

MOLECULAR SIEVE

Andrews University

Department of Chemistry & Biochemistry

An American Chemical Society Approved Program since 1976

Fall 2023

Roald Hoffmann—Poet, Playwright, Nobel Chemist

In This Issue:

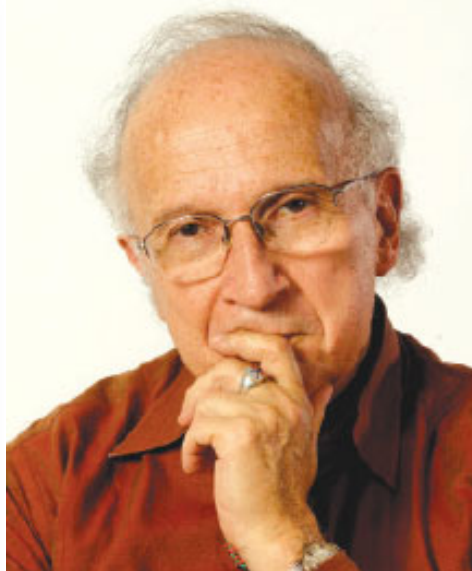
- 1 Roald Hoffmann
- 2 Faith & Science
Student Research
- 3 Quant Lab Coats
ChemClub Officers
ΓΣΕ Honor Society
- 4 Scholarships
Alumni Notes
- 5 Alumni Notes
- 6 Alumni Notes
- 7 Student Activities
- 8 Nowack Retrospective
- 9 Dr. Nowack Farewell
- 10 From the Chair
Forensic Lab
- 11 Graduates

Faculty:

Lisa Ahlberg, PhD
Ryan Hayes, PhD
Getahun Merga, PhD
Desmond Murray, PhD
David Nowack, PhD
David Randall, PhD

Staff:

Dana Johnston, MS
John Rorabeck, MS



The Andrews University Department of Chemistry & Biochemistry welcomed Dr. Roald Hoffmann to our weekly seminar lecture series on the 22nd of September, 2022.

The Benton Spirit Newspaper reported that when Dr. Hoffmann was asked, "What sets scientists apart?" his reply was, "First, and foremost, curiosity."

His interdisciplinary presentation wove together chemistry, culture, and literature. Dr. Hoffmann's perspective is influenced by, among other things, his love for both science and humanities, his belief that science is inherently poetic, his adoption of English as his sixth language, and his experiences as a Holocaust survivor.

Dr. Hoffmann received the 1981 Nobel Prize in Chemistry along with Kenichi Fukui. Their work independently developed theories concerning the course of chemical reactions.

The frontier orbital theory and conservation of orbital symmetry has been a powerful tool increasing our understanding of nature and predicting how chemicals will react. This framework to model the course of chemical reactions aids chemists studying life processes and synthesis of new drugs.

In addition to his scientific breakthroughs, Hoffmann has written several books of poetry, including "The Metamict State," "Gaps and Verges," and "Chemistry Imagined." He has also authored several plays, one about the discovery of oxygen, and another about his experience during the holocaust.

While his father and many other family members were tortured and killed during World War II by the Nazis, he was hidden by his mother in an attic. He described his experience during this time as being enveloped in a cocoon of love. His mother kept him busy learning to read, and memorizing geography and other material in his hiding place.

We were all enriched by the wonderful opportunity to listen and learn with Dr. Hoffmann.

Dallas Conference

On February 17-18, 2023, Dr. Ryan Hayes and his wife, Suzi, attended the Dallas Conference on Faith & Science at Dallas Baptist University in Dallas, TX. We have been increasing our activity in the faith and science arena for the past ten years, so it was good to see what the Christian world, outside of the SDA church, is doing to encourage the intersection of science with religion. The conference was well attended and the main speakers presented to a large auditorium of nearly a thousand people.

The Hayes resonated with chemist James Tour's (Rice University) perspective on the origin of life (OOL) researchers' lack of progress toward spontaneous mechanisms for forming the major classes of molecules: proteins, sugars, lipids, and nucleic acids. Dr. Tour asked for any Ph.D. chemists to stand up, and three stood up. Then he asked if what he said was making sense, which started some good conversations during the breaks with nearby attendees.

Casey Luskin's (Discovery Institute) talk about codes in DNA was insightful, along with Jonathan McLatchie's (Discovery Institute) update on the irreducible complexity argument of the bacterial flagellum.

