Dear Friends,

I am glad you are here. Thank you for your dedication to science, and thank you for being a member of the Indiana Academy of Science. The need for informed and engaged scientists has never been greater.

In the United States, and across the globe, the novel coronavirus has substantially influenced human health and activity. We are all grappling with how to most wisely proceed as the situation, and our institutions’ responses to it, shift. Scientists have the training and responsibility to lead in analyzing and communicating pandemic information and best practices to our families, friends, and institutions. I have observed so many scientists (from undergraduates to full professors to industry professionals) compassionately and rationally explaining data, debunking conspiracy theories, and promoting responsible behavior among their familial, social, and professional circles. As COVID-19 has necessitated the reduction of in-person gatherings, the Academy is actively exploring how we will approach our meetings to ensure quality interactions among expert and developing scientists and to provide a forum for the dissemination of the exciting work being completed here in Indiana. We will keep you apprised of new developments.

While in the throes of our battle with COVID-19, we have – yet again – witnessed deplorable violence against black Americans. As I wrote to the Academy in June, these incidents have re-exposed ugly attitudes and behaviors among a swath of our society. I echo here what I wrote earlier this summer: We must not remain silent as our colleagues, friends, students, and mentors experience aggressions that threaten life and well-being. Many scientists of color are subjected to both macro-level oppression as well as day-to-day microaggressions, suppressing their ability to live freely and to do the work they love. Historically, our colleagues have wrestled with these issues alone, and they have performed the heavy emotional labor of fighting for justice. We must all join together to oppose racism in all its forms. The Indiana Academy of Science strongly condemns all specific and systemic instances of racism. To this end, we are in the process of convening an Academy task force to develop policies, strategic plans, and next steps to ensure the Academy sustainably promotes diversity, equity, and inclusion among our membership and the Indiana scientific community. As always, I welcome your suggestions.

Fall has begun, and with it, both usual and unusual stress. We are all, in different ways, working hard to support those we care about, from the living room, to the boardroom, to the classroom. I recognize how cognitively and emotionally demanding these efforts are. I hope you are finding ways to renew your spirits. Please take good care of yourself. We need you! All the best, —VJ Rubenstein

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From the Executive Director

Hello Academy Members,

I am hoping these summer months have been pleasant for you, despite the fact that life as you may have once known it is very different. The Indiana Academy of Science is looking forward to getting back to our programming this Fall, and facilitating opportunities for you to re-connect with your fellow Academy members. With 17 different science disciplines represented in the Indiana Academy of Science, members have the unique opportunity to knowledge share outside of your individual disciplines, generate new ideas, and become even more productive. It is that kind of diversity in our membership, and so much more, that contributes to the depth and breadth of the Academy.

Over the past couple of months, the Academy has been working on a number of projects important to our members. Because COVID19 prohibited us from holding our 135th Annual Academy Meeting as planned, the Council was happy to approve the publishing of the approved abstracts in the business section of the new edition of the Proceedings. As you know the Proceedings has been in existence for over 100 years, and has consistently shared the science of our Indiana scientists both locally and with the world. Members can find the Proceedings online, and standard members of the Academy also receive a hard copy of the journal in the mail. The Academy remains grateful to Proceedings editors Dr. Don Ruch and Dr. Paul Rothrock for their remarkable work with the Proceedings over many, many years.

For those of you who plan to submit a proposal requesting funding to help with your research, please remember the deadline for submission of your Senior Research Grants proposals is September 15, 2020. More information about this can be found about the Senior Research Grants program on the Academy Website at <http://www.indianaacademyofscience.org>.

Science with a Twist has gone virtual. Not only can you join in on a wonderful evening at the Bokeh Lounge in Evansville, learning about an interesting science hot topic delivered by an expert in the field, but now you can also join the crowd that evening on Facebook Live. After a pandemic induced hiatus of six months, the Evansville Museum of Arts, History and Science, in partnership with the Indiana Academy of Science, is rebooting our long-running Science with a Twist program with new presenters and a new format this fall. Participants will not only be able to learn about cutting-edge topics in science, engineering and medicine from content area experts, from the informal atmosphere of the Bokeh Lounge bar in Evansville where socially distance rules apply for in-person audiences, but participants can now join in on Facebook live from the Evansville Museum’s Facebook page.

On September 16, Dr. Louis Cady will present a talk entitled, "How to Escape Hormone Hell", and on October 21 Nate Templeton will present a talk on "The Science of Coffee". There will be a trivia contest, prizes, socialization and SCIENCE!

