

MOLECULAR SIEVE

An annual newsletter for alumni and friends of the Andrews University Department of Chemistry and Biochemistry

An American Chemical Society Approved Program since 1976

Fall 2013

Lab & Amphitheater Renovations Completed

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Amphitheater

After being untouched since Halenz Hall was built in the early 1970's, the chemistry amphitheater received a significant upgrade this summer. The seats were refurbished with new fabric covers (a raspberry color) and the seat



backs were replaced with an all-black version. The metal pieces of the seats were painted black with a long-lasting, powder coating. The floor was re-carpeted. The front lecture cabinet and chemical-resistant counter top was replaced.

In addition, the audio visual resources were significantly upgraded. Two bright, high-definition video projectors were installed along with upgraded audio system and speakers. Two channel wireless microphones were added and a DVD player. We chose to forgo software control of the system and so each of the pieces is manually controlled which has already proven its reliability and ease of use. Finally, the single chalk board was replaced with a four-board, 12-ft wide, vertical slider whiteboard system. This feature quadruples the writing space for lecture and has proven to be the most useful addition.

The students, staff and faculty are grateful for the loyal support of our fabulous alumni, who, through their generous donations over the years, funded the amphitheater upgrades.

~ David Nowack

Organic Labs

Four summers ago, the university embarked on a multi-year, 3.5 million dollar project to upgrade the air-handling in Halenz Hall to ensure a healthful environment where we can safely engage in chemical teaching and research.

We have welcomed each improvement as it has come. First the actual HVAC unit was installed and new ductwork was run throughout the building along with a new alarm system. That first year also saw completely new stockrooms for organics and inorganics thanks to the generosity of our alumni donors. The next phase was the replacement of all the older generation hoods with state-of-the art hoods.

We are thrilled to announce that this past summer the effort was completed with all new organic labs. Each lab now boasts 10 modern high efficiency hoods—enough so that every student will work each experiment inside the hood. The rooms have a nice fresh feeling without the lingering odor of organic molecules.

One of the labs has also been designated as a lecture site—with leg room carved out below the deck space for students from both sections to comfortably attend a pre-lab overview. At the front of the room is a new projection system and white board to assist the teacher in getting concepts across to the students.

Beautiful. Come and see for yourself!

~ David Nowack



Science, Technology, Engineering, Mathematics

The aim of the STEM Division at Andrews is to provide a holistic environment that focuses on early research, active learning, and the learning community. Enhancing STEM enrollment and retention will help to achieve the goal set by the 2012 President's Council of Advisors on Science & Technology, which states that American universities need to produce an extra one million college graduates in STEM fields. To increase STEM majors at Andrews, the STEM departments created the STEM Marketing & Enrollment Coordinator position in November 2012.

Since assuming the role as the first of these coordinators, I have appointed student recruiters to aid in contacting prospective students in the STEM areas, thereby providing a student-to-student connection through which potential majors can receive answers to their questions about life on campus and specific concerns about pursuing a science degree and the pathways that students may take toward their career goals.



Through the spring and summer, my team put increased emphasis on what messages faculty, student recruiters, and I communicated to potential chemistry students. As a result, the department's headcount is up by nearly 8% despite an overall downturn in enrollment for the entire university this fall semester.

For freshman orientation this August, in order to enhance the students' initial experience in STEM, we paired five groups of new STEM students with STEM faculty and alumni who now advise and mentor them. The faculty mentors meet with the students on the 30-, 60-, and 100-day mark as well, to touch base on the students' journey so far in the university setting. Dave Nowack, Department of Chemistry Chair, is one of the STEM mentors.

Also during orientation week, the STEM departments coordinated a creative display for the annual ice-cream social. Each department's booth had an engaging activity or demonstration to catch the eye of the mingling freshmen. All STEM presenters wore t-shirts representing their specific departments, with the Department of Chemistry spelling Avogadro's number on the backs of their purple shirts. The activity at the chemistry booth utilized the ever-popular Mentos carbonated beverage reaction—with a special flare: a network of tubes which directed the geyser reaction neatly into six cups for root beer floats.

Another initiative in STEM is creating a community with the help of *Instagram*, *Facebook*, *Tumblr*, and *Twitter* via weekly postings of STEM events, research, student interviews, and announcements on each of these social

media sites. Some examples of chemistry posts include a discussion of the tofu research being conducted by Dr. Ryan Hayes and his students, the announcement of the new large-scale rotovap equipment purchased by Andrews ChemServices, and the weekly updates covering the chemistry seminars. To see some of the postings, visit www.facebook.com/andrewsSTEM or www.andrewsSTEM.tumblr.com.