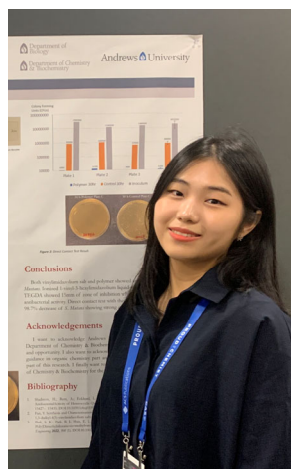
There were discussions about our bodies' beautiful engineering design and updates in Biblical archeology from Titus Kennedy. When asked which books of the Bible have archeological support, he quickly answered, "All of them." Dr. Hayes connected with others from different organizations, especially the Discovery Institute, and enriched his library with books testifying to the incredible design all around us.

More details of the speakers and program can be found at www.discovery.org. Or follow the QR code.



Student Research Notes

Ian Neidigh, a biochemistry major, is working with Dr. Lisa Ahlberg in HPLC techniques. This past summer, he teamed up with his father to investigate HFIP (1,1,1,3,3,3-hexafluoroisopropanol), which is often an ingredient in mobile phases for LC-MS analysis of phosphorothioate oligonucleotide molecules. His focus is on how HFIP reduces the separation of diastereomeric peaks while still separating M+1 and M-1 molecules.



Gina Park, a music major, is working with Drs. Lisa Ahlberg and Rob Zdor. She has developed a highly innovative approach to thin film polymerization. Hers is an interdisciplinary project synthesizing heterocyclic vinylimidazolium antibacterial monomer liquid salt and curing it with UV light to potentially serve as an antibacterial composite. Gina presented her work at the ACS meeting this August.



Natalie McArthur, an MLS major, is working with Dr. Murray to optimize a novel carbamate synthesis via electrophilic carbonyl addition. She hopes to test the products for insecticidal properties.

Quant Lab Coats—The Tradition Continues!

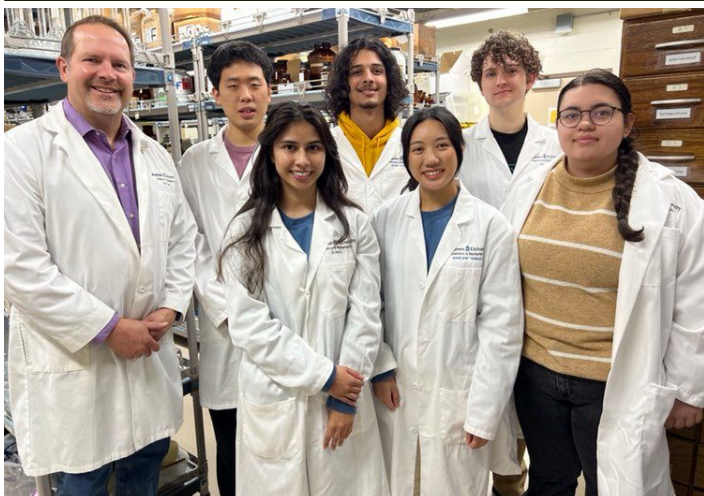


Congratulations to all the brave new analytical chemists in Quant this fall, who earned their own lab coats.

Brandon Alvarez, Kamillie Hernandez, Nahzoni Haycock, Michelle Thomas, Anders Jeronimo, Jason Regneantu, Heecheon Oh, Dale Northrop

