The Accelerator

INDIANA SECTION OF THE AMERICAN CHEMICAL SOCIETY

Q2 2019 (JULY)

Chair's Corner *by Tamiko Porter*

Kudos to all of the section student award winners and members celebrating 50+ years with ACS. Everyone was recognized at our fantastic May banquet. We'd like to thank everyone who attended and also express our appreciation of Kathy Stickney who did a great job planning the banquet.

If you don't have plans for the evening of July 18, let me personally invite you to join the section at our Annual Baseball night. What better way to spend a warm summer evening than cheering on our hometown Indians to victory with friends and fellow chemists? The particulars on how to request tickets can be found in the ad in this issue of the Accelerator.

Please note that we are in the planning stages for some other exciting activities including Chemistry and Archaeology, the Chemistry of Cheese and the National Chemistry Week Celebration at the Children's Museum. We also have October 10, 2019 saved for a general membership meeting. More info on these and others events will be shared via our webpage, email and the Accelerator.

Calendar of Upcoming Events and Deadlines

Indians Baseball Night: Part XVIII ***Thursday, July 18*** at 7 PM at Victory Field (RSVP at mathes@lilly.com or 317-217-9810 by July 15)

Project Seed Poster Session ***Thursday, July 18*** from 4 pm to 8 pm at 655 Barnhill Dr (IUPUI Campus). See www.indyprojectseed.org for more information

Ignite Your Superpower ***Thursday, August 22nd*** from 8 AM to 3 PM at IUPUI, 420 University Blvd, Indianapolis, IN 46202. Contact IYS@womenandhightech.or with any questions. Register to volunteer at https://signup.com/client/invitation2/secure/2705558/false#/invitation

Illustrated Poetry Contest deadline for entry application ***Thursday, September 19th***: Contact linda.obsborn@hrglab.com, or call 317-390-3188 for questions. Mail submissions to the above email or Linda Osborn at 6320 Intech Way, Indianapolis, IN 46278

Speaker: Maria Alvim-Gaston's Chemistry of Cheese

Celebrate Science Indiana ***Saturday, October 5th*** from 9:30 AM to 5 PM at the Indiana State Fairgrounds Blue Ribbon Pavillion. Contact jaustin@hrglab.com to vounteer

Chemistry of Cheese *October 24th 6-9 PM at* Big Red Liquors Corporate Offices; 5445 South East Street, Indianapolis, IN 46227

National Chemistry Day ***Saturday, November 2nd*** from 10 AM to 3 PM at the Indianapolis Children's Museum. Tickets can be purchased https://www.childrensmuseum.org/visit/buy-ticket For more information, contact customerservice@childrensmuseum.org or call 317-334-4000.

MUAAC 2019 ***November 7-9th.*** For more information, contact fdiess@iupui.edu

STAY TUNED TO OUR WEBSITE AND EMAIL BLASTS FOR INFO ON THESE EVENTS

CHEMISTRY AND ARCHEOLOGY (SEP 6THT)
STUDENT AND INDUSTRY NETWORKING (OCT)
BRAINSTORMING FOR THE 2023 INDIANAPOLIS NATIONAL ACS MEETING (TBD)
VOLUNTEER APPRECIATION PARTY (DEC)

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The Indiana Section of the ACS presents…

Indians Baseball Night: Part XVIII

Indians play Syracuse Mets!

July 18th; 7 PM Game Time!!!! Victory Field $10*,**

Chemistry/Baseball Trivia Giveaways!!!

Please RSVP to Brian Mathes at mathes@lilly.com

Or 317-217-9810 **by July 15th**

***SPECIAL PRICING FOR YCC and STUDENT MEMBERS $5 per ticket.**

*****This event is open to friends and family of ACS members for the $10 ticket cost***

2019 ACS Awards Banquet—Indiana Section ACS

Written by Katherine Stickney; photos by Abraham Hentz

The University of Indianapolis hosted the 2019 Central Indiana ACS Awards Banquet on May 22, which commenced with a keynote address by Mr. Phil Hassman, Group Leader and Senior Biochemist at Eurofins Lancaster Laboratories. Mr. Hassman's engaging presentation related the role of insulin in our life to how we could live our lives with a deeper purpose and focus on personal success and wellness.

Mr. Phil Hassman, Senior Biochemist, Eurofins Lancaster Laboratories

After dinner, the awards presentations recognized several groups of people from our central Indiana local ACS section, including our distinguished ACS 50-, 60-, and 70-year members, secondary students and their teachers who exceled in individual and school competitions, the recipient of our section's Gladysmae Good – Teacher of Chemistry Award, and those students who qualified for and competed at the national level in the U.S. National Chemistry Olympiad.

Students recognized with USNCO Top 20 Honors and attending the Summer 2019 training camp to prepare for a spot on the international team

School and student winners of our National Chemistry Olympiad exam were recognized in a previous newsletter. However, by the time of the banquet we had received news that three of our section's winners received national Top 20 U.S. National Chemistry Olympiad honors! Congratulations and top accolades to two students of Carmel (Yannik Singh and Iris Yan) and one of student of Park Tudor. Thank you to Dr. Bob Pribush and Dr. Jianping Huang for your wonderful service in sponsoring this competition for the section and helping our section's students attain national recognition.

Dr. Jianping Huang with some of the student awardees

Other awards presented at the banquet included:

ACS-IUPUI "Think Like a Molecule" Poster Session Award Winners
Recipients of awards at the section's April 2019 ACS-IUPUI poster session, co-organized by Tamiko Porter and Christine Skaggs of IUPUI and Meghan McLeod of Heritage Research Group, were recognized at the banquet. The ACS-IUPUI poster session winners were:

Grand Prize Poster Award – Charles Sexton

ACS Project Seed Poster Presentation Award – Fizza Qureshi, Project SEED HS Student

ACS Chair's Poster Presentation Award
First Place: Sara Dille
Second Place: Kent Shilts
Third Place: Kymeri Davis
Honorable Mention: Wei Wei

IUPUI Dean's Poster Presentation Award
First Place: Charles Irving
Second Place: Mark Woollam
Third Place: Bryant Kim
Honorable Mention: Ritu Chaturvedi

Kurek Student Poster Presentation Award
First Place: Kiyomi Kukoyi
Second Place: Maria Barron
Third Place: Nicholas Ensinger
Honorable Mention: Heidi Kastenholz


A few of the ACS-IUPUI poster session award winners

Gladysmae Good – Teacher of Chemistry Award
Dr. Jessica Hollenbeck of Park Tudor School received the Gladysmae Good Award for her commitment to excellence in chemistry: by challenging and inspiring her students, engaging in the K-12 chemistry education community, and for extracurricular work in chemistry to stay current in the field and to make a difference in the community.