Along with the social media campaign, STEM is aiming to coordinate original and updated photographs from the departments to share the different facets of their disciplines. Chemistry was the first department to complete their photos, with their last photo shoot including a group of 25 students and Dr. Nowack showing the explosive reaction of fire and a hydrogen-filled balloon.

The next upcoming event for STEM is the November 5 Open House, wherein prospective students from southwestern Michigan can learn about careers in STEM and meet current students and faculty to ask questions about the different programs. A few days later, on November 14, is the first annual, weekend-long, science festival (SciFEST), with six Lake Union Conference academy groups attending.

The theme for SciFEST is "Discover Design," and the purpose of the weekend is to celebrate science and to give the students a taste of what goes on at Andrews and how careers in the sciences fulfill God's purpose for the students' lives. Throughout the weekend, students will engage in science activities in the STEM departments, attend a science show (put on by faculty), and participate in an egg drop and a quiz bowl. Students will also enjoy spiritual fellowship during a special Sabbath School and church service put on by STEM faculty and students.

~ Rachel Boothby



Back: Alanna James, Rosanne Thornhill, Swanieka Choy, Brian Maycock, Andrew Hong.
Front: Dr. Nowack, Emily Bankes, Jordan Holzschuher, Betsy Quetz.

We continue the tradition of awarding lab coats to our chemistry & biochemistry majors who take on the challenge of Quantitative Analysis. Each coat is embroidered with the name of the courageous student unafraid to tackle some serious chemistry.

Murray Promotes Early Research

Over the last ten months Associate Professor of Chemistry Dr. Desmond H Murray has given a number of presentations on one of his favorite topics – engaging students in early research. From the latest talk in September at the Union Train Station in South Bend, Indiana for the Michiana Science and Technology Center, to the earliest at Jamestown Community College, in New York last January, Murray has given a total of eleven lectures so far this year.

During this time he also wrote general-public editorials and served as organizer and editor for a special early research issue published by the Benton-Michiana Spirit Community Newspaper. In addition to student descriptions of their research, this



Dr. Murray teaches research technique.

special issue contained guest articles regarding the benefits of early research and includes a piece by Arne Duncan, United States Secretary of Education.

Murray's public addresses highlight the need to create a culture of curiosity; the importance of early research as a sustainable and seamless strategy to improve science education and the idea that research should be the 4th R, alongside reading, writing and arithmetic, in secondary education. Murray's talks and science education innovations are directly relevant to concerns about America's decline in math and science performance at the secondary level in most global comparisons. These concerns are featured in reports such as, the 2001 Commission on National Security and the National Research Council's 2005 America's Lab Report: Investigations in High School Science. For example, the NRC report states that "the quality of science laboratory experiences is poor for most U.S. high school students."

Murray's speaking engagements have taken him to New York, Detroit, South Bend, Normal, Ypsilanti, Berrien Springs, Benton Harbor and Lansing. The audiences have covered the spectrum from the Michigan Department of Education Office of Education Improvement and Innovation, to the Detroit Public Schools 1st Annual Back to School Teaching and Learning Symposium, the Michigan Science Teacher's Association 60th Annual Conference, and the Illinois State University Center for Mathematics, Science and Technology. In attendance have been students, K-12 and higher education teachers, school board members, public education administrators and the general public.

For the last 17 years Murray has tirelessly advocated for and provided students with early opportunities to conduct research. More than 750 students have participated in his early research projects that focus primarily on organic synthesis (www.bestearly.com). Student documentation of

their research experiences can be seen on Murray's YouTube Channel.

Murray describes these experiences where students get hands-on experiences in authentic research four to eight years earlier than normal as 'incubators of innovators.' His efforts have been recognized with local, regional and statewide awards. Specific initiatives include: re-designing Grade 12 chemistry away from a lecture and textbook style course to a research project-based course; organizing an annual early research symposium; establishing early research classes in the Department of Chemistry and Biochemistry course offerings; and engaging the general public through talks, editorials and special newspaper issues on early research.

~ Desmond Murray

ACS Meeting

In September, Drs. Hayes, Randall, Nowack and Ahlberg, and senior students Jonathan Lee and Bitna Yoon traveled to Indianapolis for the ACS's Fall National Meeting. Randall presented two posters during the Undergraduate Research poster session and Lee presented a poster of work with Ahlberg at the Analytical Division poster session. Lee received an award for his undergraduate research. The ACS has been doing a lot to encourage students in chemistry. The meeting was an excellent opportunity to make some connections, talk science, and learn some of the advances in chemistry, chemistry education and technology.