Not Pictured: **Yunji Song**

ChemClub Officers



Student Club for Chemists, Biochemists, and Friends

Back: **Dr. Ryan Hayes**, Sponsor

Kiheon Chung, Spiritual Vice President

Suvan Campbell, Social Vice President

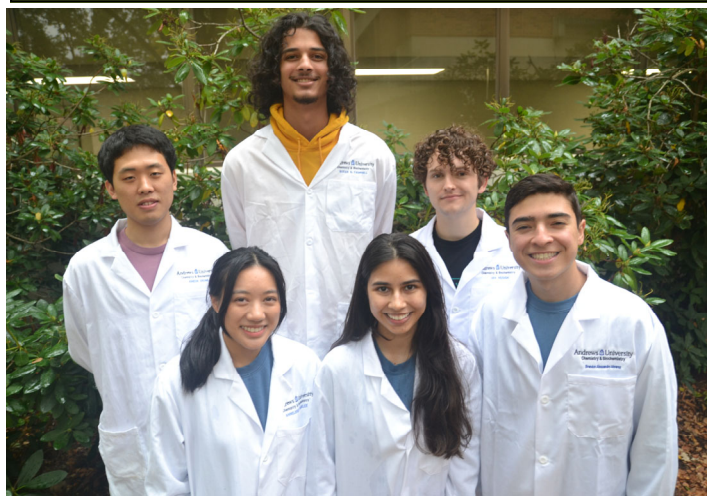
Ian Neidigh, Vice President

Front: **Rekha Isaac**, Public Relations

Anneliese Tessalee, President

Gabi Srikureja, Treasurer

Gamma Sigma Epsilon



Chemistry Honor Society, ΓΣΕ

Back: **Kiheon Chung**, Treasurer

Suvan Campbell, Sergeant at Arms

Ian Neidigh, Sergeant at Arms

Front: **Anneliese Tessalee**, Vice President

Rekha Isaac, President

Brandon Alvarez, Recorder

Scholarships

Scholarships 2023-2024 school year

Lois K. Mutch Scholarship

Ralph Gifford V, Ian Neidigh, Daviah Smith

Dwain Ford Scholarship

Colin Cha, Joya Dean, Chloe Gaban

Richard Cook Scholarship

Heecheon Oh, Gabi Srikureja

Thomas Mullin Scholarship

Brandon Alvarez

Theodore Hirsch Scholarship

John Roosenberg

Minesinger Scholarship

Darien Jung, Yunji Song

Robert Wilkins Scholarship

Emily Atencio

H. F. Halenz Scholarship

Suvan Campbell, Anneliese Tessalee

Glen & Jeremy Abbot Scholarship

Rekha Isaac, Andy Zhao

Ralph Scorpio Scholarship

Kamillie Hernandez

Hall & Miller Scholarship

Ada Chan, Ethan Delacruz,

BrendaLiz Moris, Shaheene Tillett

John & Elizabeth Sangerloo Scholarship

Kiheon Chung

Molecular Sieve is produced annually

by the Department of Chemistry and Biochemistry
4270 Administration Dr, Berrien Springs, MI 49104

Editor—D. Johnston Editor-in-Chief—D. Randall

CORRECTION: the alumni note on page 6, for Steve Warren has been updated to show that he received a BS in 1971, not a BA. We apologize for the mistake.

Alumni Notes

Nels Wangsness (BS Chem '22)

Soon after graduating, I went out to Colorado for a business management internship with Centura Health. Various experiences there confirmed my interest in the business/administrative side of health care.

I took time to travel and reflect, with weeks spent in Minnesota helping my grandparents through moves and health issues followed by a visit to Sweden and a motorcycle tour of the Eastern USA. Then I settled down and began an operations internship with a community health center which opened my eyes to the deep need for affordable care. During this time, I also completed a couple of credits for an MBA.



In September, I received a recruitment call out of the blue from the AdventHealth Leadership Institute, asking if they could “put my name in the hat” to fill an open spot on the Business Management residency track at the main Orlando hospital. I was again turned away due to their preference for a business degree, but was offered the opportunity to interview for a different track. I am now working with AdventHealth’s Supply Chain & Business Services leadership residency in Orlando and am loving every second of it.

This department oversees many more areas than I had realized, and actually seems to be an even more useful path into healthcare leadership. My department is excited about the unique perspective that I can bring to the table as a biochemist, and I am looking forward to developing a deep understanding of the behind-the-scenes processes and teams that support the more visible parts of hospital and health care operations.

I am beyond thankful for the support that the Chemistry & Biochemistry faculty have shown me after graduation through letters of recommendation, words of encouragement and more. Though I may not go on to be the one making diagnoses and directly treating patients, I am excited to be able to make a difference on an organizational level in the quality of care experienced by our patients.

Aaron Jacobs (BS Chem '21)

I am currently pursuing a PhD in chemistry at Michigan State University under the mentorship of Greg Swain. My research uses electrochemical sensors to detect biomarkers of respiratory disease

Alumni Notes

and wound infection. Surprisingly, I have spent a lot of time at various dairy farms collecting exhaled breath condensate specimens from calves to detect bovine respiratory disease. I didn't expect to need Muck Boots for my PhD project!

My wife, Abby, and I got married in August of 2021, and she works in Okemos, MI as an orthodontic assistant. We often spend time walking



around campus, attending sports events, and cooking new meal ideas together. Staying in Michigan has been nice for both of us since we can visit our families regularly.

We are unsure where we will live after I graduate, but we have been traveling to new parts of the country to see what we like—preferably somewhere with lots of outdoor activities. All the best!

