

Eastern Analytical Symposium Going Virtual



See articles on pages 5-7.



THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

In my previous column I continued my "Great Books in Chemistry" series with an examination of 16th Century works relating to mining and metallurgy that contained a good deal of early chemistry. The first publication that can really be called a textbook of chemistry is, in my opinion, "Alchemia" by Libavius.

Libavius (Libau) born in Saxony in 1540; died in Coburg in 1616; was the son of a weaver. He somehow gained entrance to the university at Jena where he earned an M.D. He became a teacher, including a stint as Professor of history and poetry (!) at Jena. For the rest of his career he alternated between medicine and teaching, developing an interest in chemistry. In his medical practice he used chemical medications including, following Paracelsus, potable gold. He gave credence to transmutation in his writings, but warned against fraudulent practices by pseudo-alchemists. The general tone of his writings, which were voluminous, is that of a careful academic.

"Alchemia" was published in 1597 at Frankfurt and is in Latin, the scholarly language at that time in Western Europe. It is a very long large-format lavishly illustrated book that must have been very expensive. Oddly enough it was printed on rather poor paper, in several parts, some of which are now extremely rare. Part I has plans for Libavius' ideal chemical house that includes laboratories, a museum, a wine cellar (no doubt conducive to chemical thinking), and gardens.

As Partington, in Volume 2 of his "History of chemistry" states: "Libavius' Alchemia is an excellent practical text-book ... a clear, concise and sensible style, entirely different from the rambling, bombastic, and obscure verbiosity of Paracelsus or the alchemical authors." Alchemy is carefully defined and generally supported, but without overly enthusiastic claims.

"Alchemia" includes some initial attempts at qualitative analysis especially of mineral waters. At the time they were widely used in medicine. Libavius shows that most natural mineral waters contain a variety of dissolved minerals including, depending on the source, common salt, nitre, vitriol, and alum. He does not distinguish between inorganic and organic compounds. There is a clear description of the preparation of nearly pure ethanol, vinum ardens, from wine or beer. When litharge (lead oxide) is dissolved in vinegar the crystalline sugar of lead is produced (so-called because lead acetate allegedly tastes sweet). (Safety note to readers: do NOT try this!) Heating lead acetate yields a "quintessence" – volatile and flammable (acetone).

Complete copies of this foundational textbook, "Alchemia", are rare. I have never seen or held one. Authoritative sources denote it as the first real chemical text, and so it finds its place among the Great Books of Chemistry.

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Indicator>

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November Calendar

NEW YORK SECTION

Sunday, October 25, 2020 NYACS National Chemistry Week See page 14.

Thursday, November 5, 2020 Long Island Subsection See page 8.

Tuesday, November 10, 2020 Biochemical Topical Group *See pages 8-9*.

Friday, November 13, 2020 New York Section Board Meetings See page 8.

Wednesday, November 17, 2020 Westchester Chemical Society See pages 9-10.

Thursday, November 18, 2020 Metro Women Chemists' Committee See pages 10-11.

Thursday, November 18, 2020 NY/NJ Section Society for Applied Spectroscopy See pages 11-12. (See SAS schedule on page 16)

also

Thursday, December 3, 2020 Westchester Chemical Society See pages 13-14.

Thursday, December 3, 2020 Long Island Subsection Holiday Seminar See page 14.

Date TBD, January XX, 2021 New York Section's 2021 Sectionwide Conference See page 15.

Deadline for items to be included in the DECEMBER 2020 issue of *The Indicator* is OCTOBER 28, 2020

NORTH JERSEY SECTION

Monday, October 19, 2020 North Jersey Meetings See page 7.

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To Comply With the Federal Regulations Regarding Social Distencing Necessitated by the COVID-19 Virus, it became imperative to cancel or postpone all Section Meetings for the past nine months.

Details of any relevant meetings will appear in the appropriate future issues of *The Indicator*.

The Indicator is posted to the web around the 15th of the previous month at

www.TheIndicator.org

2020 EAS IS GOING VIRTUAL!

The EAS Governing Board has made the decision that the 2020 Eastern Analytical Symposium & Exposition will be held virtually this November.



All EAS in-person meeting favorites, invited talks from academia and industry experts, contributed presentations from attendees showcasing their recent research achievements, the exposition of latest technologies and products, etc., will be available at the virtual event.

Furthermore, without the limitation of a physical venue, all the presentations in the technical program will be made available on-demand November 16 through De-

cember 31, 2020 for all registered attendees. This will allow our attendees to watch presentations at a time that fits best into their schedule.

The technical presentations will be offered in one of the following formats:

- Live sessions: Real-time presentations will be broadcast at a scheduled time followed by live Q&A with session presenters. We encourage all attendees to join us for these realtime presentations.
- On-Demand sessions: Pre-recorded presentations will be available for viewing at the event and until Dec. 31st.
- · Poster sessions: The posters will be available for viewing at the event and until Dec. 31st.

Attendees will have opportunities to engage in discussion with the presenters via the virtual platform. Click here to view our live, on-demand and poster session schedule.

We are offering our most popular short courses over a period of several weeks from Oct. 5-Nov. 13, to give attendees ample opportunities to attend one or more short course(s) with minimal impact to their work schedule. The short courses will be presented via a video conference platform, allowing for interactions with our all-star instructors in real-time. Click here to view our short course schedule.