Dr. Jessica Hollenbeck of Park Tudor Schools; award presented by Erica Posthuma of University High School

ACS 50-, 60-, and 70-Year Members

Each year, we are thrilled to recognize our 50- and 60-year ACS members. This year we also had the extraordinary privilege of having a 70-year ACS member in our section! The section would like to recognize the following members of the ACS who have reached their anniversary year:

Fifty-Year Members	Sixty-Year Members	Seventy-Year Member
Mr. Robert Barbuch	Mr. Barry Campbell	Dr. Eugene Farkas
Dr. Barry Haymore*	Dr. Alvin Donoho	
Dr. Sherry Queener*	Dr. Jon Lewis	
Mr. Robert Hill		

*These members attended and offered remarks about their long and productive professional careers.

Left: Dr. Barry Haymore – 50-year ACS member

Right: Dr. Sherry Queener – 50-year ACS member with Dr. Kathy Stickney

Finally, the Indiana Section gratefully acknowledges Abraham Hentz for photography at the event and Meghan McLeod for support. The well-attended banquet brought together people of all ages and experience levels in chemistry and gave our section's high-achieving young scientists a firsthand look at how the ACS could shape lives and careers for future success. Finally, thank you to our 2019 Indiana Section ACS Chair Dr. Tamiko Porter and the entire executive committee who organizes our extensive programming.

2018 ChemLuminary Winners Announced!

Congratulations to the chairs, volunteers and participants who made last year's events possible. We couldn't do it without your help!

2018 Winners!	ChemLuminary Award
Advocating for Science, how to talk with your elected officials	ACS President's Award for Local Section Government Affairs
Celebrate Science Indiana	Local Section Partnership Award
The Chemistry of Cheese	Outstanding Continuing Public Relations Program of a Local Section
All Activities!!	Outstanding Performance Awards – Medium Large Size Category

The Gladysmae Good – Teacher of Chemistry Award

by Kathy Stickney

The Gladysmae Good – Teacher of Chemistry Award is presented annually to a teacher in our section in honor of Gladysmae Good. Gladysmae earned her BS in Chemistry (cum laude) from Butler University in 1962. After working as a chemist at Mallory's, she earned her teaching credentials and completed a Master's degree in chemistry at Butler University. She taught at Arlington High School from 1964 until her retirement in 1990, stayed active in the Indiana Section ACS, and positively impacted generations of chemistry students. Criteria for the section's Gladysmae Good Award include: ability to challenge and inspire students; keeping up-to-date in the discipline; active in K-12 community service; and leadership and involvement in the profession.

The Indiana Section of the American Chemical Society is proud to present the 2019 Gladysmae Good – Teacher of Chemistry Award to Dr. Jessica Hollenbeck of Park Tudor School. Dr. Hollenbeck was recommended for this honor by Dr. Tom Xiao, who noted her passion for teaching and involvement in extracurricular activities in his nomination. Dr. Hollenbeck earned her BS in Chemistry from the University of Michigan, her PhD in Chemistry from Indiana University, completed a post-doctoral appointment at the University of Wisconsin in Chemical Education, and held a faculty position at Trinity University (TX), adding numerous publications and grants to her already impressive credentials during her time in higher education. After teaching at the university level, she transitioned to secondary education to better impact STEM education. Dr. Hollenbeck now serves as an Upper School Science Teacher at Park Tudor School, where she is a teacher-leader, involved in extracurricular activities, and a strong advocate for her AP Chemistry students and National Chemistry Olympiad participants. Please join us in congratulating Dr. Hollenbeck on her achievements!

Do *You* Think Like a Molecule?

By Meghan McLeod

The Think Like a Molecule poster session was held on April 5th. IUPUI was a great host and allowed us to take over the lobby of their Science and Engineering Laboratory Building as we assembled over forty presenters from local high schools, universities, and companies. Matt Garlick served as our keynote speaker and talked about his time in graduate school and his

current work as patent lawyer. His message was well received, and both students and attendees enjoyed hearing about his experiences.

We also had over twenty local members volunteer to be judges for the event. It was a wonderful opportunity to have members working in both industry and academia network and talk to students about their projects, goals, and experiences.

At the end of the night, the Indiana chapter of the ACS awarded $1,125 to eleven individuals for their outstanding posters. The Think Like A Molecule Committee received lots of positive feedback about the event that we hope will carry over to next year's event. The Think Like a Molecule Poster Session 2020 will be part of the IU Bicentennial Anniversary held at the Indiana Convention Center April 3-4, 2020.

Thank you to the volunteer judges for the 2019 poster session!

2019 Indiana ACS USNCO Exam – The Winners are In!

Below are the overall results of the 2019 Indiana Section ACS USNCO Exam held at Brebeuf Jesuit Preparatory School on Saturday, March 30, 20189. There were a total of 137 students who took the exam (of 206 registered): 90 (of 125 registered) first year exam (average score 25/60) and 47 (of 81 registered) advanced exam (average score 37/60).

Students who scored high on the exam were invited to participate in the second phase of the USNCO competition, which is a written exam plus a practical laboratory exam, held at Butler University on Saturday, April 27, 2019.

