ACS Chemistry for Life®

SCALACS

A Joint Publication of the Southern California and San Gorgonio Sections of the American Chemical Society

VOLUME LXXVIII/No. 7 NOVEMBER/DECEMBER 2023

SOUTHERN CALIFORNIA Section

SAN GORGONIO Section

ACS Chemistry for Life®

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American Chemical Society

Volume LXXVIII NOVEMBER/DECEMBER 2023 Number 7

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THE NEXT ISSUE OF SCALACS WILL BE ON JANUARY, 2024

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CHAIR'S MESSAGE

Dear SCALACS members,

I want to start by thanking everyone who has helped make my year as Chair run smoothly and made our section a place to learn and participate in all things chemistry. I am indebted to our Board of Directors, Councilors, members of the Executive Committee, and members of different sub-committees for devoting their time to SCALACS. Also, thanks are due to all members of the section for their kind and generous support. It is our honor to have recognized Professor Alison Butler of the University of California, Santa Barbara, who won the 2022 Tolman Award, and Krishna Kallury, who won the 2023 Agnes Ann Green Service Award for his dedication to the local section. Thank you to Gerald Delker, Thomas Mathew, Krishna Kallury, and Inessa Bachynskaya for working at our booth at the Girls in STEM Day in April. Thank you also to Dr. Salmaan Baxamusa, Professor Sri Narayan, and Professor Surya Prakash for presenting our SCALACS Earth Day seminars this year.

Our special salute of honor goes to our Senior Scientists who completed 50, 60, and 70 years of membership in the American Chemical Society for their outstanding service and selfless activities spanning such a long period.

The Southern California Section and the Tolman Award Committee are now seeking nominations for the 2023 award. There is no official nominating form for this award, and nominations are accepted from any member of this section or of neighboring sections. The nomination package should include:

- an up-to-date curriculum vitae or resume of the candidate,
- letters of support from colleagues in the profession describing the candidate's major achievements,
- letters of support from former students if the candidate is being considered for outstanding teaching.

Please submit nomination packages electronically to the Chair of the Tolman Committee at office@scalacs.org. Rather than submitting copies of publications, a list of representative publications would suffice. The deadline for receipt of nominations is November 15, 2023. Inquiries should be directed to the Chairperson via email at office@scalacs.org.

I would like to recognize the hard work of Ms. Barbara Belmont, our Secretary/Treasurer, for supporting me throughout my Chairpersonship - she was a consistent source of information and support, and our high school teachers' team led by Dr. Gerald Delker for conducting the Chemistry Olympiad Southern California Section Examinations and the respective programs efficiently. I am honored and privileged to work with these wonderful people, who are always diligent to offer their support when asked. My sincere thanks are due to our office team led by Ms. Jenneva Guzman, Ms. Peggie Chan, and Ms. Danielle Fazzi (Huntington Association Management) for their prompt and efficient administrative services, SCALACS Magazine preparation, arrangements for Zoom lectures, symposia, and various programs, and Professor Eleanor Siebert for help with SCALACS Magazine editing.

I hope you all have a safe and prosperous 2024!

Sincerely,
Edye Udell
Chair, SCALACS
Science Teacher, Westridge School
(EUdell@westridge.org)

SCALACS/AACT/Occidental College High School Chemistry Teachers Meeting Recap

On Saturday, October 28, the SCALACS/AACT/Occidental College High School Chemistry Teachers Meeting resumed its in-person sessions. This is an annual meeting of high school chemistry teachers from all around Southern California. The meeting's theme is "For High School Chemistry Teachers, By High School Chemistry Teachers."

We were honored to have nine speakers, each doing a half hour presentation, sharing their "Best Practices for Teaching Chemistry." Presenters included Paul Groves (Retired Teacher), Michael Morgan (Francisco Bravo Medical Magnet High School Teacher), Edye Udell (Westridge School for Girls Teacher and SCALACS Chair), and many others. Approximately 40 teachers attended this all day event. It was a fantastic event! Lots of fun!





Call for Nominations for Paul Shin Memorial High School Teacher of the Year Award

If you know of a **local high school chemistry teacher who is making a difference**, please make the effort to show how important his/her work is to you and the students. Self-nominations from those who feel they fit the requirements are accepted as well. It is teachers like the recipients of this award who make learning chemistry rewarding.