Gideon Nyakundi (BS Biochem '15)

I'm, currently in my third year of pediatric residency at Children's Hospital of Michigan in Detroit. If the drive were shorter, I'd come back to the Andrews campus to say hello.

I plan to become an outpatient pediatrician: location to be determined. LOL. Here's a photo of my mother celebrating my graduation from medical school with me.



Desmond Murray (BS Chem '85)

This school year will be the 58th anniversary of the department guest lecture series renamed 8 years ago for the late Professor Dwain Ford. This year's presentations include topics on asthma, immortal cells, forever chemicals, green chemistry, electron



flow, inclusivity in science outreach, materials that do mechanical work in response to light, storage of hazardous waste, popularizing chemistry, conversion of carbon dioxide into many useful materials,

astrochemistry, biodegradation of plastics, silicone chemistry, sustainable electrochemistry, polymer chemistry, and insights from the intersection of science and theology.

If you'd like to join us, or see videos of past talks, contact me to get our weekly invites. murrayd@andrews.edu

Richard Afton (BS Chem '77)

I have married for 45 years to my wife, Anne (Summerton). We met when I was the lab assistant for her nursing chemistry class at Andrews.

We have two children, Scott and Danielle—both Andrews alumni. We also have two grandchildren, Allie and Jack.

I am semiretired after 47 years with Sherwin Williams (SW). My position was Senior Global Technical Director where 7 laboratories reported to me. Labs in the USA, Italy, France, Brazil, Mexico and Finland. In my market, Coil Coating, SW leads the World in sales and innovations. I traveled globally in Europe, Asia, South America, Mexico, Canada and the USA.

My hobbies remain playing golf and percussion. I play drums for our SDA church, Oasis, in Portland, TN.

My favorite memory at Andrews was when I played "Dr. George Javor" with the original Benzene Ring Actors. Another story was the Meier Hall water fight, a free-for-all with hoses, balloons, sprayers, etc. It was awesome!



David Dassenko (BA Chem '75)

After graduating from Loma Linda Medical School, I have practiced as a pediatric cardiac anesthesiologist and critical care specialist for over 37 years at Children's Hospital and Clinics of Minnesota. I recently stepped down as chief of anesthesia and medical director of the cardiac intensive care unit. My wife of 48 years and I have two grown children and 3 grandchildren. We live in a suburb of Minneapolis and enjoy travel, golf, volunteering, and our family who all live close to us. I have made many trips to South America and India with the Children's Hospital cardiac team for educational seminars. I still practice cardiac anesthesia and critical care with plans to retire in the next few years.

I remember when the "new" science building was

(Continued on page 6)

Alumni Notes

built during my tenure as organic lab assistant to Dr. Minesinger. I had the opportunity to stock and set up the new organic chemistry lab under his guidance. Back in my day leaving campus was restricted along with access to my girlfriend at the time (who became my wife). We fondly remember sneaking off campus to enjoy junk food, and car trips to local pizza parlors and movie theaters.



I received a first-class education at Andrews which prepared me for my career as a physician. My wife and I are both grateful for the experience we shared at Andrews.

Steve Warren (BS Chem '71)

I moved from Southern Adventist University in 1997 back to Niles where my family have lived since 1961. The position at Andrews opened and I was there for 8 years. I taught at Lake Michigan College until I retired. Since then, I have made a few attempts at research proposals with commercial websites like 9 Sigma.

One problem suggested by Dr. David Alonso was to develop an accurate and inexpensive polarimeter for student use. This led to a prototype, costing less than \$50 in parts, that gave results almost equivalent to the commercial instruments, which cost about \$10,000.

One project involved computer simulations of randomly generated DNA that was virtually subjected to point mutations. These were checked to determine how close to a target sequence the process could come. The results clustered at one quarter of the DNA bases in the correct place after a million mutations. Another simulation started with perfect DNA and mutated it. After 5000 mutations, this study degenerated the starting DNA to an equilibrium position of a quarter of the bases in the correct position.