	1st Year Exam Winners	Advanced Exam Winners
Top Honors	1st place - Colin Zou, Carmel 2nd place - Vishnu Iyer, University 3rd place - Ameya Blamkar, Carmel	Yannik Singh, Carmel Andrew Wu, Park Tudor James Lao, Zionsville
Honorable Mention: plaque	Rhea Acharya Carmel Edward Dong Carmel Nathan Ou Carmel Nishita Prasad Carmel Lalith Roopesh Carmel	Tony Yu Bloomington South Robbie Ge Carmel Jeffery Tan Carmel Harry Wang Carmel J. C. Park Tudor

	Jacob Zhang Carmel Harry Zheng Clay Middle Canaan He Creekside Middle Sowmya Chundi Carmel Vanessa Xiao Park Tudor Vanessa Xiao Park Tudor Zhuhan Shao Zionsville Jack Liu Carmel	Varun Chheda Park Tudor Kyle Xu Park Tudor J. Z. Park Tudor David Lian Zionsville
Team Award – AACT membership and plaque	1st place Carmel 2nd place Park Tudor 3rd place Zionsville 4th place Plainfield 5th place Creekside Middle	1st place Carmel 2nd place Park Tudor 3rd place Zionsville 4th place Plainfield 5th place Hamilton SE
Perpetual Plaque Award	John Kaufmann, Brebeuf James Duncan, Chatard Kamal Singh, Hamilton Southeastern Ahmad Salik, Plainfield Toriahn Armour Providence Christo Rey Leairra Carter, Providence Christo Rey	Yannik Singh, Carmel Rachel Bischof, Franklin County Andrew Wu, Park Tudor James Lao, Zionsville
Students Who Qualified for the National USNCO Exam	Robbie Ge, Carmel Yannic Singh, Carmel * Iris Yan, Carmel Anthony Tam, Fishers Kamal Singh, Hamilton Southeastern * J. C. , Park Tudor Varun Chheda, Park Tudor	Jenny Zhao, Park Tudor Salik Ahmad, Plainfield Hannah Snider, Plainfield Vishnu Iyer, University James Lao, Zionsville David Lian, Zionsville

This year, the Indiana Section had the largest number of students attending the USNCO camp and the only two women! Three of our students placed within the Top 20, three in the Top 50 and two additional students placed in the Top 150.

Top 20 study camp and high honor:

Yannik Singh	Carmel
Iris Yan	Carmel
J. C.	Park Tudor

Top 50 and high honor:

James Lao, Zionsville
Varun Chheda, Park Tudor
Jenny Zhao, Park Tudor

Top 150 and honor:

Robbie Ge, Carmel
Vishnu Lyer, University

Congratulations to the winner and special thank you to the Indiana Section Olympiad Coordinators: Jianping Huang, Eli Lilly and Robert A. Pribush, Butler University

2019 Indiana State *You Be The Chemist* Challenge Champion Heads To DC For The 2019 National You Be The Chemist Challenge On June 17

by Larry Sernyk

On Saturday April 13, forty children and their families filed into the auditorium for the exciting 2019 Indiana State You Be The Chemist Challenge. Held at The Heritage Group's The Center in Intech Park on the NW side of Indianapolis, the 5th – 8th grade students absorbed last minute notes while awaiting the start of the competition. This was the 8th year that Indiana has been participating in the You Be The Chemist Challenge. The Chemical Educational Foundation's You Be The Chemist Challenge celebrates and elevates the science of chemistry to inspire students to explore the field. It is a local, state, and national academic competition for students in grades 5-8, when most U.S. students have not studied chemistry as its own subject.

The top 40 students from the four Indiana Local Challenges in Evansville, St Joseph County, Indianapolis North and Indianapolis South, which occurred throughout February and March, earned a coveted spot at the 2019 Indiana State You Be The Chemist Challenge.

40 student participants in the 2019 Indiana State You Be The Chemist Challenge

Kurt Hettinga, President of Superior Solvents & Chemicals and Member of the Chemical Educational Foundation Board of Trustees and Linda Osborn, Director of Analytical Research at Heritage Research Group welcomed the students and audience and shared some inspiring remarks for the students.

The challenge consisted of 7 Rounds of chemistry based multiple choice questions which were used to identify of the top 4 students of this year's state competition. Congratulations to all 40 students who participated as they were all winners already being the top students from the Indiana Local Challenges. All 40 students received a participant medal, certificate and CEF giveaway.

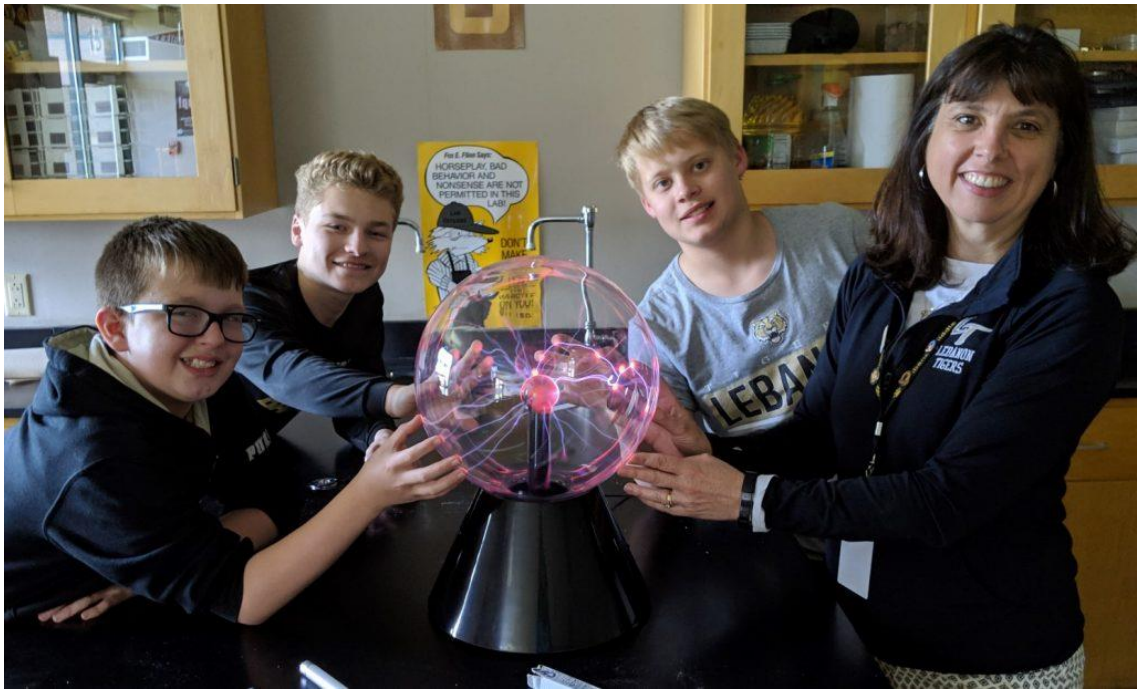
The students during the competition, with responders in hand, listen intently to the questions as moderated by Patricia Maldonado and shown on the double screens at The Center.