Plus, there is a financial component of **$500.** The $500 will be an unrestricted award directly to the teacher. **The winner of the Section Award will also be a nominee for the National ACS James Conant Bryant Award.** Having won a previous award does not necessarily exclude a nominee; however, the nomination would need to be based on different criteria than the first award.

Nomination Package should include: Biographical sketch of nominee with date of birth, list of any publications, statement (no more than 1,000 words) of nominee's achievements as a high school chemistry teacher including quality of teaching, effective methods, nominee's ability to challenge and inspire students, extracurricular work (science fairs, clubs, etc.). Seconding letters are not essential, but up to five may be included. Nominating documents should be submitted via email to office@scalacs.org. Note that signed documents that have been scanned are acceptable.

The deadline for nominations is **November 15, 2023.** Please feel free to contact **Michael Morgan** of the Educational Affairs Committee at **mmorgan@lausd.net** if you have questions.

In honoring their enduring support, we extend heartfelt congratulations to these dedicated members of the American Chemical Society. Their contributions to chemistry and the community over many years stand as a beacon of inspiration, shaping the future of our discipline and leaving an indelible legacy. Read about our Silver Circle Reminiscences on our website: https://scalacs.org/?page_id=63

If you have an anecdote, story or remembrance of your career as a senior chemist that you would like to share, please send it to the Section Office at office@scalacs.org.

50-YEAR MEMBERS

Dr. Jacqueline K. Barton
Dr. Glenn John Bastiaans
Dr. Shiuan Chen
Dr. James Asao Doi
Mr. Richard E. Heimerl
Dr. Michael Robert Hoffman
Dr. Howard A. Katzman
Dr. Ralph Yutaka Komai

60-YEAR MEMBERS

Dr. Walter Joseph Farmer
Dr. David Holtz
Mr. John A. May
Dr. Kenneth M. Solovy

70-YEAR MEMBERS

Dr. Kurt Baum
Dr. Joseph Casanova, Jr.
Dr. Richard Taylor Keys
Dr. Richard Joseph Mohrbacher

Call for Nominations for 2023 Richard C. Tolman Medal

The Tolman Medal is awarded each year by the Southern California Section of the American Chemical Society in recognition of outstanding contributions to chemistry. These contributions may include achievements in fundamental studies, achievements in chemical technology, significant contributions to chemical education, or outstanding leadership in science on a national level. The nominee need not be a Southern California resident; however, most of the award-related accomplishments must have been made in this area. The Southern California Section and the Tolman Award Committee are now seeking nominations for the 2023 award.

There is no official nominating form for this award and nominations are accepted from any member of this section or of neighboring sections. The nomination package should include:

- an up-to-date curriculum vitae or resume of the candidate
- letters of support from colleagues in the profession describing the candidate's major achievements
- if the candidate is being considered for outstanding teaching, letters of support from former students should be included.

Please submit nomination packages electronically to the Chair of the Tolman Committee at **office@scalacs.org.** Rather than submitting copies of publications, a list of representative publications would suffice.

The deadline for receipt of nominations is **November 15, 2023.** Inquiries should be directed to the Chairperson via email at **office@scalacs.org.**

THE HEALING POWER OF CHEMISTRY

October 15-21 | 2023 | #NationalChemistryWeek

NATIONAL CHEMISTRY WEEK SEMINARS SUMMARY

SCALACS was very fortunate to be able to host two virtual seminars in conjuction with the National Chemistry Week on October 23, 2023. We were honored to have two seasoned experts in our chemistry field, the esteemed Prof. Travis Williams, a full tenured professor at University of Southern California and Ms. Urvashi Saxena, Product Manager of Collins Aerospace in Virginia presenting the seminars. These seminars held virtually were attended by more than eighty participants including sixty students from California Academy of Math and Science, Long Beach and Francisco Bravo Medical Magnet School, Los Angeles. Thank you to speakers and to our councilor, Krishna Kallury who worked hard in putting this event together.

Seminar 1: 3:45-4:45 pm, October 23, 2023
Applications and Mechanism in Hydrogen Transfer Catalysis

Presented by

Prof. Travis Williams
Professor of Chemistry,
Organic and Organometallic Chemistry, USC

Prof. Travis highlighted four focus areas his group has been working on since 2015:

- Decarbonization of transportation
- Transition metal chemistry to get CO_2 emissions eliminated
- Generation of green hydrogen for fuel and fertilizer applications
- High value co-products from the catalysis reactions employed

The first two relate to hydrogen as the alternative to fossil fuels and the latter two pertain to conversion of neglected resources into useful products.

