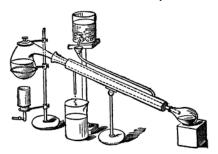


# SOUTHWEST RETORT



#### **SEVENTY-SECOND YEAR**

April 2020

Published for the advancement of Chemists, Chemical Engineers and Chemistry in this area

#### published by

The Dallas-Fort Worth Section, with the cooperation of five other local sections of the American Chemical Society in the Southwest Region.

Vol. 72(8) April 2020

Editorial and Business Offices: Contact the Editor for subscription and

advertisement information.

Editor: Connie Hendrickson: retort@acsdfw.org

Copy and Layout Editor: Lance Hughes: <a href="https://doi.org/hugha64@gmail.com">hugha64@gmail.com</a>

Business Manager: Martha Gilchrist: Martha.Gilchrist@tccd.edu

The Southwest Retort is published monthly, September through May, by the Dallas-Ft. Worth Section of the American Chemical Society, Inc., for the ACS Sections of the Southwest Region.



# Contact the DFW Section

General: info@acsdfw.org

Education: ncw@acsdfw.org

**Elections:** 

candidates@acsdfw.org Facebook: DFWACS

Twitter: acsdfw

#### **TABLE OF CONTENTS**

Fifty Years Ago5
ARTICLES and COLUMNS
Letter from the Editor15
ACS Local Section13
Around the Area14
NEWS SHORTS
Missing Link in Coronavirus Jump from Bats to Humans could be Pangolins, not Snakes
Can Soap Really 'Kill' the Coronavirus? (video)
<b>Chemistry Education Goes Online8</b>
Special Report Highlights Potential Therapeutic Agents, Vaccines for COVID-199
Maggot Analysis goes Molecular for Forensic Cases11
Magnolia Bark Compound could Someday Help Treat Drug-resistant Epilepsy12
ANNOUNCEMENTS and MEETINGS
2020 Meeting in MiniatureCANCELLED
Elemental Arts Contest10
INDEX OF ADVERTISERS
Huffman Laboratories3
Vance Editing3
TMJ Data Entry and Editing3
ANA-LAB4

2

## **SERVICES and ANNOUNCEMENTS**

# Elemental **Analysis**

**CHNOS Ash** ICP · AA · ICP/MS TOC · TOX · BTU **Problem Solving** 

# **HUFFMAN**

# LABORATORIES, INC. Quality Analytical Services Since 1936

Phone: (303) 278-4455

FAX: (303) 278-7012

chemistry@huffmanlabs.com www.huffmanlabs.com









**EDITING** AND PROOF-READING SERVICES

Need someone to proof or edit your next paper, grant, or presentation? Let an experienced proofreader and PhD chemist do it for you! I have a strong grasp of English grammar and scientific writing and can condense text without losing the underlying meaning. **Competitive rates! Contact** Mike Vance:

vance2276@gmail.com

408-786-7451

# **TMJ**

**Data Entry and Editing** 

Specializes in:

- **Company newsletters**
- Confidential Data Entry
- **Free Quotes**

**Contact Lance at** 

hugla64@gmail.com

 $\mathbf{Or}$ 

214-356-9002



# 57 58 Quality Analytical & Environmental Services Since 1965 69 70 La Ce Pr Na Pm Sm Eu Ga Tb Dy Ho Er Tm Yb 13801 140.12 140.91 144.24 (145) 150.36 151.96 157.25 158.93 162.50 164.03 167.26 168.03 173.04

#### ANA-LAB CORPORATION

2600 Dudley Road • P. O. Box 9000 Kilgore, Texas 75663-9000

903-984-0551 • Fax: 903-984-5914

www.ana-lab.com • Email: corp@ana-lab.com

Ana-Lab Corporation is an employee-owned organization which provides superior, innovative and cost effective solutions for clients though exceptional science, processes and people. With a staff of experienced, professional and talented chemists and technicians supported by sophisticated laboratory testing equipment, Ana-Lab is the preferred environmental testing laboratory serving clients nationwide.