Currently, I'm helping with the painting of the Niles Adventist School's new addition and the Niles Westside SDA Church renovations were among other activities. (**corrected** to show BS, not BA)

Doug Pond (BA Chem '65)

In the fall of 1964, I drove my 1937 Plymouth from Nelson, BC to Fort MacLeod, AB, with my sister. She drove the car north to Canadian Union College, while I stood beside the road with my suitcase and duffle bag with my thumb out to begin the 2,100 mile trip, hitch hiking to Andrews University. That was Thursday. An overnight ride

in the back of an International Travelall brought me to Winnipeg, Manitoba early Friday morning. After crossing the border into Minnesota, a police patrol stopped to check me out. Showing him my US birth certificate was enough to satisfy him, and he promised to pick me up on his way back. But that never happened. After accepting a ride a short time later, I felt a little uneasy when I noticed a revolver on the floor beside the driver.

I arrived in Duluth about sundown, got dropped off at a drug store in town, and used a pay phone to call the local Adventist church. Someone actually answered. They were having vespers. I found my way there - I can't remember how. The pastor and his wife took me home. She gave me something to eat; pressed by suit and shirt, and gave me a bed for the night. Sabbath, after church, the Noyes family took me to their cabin by the lake and I spent a lovely afternoon and evening with them. The next day Mr. Noyes drove me to the edge of town and I took up the journey again.

I decided to avoid Chicago, but getting through Detroit was no easy matter either. As evening approached I finally got a ride to an intersection west of the city. No use to hitch hike at night so I unrolled my sleeping bag on the side of the freeway and went to sleep. Early the next morning, as I climbed up the bank to the freeway, a startled truck driver stopped for me. My next and last ride was with a guy headed to California. He wanted company for the trip. Oh well, I just needed to go about 30 miles.

That was the eventful beginning to a one-year residency in the brand new Meier Hall!

Wes McNeal (BA Chem '56)

I graduated from EMC (now Andrews), and headed to Loma Linda Medical School. I practiced Family Medicine from 1961 until 1998 in Green Bay, WI. After I retired in 1998 my wife Mary and I retired in East Tennessee. After an idle year I went back to work part time in family medicine clinics in eastern Tennessee, in the shadow of the Great Smoky Mountains, for the next 11 years.

The head of the chemistry department at EMC was Dr. Halenz when I graduated. My family and I lived on campus from the mid 30's until 1940. Dad was attending college and working on the farm. Dr. Halenz had a son named Donnie, about the same age as my brother and I, and we were playmates [Editor's note: Dr. Don Halenz was a faculty member and served as the long time chair of the PUC chemistry department].

I appreciated the education I received at EMC. It has served me well in my chosen profession.

Student Activities

Graduation provides us a time to rejoice with family and friends, to look back on the journey, and forward to the future. A special shout out to Drs.



Ahlberg and Randall, who were especially proud of their daughter's graduation this year. (see photo above)

From left to right: Dr. Ahlberg, Zoë Gentles, Alannah Tjhatra, Dr. Hayes, Jongwan Park, Dr. Randall, Olivia Joyce, Julia Randall, Davia Spence Mrs. Johnston, Dr. Nowack

Special thanks to the members of our honor society, **Gamma Sigma Epsilon**, for their outreach in the community this year. Among other events that they hosted, here you see them assisting an English as a Second Language class of adult learners in the community. Giving participants a hands-on experience with a follow up quiz was useful in expanding vocabulary and increasing confidence in a new language.



We started this year's academic journey with a welcome-to-school **Hot Dog Feast**. It is a great way to reconnect with old friends and meet new people. We were grateful that the weather cooperated so that we could meet outside on the east lawn behind the science complex.



We pulled out the elegant fare for our annual **Awards Cere-mony** to mark the end of school. Fond farewells and congratulations all around!



The ChemClub hosted a delicious **Mole Day** vespers where we raised a glass to our old friend, Amedeo Carlo Avogadro.

Dave Nowack—looking back, looking forward

The end of an era is fast approaching. At the end of June 2024, Dr. Nowack plans to retire from the faculty of the Department of Chemistry & Biochemistry. Joining the department in 1998, he has taught biochemistry and served students faithfully for a quarter of a century—making a big impact on nearly 200 departmental alumni and thousands more who took his courses.

Nowack served as the department chair from 2009 to 2019 which was a time of a lot of changes. He recalls, “The renovation of the department including the organic labs and air handling system was an important milestone in the maturity of the department. The investment in this project, where all the dollars are seen by students, was affirming.” About Nowack’s tenure as chair, he recalls, “I had a strong sense of seeing the hand of God in the faculty and staff hires I was able to make as chair.”