In addition, this group is working on oxygen atom transfer to waste plastics and carbon epoxy fiber composites for aircraft industry applications. Also, on their slate are medical imaging applications employing CO_2 loaded nitrogen-rich polymers subjected to ultrasound which were not discussed in the seminar.

Designing a precursor material that can function as a source of hydrogen and is safe to transport has been the subject of several investigations. Prof. Travis' group investigated formic acid for this purpose. Prof. Travis described in detail their studies on formic acid employing transition metal-nitrogen ligand catalysis as well as electrochemistry to study the conversion of formic acid into CO_2 and hydrogen. It was found that using 1:1 methanol water with sodium formate and subsequent addition of 100% formic acid into the reaction was successful in generating three equivalents of hydrogen. Iodine catalyzed electrochemical conversion of formic acid was also shown to be an excellent method for dehydrogenation of this acid.

From Trash to Treasure:
During the production of biodiesel from agricultural products like soya bean oil, canola oil and corn oil, a valuable byproduct was found to be trashed. Prof. Travis followed the trail of chicken wings and French fries from the University of Texas at Austin which ended up at refineries that generated biodiesel from the oil residues of the food. The byproduct was glycerol which was discarded. Prof. Travis' group studied the conversion of glycerol into lactate with transition metal catalysis with excellent results. Lactate is a valuable precursor to biomaterials like polylactate. This gives an enormous economic boost to the biodiesel industry. They also found that oleic acid with its cis geometry is unaffected by catalysed hydrogenation while polyunsaturated acids were completely saturated. This prevents solidification of the biofuel under cooler conditions.

Further Readings:
1. Travis et al ACS Catalysis 2016, 6, 2014
2. Travis et al ACS Sustainable Chemistry & Engineering 2018, 6, 5749

Seminar 2: 4:45-5:45 pm, October 23, 2023
AI and Green Chemistry: Crafting a Sustainable Tomorrow

Presented by
Urvashi Saxena
Product Manager, Collins Aerospace, Virginia

A computer would deserve to be called intelligent if it could deceive a human into believing that it was human." – Alan Turing

Artificial intelligence (AI) is the ability of a computer or a robot controlled by a computer to do tasks that are usually done by humans because they require human intelligence and discernment. AI systems work by combining large sets of data with intelligent, iterative processing algorithms to learn from patterns and features in the data that they analyze. Each time an AI system runs a round of data processing, it tests and measures its own performance and develops additional expertise.

Ms. Urvashi cited some examples of AI we use on a routine basis – cellphones, computers, Netflix, picture manipulation to name a few. AI driven products include manufacturing robots, self-driving cars, chat bots, social media monitoring, virtual travel booking and smart assistants.

(Continued on page 8)

Virtual International High School Students Research Symposium, December 2, 2023

SCALACS will be hosting a Virtual International High School Students Research Symposium on December 2, 2023 from 9 am to 4 pm under the ACS's LSAC/DEIR Grant Funding. Sponsored by Lumiere Education, registration for this event is free to all high school students. It'll be a 15-minute Powerpoint presentation via Zoom. Topics include all areas of the STEM subjects. The top 6 presentations will be awarded US$100 each as determined by a panel of judges appointed by SCALACS. To register, please visit www.scalacs.org. Registration closes on midnight of November 20th. For more information, contact SCALACS office at office@scalacs.org. To date, we have around 30 participants from all over the world (see below).