Lastly, to help augment the education of our Indiana young scientists in training (Indiana high school students) who are learning from home this year because of the COVID19 challenge, the Academy is placing a call to you,
our members, to help. You should have received a separate email from me about the *Kitchen Table Science* project that the Academy has initiated. If you can participate, please take the time to do so; it will surely make a difference to so many of our Indiana kids who love science as we do.

Titled *Kitchen Table Science*, the Academy is asking our members to each produce one or two 10-minute (or less) “creative” videos within your discipline, designed to enhance critical thinking skills while fueling an excitement about science in our Indiana 9-12th graders who are learning from home this year. If for any reason you are unable to record a new video, we are asking you to identify an existing good quality short science education and/or research video for Indiana 9-12 graders, that tells the story you want told. Videos are requested no later than September 30th. Such videos will be shared with Indiana high school students, parents, and teachers in particular, and with science enthusiasts in general, through many outlets, to include the Indiana Department of Education website, newsletters, email to teachers and school officials, posted on our Indiana Academy of Science (IAS) website and Facebook page, published in the Academy Newsletter, and emailed to all of our IAS members, and finally, advertised through press releases and public service announcements statewide. This project is being brought to you from the Youth Activities Program Committee of the Academy, Dr. Azeem Ahmad, chairman.

In a nutshell, the fall, winter, and spring months of the 2020-2021 program year promises to continue realizing the Academy mission of promoting scientific research and diffusing scientific information, encouraging communication and cooperation among scientists, and improving education in the sciences. We do this through our Senior Research Grants Program, our special books and publications, our youth programs designed to nurture the talent of Indiana high school young aspiring scientists, our support of Indiana’s STEM teachers-our science educators, our community programs and partnerships that reach each corner of our state, and our highly anticipated and very well attended Annual Academy Meeting. Please keep an eye out for important dates and deadlines as they are firmed up for these initiatives. Check your emails from the Academy, the Academy website and Facebook page, and the Academy newsletter; and take time over the next few weeks to renew your Academy membership so you can remain current and involved.

Stay safe. Stay well.

— Delores G. Brown, Ph.D., Executive Director

Please like us at
https://www.facebook.com/IndianaAcademyOfScience/.
Indiana Science at its Best!

In most editions of the Academy Newsletter, we have introduced you to some remarkable individuals who represent the **past, present and future of science in Indiana**. As we continue to share these profiles with you, we invite you to join us in identifying such individuals. Take a few minutes and recommend someone whom you believe is doing remarkable work in the science arena by 1.) sharing their scientific journey, 2.) telling us about their current work in science, and 3.) providing a link to their webpage, social media profile, or other online resources members could visit (if available.) Provide a picture of the individual to include with their profile in the Academy Newsletter, **together with their permission** for the Indiana Academy of Science to highlight them. We also will consider past scientists who are of importance to Indiana science and the Academy in particular. Send your recommendations to the Newsletter Editor at <lmjacobu@iupuc.edu>. Though we may not be able to use all of the recommendations, we will certainly try to use most.
Anti-Racism Policy Statement

*Adopted by the Council of the Indiana Academy of Science; June 5, 2020.*

The Indiana Academy of Science strongly condemns all specific and systemic instances of racism.

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Statement by the Indiana Academy of Science

Regarding the murder of Mr. George Floyd
and Other African American Victims of Systemic Racism.

*Indianapolis, Indiana (June 4, 2020)*

In recent weeks, we have, once again, witnessed violence against African Americans, a deplorable stain that has soiled the fabric of our country for hundreds of years. Mr. George Floyd in Minnesota and Ms. Breonna Taylor in Kentucky are but two of the many African Americans who have been killed by police, law enforcement officers who have taken an oath to support the Constitution and the laws of our country and to safeguard the communities they serve.

Beyond these specific acts of unspeakable aggression, we should all be concerned when the mere mention of race was used by a white woman to attempt to weaponize a police force against Christian Cooper (who was just birdwatching in Central Park in New York) as an imminent threat to her life. Ahmaud Arbery was shot and killed while jogging on a Georgia Street. While white neighbors have often passed through a local construction site, it was Arbery’s race that led to his being stopped, and ultimately to his death.

To our African American Academy members, please know that the Indiana Academy of Science recognizes how anguish and exhaustion could prevail in having to deal with the ugliness of racism and discrimination. And to all of our Academy members, it is understandable how these reprehensible events could give rise to feelings of injustice and anger. The Indiana Academy of Science shares the frustration of such repugnant and unconscionable acts.