#### Regional Service Centers

Amarillo, TX Phone / Fax 806-355-3556 Email: panhandlesales@ana-lab.com

Dallas, TX Phone / Fax 972-837-9412 Email: northtex@ana-lab.com

Austin, TX Phone / Fax 512-821-0045 Email: centex@ana-lab.com

Brownsville, TX Phone / Fax 956-831-6437 Email: rgvtex@ana-lab.com Houston, TX Phone / Fax 281-333-9414 Email: gulfcoastsales@ana-lab.com

Norman, OK Phone / Fax 405-590-2533 Email: oklahoma@ana-lab.com

Shreveport, LA Phone / Fax 318-219-9300 Email: arkla@ana-lab.com









### FIFTY YEARS AGO IN THE SOUTHWEST RETORT

The Southwest area has been blessed with three different ACS tour speakers for April. **Dr. Teddy H. Grindstaff** from DuPont will speak on "Holography." **Mr. Frederick E. Borton** from Olin Mathieson will talk on "Artificial Thermals." **Dr. Kenneth Blum** from Southwest Research Foundation in San Antonio will present either "The Pharmacology and Chemistry of Psychotropic Agents: Hallucinogins and other Abused Centrally Active Agents" or "The Psychopharmacology of a Protective Agent Against Acute Alcoholic Intoxication."

The petition requesting the reorganization of the Ark-La-Tex Section into two sections has been received by **Dr. Charles White-side** of Kilgore College. The petition will be available at the April 15 meeting in Marshall for signatures. It is hoped that the required 50 signatures on the petition will be obtained in time for presentation at the May ACS National Meeting. Recent seminars at Texas Eastman were given by **Professor Yuya Yamashita** of Nagoya University and **Dr. Joachim Bargon** of Cal Tech.

In the Central Texas ACS Section **Dr. Patrick Cassidy** of Tracor, the section chair, was the ACS representative to the inauguration of **Dr. Billy Mae Jones** as President of Southwest Texas State University. **Dr. Donald Carlton** of Radian Corp. has received research grants from Kirkland Air Force Base and from HEW. At UT-Austin **Dr. C. A. L. Becker** has received a two year Welch grant.

In the Dallas-Ft. Worth ACS section, seminars at East Texas State University (*(now Texas A&M-Commerce*) were given by **Dr.** 

A. G. Pinkus of Baylor and Dr. Hans Jonassen of Tulane. The East Texas State Student Affiliate Chapter of the ACS will host the upcoming Meeting-in-Miniature on May 8. At the Mobil Field Research Laboratory Drs. Luther Williams, Arthur Hall, and Herman Custard attended the ACS National Meeting recently held in Houston. Dr. Wilson L. Orr attended the symposium on "Geochemistry of Stable Isotopes" sponsored by Cal Tech and held Feb. 17-18 in Pasadena.

The Southeastern Texas ACS Section is finally relaxing after the end of the ACS National Meeting held recently in Houston. Thanks go to the General Chair Dr. Joe Franklin and Co-Chair Jim Cavender, Jr. Other vital colleagues were Dr. Bill Bailey, Chemical Exposition Chair; Dr. Ray Seymour, Public Relations Chair; Mary Lou Margrave, Ladies Program Chair; Dr. Max Mosesman, Industrial Plant Tours Chair; Dr. Gerry Meisels; Student Personnel Chair; and Dr. Bob Stevens, Student Program Chair.

In the Texas A&M ACS Section, the A&M Chemistry Department was visited by **Dr. Frank Cotton** from MIT, who is serving as an Academic Consultant under the NSF Department of Chemistry Development Grant. In addition to informal discussions, he also presented three lectures.

Compiled by E. Thomas Strom

# Missing Link in Coronavirus Jump from Bats to Humans could be Pangolins, not Snakes

"Protein Structure and Sequence Reanalysis of 2019-nCoV Genome Refutes Snakes as Its Intermediate Host and the Unique Similarity between Its Spike Protein Insertions and HIV-1"

#### Journal of Proteome Research

As scientists scramble to learn more about the SARS-CoV-2 coronavirus, two recent studies of the virus' genome reached controversial conclusions: namely, that snakes are intermediate hosts of the new virus, and that

a key coronavirus protein shares "uncanny similarities" with an HIV-1 protein. Now, a study in ACS' Journal of Proteome Research refutes both ideas and suggests that scaly, anteater-like animals called pangolins are the missing link for SARS-CoV-2 transmission between bats and humans.

