mailings to our MD ACS membership in October 2006.

Changing your e-mail address? Moving out of the MD ACS area? E-mail changes can be updated either by:

- E-mailing us at <u>acsmarylandsection10@gmail.com</u> give us your member #, full name, and e-mail changes and we can ensure that your records are updated with National ACS.
- Contacting the National ACS membership division: 800-333-9511 (US only) or service@acs.org

To ensure that you receive the Chesapeake Chemist, please add the MD ACS e-mail acsmarylandsection10@gmail.com.

If you are a member who currently doesn't receive the Maryland ACS Chesapeake Chemist but download it from our website, it is possible that National ACS does not have your e-mail address on file. If you want to receive the Chesapeake Chemist via e-mail, please e-mail us at acsmarylandsection10@gmail.com – give us your member #, full name, and e-mail address and we can ensure that your records are updated with National ACS.

The current edition and previous editions of the Chesapeake Chemist can ALWAYS be obtained via our website: http://www.maryland.sites.acs.org – please see the Newsletter Archive link on the left-hand side of the website.



MATERIALS CHARACTERIZATION

MORPHOLOGY CHEMISTRY STRUCTURE

OM / SEM / EDXA / TEM / SAED, EPA / WDXA XRF / ESCA / AUGER / XRD DSC / TGA / MFTIR

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