Left to Right: Grace Zhang, Rohan Bhosale, Noah Meroueh and Geetika Chitturi

The top four students received plaques and Amazon gift cards. This year's challenge Champion was 8th grade student **Grace Zhang**. 2nd Place went to 6th grade student Rohan Bhosale, 3rd Place went to 8th grade student Noah Meroueh and 4th Place went to 8th Grade student Geetika Chitturi. Grace, Rohan and Geetika are from the Carmel Chemistry Club which was composed of students from Carmel Middle School and Noah is from Creekside Middle School.

Grace Zhang advanced to the 2019 You Be The Chemist National Challenge at the Omni Shoreham Hotel in Washington DC on June 17 where she represented Indiana! Grace. She was the Indiana State Challenge Champion last year and participated in the 2018 You Be The Chemist National Challenge.

There was also a drawing for a 12” plasma globe. All educators who had students participating in one of the four Indiana You Be The Chemist Local Challenges were eligible. Michele Schulz, Lebanon Middle School was the winner.



Michele Shultz and several of her students experimenting with their new plasma globe

Our sincere thanks to the teachers and parents of this year’s challenge participants for supporting and encouraging them as they prepared for the Local and State challenges.

A special thanks to Kurt Hettinga (President, Superior Solvents and Chemicals) and Linda Osborn (Project Chemist, The Heritage Research Group) for their welcoming and inspiring remarks to the students and audience, to Patricia Maldonado (Associate Consultant, Quality R&D at Elanco) for serving as the moderator for this year’s state challenge, to Marcia Gillette (Professor at IU Kokomo), Dylan Engels (Chemist at Superior Solvents and Chemicals) and Linda Osborn (Chemist at Heritage Research Group) for serving as content judges, and to Mary Pat Knadler (Lilly retiree) and Kurt Graper (Dow AgroSciences retiree) for serving as conduct judges.

Changes Coming Soon to the Local Section Webpage

Look for exiting changes to come. We are revamping our webpage making it easier to follow the Local Section events:

http://www.acsindiana.org/acs

Ball State Science Day

by Ryan Jeske

Ball State Student Affiliates of the ACS held their annual Science Day on April 14, 2019. This year the event was located back in the Ball Gym with more space and easier access. Approximately 300 people attended this year. We had over 50 volunteers from 4 departments. We had a wide variety of demonstrations and activities, which included:

Elephants toothpaste, genie in a bottle, fake snow, super absorbent polymers, liquid nitrogen, butterfly chromatography, insects/entomology, wildlife ecology, flaming money, electricity, physics demos on momentum and center of gravity, weather forecasting and storm chasing!

Passport to Hi-Tech - Inspiring Girls to Follow STEM Careers

Maria Alvim Gaston

This year, the Passport to Hi-Tech, at Conner Prairie, took place on March 16. The events' focus is on teaching girls ages 7-12 about careers in the science, technology, engineering, and mathematics (STEM) fields. At Passport to Hi-Tech, young girls interact with exhibits and perform experiments related to STEM fields, as well as meet female experts and professionals excelling in STEM careers.

The exhibits included many branches of science including biology, chemistry, computer science, engineering, genetics and manufacturing. In addition, the booths were operated mostly by women experts in STEM who were ready to answer our curious-minded kids' questions.

The event offered the opportunity for the girls to meet experts and professionals working with Indiana-based hi-tech companies. Each participant received a passport and as they visit the different booths operated by women experts in STEM, they asked questions, assisted with hands-on experiments, and learned about what it takes to work in these fields. They collect a stamp or sticker in their passport for each booth they visit! After the passport is filled, they receive a treat bag and enter for a chance to win a raffle.

One big highlight at the event this year is that the girls could meet Meteorologist Star Derry from CBS4!!!

The American Chemical Society (ACS) had a station in collaboration with Eli Lilly and Company. Girls learned about how chemistry is part of our daily life. They had fun having their picture taken dressed up as scientists. There was not a dull moment at the ACS & Eli Lilly table, many questions were asked including how medicines are discovered and how to become a woman scientist.

As chair of this event, I was very grateful for the support of my booth-mates Norman Sesi, Selene Buquer, Selina Wilson, and Hannah Walters. The ACS/Eli Lilly table was full of promising chemists throughout the day!

More STEM Events Coming to Conner Prairie…Are You Ready to Ignite Your Superpower?

Scheduled for August 22, 2019, the 3rd Annual *Ignite Your Superpower (IYS)* is an event for middle-school girls to discover more about Science, Technology, Engineering and Math (STEM) through participation in hands-on experiences, interactions with female role-models and fun-filled learning on a college campus. This event is not open to the general public.

More than 600 students will be joining us at Indiana University - Purdue University Indianapolis (IUPUI) from central Indiana schools.

We are again seeking Superheroes to volunteer to spend the day chaperoning small groups of the 600 students around the exhibits, presentations, lunch and campus exploration activities. Register now to be a Superhero!

Ignite Your Superpower is presented by Indy Women in Tech through a partnership with Women & Hi Tech and Conner Prairie.