Name	Research Topic
Aashima Keswani	In what ways is the data of women between the age of 15 to 25 being unethically collected by social media apps and what is the resulting impact?
Achint Kaur	How can we use phylogenetics methods in tracing back the origins of Acute Myeloid Leukemia, as well as elucidating the role of driver mutations and the specific locations of the mutations involved?
Ryan Santosh	How can machine learning be applied in the ideation stage in automotive design and how can breakthroughs in ML affect this field?
Adhiraj Gupta	How do different CNN architectures compare for the task of classifying road signs and drawing bounding boxes around them?
Ayaan Waqar	What are the privacy considerations in federated machine learning for healthcare wearables?
Mihaela Petrova Tzvetkova	What is the impact of zinc finger proteins in developing and promoting metastasis in breast cancer?
Oguzhan Sinik	What are the key characteristics of human speech that contribute to perceived naturalness? What are the technical challenges in creating human-like sounds for virtual voice assistants and how can these challenges be overcome?
Nada Elmahmoudy Hassan Elazazy Harraz	How can rising sea levels affect The Coastal Zone of the Nile Delta in Egypt?
Udaiveer Parihar	Evaluating the effectiveness of a PMSA (Prostate Membrane Specific Antigen) antigen radioisotope based screening method in screening for PDAC (Pancreatic Ductal Adenocarcinoma) in high-risk populations compared to existing screening tools.
Aisana Kasenova Askhatovna	How are the racial biases within the training datasets used to develop AI models affect the accuracy and reliability of dermatological diagnoses?
Isabella Jabbour	What are the predicted consequences of strategic marketing and social influences on the number of current e-cigarette users in middle school and high school?
Kaylyn Sethakosee	Did the COVID-19 pandemic have an adverse effect on pregnancy outcomes and C-Section rates in the state of Massachusetts?
Raiya Minhas	How do soft materials and engineered artificial biosystems improve biocompatibility for the application of Total Artificial Heart (TAH) development? How has improved medical technology affected the instance of heart transplants?
Yung Hau Hong Joseph	How did different COVID-19 policies impact stroke admissions and the severity of stroke in Hong Kong?
Simar Rajpal	Comparing protein structure prediction using AlphaFold to protein structures that were solved experimentally for key oncogenic proteins involved in cancer progression.
Anant Gupta	To what extent can large language models help to predict changes in the stock market?
Kanjonavo Sabud	Based on climate computational models, how does changing climate increase the probability of wildfires in the East Coast of the USA?
Maya Malik	How have coral reef ecosystems in Hawaii, USA evolved over time when analyzed through machine learning techniques applied to underwater images? How can identifying classical Indian dances through machine learning techniques via analyzing images be used to automatically classify YouTube videos by dance form, therefore contributing to the preservation of Indian dance and heritage?
Lea Chen	How can I design an assistive robotic companion to support the needs of elders living alone?
Rianna Amin	Constructing a Global Electricity Supergrid Based on Renewable Energy Sources: A Qualitative Analysis
Jose Maria Salvador	Are attention-based neural networks more effective than any other neural network architecture for software vulnerability analysis?
Samantha Wu	How is the quantity of exosome derived miRNAs in human milk affected by 1) multiple freeze thaws, 2) storage at different temperature conditions, and 3) isolating EV and miRNA on the same day using the size exclusion chromatography method?
Niharika Sapre	How can computational methods help increase the efficiency of small farmers' harvest and make work less arduous?
Sean Seguin	How can long language models be applied to medicine in order to make diagnosis easier for both doctors and patients?

ACS Local Section
Southern California

PRESENTS

INTERNATIONAL HIGH SCHOOL STUDENTS RESEARCH SYMPOSIUM

Conducted under the American Chemistry Society's LSAC/DEIR Grant Funding

SATURDAY | DECEMBER 2

SCALACS invites you to attend/participate in the virtual **International High School Students Research Symposium**
Date: **Saturday, December 2, 2023**
Morning Session: **9:00 am to 12:00 noon Pacific Time**
Afternoon Session: **1:00 pm to 4:00 pm Pacific Time**
Topic(s): **Any area relating to STEM subjects**
Mode of Presentations:
Powerpoint via Zoom (15 minutes for each presentation)

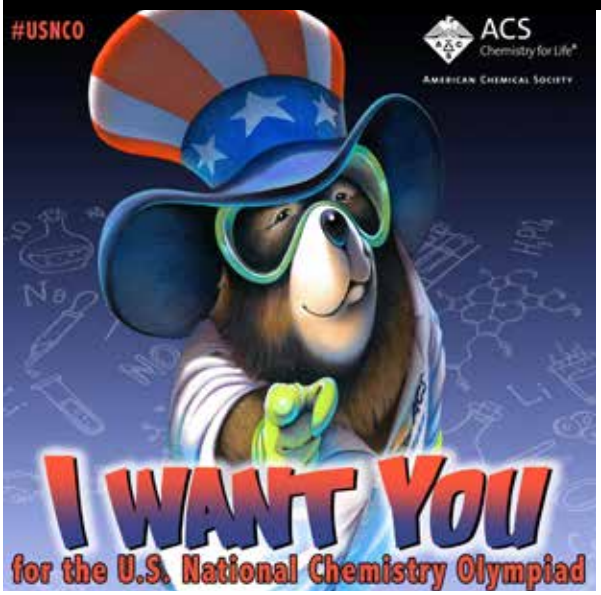
Top six (6) presentations will be awarded US$100 each as determined by a panel of judges appointed by SCALACS. **Registration is free to all. To register, please visit www.scalacs.org. Registration closes on midnight of November 27, 2023.** For more information, contact SCALACS office at office@scalacs.org.