A virtual Exhibition Hall will provide opportunities to browse for products and interact with exhibitors. Attendees will be able to visit 40+ exhibitors, displaying the latest in analytical instrumentation, supplies, and services. Attendees can chat, interact, and network with exhibitor staff and other attendees, while getting answers to your analytical questions. View exhibitor videos and product showcases, download information on products and services, schedule sales meetings. Participate in exciting games/activities to win prizes, while seeing the latest in analytical instrumentation, services, and supplies. The live Expo hours are November 16 through 19 from 9 am to 4 pm, with on-demand content continuing until December 31, 2020.

Registration for the 2020 EAS includes all the live features and more during the actual symposium as well as on-demand access to the full technical program after the meeting dates. The virtual platform will allow attendees from around the world to access presentations, visit virtual booths, and network with fellow attendees from their computers, phones, or tablets. In the light of this challenging time, we have tried our best to keep registration fees at a minimum; full- time students will be able to attend the symposium for FREE.

We hope you will join us this November for our first ever virtual symposium, whether you are a regular participant or a first time attendee.

Judy Lin 2020 EAS President

SOME OF THE NY/NoJ SESSIONS IN THE TECH PROGRAM

Tues, Nov. 17 - Live via the virtual event platform

New York Microscopical Society Ernst Abbe Award

Honoring Brian J. Ford, Microscopist, Biologist, Author and Lecturer

- Chairs: John Reffner, John Jay College of Criminal Justice Brooke Kammrath, University of New Haven
- 2:00 Oblique Illuminations, Christopher Palenik, Microtrace LLC
- 2:30 *Tools and Techniques of Investigative Forensic Microscopy*, Richard Brown, MVA Scientific Consultants, Inc.
- 3:00 A Closer Look at Tape; Microscopy of Tape in Forensic Examinations, Andrew Bowen, US Postal Inspection Service
- 3:30 *The Lion, the Witch and the Microscope*, Brian J. Ford, Microscopist, Biologist, Author and Lecturer
- 4:00 *Presentation of the Ernst Abbe Award* followed by LIVE Questions & Answers with all 4 Presenters

Wed. Nov. 18 - live via the virtual event platform

New York/New Jersey Sections of the Society for Applied Spectroscopy Gold Medal Award, Honoring Howard Mark, Mark Electronics and Jerome J. Workman Jr., Spectroscopy & LCGC (See pages 11-12 for complete program)

- Chairs: Dana Garcia, Arkema, Inc. Deborah Peru, DP Spectroscopy and Training
- 2:00 History of Calibration Transfer, Howard Mark, Spectroscopy
- 2:30 The Present and Future of Chemometrics in the Analytical Sciences, Jerome J. Workman Jr., LCGC -Spectroscopy
- 3:00 DQM, or My Project with Karl Norris, David Hopkins, New York Section of SAS
- 3:30 *Chemometrics Applied to the Forensic Sciences*, Barry Lavine, Oklahoma State University
- 4:00 Presentation of the Gold Medal Awards followed by LIVE Questions & Answers with all 4 Presenters

Pre-recorded presentations available on-demand:

Evolving Methodologies for the Analysis of Environmental Emerging Contaminants, sponsored by the ACS Division of Analytical Chemistry

Chairs: Anthony Provatas, University of Connecticut, Satinder Ahuja, Ahuja Consulting

Challenges in the Quantitative and Qualitative Analysis of Microplastics in Aqueous Environments, Julie Peller, Valparaiso University, Sarah Shidler, Renishaw Inc.

Investigating Environmental Pollution: The Forensic Approach, Lawrence Cahoon, University of North Carolina-Wilmington

Current Status in the Evolution of Analytical Methodologies for the Analysis of PFAS in Environmental Samples, Charles Neslund, Eurofins Lancaster Laboratories Environmental

Innovations in Mass Spectrometry Applications, *organized by North Jersey Mass* Spectrometry Discussion Group

Chair: Long Yuan, North Jersey Mass Spectrometry Discussion Group

Bioanalytical Strategy and Assay Development for Probody Drug Development, Qin Ji, Bristol-Myers Squibb

Absolute Quantitation of Proteins by Coulometric Mass Spectrometry Without Using Standards, Hao Chen, Pengyi Zhao, New Jersey Institute of Technology

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Anti-Peptide Immunocapture with In-Sample Calibration Curve Strategy for LC-MS Bioanalysis of Clinical Cancer Biomarkers in Formalin Fixed Paraffin Embedded (FFPE) Tumor Tissues, Naiyu Zheng, Kristin Taylor, Huidong Gu, Rasa Santockyte, Xi-Tao Wang, Jean McCarty, Olufemi Adelakun, Yan J. Zhang, Renuka Pillutla, Jianing Zeng, Bristol-Myers Squibb

LC-MS Based Protein Target Quantitation and Engagement Assays: Application to Therapeutics for Thrombotic Diseases, Lijuan Kang, Michael Duck, Huang Devine Zheng, Matthew Bunce, Xinkang Wang, Lawrence Szewczuk, Qiu Li, Fuyong Du, Heather Murrey, Madhu Chintala, Naidong Weng, Wenying Jian, Janssen, James Lanter, Arkuda Therapeutics

Biological and Pharmaceutical Applications of Mass Spectrometry Imaging, organized by North Jersey Mass Spectrometry Discussion Group

Chair: Gene Hall, Rutgers University

From Art to Zoology: A 2020 Vision of Imaging Mass Spectrometry, Gene S. Hall, Rutgers University

Probing Metabolic Heterogeneity in Tumors Using Imaging Mass Spectrometry, Shawn Davidson, Princeton University

Mass Spectrometry-Based Imaging at Merck: Enabling Rapid Tissue Distribution of Drugs and Metabolites in Drug Discovery and Development, Bingming Chen, Merck & Co.