As Academy members, we must commit ourselves to opposing racism in all its forms. We must not remain silent as our African American colleagues, friends, students, and mentors experience aggressions that threaten life, and are subjected to the day-to-day micro-aggressions that suppress the ability of African Americans to live freely and prosper. **The Indiana Academy of Science strongly condemns all specific and systemic instances of racism.**

Indiana Academy of Science members are encouraged to actively search for ways that we can identify, confront, and end systemic racism. The burden is on us all to do the work.
**Kitchen Table Science Videos Requested for Indiana Students in Grades 9–12**

*Delores G. Brown, Ph.D., Executive Director*

As the 2020 school year begins, COVID-19 is continuing to offer challenges to our Indiana high schools and middle schools across the state. The Indiana Academy of Science cares and understands the need for keeping young minds invigorated through science, and is working to extend unique remote opportunities for these young people.

The Indiana Academy of Science (Youth Activities Program Committee—Dr. Azeem Ahmad, Chair) is calling for Indiana senior scientists, graduate science students and undergraduate science students to produce one or two 10-minute (or less) “creative” videos within their discipline, designed to enhance critical thinking skills while fueling an excitement about science in our Indiana 9-12th graders who are learning from home this year. These videos would demonstrate your use of scientific method in addressing a problem that has surfaced in your individual discipline, graphically present the work you do and its importance, or simply share knowledge about a topic of science that is particularly of major interest to you. These short-videos would be produced by you in the comfort of your home, in your lab, or in your office or otherwise workplace; utilizing your own personal electronic device.

If for any reason you are unable to record a new video, I ask you to identify an existing good quality short science education and/or research video for Indiana 9-12 graders, that tells the story you want told. The source for collecting and picking these educational videos could range from your own organizations, past science education or research presentations you or others have made, to any appropriate peer-reviewed source on the internet --for example YouTube. It is important to share full permission or citation with your submission.

Videos are requested **no later than September 30th**. Such videos will be shared with Indiana high school students, parents, and teachers in particular, and with science enthusiasts in general, through many outlets, to include the Indiana Department of Education website, newsletters, email to teachers and school officials, posted on the Indiana Academy of Science (IAS) website and Facebook page, published in the Academy Newsletter, and emailed to all IAS members, and finally, advertised through press releases and public service announcements statewide.

Email your short video (and inquiries) to the Academy Administrative Assistant Linda Buff at linda.buff@indianaacademyofscience.org.
Flora of the Chicago Region Illustrated Glossary Available

Special Publications Editor Bill McKnight reports that the Flora of the Chicago Region illustrated glossary is now available from the Conservation Research Institute (CRI) website (link below).

<http://conservationresearchinstitute.org/flora-of-the-chicago-region>

Wake Up, Woods Receives Accolades

The Indiana Academy of Science financially helped sponsor a children’s book about early spring blooming plants and the animals that interact with them. The title is Wake Up, Woods, for which member and past president, Michael Homoya (pictured), wrote the text. It is a project of the Indiana Native Plant Society. The book is this year’s Indiana selection for the Library of Congress’ Center for the Book. It was also the recipient of the 2020 GardenComm Silver Medal of Achievement, and it made the short list for The Eugene and Marilyn Glick Indiana Authors Award, administered by Indiana. Two reviews are available at the following URLs.

<https://blog.nature.org/science/2019/12/17/childrens-book-review-wake-up-woods/>
<https://www.indianaauthorsawards.org/review/wake-up-woods/?mc_cid=3711959da6&mc_eid=dd11feb2b5>
Indiana Academy of Science Hosted COVID-19 Webinar

On May 13th, 75 Academy members participated in a webinar that featured a diverse panel of Indiana scientists reviewing the virology, pathogenesis, current and ongoing treatment and vaccine trials for COVID-19. They also discussed the impact of COVID-19 social distancing on laboratory research progress and how to best use this time away from the lab. Dr. Minal Mulye of Marian University College of Osteopathic Medicine (pictured, bottom left) hosted the event. Panelists included Dr. David Sanders of Purdue University (pictured in main frame), virologist Dr. Chris Stobart of Butler University (pictured bottom right), and infectious diseases specialists Dr. Aaron C. Ermel and Dr. Bill Sullivan of Indiana University School of Medicine.