Understanding where SARS-CoV-2 — the virus that caused the COVID-19 pandemic — came from and how it spreads is important for its control and treatment. Most experts agree that bats are a natural reservoir of SARS-CoV-2, but an intermediate host was needed for it to jump from bats to humans. A recent study that analyzed the new virus' genome suggested snakes as this host, despite the fact

that coronaviruses are only known to infect mammals and birds. Meanwhile, an unrelated study compared the sequence of the spike protein — a key protein responsible for getting the virus into mammalian cells — of the new coronavirus to that of HIV-1, noting unexpected similarities. Although the authors withdrew this preprint manuscript after scientific criticism, it spawned rumors and conspiracy theories that the new coronavirus could have been engineered in a lab. Yang



Zhang and colleagues wanted to conduct a more careful and complete analysis of SARS -CoV-2 DNA and protein sequences to resolve these issues.

Compared to the previous studies, the researchers used larger data sets and newer, more accurate bioinformatics methods and databases to analyze the SARS-CoV-2 ge-

#### Continued from page 6

nome. They found that, in contrast to the claim that four regions of the spike protein were uniquely shared between SARS-CoV-2 and HIV-1, the four sequence segments could be found in other viruses, including bat coronavirus. After uncovering an error in the analysis that suggested snakes as an intermediate host, the team searched DNA and protein sequences isolated from pangolin tissues for ones similar to SARS-CoV-2. The researchers identified protein sequences in sick animals' lungs that were 91% identical to the human virus' proteins. Moreover, the receptor binding domain of the spike protein from the pangolin coronavirus had only five amino acid differences from SARS-CoV-2, compared with 19 differences between the human and bat viral proteins. This evidence points to the pangolin as the most likely intermediate host for the new coronavirus, but additional intermediate hosts could be possible, the researchers say.

The authors acknowledge funding from the National Science Foundation, the National Institute of General Medical Sciences, the National Institute of Allergy and Infectious Diseases and the Extreme Science and Engineering Discovery Environment.

The authors acknowledge funding from the National Science Foundation, the National Institute of General Medical Sciences, the National Institute of Allergy and Infectious Diseases and the Extreme Science and Engineering Discovery Environment.

# Can Soap Really 'Kill' the Coronavirus? (video)

WASHINGTON, March 23, 2020 — Constantly being told to wash your hands? Us, too. So we're diving into the chemistry behind why soap is so effective against viruses like the coronavirus that causes COVID-19: https://youtu.be/K2pMVimI2bw.

#### YouTube ID: K2pMVimI2bw

Reactions is a video series produced by the American Chemical Society and PBS Digital Studios. Subscribe to Reactions at http://bit.ly/ACSReactions and follow us on Twitter @ACSReactions.

#### **2020 DFW Section Officers**

Chair: Mihaela C. Stefan

**Chair-elect: Trey Putnam** 

Past Chair: Denise Merkle

Treasurer: Martha Gilchrist

Secretary: Heidi Conrad

Councilors (2018-20) Mary Anderson

Councilors (2019-21): Linda Schultz,

E. Thomas Strom, and Jason McAfee

Alternate Councilor (2018-20): Ed Donnay

Alternate Councilors (2019-21): Michael Bigwood, John McIlroy, and Daniela Hutanu

## Chemistry Education Goes Online

"Tips for teaching in the time of coronavirus"

#### Chemical & Engineering News

With colleges and universities around the world shuttered because of the COVID-19 pandemic, chemistry teachers are navigating the shift to online learning. There are several factors to consider in this effort, from technology to accessibility. *Chemical & Engineering News* (C&EN), the weekly newsmagazine of the American Chemical Society, asked chemistry teachers with online learning experience to provide best practices for educators in this new, virtual territory.



The first step, experts say, is to get familiar with the tools available for virtual class-rooms. Most schools have access to recording and teleconferencing software, and instructional designers can help provide a framework for online coursework. While there are many technologies available, experts warn not to assume that all students are tech-savvy, have a suitable internet connec-

tion or can access certain tools. Pre-recorded lectures should include captions when possible, both for accessibility and in anticipation of audio issues. And glitches will happen, making it important to practice using the platforms before going live. The experts also note that keeping lectures as short as possible (15 minutes at most) will help students digest the content better, especially when it comes to more advanced material, writes Senior Correspondent Celia Henry Arnaud.