Contact IYS@womenandhightech.org for any questions.

When: 8/22/2019 8:00 AM to 3:00 PM Where: IUPUI, 420 University Blvd, Indianapolis,

Project SEED Students Talk about their Experiences in STEM

Aron Gebre: This summer I am working in Dr. Windsor's lab in the IUPUI School of Dentistry. This year, we are studying the effects of CBD oils on HPLF and HGF cells. Even though this is my second year in Dr. Windsor's lab, I continue to learn both new procedures and the science at play. We have a great opportunity to have a hands-on experience with the science that was previously only available in textbooks. We range from working in cell culture, using various assays and procedures like western blotting to test the effects that CBD has on our cells. I am very grateful for this opportunity to experience scientific research firsthand and am looking forward to learning more in the future.

Feven Welde: This summer I am interning at the IUPUI School of Science in the Department of Chemistry and Chemical Biology chair, Dr. Basu's lab. Similar to last year, I am studying the purification process of going from the cellular level down to just the NapA protein we are interested in. This year, I am working on growing more of my own NapA mutants and studying how a mutation affects the NapA protein of interest, once it comes down to studying the pure protein. I am doing many similar procedures compared to last year, however the bigger picture is starting to come together regarding the NapA protein originally found in C. jejuni but studied in E. Coli. I have performed protocols detailing the purification process by both size-exclusion and His-tag chromatography methods. This opportunity has opened up doors for me, specifically by providing me a very strong background to prepare me for college at Johns Hopkins where I will study Biochemistry.

Run Rem Sang Bawi: This is my second summer with Project SEED. For this summer, I've been working with Dr. Petrache from the Physics Department. The past weeks of working with Dr. Petrache was one of the most interesting experiences in my life for me. While last year for my project, everything was going in a fast pace, this year for my project, everything is going smooth and slow. For my project, we are trying to mix salt solution with lipids to see which one have less and which have more density by using sinking and floating method. If the multilameller lipid sink, then the salt solution is low and if it floats then it means the solution is less dense than the lipid. In the past weeks, I have learned how to make salt solutions and mix them with lipids. I also learned how to use the refractor index and density meter to measure how accurate the concentration of the sample that I made was. For now, we have made 2 samples so far which are NaCl with DLPC and LiCl with DLPC. The floating of the DLPC always change depending on the temperature and it never really floats and sink the way we predicted so we are thinking about making a new solution with more salt.

Jade: I'm interning at Lilly working in the neurodegeneration department. My mentor Dr. Pan's lab revolves around in vivo pharmacology, but my project is specifically about immunohistochemistry (IHC) and staining slides to quantify specific antigen tissues in brain samples at different stages of Alzheimer's disease. I have really enjoyed learning about IHC, because I can finally see how the basic building blocks of science that we learned of in AP Bio and AP Chem are applied and put to use practically. I have done everything from cutting the tissue to observing it underneath the microscope and learning how to quantify it. I can cut both frozen tissue and paraffin embedded tissue on the cryostat and microtome respectively. I've walked through the staining process both manually and using an automatic strainer. I've also prepared the buffers, antibodies, and other necessary ancillary reagents. It's only halfway through the summer and I have already learned so much. I'm grateful for this opportunity and the ability to work and learn from esteemed chemists as a high schooler.

Senait Nega: This summer I am Interning at the IUPUI school of medicine in the Center for Musculoskeletal health in Dr. Lynda Bonewalds lab, my mentor is Dr. Yukiko Kitase.

I am investigating the effects of inhibiting Nfatc1 activity on genes that regulate bone resorption and calcium release. Before we begin the main focus of the project we have been

running DEXA(Dual Energy X-ray Absorptiometry) to see how different genes in mice affect how much bone loss they have after two weeks of hindlimb unloading. We measure the baseline as a control to make sure that the gene (MRGPRD) doesn't affect BAIBA production in mice. Even though this is my second year in Project SEED I am continuously learning more information than I thought possible. I am getting a hands on experience and learning how to analyze and interpret data effectively and efficiently. I am able to productively communicate my findings with my mentor and am able to see how I can improve so that I can do the very best work that I can do.

Alondra Salazar: I just graduated high school from Scecina Memorial High School and will now be attending Indiana State University majoring in biochemistry with a minor in Spanish and health professions in the fall. I have always wanted to become something in the medical field and not only because science is my favorite subject but knowing that I can be someone who can one day hopefully change someone's life fascinates me even more. It is my second year being in Project Seed, last year I was at the school of medicine in the department of biochemistry and molecular biology in Dr.Charlie Dongs lab doing my research on "In search of a cure for fatty liver disease". Being in Dr.Dongs lab was a very unique and very eye opening experience, It was the first time that I had done research and it was very hands on. I learned how to cell culture and how to use a fluorescent microscope. For my research last year, we were trying to investigate the role of autophagy in lipid metabolism using two specific genes (PNPLA3 & Atg14) and a cancer liver cell line (HepG2). We analyzed the difference of the PNPLA3 cellular localization in the wild type and Atg14 knockout HepG2 cells. In addition, we examined the effect of free fatty acids on the PNPLA3 localization and lipid droplets homeostasis.

This year I am at Eli Lilly in Dr. Stanley Kolis lab and my supervisor is Han Xia. My summer project is about using Differential Scanning Calorimetry (DSC) to assess thermostability of different peptide coupling reagents in different solvents. DSC of some pure peptide coupling reagents had been run in house and some data are available in literature. Many peptide coupling reagents are self-reactive or even explosive. From a process safety and thermal hazards perspective, these reagents pose a special danger as runaway decomposition can occur and depending on the structure of the material in question, these events can lead to a fire or explosion. However, some reagents might look safe at the first glance for transportation and operation, because they show relatively high melting points, and the melting points act as thermodynamic protection to prevent decomposition from happening at lower temperatures. In this work, we will look at the thermal stabilities of some peptide coupling regents in solution and determine safe operating parameters for these peptide coupling reagents when melting points protections are no longer available. This work will provide necessary safety information for future peptide campaigns/projects within Lilly.