Looking forward, Nowack dreams of, “Seeing 60 students in our department with a good balance between chem and biochem majors, and continuing financial support from our alumni and friends for instrumentation and other departmental needs.” Starting July 1, 2024, Nowack shares his plans include “traveling, to see Europe, new parts of the US (the north east), visiting and re-visiting national parks including Yellowstone, Yosemite, Zion, Grand Canyon, and seeing my grandkids.” He adds, “I’d like to continue to develop my photography habit so that I can photograph my wife’s wonderful food. I’d like to work some, but probably not in education. I’d like to volunteer.”

For now, Dr. Nowack concludes, “I feel like I’m leaving the department in good hands with God’s leading to find a replacement faculty. I have confidence in the future of this department.”



Drs. Randall and Nowack with class of 2012: Courtney Tait Basit, Adam Shull, Brittany Adele Foster

Born in Rolla, Missouri, Nowack received his BA in chemistry from Union College, in 1976. He then began his teaching career by joining the faculty of Lynwood Academy, where he taught chemistry and math for three years. In 1979, he joined the faculty of Andrews Academy teaching math and chemistry. Nowack began doctoral studies

in biochemistry in 1984 at Purdue University in the lab of Dr. D. James Morre. In 1987, he completed his MS in medicinal chemistry and pharmacology. In 1988, he completed his PhD in nutritional biochemistry from Purdue. His dissertation is entitled: “Modulation of Transition Vesicle Formation and Function by Vitamin A.” Prior to coming to Andrews, Nowack served as professor of chemistry at Union College.

In 1996, Dr. Nowack won the Zapara Award for Outstanding College Teaching while at Union College. The students of Andrews recognized his teaching and advising excellence during the 2001-2002 school year when he was named advisor of the year. Nowack has received numerous grants for research and has published many articles. He is a member of the American Chemical Society and Sigma Xi Research Society. Since 2010, Dr. Nowack has assisted with the Andrews University graduation services by serving as grand marshal for the events.

Dave is married to Judy Curry Nowack. They have a daughter, Allison, and a son, Daniel. A grandson, Eli, joined their lives five years ago, and this year another, Ben, created more reason to look forward to some extra time in retirement to spend with these sweet young men.



Original artwork by Allison Nowack Ibanez, 2012

Thanks for believing in us
Dr. Nowack ☺

Note left on a whiteboard for Dr. Nowack by the summer 2023 BCHM 421 students

Enjoy Retirement, Dr. Nowack!

Atuhani Burnett (Chem '01)

I am currently chief of surgical oncology, liver, pancreas, biliary, and foregut malignancies at Ascension Medical Group in Milwaukee, WI. Thanks for everything you have done for myself and many other students.

Chantelle Morris (Biochem '05)

Dr. Nowack came into my life first as my academic advisor when I decided to switch my major from Biology to Biochemistry. It was not missed on me that I had made the right decision because Dr. Nowack became the benchmark of the type of scientist and I hoped to become. He is a man of compassion, kindness, a jovial yet gentle spirit and truly cared for his students and their well-being. In areas where I struggled he helped me and if he couldn't personally, he would provide resources. When it came to Biochemistry class, Dr. Nowack would send us to the student center at times to get breakfast because he believed optimal learning required us to be nourished. That is stuck with me even as I taught my own college students in South Korea.



My fondest memory was when he and his wonderful family threw a surprise farewell party at their home for me and my classmate as we were leaving Andrews before the school year ended. He managed to rope my sister and a friend into getting all my close friends to come. It was a great time!

As he enters a well-deserved retirement, I wish him enjoyment and God's continuous blessings over him and his family. He has accomplished much, impacted many and now it our turn to celebrate him! Cheers to you, Dr. Nowack!

Joon Yoon (Chem '10)

Of course, I remember Dr. Nowack. I wish him all the best for his retirement. God bless!

Sam Kang (Biochem '13)

It's been a long time. I think what's most memorable for me about Dr. Nowack was how he always had the drive to push what he thought was best for his students.

I feel like I had difficulty reaching out for help especially when I had to retake classes at the time and going up to him was scary the first time I had to do it.

I think his frank attitude in getting me to push forward has helped me get to graduation. Although I'm still working things out, knowing that people work for your best interests has helped me move forward.

Nathaniel Srikureja (Biochem '19)

This is exciting news indeed. I remember Dr. Nowack's favorite subject of conversation outside of school being his grandkids and I hope he gets the chance to spend lots of time with them. I hope that he will have a fantastic retirement. I want to send a special thanks to Dr. Nowack for being an exceptional mentor during my time at Andrews, always pushing his students to be critical thinkers rather than rote memorization; the skills he taught, both the biochemistry content and how to think about and approach problems, have helped me tremendously through medical school. There is so much to appreciate about Dr. Nowack, his integrity, dedication for teaching and Adventist education, his guidance on the biochemistry program, but also his approachability and warmth with students and faculty alike. Surely he will be missed.