North Jersey Meetings

There are no meetings scheduled to be held in the North Jersey Section during the month of November 2020.





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New York Meetings

https://www.newyorkacs.org

ACS, NEW YORK SECTION BOARD OF DIRECTORS

MEETING DATES FOR 2020

The dates for the Board of Directors Meetings of the ACS New York Section for 2020 were selected and approved. The meetings are open to all – everybody is welcome. All non-board members who would like to attend any of the meetings should inform the New York Section office by emailing Bernadette Taylor at **btaylor@NewYorkACS.org** or by calling the Section office at (732) 770-7324.

Dates of the meetings for 2020 are posted on the New York Section website at https://www.newyorkacs.org below, and monthly in *The Indicator*. Dr. Ruben Savizky will chair all meetings. Board meetings will start at exactly 6:30 PM. Until further notice, meetings will be held on-line.

The Board Meeting dates for 2020 are:

Friday, November 13, 2020

Meeting will be held on line.

LONG ISLAND ACS NOVEMBER SEMINAR

Synthesis and Applications of N-Heterocyclic Carbene Containing Macrocycles

Speakers: Anibal R. Davalos and Steven T. Diver University at Buffalo Buffalo, NY 14226

The synthesis and applications of N-heterocyclic carbene (NHC)-containing macrocycles are presented. NHCs are versatile ligands and they have been exploited significantly in metal catalyzed reactions such as olefin metathesis and cross couplings. We envision that a macrocyclic ligand will both protect the metal center and impart improved selectivity. Our synthetic approach has shown to be a suitable route to obtain macrocycles with different dimensions and functionalities from very similar starting materials. These newly synthesized macrocyclic NHCs have shown to promote intramolecular Michael-Stetter reactions after deprotonation. THE INDICATOR-NOVEMBER 2020

In addition, the corresponding ruthenium and palladium macrocyclic NHC complexes have been synthesized, providing an active set of metathesis and cross coupling catalysts. Herein, we report a reactivity profile and structural data of the synthesized catalysts as well as offer inside into their relative reactivity. Ultimately, based on these findings we will suggest future directions in macrocyclic design.

Date: Thursday, November 5, 2020

Time: 6:00 PM Place: Remote. Join Zoom Meeting:

https://ncc-

zoom.zoom.us/j/95361514332?pwd=aHZI Sml5c3R3Q2RuR1ZVRkJOM1RBZz09

Meeting ID: 953 6151 4332 Passcode: 270927 One tap mobile +16468769923,,95361514332# US (New York)



BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMACOLOGY DISCUSSION GROUP

The Significance of Microbial Metabolomics in Human Health and Disease

Organizers: Steven Gross, PhD Weill Cornell Medicine John Hambor, PhD Boehringer Ingelheim

> Nilufer Seth, PhD Janssen

Kari Fischer, PhD New York Academy of Sciences

Sonya Dougal, PhD New York Academy of Sciences

Keynote: Rima Kaddurah-Daouk, PhD Duke University School of Medicine

Speakers: Janelle S. Ayres, PhD Salk Institute for Biological Studies

> Priyanka Baloni, PhD Institute for Systems Biology, Seattle

Jane Ferguson, PhD Vanderbilt University Medical Center

Michael A. Fischbach, PhD Stanford University

Wendy Garrett, MD, PhD Harvard T.H. Chan School of Public Health

Sarkis Mazmanian, PhD California Institute of Technology

David Wishart, PhD University of Alberta

The effects of the microbiome may extend well beyond its resident organs, as the products of microbial metabolism may be able to travel throughout the body. This symposium will discuss the downstream physiological effects of microbial metabolites, and their promise as potential nodes of therapeutic intervention.

Date: Tuesday, November 10, 2020

- Time: 11:00 AM 5:00 PM
- Place: Virtual Symposium
- Cost: ACS and Academy members save \$30 or more on this event. Please select the appropriate non-member Registration Category and use the Priority Code "ACS".

For more information and to register for the event, go to: www.nyas.org/micrometabolismlomics2020

To become a Member of the Academy, visit nyas.org/become-a-member/



WESTCHESTER CHEMICAL SOCIETY

Because of Covid-19 pandemic restrictions, fall meetings will not be held at our usual location at the Westchester Community College. The meetings will be held remotely (via Zoom). Zoom must be downloaded to your computer, but it is free.

Please note that screen prints of the Zoom screen may be taken at the meetings and may be submitted for publication in the NY/North Jersey newsletter, *The Indicator.* If you do not want a photo of yourself submitted, let us know at the meeting.