~ Lisa Ahlberg

ChemClub Officers



Front: Adrienne Magsipoc, Treasurer; Betsy Quetz, Pastor; Samantha Chang, Public Relations; Jiyeong Lee, Secretary
Back: Camille Martin, President; Hwuk Chan Woo, Vice-President

Rachel Boothby, BBA '10 STEM Marketing & Enrollment Coordinator

We are excited to have Rachel Boothby lending new energy to the recruitment and retention of students who are interested in studying in the areas of STEM: Science, Technology, Engineering, and Math.

Originally from Minnesota, Rachel came to Andrews University following in the footsteps of her older sister, Sarah.

An accomplished violinist, Rachel has played in the Andrews Orchestra every year up till spring of 2013. This fall you can hear her perform in a quartet for the annual Seminary Concert.

Though she began as a music major, Rachel found her natural calling was in marketing, and she is a 2010 graduate of the Andrews University School of Business, where she studied business administration with an emphasis in marketing. Business runs in the family as well—her husband graduated from Andrews with a degree in finance in 2008.

Rachel accepted the position of STEM Marketing and Enrollment Coordinator in the fall of 2012, and she hasn't stood still since. The list of ideas and new programs she has started is a long one. Check out the STEM newsletter at <http://www.andrews.edu/cas/stem/> She also launched a social media campaign at <http://andrewsstem.tumblr.com> and at <http://twitter.com/andrewsSTEM>.

We had to laugh when Rachel ran a promotional contest—only to have the first, randomly-picked winner turn out to be Keith Mattingly, the dean of the College of Arts and Sciences! The second drawing revealed that our own Biochemistry major, and ChemClub officer, Jiyeon (Rachel) Lee had won \$50 worth of Andrews apparel.

More of Rachel's handiwork can be seen on the STEM Instagram page, <http://instagram.com/andrewsstem> and on the STEM facebook page at <http://www.facebook.com/AndrewsSTEM>.

Her current project is producing an upgraded, modern brochure highlighting the Chemistry Department with professional photographs shot in our very own labs.

Rachel and her husband, Jason have a cute little Yorkie-Chihuahua mix named Skeeter. They are a very active couple, enjoying games, hiking, rock-climbing, and travel. Both are still heavily involved with intramurals—football, basketball and soccer. I have been especially commissioned to inform everyone that Rachel's soccer team won the championship this season.

Welcome to the team, Rachel!

~ Dana Johnston



2013 Graduates and Awards

2013 Undergraduate Degrees Awarded

Guilherme Alves BS Biochemistry
Andrew Brummett BS Biochemistry
SungMin (Peter) Cho, BS Biochemistry
Summa Cum Laude
Luis Garibay, BS Chemistry-ACS certificate,
BS Mathematics
Samuel Kang, BS Biochemistry
Eun Soo Lee, BS Biochemistry
Cum Laude
Clarissa Lewis, BS Biochemistry
Soon Ho Park, BS Biochemistry
Kenneth Richardson, BS Biochemistry
Joshua Szykowski, BS Biochemistry
Erika Tanner, BS Biochemistry

2013 Awards

ACS General Chemistry Award Ashley Reichert
ACS Analytical Chemistry Award Satoshi Thiele
ACS Organic Chemistry Award Satoshi Thiele

2013 Scholarships

Lois K. Mutch Scholarship	Satoshi Thiele
R. Scorpio Scholarship	Rosanne Thornhill
Tait Family Scholarship	Emily-Jean Bankes
Dwain Ford Scholarship	Jonathan Lee
Halenz Scholarship	Hwuk Chan Woo
Richard Cook Scholarship	Seth Campbell
Richard Minesinger Scholarship	Jordan Holzhuher
Mutch, Scorpio, Wilkins Award	Hyeelin You
Robert Wilkins Scholarship	Andrew Hong
Chai Hee Wong Scholarship	Aaron Shou
Hall-Miller Scholarship	shared by*

*Seth Stacey, Samantha Chang, Stephen Gilbert

Become a Chemistry Partner:

Would you like to give to support the program you loved as an undergraduate?

Send checks to: Department of Chemistry and Biochemistry
4270 Administrative Drive, HH225
Andrews University
Berrien Springs, MI 49104

Inductively Coupled Plasma Optical Emission Spectroscopy

As the department continues to update and modernize its equipment, we have been working on securing new instruments for the analysis of solids. Recently we have been blessed to receive the Optima 8000 ICP-OES, which replaces the 1970 era atomic absorption instrument.