Jose Moreno Ponce: Being able to participate in Project SEED for the past two summers has been a surreal experience. Last summer I was mentored by Dr. AJ Baucum in the Department of Biology within the School of Science at IUPUI. I was also mentored by Asma Salek who was a graduate student in the lab. I would say that first summer was a real eye opener for me, I wasn't really sure what to expect that first day, but I in a way was expecting a walk in the park. I

was dead wrong because I would say it requires a great amount of the work and dedication to be able to partake in research throughout the summer. I think in the long run it was a breathtaking experience as the program gives you a taste of what required to conduct research for a living. Had I not participated in project seed I would still have that incorrect mentality. My summer research looked to determine if the interaction between protein phosphatase 1 (PP1) alpha and spinophilin would be altered if the activity site in PP1 alpha were to be changed from Histidine 248 to Lysine via site-directed mutagenesis. That is because it is known that Histidine 248 is responsible for phosphatase activity of PP1 alpha. Normally spinophilin can mediate the phosphorylation state of various proteins by targeting PP1 to them. For example, spinophilin and PP1 can regulate the activity of the AMPA-type glutamate and NMDA receptor ion channel by keeping PP1 anchored to the channels. This is important because the phosphorylation of a protein means that phosphate groups are added and changes in protein phosphorylation can lead to errors in cell signaling pathways that can set the stage for diseases.

To see whether the mutated PP1 had the potential to interact with spinophilin, various lab techniques were performed. First, HEK293 cells were transfected with spinophilin, wild type PP1 alpha, and a mutant PP1 alpha. Following that, HEK293 cells were then lysed with lysis buffer. Then immunoprecipitation was conducted which involved precipitating the proteins out of cell lysate using antibodies. Later SDS- PAGE was conducted followed by a western blot to transfer the proteins to a nitrocellulose membrane. Primary and secondary antibodies were used to stain the proteins of interest. Then the blot was scanned and analyzed via Image Studio software. Results showed that the mutation increased the interaction of the mutant PP1 alpha with spinophilin when compared to wild type PP1-spinophilin interaction. Together, this data suggested that the H248K mutant form of PP1 alpha plays a role in regulating PP1-spinophilin interaction.

This summer I have been working in Dr. Lilian Plotkin's lab which is in the School of Medicine, and I have also been working closely with Padmini Deosthale who is also in Dr. Plotkin''s lab. Both Dr. Plotkin and Padmini have helped me tremendously with my project this summer. This summer my project is looking at the effect of FMR1 deletion on osteocytic dendrites morphology. Essentially the FMR1 gene contains the information necessary for constructing the protein FMRP, which is thought to play a role in the way connections between neurons are developed. It is known that if the FMR1 gene is deleted it causes changes to the length of dendrites in neurons. Osteocytes are bone cells that can sense pressure and cracks within the bone who will then direct another bone cell called osteoclasts who dissolve bone usually for maintenance purposes because then osteoblasts form new bone. Osteocytes contain dendrites just like neurons and so far, my project is investigating if the deletion of the FMR1 gene will have the same impact on the osteocytic dendrites as it does on the neuron dendrites. So far, I have examining unknown bone samples which means that I do not know yet whether the sample is wildtype or knockout. So far, I have been observing the number of lacunae, which is where the osteocytes are located, and I have been noting the area of the lacunae to see if I can observe whether there is a difference between the knockout and WT samples.

As mentioned before, I am still thankful for being blessed with the opportunity to be a part of Project SEED. I have been able to learn a lot through the program. Having the responsibility of meeting the program deadlines for the abstract, poster, etc. in a way has prepared me for college as I am sure college will be full of deadlines and it will be my responsibility to meet them. I was even able to receive help on my college essays via the Project SEED team for free no less which I am not sure where else one would get that opportunity. Overall the learning experience has really shaped my way of thinking and I have no doubt that it will help me in my future endeavors. I am still thankful to Dr. Baucum and Dr, Plotkin for letting me in to their lab to be able to learn and just have this surreal experience. I am also thankful to Elmer and the whole Project SEED team, and my former teacher Mrs. Hinshaw for all the help I have received from them, as I know I would not be where I am today without them.

San Diego, CA August 25-29

Fall 2019 National Meeting and Expo

Chemistry and Water!

Upcoming Regional Meetings

Midwest Regional Meeting (MWRM); October 16 in Wichita, KS
Southeastern Reginal Meeting (SERMAS); October 20 in Savannah, GA
Southwest Regional Meeting (SWRM/RMRM); November 13 in El Paso, TX
Middle Atlantic Regional Meeting (MARM); June 12, 2020 in New York, NY

2019 Indianapolis Project SEED Poster Session

Thursday the 18th of July 4:00-8:00 PM

4:00 Poster Session, Medical Sciences Atrium[1]

6:00pm Awards Ceremony, Emerson Hall Auditorium[2]

Indiana University School of Medicine

[1]The Van Nuys Medical Sciences Building is at 635 Barnhill Drive. Guest parking is available at Vermont Street garage, on Vermont between Barnhill Drive and University Boulevard
[2]Emerson Hall is next to the MS building, same cul-de-sac, 545 Barnhill Drive
www.iupui.edu/map. Additional Program Information at www.indyprojectseed.org

The Indianapolis Project SEED Interns the request the pleasure of your company as they present their research findings at the 2018 Indiana High School Scientific Research Symposium together with over 100 high school students from multiple programs across Indiana, at the IU School of Medicine Atrium.

Celebrating 51 years and 10,000 + students

Project SEED was established by the American Chemical Society in 1968 for economically disadvantaged high school students. High School juniors or seniors that meet the qualifications are given a rare opportunity to work alongside scientist-mentors on research projects in industrial, academic, and government laboratories. The Indianapolis Program was established at the Indiana University School of Medicine in 1973 and continues this day as one of the largest and longest running programs in the nation. In 2019 we celebrate not only 51 years of a strong legacy program but over 10,000 students served across the nation.