Special Seminar – "Clinical Tests and COVID-19"

Speaker: Paul Dillon, Ph.D. Co-Chair and Program Director, Westchester Chemical Society.

> Patient Advisor, Interstitial Lung Disease Collaborative (ILDC).

Abstract:

This talk is an update of an invited talk, given via Zoom, to the Boston and Cape Cod support groups of the ILDC. Because of the pandemic there is great interest in tests related to the SARS-CoV-2 virus (the cause of the COVID-19 disease). This talk discusses the availability of COVID-19 tests. Considering the short time-frame, tests have been developed quite well and quickly. There are brief reviews of clinical testing in general, and of the SARS-CoV-2 virus structure. I discuss the types of clinical tests (diagnostic-for viral RNA and/or antigens) and serological (for antibodies to the virus) and the difference between gualitative tests (those concerned with COVID-19) and quantitative tests. I address questions of sensitivity, specificity, prevalence and predictive values. I and several of my colleagues in clinical diagnostics have been concerned about false positive serological results; fortunately our fears were unfounded. However, we must still be cautious in handling positive antibody tests on individuals who have been asymptomatic and never tested positive for the virus. Unless we know that the local population has a reasonably high prevalence, such positive tests can be misleading. I have developed models for positive predictive value vs. prevalence and for estimating prevalence. I discuss recent CDC guidelines including the use of pairs of serological tests, and of neutralizing antibody tests (i.e., for antibodies that can be shown to kill the virus or impede its propagation). Finally. I note some prognostic (severity) tests. just becoming available, for patients newly diagnosed with COVID-19.



Biography:

Paul Dillon is a chemist turned biostatistician. He received his B.S. from The Polytechnic Institute of Brooklyn (now NYU's Tandon School of Engineering) in 1966, his M.S. and Ph.D. from New York Uni-

versity's Graduate School of Arts and Science in 1969, and 1974, respectively (all degrees in Chemistry). He was a chemist for Union Carbide Corp., Tarrytown, NY from 1965-1970 working on paint latexes and took

WESTCHESTER CHEMICAL SOCIETY

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a leave to do his dissertation research from 1970-1973. Although technically in Chemistry, his research dealt with creating an optimization program to estimate molecular geometries by minimizing quantum calculated energies as functions of bond distances and angles. Back at Union Carbide in 1973 he worked on urethane foam flammability, modeling the evaporation of aqueous solutions of organic solvents and internally consulting in engineering statistics. In 1997, he received the first prize in the Roon Awards administered by the Federation of Societies for Coatings Technology for his development of the concept of critical relative humidity.

In 1986, he joined Technicon Instruments Corp., also in Tarrytown, NY, as a biostatistician. There, and for successor companies (Miles Laboratories, Bayer Diagnostics, Siemens Diagnostics, and Siemens Healthineers), he worked on protocol development, data analysis and generated reports for internal and external (clinical trials) evaluation studies for new or improved automated diagnostic instruments and reagents. He has worked on a range of diagnostics including, classic clinical chemistries, and immunodiagnostics. Retiring in 2012 he consulted until 2018. He has also been active in the Westchester subsection of the NY Section of the American Chemical society, serving as its Program Director since 2009 and its co-chair since 2015. He has also served on the board of the NY section of the ACS (2016-2018), and on the Advisory Board of the Center for Sustainable Energy at Bronx Community College (2014-2015), and the Industrial Advisory Board of the Polytechnic Institute of New York University, Department of Chemical and Biomolecular Engineering (2012-2013), He and recently became a Patient Advisor at the Interstitial Lung Disease Collaborative (2020).

Date: Thursday, November 17, 2020 Time: 7:00 PM (Zoom link available from 6:45 PM Eastern Time (US and Canada) Place: Zoom

Cost: Free and open to the public

Dr. Rolande Hodel, Co-Chair of the Westchester Chemical Society is inviting you to a scheduled Zoom meeting.

Join the Zoom Meeting https://sunywccedu.zoom.us/j/87192908761?pwd=VGdIN FE0bFhoZWh2dEs5UUtJOUVLUT09 Meeting ID: 871 9290 8761

Passcode: 6l697e

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Find your local number: https://sunywccedu.zoom.us/u/kdYfjALkRf

For further information: contact Rolande Hodel, rrhodel@aol.com,

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Or Paul Dillon,

PaulWDillon2@hotmail.com Phone: 914-941-0890, Text: 914-393-6940

+

NY ACS METRO WOMEN CHEMISTS' COMMITTEE

Opening Up the Envelope: Reading Out Mysterious Membrane Machinery in the Human Pathogen Mycobacterium Tuberculosis

Speaker: Dr. Jessica C. Seeliger Associate Professor Pharmacological Sciences Stony Brook University

Abstract:

Tuberculosis (TB) is the deadliest infectious disease worldwide: 1.5 million people died of TB in 2018. Mycobacterium tuberculosis is the causative bacterium and humans are the only reservoir for this wily predator, which has co-evolved with humans for millennia. An important aspect of the M. tuberculosis arsenal is its unusual cell envelope, particularly the outermost layer or mycomembrane, which contains critical biomolecules—such as lipids and proteins—that enable bacterial survival and mediate virulence in the human host. However, the cell envelope remains a poorly understood compartment in mycobacteria, partly due to current experimental limitations.