Jesse Gray (Biochem '19)

Dr. Nowack imparted immense knowledge and passion for chemistry to countless students. I am deeply grateful for the profound impact he's had on my academic journey. I especially thank him for helping me find sponsors in my final year of undergrad when money was tight. Now that I'm in graduate school and have met with the ups and downs of research, I often recount stories to fellow graduate students of Dr. Nowack's leadership and unique teaching style. He kept a constant jovial presence and spirit. His dedication, insightful teaching, and unwavering support have shaped my understanding of chemistry, and also my character. Dr. Nowack's legacy as a remarkable professor will live on, and I wish him a retirement filled with well-deserved relaxation, new adventures, and cherished moments with his loved ones!

Zoë Gentles (Chem '23)

My favorite memories from being a chemistry major were the enchilada nights, especially the past one since all the COVID restrictions were lifted. Dr. Nowack opened his home to the chem club and students, and it allowed us to get a break from campus and be in an environment that was very reminiscent of home for the students, including me. I'm eternally grateful to Dr. Nowack for letting us host Enchilada Night in his own home, and I hold to those memories as a reminder of the importance of community.

From the Chair

Dear Alumni

As we approach the end of 2023, we gratefully reflect on the blessings that another year brought to your department. With ongoing maintenance, our facilities and fleet of instruments continue to work well. We were glad our new NMR thrived under the workout it received with organic chemistry mini-research projects in spring 2023 to help students characterize their products.



Our biggest blessing continues to be our students. The incoming student enrollment increased over fall 2022, both in the department and in the university. We continue to be proud of our graduates: recent ones who leave to pursue many great post-Andrews opportunities and graduates from over 60 years ago who have made tremendous impacts in their spheres of influence.

While we deeply value the second-to-none (bio) chemical education our students receive in their classes and labs, we love the broader interests many of our majors pursue. Every year, I'm impressed with the wide range of interests our graduates demonstrate through graduating with honors, as well as minors and second majors from across campus. Among other venues, current students and recent grads are members of music groups (wind symphony and university singers), have served in leadership roles as Student Movement editors and contributors, Honor's officers, campus cultural clubs, and represented Andrews on our sports teams,

Our faculty continue to innovate in the classroom. New whiteboards in the amphitheater benefit students and faculty alike from the engagement and change of pace. The instrumentation "certification" process leverages a departmental strength into additional professional value for our students.

Thanks for being outstanding students of biochemistry or chemistry -- whether you graduated one year ago or 60 or more years ago. But thanks also for being committed to being whole people.

Forensic Lab Report

The Berrien County Forensic Laboratory (BCFL) is now in its 51st year of operation.

Over the years, technical advances have resulted in greater accuracy, sensitivity, and speed in analytical chemistry. These offer an increased scope of analytes that goes beyond the expected list of "drugs of abuse" intended for court testimony. Some of these cutting agents can have negative effects for public health.