Student stipends are provided by the ACS national endowment for Project SEED with local matching funds provided by the ACS Indiana Section membership, the IUPUI School of Science, The Indiana Biosciences Research Institute (IBRI), The Herman B. Wells Center for Pediatric Research at the IU School of Medicine, the Indiana University School of Dentistry and private donors. Programming support for the students is provided by the Indiana CTSI though the Indiana CTSI Project STEM initiative and the IUPUI Office of the Vice Chancellor for Research (OVCR).

Please join us in celebrating the interns' accomplishments with their families, mentors, school teachers and supporters from our local scientific community.

Reinforcing the value of being an ACS member

by Brian Mathes, Chair, Committee on Membership Affairs

JULY 4, 2019 | APPEARED IN **VOLUME 97, ISSUE 27**

During the American Chemical Society Spring 2019 National Meeting in Orlando, Florida, ACS president Bonnie Charpentier called for a special council discussion on the value of ACS membership. Such discussions offer a unique opportunity for the ACS president to bring a topic to the council and gain feedback from councilors who represent ACS members—in short, taking the pulse of the organization.

Credit: Tod Martens Photography

I heard comments from councilors, such as, "I would challenge the society to really think about how we can tailor the value proposition for all of our members at the individual level and thus increase membership," as well as comments about lowering ACS conference fees and offering variable membership fees. This feedback represents what it means to the society to have a happy and thriving membership—one that is growing and sustaining now and in the years to come.

Like most professional associations, ACS has until recently been facing a decline of its membership base, and we must strive to continue in the positive direction. As President Charpentier said, "Greater numbers can bring in diverse views and talents that can help us harness our collective ingenuity and keep ACS evolving along with our profession. We need to make sure we're doing everything we can to ensure that ACS membership continues to be relevant and provides the value that today's and tomorrow's chemists are looking for."

After repeated surveys, focus groups, evaluations, panel discussions, personal conversations, and the council's special discussion, we've validated that ACS needs to increase the value of membership to attract and retain its members. We believe that for some, the cost of becoming a member is greater than the potential benefits of joining or renewing. So the Committee on Membership Affairs (MAC) and others are working to close this value gap by market testing new pricing options and incentives while working with the entire ACS organization to pilot new offerings that are relevant and useful to current and future members. We are also working to change the statutory limitations in our governing documents that are hindering our efforts.

Collectively, we have identified a solution to rally around: flexibility. I heard it over and over on the council floor, and it keeps emerging in discussions throughout the society. How can we engineer a system that provides greater flexibility to allow for faster, better, and more dynamic ways to deliver value to members, and allows the society the flexibility to respond more quickly to changing forces in the market and the chemistry enterprise?

> **By being flexible, we can create a sustainable future for the grassroots units and ensure an engaged and vital ACS membership**

You heard me right. Per the ACS treasurer, the society will not increase dues for 2020. This might not seem like an example of flexibility, but this was the first time in 18 years that the society didn't automatically raise the dues by the standard formula stipulated in the ACS bylaws. This decision aims to address the value gap between dues and benefits while working to increase benefits. To me, this was a step in the right direction.

In an overwhelming majority, councilors also **approved the Petition to Streamline the ACS Governing Documents** and agreed to move a great deal of the rules and procedures from the bylaws into a new document called standing rules. This approval created a streamlined process that allows ACS governance committees, such as MAC, to have the autonomy to amend rules and procedures within its jurisdiction, with council approval. The result is more flexibility and speed, making it twice as fast to bring issues before council and adapt to changing forces.

In the coming months, MAC will work with colleagues on a variety of ACS committees, including the Committee on Budget and Finance, the Local Section Activities Committee, and the Committee on Divisional Activities, to examine how we can further strengthen the positions of the ACS local sections and technical divisions. They are the backbone of our value proposition for members, and when they are strong and robust, ACS membership is strong and robust.

Unfortunately, the membership challenges over the past few decades, through a noticeable reduction in allocations to local sections and divisions, have begun to erode the capacities of those units. My governance colleagues and I will be examining ways to strengthen the position of our local sections and divisions. By being flexible, we can create a sustainable future for the grassroots units and ensure an engaged and vital ACS membership.

Because some of the changes that the council voted to approve involve amending the ACS Constitution, the entire ACS membership must approve those amendments in the upcoming ACS national elections. I urge you to cast your vote affirmatively for these changes. By doing so, you will be voting to help create a better and bigger ACS in the future.

If you have ideas for how ACS can add value and benefits for members, please contact me at **mac@acs.org**.

Views expressed are those of the author and not necessarily those of C&EN or ACS.

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Join us at CELEBRATE SCIENCE INDIANA 2019 – October 5th!

Indiana State Fairgounds

Elements Financial Blue Ribbon Pavilion

9:30 am - 5:00 pm

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FREE ADMISSION!

Parking $8

****

Over 50 exhibits with hands on fun for everyone!

Over 200 Activities Tons of Giveaways Special Sessions

For Teachers: RAFFLES - over $4,000 in prizes

We have lots of fun things planned for 2019 celebrating marvelous metals in honor of the 150th anniversary of the development of the Periodic Law of the Elements independently by Dmitri Mendeleev and Lothar Meyer. To advocate for science and celebrate the International Year of the Periodic Table (IYPT), the Indiana section of the ACS will reach out to our state legislators to obtain a proclamation for the State of Indiana recognizing 2019 as the International Year of the Periodic Table and hope that it can be presented at this event!

Want to be a general volunteer? Please sign up at http://celebratescienceindiana.org/volunteer/. Know anyone that is passionate about STEM education that might want to exhibit at Celebrate Science Indiana or want to volunteer at the ACS booth? Please contact Julie Austin at ACSaccelerator@gmail.com.

Our video from last year is a fun remembrance of a great time in 2018: https://www.youtube.com/watch?v=PcuSXxJkyEA&feature=youtu.be

Hope to see you with family at the Elements Financial Blue Ribbon Pavilion on October 5th!