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The Seeliger Lab develops biochemical methods to meet the unique demands of M. tuberculosis and uses them to explore the content and functions of the cell envelope, towards better understanding—and combatting—this human pathogen.

Biography:

Jessica Seeliger has often been told that she is from California, although in truth she was born in northeastern Ohio (go Cavaliers!) and grew up in the college town of Oberlin. For reasons that even she doesn't quite understand, she loved chemistry from first encounter in eighth grade and went on to acquire three degrees in chemistry and work in five different chemistry labs on everything from carbon nanotubes to protein folding to transient absorption spectroscopy and finally to lipid synthesis in mycobacteria. This crazy ride through science is now enriched by the influence of her two toddlers and her research group of enthusiastically omnivorous scientists, who remind her every day why she loves being a professor.

Date: Wednesday, November 18, 2020

Time: 12:00 noon – 1:15 PM Place: Pace University One Pace Plaza New York, NY 10038 Via zoom, please contact Dr. Rita K. Upmacis (rupmacis@pace.edu) for details. Cost: FREE

V NEW YORK/NEW JERSEY SECTION SOCIETY FOR APPLIED SPECTROSCOPY

NY/NJ SAS Gold Medal Award Session 2020 Eastern Analytical Symposium in November

Gold Medal Joint Award Recipients:

A CONTRACTOR

Dr. Jerome Workman & Dr. Howard Mark for contributions individually and as a team, to the field of NIR and chemometrics leading to a wider adoption of the technology in the spectroscopy community.

Session Details:

NY/NJ SAS Gold Medal Award honoring Howard Mark, Mark Electronics and Jerome Workman, Jr., LCGC Spectroscopy. Chairs: Dana Garcia, Arkema Inc. & Debbie Peru, DP Spectroscopy and Training

2:00 PM - 2:29 PM	History of Calibration Transfer Speaker: Howard Mark, Spectroscopy
2:30 PM - 2:59 PM	The Present and Future of Chemometrics in the Analytical Sciences Speaker: Jerome Workman, LCGC Spectroscopy
3:00 PM - 3:29 PM	DQM, or My Project with Karl Norris Speaker: David Hopkins, New York Section of SAS
3:30 PM - 3:59 PM	Chemometrics Applied to the Forensic Sciences Speaker: Barry Levine, Oklahoma State University
4:00 PM - 4:30 PM	Presentation of the NY/NJ SAS Gold Medal Awards followed by LIVE Questions & Answers with all 4 speakers

Dr. Jerry Workman Biography

Dr. Jerry Workman career has spanned over 30 years, and included appointments in academic, commercial/industrial, and governmental positions. Dr. Workman is currently Senior Technical Editor for Spectroscopy and LCGC; Certified Core Adjunct Professor, School of Health and Human Services, National University, CA; and Principal at Biotechnology Business Associates. Most recently, he was Executive V.P. of R&D at Unity Scientific and Process Sensors Corp. in Milford, MA. Past positions included Director of Research & Applications, Molecular Spectroscopy and Microanalysis, Thermo Fisher Scientific, Madison, WI and Chief Technical Officer, Vice President of R&D, Argose Inc., Waltham, MA.

NEW YORK/NEW JERSEY SECTION SOCIETY FOR APPLIED SPECTROSCOPY

(continued from page 11)

Dr. Workman had a pivotal role in the development of over twenty scientific instrument products with novel software improvements for successful commercial use for start-ups to major corporations. Over 74 U.S. and International Patent Applications (since 1998); 25 issued. Dr. Workman published of 500+ technical publications and 21 reference books. Dr. Workman received numerous awards, the latest in 2018 Frost & Sullivan Manufacturing Leadership Award winner for DLP and 'True Alignment Spectroscopy,' Engineering and Production Technology Leadership Category 2018

Dr. Workman hold a PhD from Columbia Pacific University and business certificates from Massachusetts Institute of Technology - Sloan School of Management and Columbia Business School.

Dr. Howard Mark Biography

Dr. Howard Mark is a recognized expert in chemometric, statistical data analysis, NIR spectroscopy, experimental design, custom software and custom hardware development. Dr. Mark is the founder of Mark Electronics - consulting services for NIR analysis, chemometric, statistical data analysis, custom software design and development. The consultancy also provides training courses in statistics, chemometrics & NIR, computer interfacing & control, custom software & hardware design & development. In this capacity he has worked for the US Army (product acceptability) and pharmaceutical companies (experimental design). Dr. Mark consulting work included the first prototype validation protocol meeting requirements for FDA approval. He is statistical advisor to NIRVWoG/PASG/PQRI initiative to amend USP chapter on NIR. Dr. Mark is the President of The Near Infrared Research Corporation designing, developing and marketing products for near-infrared spectroscopic analysis. Products include: high-pressure optical cell, fiber optic adapter for cell, software for quantitative and qualitative analysis containing unique proprietary algorithms for high-speed computation, conformity index calculation and patented linearity test.