RSVP at:
scalacs.org
by November 27, 2023

EVENT SPONSOR:

LUMIERE EDUCATION

An organization founded by Harvard and Oxford PhDs with the aim to provide high school students around the world access to research opportunities with top global scholars.



2024 HIGH SCHOOL CHEMISTRY OLYMPIAD

Teachers, if your students are interested in participating in the 2024 USNCO exams, they must register with ACS by completing the **REGISTRATION FORM** no later than **December 15, 2023.** Completion of this form does not guarantee participation in the program.

Registration and more information can be found at the ACS website below: https://www.acs.org/education/students/highschool/olympiad.html

2024 IMPORTANT DATES

Schedule is subject to change. All changes will be communicated to USNCO Coordinators and posted on the USNCO website.

December 15, 2023	Student registration closes
March 1-24, 2024	Local Exam
April 13-21, 2024	National Exam
June 2-14, 2024	Study Camp
July 22-31, 2024	International Chemistry Olympiad

The 2024 International High School Chemistry Olympiad will be on July 22 through 31. The Local Exam will be held some time from March 1 - 24, 2024. If your school is interested in participating, please email the estimate of number of students who will be taking the exam to office@scalacs.org. The **Local Exam online participation payment and confirmation will open in January.**

(Continued from page 5)

The main points of Ms. Saxena's presentation include:

- AI is superior than human mind in consistency, accuracy and speed
- AI categories include Narrow, General and Superintelligent variations
- Types of AI include reactive machines, limited memory, theory of mind and selfaware
- Applications of AI consist of Neural networks, Machine Learning, Natural Language processing and Robotics
- Machine learning subsets are supervised, unsupervised and semi-supervised learning, reinforcement and deep learning

Ms. Urvashi then discussed in detail applications of AI in • Healthcare • Education & learning • Financial sector • Aviation industry • Green chemistry/sustainability and combating climate change • Agriculture and food industries • Green chemistry – regulatory compliance, recycling, process optimization, supply chain management, materials discovery and predictive analytics

Some AI Reviews:

1. Artificial Intelligence in Drug Discovery & Development, Drug Discovery Today, 2021, 26, 80
2. Clinical applications of AI in Glaucoma, Ophthalmic Vis Res 2023; 18 (1): 97–112
3. AI in Pharmaceutical Technology & Drug delivery design, Pharmaceutics 2023, 15, 1916.

Thank You to All 2023 Volunteers

The many programs and services that this Section provides are accomplished by the volunteers of the various committees. We would like to acknowledge and thank all of you who volunteered your time and talents during this year.

Chair:
Edye Udell

Chair-Elect:
Richard Kidd

Secretary/Treasurer:
Barbara Belmont

Elected Members of Executive Committee:
Laurie Barge
Inessa Bychinskaya
Krishna Kallury
Richard Kidd
Benjamin Ku
David Hanna
Sahar Roshandel
Katherine Van Heuvelen

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Senior Chemists:
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Chandrasekhar Sonwane
Edye Udell

Environmental Improvement:
Laurie Barge, Chair
Inessa Bychinskaya
Thomas Mathew

Tolman Award:
Vy Dong, Chair

Speakers/Volunteers/ Contributing Authors:
Professor Alison Butler
Dr. Salmaan Baxamusa
Professor Sri Narayan
Professor Surya Prakash
Professor Travis Williams
Ely Khatib
Urvashi Saxena
Nancy Brown
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It takes a lot of people's time and efforts to make our programs work. We as a Section and the community at large sincerely appreciate the dedication of these people and invite you to participate if you haven't already! This Section would be nothing without your volunteer efforts.

If you're interested in Section governance or helping with any of our events, please contact our Section Office at office@scalacs.org. We'd love to have you on a committee!