During 2019's International Year of the Periodic Table, NCW Illustrated Poem Contest celebrates Marvelous Metals!

Do you know a child in grades K-12 that can write poems and draw? Have them write and illustrate a poem using the NCW theme, "Marvelous Metals"!

The Indiana Section of the American Chemical Society (ACS) is sponsoring an illustrated poem contest for students in Kindergarten - 12th grade. Four categories: K-2, Grades 3-5, Grades 6-8, Grades 9-12.

Contest Deadline: September 19, 2019

Prizes: 1st Place = $100, 2nd Place = $50, and 3rd Place = $25 in each age group.

All entries are displayed at Celebrate Science Indiana on October 5th at the Indiana State Fairgrounds and the winners will be announced there. The awards ceremony is November 2nd at the Children's Museum of Indianapolis during Science Day. Winners will read their poems, show their artwork and receive their cash prizes.

Contact: Linda Osborn linda.osborn@hrglab.com 317-390-3188 with questions. Send official entries with entry form as a pdf file to linda.osborn@hrglab.com or mail to Linda Osborn at 6320 Intech Way Indianapolis, IN 46278. All entries must be received by midnight on September 19th.

Winners of the Indiana illustrated poem contest will advance to the ACS National Illustrated Poem Contest!

Entry forms can be obtained on our website at http://www.acsindiana.org/acs.

Some of last year's winners are shown on stage at the Lilly Theater in the Children's Museum of Indianapolis after reading their poems to the audience and receiving their cash awards!

Contest Rules

All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.

The text of the poem should be easy to read and may be typed before the hand-drawn or digital illustration is added, or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration. No clipart or unoriginal images can be used.

Acceptance of prizes constitutes consent to use winners' names, likenesses, and entries for editorial, advertising, and publicity purposes.

Entries are judged based upon relevance to and incorporation of the NCW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.

Only one entry per student will be accepted; all entries must include an entry form. If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form.

NOTE: Do not include name or other information on the artwork page – only on the entry form.

All entries must be original works without aid from others. Poems may be submitted by hand on an unlined sheet of paper 8.5" by 11" or scanned and sent via email. Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet, or mobile device.

All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.

Your ACS local section is getting ready for:

265th ACS National Meeting & Exposition

March 26-30, 2023 – Indianapolis, IN

INDIANAPOLIS 2023

Participate into the brainstorming and preparation

We will have our 3rd work session this Fall.

Stay tune for the exact date.

All who are interested are welcome!

If you have any questions or would like to be added to the mailing list for the preparation of this event, contact Frédérique Deiss: fdeiss@iupui.edu

THINK OUTSIDE THE BOX

Meghan McLeod, analytical chemist, Heritage Research Group

I graduated nearly 2 years ago, and while it was scary leaving the comfort of my familiar graduate research position, I was ready to move on.

Credit: Rebekah Dickerson

Meghan McLeod

Working in industry has opened doors to new opportunities and lessons. The basics of science and research stay the same: you solve problems, following the trusty scientific method as a guide. But instead of focusing on what project is more likely to get grant money or publication in high-quality journals, you focus on what is financially smart and applicable in the real world.

In graduate school, you can pursue an interesting or unexpected result until you find an answer. In industry, you have project deadlines that may not always allow that freedom. But it's rewarding to see your work implemented in solving real-world problems.

My advice to future scientists is to power through; it will be worth it in the end. Take all the knowledge you have gained and be ready to apply it to different systems with out-of-the-box thinking for innovative solutions. For example, I took my knowledge of how to control the optical properties of nanomaterials and applied it to developing a fast and simple detection method for low levels of ions based on fluorescence quenching.

Scientists tend to be problem solvers by nature, and if your solution makes a difference, that's the best result of all.

Reprinted with permission from C&EN News Volume 97, Issue 21 article Recent Hires Reflect on the Industry Experience

Beyond Boundaries

INDIANA ACADEMIES SYMPOSIUM

April 3-4, 2020

Indiana Convention Center • Indianapolis

Bringing together Indiana's broad intellectual capital to share and promote cross-disciplinary research, discussion, and collaboration. **Questions?** Contact Symposium Chair **Dr. Surekha Rao** at **skrao@iun.edu**

Visit our website: **go.iu.edu/2abh**

our partners in

THINKING BEYOND BOUNDARIES

- American Society for Microbiology, Indiana Chapter
- Association of Euro Studies
- Greater Indiana Society for Neuroscience
- Indiana Academy of Nutrition and Dietetics
- Indiana Academy of Science
- Indiana Academy of Social Sciences
- Indiana Association of Historians
- Indiana Chapter of the American Society for Public Administration
- Indiana College English Association
- Indiana Foreign Language Teachers Association
- Indiana Local Section of the American Chemical Society
- Indiana Philosophical Association
- Indiana Political Science Association
- Indiana Public Health Association
- Indiana Section of the Mathematical Association of America
- Sigma Theta Tau International Honor Society for Nursing

In addition to the common program, ACS Indiana will propose special symposia and network events on Friday and host our annual Think Like a Molecule Poster session on Saturday. ACS Indiana contact: Frédérique Deiss, fdeiss@iupui.edu

200 YEARS
INDIANA UNIVERSITY
BICENTENNIAL

2019 Executive Committee

Chair	Tamiko Porter
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Chair-Elect	Debra Feakes
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Alternate Councilors	Tom Xiao, Erin Dotlich, Tony Trullinger, Linda Osborn
At Large Member	Greg Smith, Anne Wilson, Maria Alvim-Gaston

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Celebrate Science Indiana	Julie Austin
Chemistry + Humanities	Anne Wilson
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Election Chair	Matt Gardlik
Grants Chair	Ann Cutler
Think Like a Molecule Poster Session	Meghan McLeod
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Kids & Chemistry Chair	Brian Mathes
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VISION

Our vision is to engage our members and community to advance the broader chemistry enterprise for the benefit of Indiana and beyond.

MISSION

It is the Mission of the Indiana Local Section of the American Chemical Society to improve people's lives through the transforming power of chemistry.