Dr. Mark has been at the forefront of NIR development for material analysis. His work has been recognized with the Eastern Analytical Symposium Award for Achievement in Near Infrared Spectroscopy in 2003 and in 2011 the Williams-Wright Award from the Cobentz Society for Contributions to Vibrational Spectroscopy made while working in industry. He is the inventor on 19 US patents, has written & edited 19 books and book chapters as well as over 200 technical publications.

Dr. Mark holds a PhD from New York University.

Dr. Workman and Dr. Mark co-authored 160 columns on the subjects of statistics and chemometrics for Spectroscopy magazine since 1986, 24 publications and in 2018: H. Mark, J. Workman, Chemometrics in Spectroscopy, Second Edition Elsevier/Academic Press, Amsterdam.

Date: Wednesday, November 18, 2020

Time: 2:00 PM - 4:30 PM

Place: On-line: Enrollment in EAS is required to access the live links.

Presentations are prerecorded. Q&A and award ceremony is a live event.

EMPLOYMENT AND PROFESSIONAL RELATIONS COMMITTEE OF THE NEW YORK SECTION

To Human Resources Departments in Industry and Academia

The Employment and Professional Relations Committee maintains a roster of candidates who are ACS members seeking a position in the New York metropolitan area. If you have job openings and would like qualified candidates to contact you, please send a brief job description and educational/experience background required to

hessytaft@hotmail.com.

Candidates from our roster who meet the requirements you describe will be asked to contact you.

WESTCHESTER CHEMICAL SOCIETY

Special Seminar – "The Science of Making Colleges and Universities Safe in the Age of Covid-19 – A Case Study"

Speakers:	Matthew R. Basso, CHMM, I	HIT
	Senior Consultant	

George Hollerbach, PE, BCEE Senior Principal Geosyntec Consultants, Inc. Lyndhurst, NJ

Abstract:

As the COVID-19 pandemic challenged the US economy in early 2020, Geosyntec's molecular diagnostic laboratory (SiREM) mobilized to develop accurate and reliable SARS-CoV-2 virus detection services to support our clients' efforts to provide safe working environments, re-entry, and continuation of operations. Our viral detection services focused using a turnkey approach: disinfection planning, client representation and strategic planning to reopen with in-house verification testing using the Gold Standard for direct detection of for the unique SARS-CoV-2 virus – Reverse Transcriptase-Quantitative Polymerase Chain Reaction (RT-qPCR).

We are now supporting Institutions of Higher Education in the development of reopening plans using viral detection which can serve as an early warning system to mitigate the spread of the virus within classrooms and dormitories. Virus detection efforts can be focused in several areas: multiple wipe composite sampling on high touch point surfaces to verify the presence of the virus; air sampling of buildings using coriolis air samplers; validation sampling of disinfection services using a surrogate virus such as a cloned mammalian virus that can't replicate but that contains the SARS-CoV-2 genome, domestic wastewater sampling at dormitories and other locations within the collection system and pooled saliva sampling. As with all data, actions should be taken, and decision tree analysis is a useful tool. Dashboards showing data to the affected community is helpful. Data can be presented in a specific database and GIS platform to aid in the temporal and spatial analysis of the SARS-CoV-2 results.

"Wastewater epidemiology" has been used for decades to detect polio in countries where the disease remains endemic and, more recently, to estimate the prevalence of opioid abuse in U.S. communities. Our program efforts for COVID -19 have focused to date on

municipal and campus wastewaters in many locations. Positive SARS-CoV-2 results in sewage are considered a leading indicator for future outbreaks and serves as the canary in the coal mine. Sewage sampling is "noninvasive" since samples can generally be collected without entering a facility and provides quantitative data to inform decisions on facility precautions and business continuity. The results are representative of overall population health since asymptomatic students and employees can contribute to the virus load in sanitary sewage. If detection is discovered, further analysis can be performed to isolate the infected individual(s) such as pooled saliva sampling.

This presentation will present the virus detection test method, sampling strategies and summarize the findings and approach of several types of clients.

Biographies:



Matthew R. Basso received his B.A. in Environmental Science from St. Michael's College and his M.A. in Environmental and Occupational Health from the City University of New York. Matt has extensive experi-

ence in all phases of Environment, Health, and Safety (EHS) as a Corporate EHS Manager at American Cyanamid, American Home Products, and Pfizer. Matt is extremely well versed on pharmaceuticals manufacturing, environmental compliance and permitting, clean-up of contaminated sites, and global auditing. Matt brings extensive global experience with the Pharmaceuticals -in-the-Environment issue to Geosyntec's cadre of practitioners.



George Hollerbach is a Senior Principal at Geosyntec Consultants and directs the Process Engineering Design group in the New Jersey Branch. He has more than 40 years of experience focused on water and

wastewater, chemical and pharmaceutical process engineering, construction management and environmental health and safety (EHS) projects. With a strong background in environmental and chemical process engineering, he has supported many capital proj-

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ects in the development and installation of newly constructed wastewater treatment and air pollution control systems. Since the start of the pandemic, George has focused on the science of the spread of the SARS-CoV-2 virus and disinfection technologies. Geosyntec and their laboratory SiREM has supported institutions of higher learning and other businesses in the development of reopening strategies using PCR analytical services in the detection of the virus in air, wastewater, surfaces and pooled saliva. In addition, Geosyntec continues to lead in the development of ozone disinfection technologies and its virucidal effect on SARS-CoV-2 virus in enclosed spaces.