We tried to get everyone on the list. If we missed you, please accept our thanks for a job well done!

BY

KEITH ORSO
Irell & Manella LLP
KOrso@irell.com

The previous edition of this column began presenting a thumbnail sketch of a 1976 "Agreement on Guidelines For Classroom Copying In Not-For-Profit Educational Institutions." The guidelines state that multiple copies (not to exceed one per pupil in a course) from books and periodicals may be made by or for the teacher for classroom use or discussion provided that each copy includes a notice of copyright, the copying meets tests of brevity and spontaneity (set forth in the October edition), and the copying meets a "cumulative effect" test.

The "cumulative effect" test is met if

(i) the copying of the material is for only one course in the school in which the copies are made,

(ii) not more than two excerpts, or one short poem, article, story, or essay is copied from the same author, nor more than three from the same collective work or periodical volume, during one class term, and

(iii) there are not more than nine instances of such multiple copying for one course during one class term (though limitations (ii) and (iii) do not apply to current news periodicals and newspapers and current news sections of other periodicals).

Notwithstanding these provisions, the guidelines expressly prohibited copying for educational use in a number of circumstances. Specifically, the guidelines stated that:

(A) copying shall not be used to create or to replace or substitute for anthologies, compilations, or collective works;

(B) there shall be no copying of or from works intended to be "consumable" in the course of study or of teaching (e.g., workbooks, exercises, standardized tests, and test booklets and answer sheets);

(C) copying shall not substitute for the purchase of books, publishers' reprints or periodicals; be directed by higher authority; or be repeated with respect to the same item by the same teacher from term to term; and

(D no charge shall be made to the student beyond the actual cost of the photocopying.

Parallel guidelines for copying musical and audiovisual works were agreed to by representatives of music publishing and music education associations to similarly bring greater certainty and protection for teachers.

The author earned engineering and chemical engineering undergraduate and graduate degrees, and is a patent attorney and partner at the law firm of Irell & Manella LLP. This column does not constitute legal advice and does not necessarily reflect the views of the firm or its clients.

THIS MONTH IN CHEMICAL HISTORY

BY

HAROLD GOLDWHITE
California State University, Los Angeles
hgoldwh@calstatela.edu

I am constantly amazed at the treasures one can find by exploring the internet. A favorite pastime of mine is trolling for used books about chemistry – especially older books. A few months ago I bought, for a remarkably reasonable price, a battered but complete and serviceable copy of "Philosophie Chimique" or, to use its English title "Chemical Philosophy, or the fundamental truths of modern chemistry designed to serve as fundamentals for the study of that science." The author is none other than A. F. Fourcroy, associate and friend of Lavoisier who revolutionized chemistry through his understanding of the role of oxygen in combustion.

The book I purchased is the third edition, published in 1806. The first edition of Fourcroy's text was published in 1792. A word of explanation about the title; Philosophy can best be taken to mean theory in this context.

The book is over 360 pages long. The pages are dense with almost completely unrelieved text. You have to reach page 205 to arrive at the book's only Table – two pages dedicated to the properties of acids. Somewhat surprising to me is the lack of a Table of the Elements; something that featured prominently in Lavoisier's "Textbook of Elementary Chemistry" published in the 1770s.

I believe my copy of this book was misbound; Fourcroy's preface is oddly placed between pages 16 and 17 of the Introduction. The preface is interesting. I will quote extensively from it. (The translation from the French is mine.) "When a science has made great progress, when it has appropriate methods to perfect its advance, general truths multiply and join up naturally: such is today's chemistry. The principles of this science were created only 20 years ago [by Lavoisier; HG] but it is already rich in corollaries and general results that reinforce the whole scheme….

It is 14 years from the first publication of "Chemical Philosophy." This third edition includes many corrections and important additions. The book has been translated into German, Swedish, Danish, English, Spanish, Portuguese, Italian, and modern Greek. I think it may be included among classic books [!]…. Teaching experience of more than 25 years leads me to hope that my efforts will not be unsuccessful. Paris, August 1805."

Obviously in a single column I cannot summarize and explain this "classic" work. An examination of one subject will have to suffice. I start with the section on the action of caloric. Lavoisier's Table of the Elements included both light and caloric. Here's Fourcroy's definition of caloric: "What people call heat is a sensation produced by a body that modern chemists call caloric." Notice the use of the word body. Caloric is a substance. "Caloric penetrates everything: it separates molecules by lodging between them; it diminishes their attraction; it dilates materials; it melts solids; and rarefies liquids sufficiently to make them invisible giving them the form of an air or the gaseous state." Fourcroy emphasizes that caloric is a particular substance with

(Continued on page 13)

CHAIR'S MESSAGE

Hello!