While there are many advantages to online learning, building rapport with students from a distance presents challenges. Staying in touch over email is essential in the absence of office hours and in-person classes, and communicating in a conversational, approachable manner will help students feel comfortable in reaching out for help, according to some online instructors. When it comes time for exams, it's important to adapt tests to an online learning platform so that students can't look up the answers. Many experts note that lab work is the biggest hurdle in chemistry education right now, with institutions working to determine essential versus nonessential labs for students. To that end, the ACS Committee on Professional Training, which approves undergraduate chemistry programs, has authorized the use of virtual labs during the pandemic. While it will take time to iron out the wrinkles, chemistry educators are hopeful that this period will help win over skeptics of online learning.

# Special Report Highlights Potential Therapeutic Agents, Vaccines for COVID-19

"Research & Development on Therapeutic Agents and Vaccines for COVID-19 and Related Human Coronavirus Diseases"

#### ACS Central Science

Since the first reports of a new coronavirus disease in Wuhan, China, in December 2019, COVID-19 has spread rapidly across the globe, threatening a pandemic. Now, researchers from CAS, a division of the American Chemical Society specializing in scientific information solutions, have issued a special report in *ACS Central Science*. In the report, they provide an overview of published scientific information on potential therapeutic agents and vaccines for the virus, with an emphasis on patents.

According to the World Health Organization, as of March 2, 2020, COVID-19 caused almost 90,000 confirmed illnesses and more than 3,000 deaths. The responsible virus, known as SARS-CoV-2, primarily attacks the lower respiratory system to cause viral pneumonia, but it may also affect the gastrointestinal system, heart, kidney, liver and central nervous system. If SARS-CoV-2 is not quickly contained, the virus could have devastating effects on people's lives, worldwide health systems and the global economy. To assist with research efforts to discover therapies and vaccines for COVID-19, Cynthia Liu led a group of CAS scientists who analyzed the published scientific data on SARS-CoV-2 and related coronaviruses.

The researchers reviewed the rapidly growing body of journal articles related to COVID-19 and SARS-CoV-2, as well as patents having to do with human coronaviruses. From the last week of 2019 through March 1, 2020, more than 500 journal articles related to the virus were published electronically or in print, with numbers steadily increasing week-



by-week. Topics included clinical manifestations, treatment regimens, viral structure and mechanisms, antiviral

agents, and diagnostics. To date, more than 500 patents have been issued for vaccines and for therapeutic agents, such as antibodies, cytokines and nucleic acids, that could help prevent or treat coronavirus infections. Because SARS-CoV-2 is similar to other coronaviruses, such as SARS-CoV-1 and MERS-CoV, the researchers highlighted therapies previously explored for these other viruses that could also be applicable to SARS-CoV-2.

The authors do not acknowledge any funding sources for this study.

#### **#IYPT Still has Events**

Nb

Mo



## **ELEMENTAL ART: A CONTEST**

To celebrate the 150th anniversary of the Periodic Table,

Al

Ga

In

Ge

Sn

As

Se

Br

Zn

Cd

The Division of the History of Chemistry (HIST) announces a contest OPEN TO ALL for ORIGINAL ART in one of the following categories with themes related to the chemical elements, their discovery, or uses:

Mn

Tc

Ru

- 1. Poem
- 2. Cartoon
- 3. Photograph

The three best works in each category (selected by a professional panel of judges) will receive certificates, monetary awards (\$250, \$200, or \$150 for 1st, 2nd, and 3nd place, respectively), and will be published in the HIST Newsletter and Website. Depending on the number of submissions, a volume with the works may be published as well.

Rh

Pd

Ag

Please submit your original art by July 1, 2020 to the HIST Program Chair (nicktsarevsky@gmail.com) as an attachment to an email; the subject line of which reads "Elemental Art Competition – XYZ" No (where "XYZ" stands for the name of the person who created the artwork).

The winners will be notified in August 2020.

We all know that it is a challenge to fit an event like this into your AP curriculum, but most of us have some Chemistry I kiddos as well, and perhaps a little more flexibility with that schedule.

Some students are not very good at traditional pen/pencil tests and this type of contest allows kids

that are more artistically inclined to demonstrate their skills and learn something about chemistry at the same time. One suggestion is to have it be optional, for a few extra points on a quiz or test. Set up a short rubric that combines the contest elements with your own learning criteria and it is quick and easy to "grade." Just an FYI, a student in the Houston area was 2nd place in the ACS poetry contest for National Chemistry Week in 2019, so you never know.