Funding Opportunity: FY21 Neotropical Migratory Bird Conservation Act Grants

*Contributed by Edward Stoker, Partners & Intergovernmental Affairs Specialist, U.S. Fish and Wildlife Service*

The U.S. Fish and Wildlife Service is pleased to announce the availability of funding through the United States Neotropical Migratory Bird Conservation Act (NMBCA). NMBCA established an annual, competitive grants program to support projects that promote the conservation of neotropical migratory birds and their habitats in the United States, Canada, Latin America and the Caribbean. The U.S. Fish and Wildlife Service's Division of Bird Habitat Conservation (DBHC) is responsible for managing the NMBCA grants program and administers all grants. Applicants submit project proposals, using Grants.gov, to the DBHC during the program's one funding cycle per year. The FWS Director selects the projects for funding. This program supports the DOI and FWS mission of protecting and managing the nation's natural resources by collaborating with partners and stakeholders to conserve land and water and to expand outdoor recreation and access.

Funding Opportunity Number: F21AS00158
Estimated Total Funding $4,000,000
Award Ceiling $200,000
Award Floor $10,000
Closing Date for Applications November 5, 2020

For additional Information:
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=328901>

If you have difficulty accessing the full announcement electronically, please contact Guy Foulks at <Guy_B_Foulks@fws.gov>.
The Annelid Project at Indiana Tech: Cultivating student learning in biology through annelid discovery and speciation

Julie Davis Good, PhD, Associate Professor, Biology, Indiana Institute of Technology

In order to promote effective and efficient conservation practices, the current state of our urban ecosystems must be described and understood. Indiana Institute of Technology (Indiana Tech) initiated a unique, urban-based earthworm census project on our campus during Fall 2019 and is continuing the program as our doors opened under significant public health measures in August 2020. In this semester-long laboratory, students apply their learning through hands-on work in the soil. Their initial investigation has led to preliminary findings and we anticipate discoveries in conservation and environmental research over the next academic years.

The Annelid project is an ongoing classroom-based observational study conducted by students enrolled in BIO-1340 (General Biology I Laboratory) geared to identify earthworms (Family: Annelida) in urban areas of less-disturbed soil structure on campus. The resulting “earthworm census” will provide critical information that will support – and may extend – the historical surveys of Indiana soil (Reynolds, 1994; Reynolds, 2016). New data from Allen County are important at a time when invasive species are over-burdening our regional resources.

Following the initial earthworm surveys in Fall 2019, subsequent studies are planned over the next five years to accomplish the following:

1. Compare freshly isolated earthworms with those reported in wider, regional historical surveys
2. Collaborate with other Annelid experts to confirm speciation and to extend published resources regarding invasive annelid species not previously identified in this area
3. Analyze soil chemistry in regions with disparate earthworm colonization
4. Obtain preliminary data on the gut bacteria (e.g. “microbiome”) of Indiana Tech earthworms; then compare local populations with populations in agricultural or preserved areas

The experience brings immense learning opportunities to students who had limited prior introduction to “science” in the past. This course also substantially enriches the experience of students arriving with broader preparation. The annelid project encompasses the entire Fall semester in order for students to achieve the actual progress of science. Students master experimental methods, practice scientific logic, and – thereby – accomplish important research with their own hands acquiring laboratory skills distinct from the types of learning in the classroom setting.

(Image from https://indianapublicmedia.org/amomentofscience/attack-earthworms.php)
2020 Annual Meeting Abstracts
The latest issue of the Proceedings of the Indiana Academy of Science (volume 128, number 2) has been sent to members. In this edition we placed the approved abstracts from the 2020 Annual Academy Meeting (that we cancelled.) Thanks to Don Ruch for formatting the abstracts for the business section of the Proceedings.

IAS Senior Research Grants Deadline
The Indiana Academy of Science Senior Research Grants Program makes awards of up to $3000 to Academy members or students they sponsor to purchase supplies, support travel and field expenses, pay research assistants, and provide other items required to conduct novel scientific research. The deadlines for the submission of proposals to the chair of the Research Grants Committee are 15 September and 1 March of each year. Visit the webpage below for more details.

<https://www.indianaacademyofscience.org/research-grants/senior-research-grants>

Procedure for Nomination of Individuals for IAS Fellows
The Awards Committee of the Indiana Academy of Science accepts nominations any time of the year. Forms for Fellow may be found at http://www.indianaacademyofscience.org/award-fellows. Please keep in mind that Recommendations for Academy Fellows are put forth by Fellows of the Academy only. Recommended nominees must be current members of the Indiana Academy of Science. Please direct questions or send nominations to: <awards@indianaacademyofscience.org>.

UPCOMING NEWSLETTER DEADLINES
Send items to the Editor, Luke M. Jacobus, lmjacobu @ iupuc.edu
- Nov 15 for December 2020
- Feb 1 for February 2021
- April 15 for May 2021
- Aug 15 for September 2021

INDIANA ACADEMY OF SCIENCE NEWSLETTER
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