Thank you to everyone who volunteered and attended our National Chemistry Week events in October. It was wonderful to be able to share our love of chemistry with the community. Check out the Section's website and Instagram page for pictures from the events.

Our Section's Annual Meeting is scheduled for **Saturday, December 2nd at 11 am**. This year's luncheon, hosted by Dr. David Srulevitch and the Section's Senior Chemists Committee, will be held at the **Alumni Center at UCR.** During the event we will have the opportunity to hear from one of our **Project Seed participants** from this summer, as well as recognizing the **long-term ACS members** in our Section.

50-Year Members
Dr. Harvey W. Blanch
Guido W. Daub
Dr. Wayne E. Steinmetz

60-Year Members
Dr. Nancy G. Adin
Harold T. McKone
Earl L. Miner
Dr. Joseph M. Muchowski
Dr. Denny B. Nelson
Dr. Raymond L. Schmidt

Plan to attend this event to hear some fascinating stories of the amazing lives and careers of the chemists in our area. Check out our website for more information and photos from last year's annual meeting.

The San Gorgonio Section is committed to cultivating a diverse, inclusive, and respectful community. We realize that we may be falling short in our efforts thus far though. Please email me if you have any suggestions on how we can implement any changes or accommodations to our events and meetings that would help us to achieve this goal.

With the beginning of the new school year, one topic that was discussed on campuses all over the world was the use of **AI (Artificial Intelligence)** in the classroom. In February 2024, we are interested in holding a panel on the responsible use of AI in the field of chemistry. We are seeking experts in the field of AI and STEM professors that are using it in their classroom to join this panel. Please email me with suggestions of speakers/panelists for this exciting event.

Beginning in January 2024, the San Gorgonio Section will no longer appear in the SCALACS magazine (where you are currently reading this message). For the past two years, we have emailed most of our members twice a month – once through the SCALACS magazine email and once through a separate email newsletter. We have continued to publish in the SCALACS magazine since it has allowed us to mail out hardcopies to our members who lack email addresses. Our move away from publishing in the SCALACS magazine will free up some funds for us to use for student travel grants in the future. If you would like to continue to receive a hardcopy of my messages or if you are not currently receiving my email newsletters but would like to do so, please email Eileen DiMauro (edimauro@mtsac.edu).

Connect with us!

Website: https://www.sangorgonioacs.com/

LinkedIn: https://www.linkedin.com/company/american-chemical-society-san-gorgonio-section/)

Instagram: @SanGorgonioACS

Volunteer to help with our events: https://forms.gle/26CZmwuWP1qjMWbc6

Feel free to email me if you have any questions or suggestions for the Section. Have a great month!

Dr. Jenifer N. Nalbandian
Chair of the San Gorgonio Local Section
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(Continued from page 11)

the ability to diminish the attraction between molecules of the same kind thus facilitating their combination with molecules of a different kind. Consequently the addition of caloric speeds up chemical reactions. He attributes to Laplace the invention of the calorimeter, "one of the greatest contributions to chemistry". My own reading of chemical history suggests that Lavoisier's name should be included with that of Laplace.

The applications of caloric are manifold: thermometers; fusion; sublimation; volatilization; artificial refrigeration; incandescence; space heating; fusion etc.

1806 is, of course, just before Dalton's atomic theory; and long before Berzelius' introduction of modern chemical symbolism. Lavoisier wrote the first chemical equation in the 1770s but that was in words, not symbols. It would be anachronistic to criticize Fourcroy for his presentation of chemistry purely in words. Once again the perusal of a textbook gives us a penetrating insight into the state of chemistry at a particular time. More from Fourcroy in a later column.

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PERIODICALS

Bi-Section ACS Calendar

NOVEMBER

15 Call for Nominations for Paul Shin Memorial High School Teacher of The Year Award & Tolman Award Deadline — pages 2 & 3

27 Registration for SCALACS International High School Students Research Symposium closes — pages 6 & 7

DECEMBER

2 SCALACS International High School Students Research Symposium — pages 6 & 7

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