April 2020 The Southwest **RETORT** 10

## Maggot Analysis goes Molecular for Forensic Cases

"Identification of the Species Constituents of Maggot Populations Feeding on Decomposing Remains — Facilitation of the Determination of Post Mortem Interval and Time Since Tissue Infestation through Application of Machine Learning and Direct Analysis in Real Time-Mass Spectrometry"

#### Analytical Chemistry

Maggots on a dead body or wound can help pinpoint when a person or animal died, or when maltreatment began in elder, child care or animal neglect cases. However, the current process for making this determination is time consuming and resource intensive. It also relies on species assessment by trained entomologists. Now, researchers report in ACS' *Analytical Chemistry* the development of a molecular maggot analysis method that's quick, easy and less subjective.

Pregnant blowflies, which can detect decomposing tissue from as far as 2 miles away, lay their eggs on remains within a few minutes or hours of death. After the eggs hatch, the emerging larvae — known as maggots — feed on the tissue. Forensic investigators collect the larvae, and entomologists determine their species and life stage, which can reveal when death occurred. However, this analysis can be difficult because a body might be infested with a mass of eggs and larvae from several species, all mixed together. In addition, the larvae from different species are hard to tell apart, so they are typically raised to adulthood when

they can be more reliably identified. But that takes time and training that investigators might not have, and the larvae in the collected samples might not be alive at the time of examination. As a quicker and more objective alternative, researchers have tried DNA analysis to distinguish species, but genomes from many of these flies are unknown. So Rabi A. Musah and colleagues set out to develop a better method.

Building on their previous work on singlespecies determinations, the researchers optimized their method for multispecies analyses. They used a method called direct analysis in real time-high resolution mass spec-



trometry to obtain molecular information about various combinations of maggot species. Then, they developed a new hierarchical conformal predictor and applied it to the data. With this method, for the first time, maggots from mixtures of up to six species could be distinguished.

The authors acknowledge funding from the John Jay College Office for the Advancement of Research Faculty Scholarship Program and the U.S. National Institute of Justice.

# Magnolia Bark Compound could Someday Help Treat Drug-resistant Epilepsy

"Zebrafish-Based Screening of Antiseizure Plants Used in Traditional Chinese Medicine: Magnolia officinalis Extract and Its Constituents Magnolol and Honokiol Exhibit Potent Anticonvulsant Activity in a Therapy-Resistant Epilepsy Model"

#### ACS Chemical Neuroscience

In patients with epilepsy, normal neurological activity becomes disrupted, causing debilitating seizures. Now, researchers report in *ACS Chemical Neuroscience* that they have found a potential new treatment for this disorder by turning to traditional Chinese medicine. Tests of extracts from plants used in these ancient remedies led the team to one compound, derived from a magnolia tree, that could quell drug-resistant seizures in both fish and mice.

Epilepsy is one of the most common neurological diseases worldwide, and the World Health Organization estimates that about 50 million people have the disorder. Medications are available, but they don't help everyone. Research suggests that about 70% of patients with epilepsy can control it well with medication, leaving many patients without effective treatment. But even when they work, the drugs can cause a range of side effects, from dizziness to mood disruptions. To look for new drug leads that could help even those patients who don't respond to conventional anti-seizure medications, Peter de Witte and colleagues set their sights on plants used in traditional Chinese medi-



https://www.mfrbee.com

cine.

The team collected 14 plants used in traditional Chinese medicine anti-seizure remedies. They then tested the plants' extracts in two types of zebrafish with epileptic-like seizures, one of which could respond to conventional anti-seizure medications, whereas the other type could not. Only extracts from the bark of Magnolia officinalis, a tree native to China, reduced seizure-like behavior in both types of fish. In tests with mice, the researchers found that the magnolia bark's most potent anti-seizure compound, magnolol, reduced the rodents' otherwise drugresistant seizures. It and similar compounds in magnolia bark could provide a starting point for the development of treatments for resistant epilepsy, according to the researchers.

The authors acknowledge funding from the China Scholarship Council, the KU Leuven Internal Funds and the Fund for Scientific Research Flanders.



# ACS DFW Section Invites Nominations: DEADLINE EXTENDED

ACS DFW Local Section Invites Nominations Doherty, Schulz, and Chemistry Ambassador Awards

The Doherty Award is given for excellence in chemical research or chemistry teaching, meritorious service to ACS, the establishment of new chemical methodology (for the industry), solution of pollution problems, and advances in curative or preventive chemotherapy. Nominees may come from industry, academia, government, or small business. The nominee should be a resident member in the area served by the DFW Section, and the work should have been performed here. The award is \$1500 and an engraved plaque.