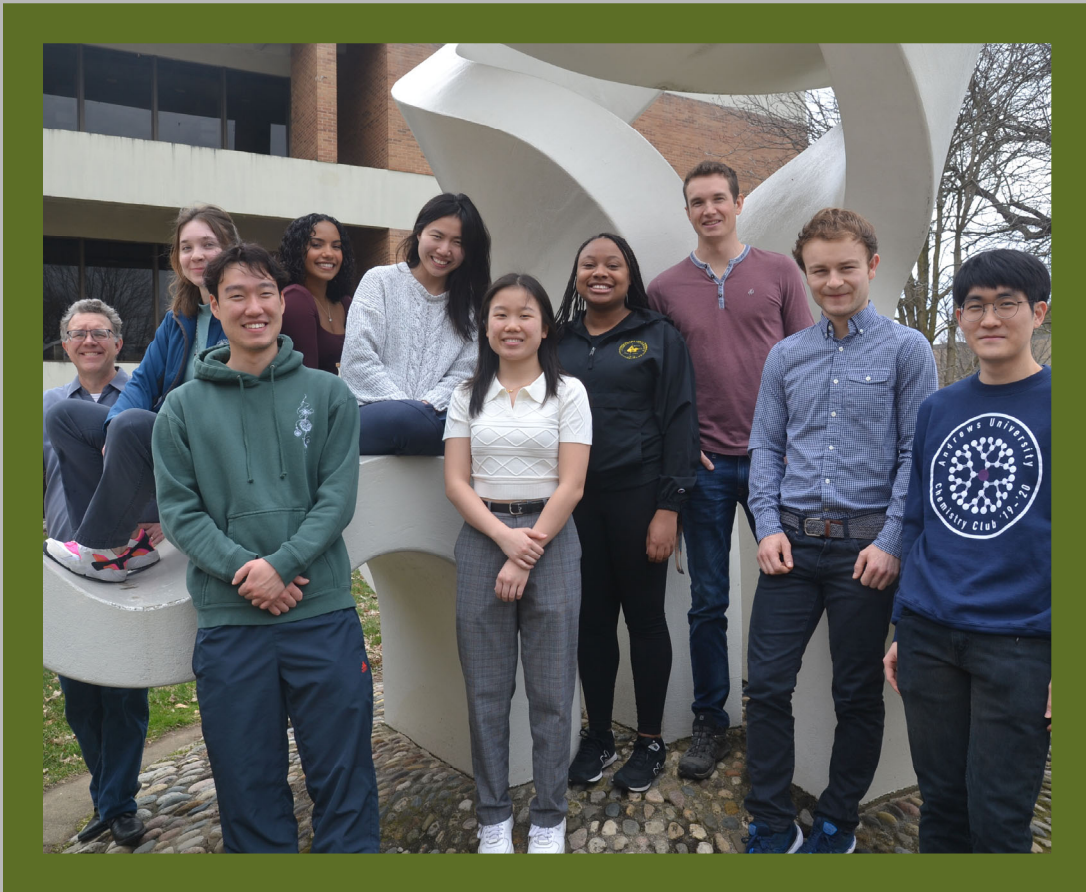


When I assumed the role of chief analyst at BCFL in 2010, cocaine was a frequent finding, often accompanied by the compound levamisole. The presence of this deworming agent (and occasional oncology treatment) was puzzling not only to me but to many testing labs across the US. Apparently, it's prominence in US foreign aid to Central American countries made it a convenient cutting agent. A more recent dangerous additive, has shown up in the increasingly ubiquitous fentanyl samples entering our country. Xylazine is legally used in veterinary medicine as a sedative. It can add to the respiratory depression of opioids with the additional danger that it will not respond to Narcan (naloxone), the treatment that first-responders have successfully used to save lives. I was reporting this finding to local law enforcement before xylazine was commonly known.

A final case in point comes from the now widely-legalized cannabis vaping products. The ability to concentrate the resins in marijuana into a thick, sticky substance not only increases the risks inherent with higher potency but opens the door to dilution with similar compounds. One of these, Vitamin E acetate, was identified by the CDC in late 2019 as a potential toxin of concern after it was found in lung biopsies from dozens of critically ill patients with recent exposure from THC-vaping. I continue to monitor the presence of Vitamin E acetate whenever vape cartridges appear destined for court prosecution. It is the role of forensic science to inform the court of potential harm to the public, even if those dangers are not apparent to the intended consumers.

E-mail alumni updates and pictures to David Randall at chemistry@andrews.edu

Farewell 2023 Graduates



Pictured above from left to right:

Julia Randall (beside her dad, Dr. David Randall), is attending Loma Linda School of Pharmacy;

Andrew Wee, is at Loma Linda School of Medicine;

Gabriela Francisco, is enjoying a gap year before starting the study of law;

Yishan Jin, is working on an MBA here at Andrews University;

Alannah Tjhatra, is at Loma Linda School of Medicine;

Zoë Gentles, is studying epidemiology for an MS in public health at SUNY, Albany;

Justin Corbett, is working in the chemical industry for a gap year before starting dental school;

Ethan Drew, plans to work in the chemical industry;

Jongwan Park, is at Loma Linda School of Medicine

Not Pictured:

Owen Faehner, is at Loma Linda School of Medicine;

Olivia Joyce, is serving as a secondary teacher at a mission school;

Doyun Kim, has returned to South Korea for a time before starting dental school;

Chaehyun Kim, is at Loma Linda School of Medicine

Happy Holidays

From your Department of Chemistry & Biochemistry



Like us on Facebook!



Address Service Requested

4270 Administration Dr
Berrien Springs, MI 49104-0430

Andrews University
Department of Chemistry & Biochemistry