Date: Thursday, December 3, 2020

Time: 7:00 PM (Zoom link available from 6:45 PM).

Place: Zoom

Cost: Free and Open to the Public

Dr. Rolande Hodel, Co-Chair of the Westchester Chemical Society is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting



https://sunywccedu.zoom.us/j/89609801495?pwd=OGh-TaHpaMk92ZURXTHdVS1InUExqUT09

Meeting ID: 896 0980 1495

Passcode: 9s941f

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Meeting ID: 896 0980 1495

Find your local number: https://sunywccedu.zoom.us/u/kiccFtguu

For further information: contact Rolande Hodel, rrhodel@aol.com

Or Peter Corfield, pcorfield@fordham.edu Phone: 914-762-4468; Text: 914-980-9128 or 914-218-7607.,

Or Paul Dillon, PaulWDillon2@hotmail.com Phone: 914-941-0890 Text: 914-393-6940



LONG ISLAND SUBSECTION

We will be having a holiday seminar on

Date: Thursday, December 3, 2020 Time: Starting at 6:00 PM

The Indicator is posted to the web around the 15th of the previous month at

www.TheIndicator.org

NEW YORK SECTION 2021 SECTIONWIDE CONFERENCE

21st Century Alchemy: Making Coinage Metals Act Like Ir and Pt.

Speaker: Mark E. Thompson Department of Chemistry University of Southern California Los Angeles, CA 90089 USA email: met@usc.edu

Abstract:

Heavy metal containing phosphors, especially iridiumbased emitters, have become the standard in high performance mobile displays and televisions, involving organic light emitting devices (OLEDs). The high spin orbit coupling in these compounds facilitates the efficient harvesting of both singlet and triplet excitons generated in the electroluminescent process. An alternative to Ir-based emitters are solelyorganic emitters based on Thermally Assisted Delayed Fluorescence (TADF). Heavy-metal and TADF emitters give similar OLED performance, which stems from the fact that they give very similar radiative lifetimes. We have found that the key to achieving higher performance for TADF emitters is to put the metal ions back into the TADF emitters.



My talk will cover the evolution of OLEDs and how metal

complexes have been designed to give these devices near 100% efficiency for electroluminescence (EL). I will then focus on the photophysical and electroluminescent properties of two-coordinate copper, silver and gold carbene complexes, i.e. (carbene)MI(donor), where the the carbene acts as an acceptor and the donor is an amide[1] or aryl group[2]. These complexes show high phosphorescence quantum yield (FPL = 0.7 - 1.0), with radiative lifetimes in 0.4-3 microsecond regime, with emission lines spanning from the violet to red (see Figure). Cryogenic photophysical measurements show these are TADF emitters with properties rivailing the state of the art iridium based phosphors. We have prepared organic LEDs with these dopants and achieved ~ 100% EL quantum efficiency for green emissive OLEDs and > 60% for blue emissive OLEDs, both at comparatively low drive voltages.

Biography:



Mark Thompson received his B.S. degree in Chemistry in 1980 (U.C. Berkeley), his Ph.D. in chemistry in 1985 (California Institute of Technology) and was a postdoctoral fellow at Oxford University. Thompson currently holds the Ray R. Irani Chair of Chemistry at the University of Southern California. He is a Fellow of the AAAS and Humboldt Society, has received a number of national and international awards and has been elected to the National Academy of Inventors and the National Academy of Engineering (NAE). His research involves the study of materials and devices for electroluminescence, photovoltaics and solar cells, chemical/biological

sensing and catalysis. Thompson is the author of approximately 400 papers in refereed professional journals and holds more than 250 patents primarily in the areas of optoelectronic applications, such as light emitting devices (LEDs) and solar cells.

Date: January TBD, 2021 Time: TBD

Place: Virtually, TBD

References:

[1] Hamze, R.; Shi, S.; Kapper, S. C.; Muthiah Ravinson, D. S.; Estergreen, L.; Jung, M.-C.; Tadle, A. C.; Haiges, R.; Djurovich, P. I.; Pettier, J. L.; Jazzar, R.; Bertrand, G.; Bradforth, S. E.; Thompson, M. E., Journal of the American Chemical Society 2019, 141 (21), 8616-8626. Hamze, R.; Peltier, J. L.; Sylvinson, D.; Jung, M.; Cardenas, J.; Haiges, R.; Soleilhavoup, M.; Jazzar, R.; Djurovich, P. I.; Bertrand, G.; Thompson, M. E., Science 2019, 363 (6427), 601.

[2] Tian-yi Li, Daniel Sylvinson M. R., Ralf Haiges, Peter I. Djurovich, Mark E. Thompson, Journal of the American Chemical Society 2019, 142, 6158-6172.