The Schulz Award is given to high school chemistry teachers, who, like the late Dr. Werner Schulz, bring that something extra to the teaching of chemistry. The nominee and/or nominator need not be ACS members. Nominees should show excellence in chemistry teaching, as demonstrated by testimonials from students and fellow teachers, results in student competitions, and diligence in updating and expanding scientific/teaching credentials.

The Chemistry Ambassador Award was recently instituted by the DFW Section to recognize an outstanding Section member who has made a significant impact via promoting chemistry to the community. The 2020 Chemistry Ambassador of the Year award is based on peer or self-nominations to the selection committee. Submissions should

be one page in length and address the community outreach activities either through teaching, service, or working with legislators to affect public policy. Submissions will be evaluated on the impact made, which may include but not limited to how many people were reached, impact on individual people in the community, and exemplary commitment to the promotion of chemistry in the community.

Each nomination should contain a completed nomination form, a cover letter highlighting the nominee's accomplishments, and a copy of the CV. One seconding letter may accompany nominations. The nomination package should be sent by email as a single pdf file to Professor John P. Ferraris at ferra-



ris@utdallas.edu.
Nominations remain active for five years but should be updated annually.

The deadline for submissions of nominations for

Doherty Award, Schulz Awad, and Chemistry Ambassador Award is extended to June 15. The nomination package should be sent by email as a single pdf file to Professor John P. Ferraris at ferraris@utdallas.edu. Nominations remain active for five years but should be updated annually.

### Around the Area



#### **UT Dallas**

Assistant Professor Sheena D'Arch was awarded a five-year, \$1.9 million NIH Maximizing Investigators' Research Award for Early Stage Investigators (ESI-MIRA) to sup-

port research aimed at better understanding how access to the DNA in human cells is regulated.

https://www.utdallas.edu/news/health-medicine/dna-darcy-nih-grant-2020/



#### **Tarleton State University**

Tarleton State University is pleased to welcome Dr. Michael Huggins as Dean of the College of Science and Technology. Dr. Huggins earned his BS in Chemistry

from the University of West Florida, his PhD in Chemistry from the University of Nevada, Reno, and held Postdoctoral positions at the University of Texas at Austin. He returned to the University of West Florida, where he taught primarily Organic Chemistry for 16+ years, rising to the rank of Professor and serving as Dean of the Hal Marcus College of Science and Engineering. He was also active in the Pensacola Local Section of the ACS, serving as Chair 2008-2009.

### **UD**

Due to concerns regarding the Coronavirus outbreak, the ACS DFW local section and the University of Texas at Dallas are canceling the ACS Meeting in Miniature Meeting, which was scheduled for April 18. We are planning to reschedule the meeting in September. We will continue to post updates regarding the rescheduling of the 2020 Meeting in Miniature Meeting.

#### About

Please mark your calendars for **The 2020 Meeting in Miniature at UT Dallas**. This meeting will be hosted by The University of Texas at Dallas in Richardson, Texas on April 18th.

We look forward to seeing you at UT Dallas! WHOOSH!

#### Location

The University of Texas at Dallas 800 West Campbell Rd Richardson, TX 75080

To volunteer as a presentation judge or for other inquiries please reach out to Dr. Jeremiah Gassensmith.

Save the Date! April 18<sup>th</sup>

# From the editor

The annual meeting of the world's largest scientific society, the American Chemical Society, has taken place for the past 100 years. For the first time the Spring 2020 ACS national meeting in March was cancelled: <a href="https://cen.acs.org/acs-news/meetings/">https://cen.acs.org/acs-news/meetings/</a> ACS-cancels-spring-national-meeting/98/web/2020/03.

The 52nd DFW Meeting-in-Minature has been cancelled and will be rescheduled in September.

Schools, colleges, and universities are closed; distance learning—teaching on-line—is the new norm at all levels of education.

Four of the six press releases in this issue involve the COVID-19 pandemic. Where did it come from? How do we kill it? When will there be a vaccine? It makes the maggot article almost cheery.

What can we say except wash your hands, wear a mask at the store, and keep safe?

Best regards,