NY/NJ SAS PRELIMINARY SCHEDULE OF SPEAKERS 2020-2021

Everyone is Welcome to Attend

Note: All meetings will be on-line. For more information, go to http://www.nysas.org/

Date 24-Sep.	Time 12 noon	Speaker William Querido	Title Applications of Infrared Spectroscopy and Imaging to Investigate Bone and Cartilage	Affiliation Temple Univ.
22-Oct.	12 noon	Adam Gilmore	Optimizing Industrial Classification and Re- gression Applications with Absorbance-Transmittance Excitation-Emission Matrix (A-TEEM) Spectroscopy Using Multi-Block Modeling and Extreme Gradient Boosting	Horiba
12-Nov.	12 noon	Richard Hawk	Scioentific Investigation of Works of Art: Allowing the Objects to Speak for Themselves	Yale Univ.
10-Dec.	12 noon	Jenni Briggs		
14-Jan.	12 noon	Debbie Peru John Wasylyk	FUNdamentals of Vibrational Spectroscopy	
18-Feb.	12 noon	Karen Faulds		Strathclyde Univ
18-Mar.	12 noon	¹ Heinz Siesler	¹ Food Authentification and Classification Using Vibrational Spectroscopy in Tandem with Chemo- metrics Tools	University of Duisburg-Essen
		² Marina deGea Neves	Handheld Near-Infrared ² Spectrometers: On-Site Quality Control and Protection against Product Counterfeiting	
Apr.	12 noon	ТВА		

May 12 noon TBA



Call for Applications

FREDDIE AND ADA BROWN AWARD

This Award recognizes and encourages high achieving middle- and high-school students, of African American and Native American heritage, to further develop their academic skills, with views on careers in the chemical sciences.

Award Amounts

Middle School \$100.00 Check and \$50.00 gift certificate : High School \$200.00 Check and \$100.00 gift certificate.

Who is Eligible

Middle School students enrolled in a science class : High School students who have completed a chemistry course

Grades

Middle School B Average or better in Science, B Average overall : High School B Average in Chemistry, B Average overall

Letter of Recommendation

Math or Science/Chemistry Teachers or Guidance Counselor

Statement

Middle School "Why I Like Science" : High School "Why I Like Chemistry"

Selection Criteria

Applicants must be African American (Black) or Native American (including Pacific Islander) or of mixed race.

Transcript

Official transcript required.

Financial Need

Not Required.

Applications available on the web: www.njacs.org/freddieadabrown or from your school guidance office.

Return Application To

Freddie and Ada Brown Award, NJACS Section Office, 49 Pippens Way, Morristown, NJ 07960

Due Date

Completed Applications must be postmarked no later than March 31 Annually

Questions: Contact Jeannette Brown Jebrown@infionline.net or (908) 239-1515

Call for Volunteers

OPPORTUNITY FOR ACS MEMBERS TO AID STUDENTS 2 SCIENCE IN A HYBRID VIRTUAL LAB PROGRAM

Can you spare a few hours of your time? Do you like working with students and would you like the opportunity to share your science knowledge in a classroom? Students 2Science (S2S) is seeking volunteers to support its V-Lab program. S2S has a series of elementary, middle, and high school experiments that run in various schools across New Jersey. Members are especially needed to mentor students in participating schools to help with experiments. It's great fun, a wonderful way to give back, and only requires

1-2 hours of your time. Experiments include CO_2 to the Rescue, Curious Crystals, Mystery of M&Ms, Thermochemistry: *Exothermic and Endothermic Chemical Reactions, and Glow it Up: The Chemistry of Luminol.* All are age-appropriate and volunteers are provided with instructions on how to support in the classroom prior to your scheduled volunteer day.

For more information, contact Cyndi Roberson, Director of Corporate Relations, at (973) 947-4880 ext. 516 or visit the website to register for the upcoming school year: https://www.students2science.org.

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SEMINAR SPEAKERS WANTED

The New York Section of the ACS is in search of speakers that we can add to our Speakers Bureau database of interested local area speakers who are available for Section-wide seminars and symposia. If you have an area of research or interest that would provide an interesting talk appropriate for our Section members, and would like to be included in our Speakers Bureau, please contact the New York Section Office at (516) 883-7510 or send an email to Bernadette Taylor btaylor@NewYorkACS.org with the following information that will be posted on the Section's website: your name, affiliation, a title, and 5-6 words briefly summarizing your area of specialty. We look forward to hearing from you about topics that you wish to share with our other members!

Call for Nominations

COMMITTEE ON THE HISTORY OF THE NEW YORK SECTION

Over the past twenty-three years the New York Section has participated in the designation of seven National Historic Chemical Landmarks and four New York Section Historic Chemical Landmarks. A brief description of these National and local section landmarks may be found on NY Section Home Page the at https://www.newyorkacs.org under the Committee on the History of the NY Section. These landmark programs recognize achievements in the chemical sciences and related areas, in order to enhance public appreciation for the contributions of the chemical sciences to modern life.

Please consider making a nomination for an historic chemical landmark. The Committee on the History of the NY Section will consider all nominations. In addition to a particular achievement, an historic library, building or association may be worthy of this distinction.

Please send your nomination, with supporting documentation, to the Chair of the Committee, Dr. Neil Jespersen, at jespersn@stjohns.edu.

Please reach out to your members to consider sending recommendations for this award. All nominations must be submitted by the Division or Committee, after approval from the respective Chair.

Nominations with supporting data should be sent to the Office Administrator email btaylor@newyorkacs.org.