The ICP-OES uses inductively coupled plasma to produce excited atoms and ions allowing students in their labs to identify multiple trace elements from the emission of electromagnetic radiation at characteristic wavelengths.

Over the past several years, our department has put together a fleet of robust modern instruments that are used across the chemistry curriculum and in scientific research. These include the 400MHz NMR, the GC-MS we acquired last year, the UV-Vis, the HPLC, and the fluorescence spectrometer. The primary use of each of these instruments is academic—in labs for General Chemistry, Chemistry for non-majors, Organic Chemistry, Inorganic Chemistry, Physical Chemistry and Analytical Chemistry.

Given these state-of-the-art machines, the faculty will develop new, engaging labs for both non-science and science majors that involve hands-on use of sophisticated, research-grade instruments.

We are grateful to the university for supporting the endeavors of our department with a \$50,000 contribution toward the purchase of the new ICP-OES, and also continue to be thankful for the many alumni donors who through their donations made up the \$5,000 needed to complete this purchase.

We look forward to continuing to work with Andrews University, outside granting agencies and alumni to provide our students and the STEM community the complex cutting-edge research instrumentation that is necessary for the exploration of chemistry in all its facets.

~ Getahun Merga



Dr. Merga with the new Perkin-Elmer Optima 8000 ICP-OES

Alumni News

Chantelle (Martens) Passmore (BS, Biochem. '02)

I remember Andrews with happy thoughts and pleasant memories. I remember Dr. Wilkins standing with his hands outstretched and then turning around to say that isomers are the “same doggie.” I remember Dr. Nowack going over glycolysis and discussing the biochemistry of Alzheimer’s disease. I remember telling Atuhani that he should dilute something in H₂O₂ (instead of water), and since I had already completed the experiment, and he was LATE—he believed me. We were amazed at the fumes under the hood! He tried it twice before I realized that he had actually acted upon my “advice.” It was one of the Quantitative Analysis bonus labs.

In 2005, I completed the BS in Nursing at University of Alberta. Currently, I’m working as an RN in labor and delivery at Legacy Salmon Creek hospital in Vancouver, WA. I live in Woodland, WA, with my family—which now is comprised of my husband, Larry; our son, James (7) and our daughter, Jessica (7 months), whom we were blessed to adopt at birth in March. We live on a few acres with our 2 dogs, 3 cats, bunnies and chickens. We enjoy going for walks, camping and traveling—lately to Louisiana to adopt our little girl. God is blessing us as Larry is in school to get his nursing degree now.

God bless you and yours.



Carla Belyea (BS, Chem. '01)

It seems like forever since I graduated from Andrews. When I see Dr. Nowack’s Facebook updates about ChemClub bashes, it makes me long for the days of excellent garlic bread from Dr. Wong and some Christmas toffee from Dr. Mutch. When it gets cold outside, I remember the days of sitting in the chemistry office drinking hot chocolate or apple cider and discussing life with Kris Knutson.

I received my Masters in School Guidance Counseling from Spring Arbor University in May 2008. I have been “pushing back the frontiers of ignorance” at Battle Creek Academy from the fall of 2001 to the spring of 2013, where I have taught chemistry, math, physics and computer science. Starting in the fall of 2008 I have also served as the school guidance counselor. I love helping young people consider their futures and how they can serve God while we wait for the soon coming of Jesus.

I continue to live in Battle Creek, MI, though my career direction has changed this year. My husband, Ron, and I are expecting twin boys December 19. Since July 2013, I have been working with the Michigan Conference Office of Education as a math and technology coach for the teachers

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in the conference. I am enjoying helping teachers accumulate the tools to help their elementary students learn math better so these students will be better prepared for



academy and college where I hope some of them will study chemistry. Going into the individual schools all over Michigan has been inspiring, as I see how teachers overcome the challenges of small, multi-grade classrooms to educate our Adventist young people for today, tomorrow and eternity. When my boys are born, I will be taking a sabbatical to focus on training them, but I know that my desire to help others learn more so they can do more will continue to be used in some capacity.

Brian Johns (BS, Chem. '93)

I was a commuter while at Andrews and spent much of my off-campus time working as a co-op student at Whirlpool Corporation in Benton Harbor from 1991-1993 in their materials and analytical chemistry and flammability testing group under Dr. John Wuepper. It was a very busy time—but fun too. The study at Andrews, along with the practical training at Whirlpool set me up nicely for things to come. It also gave me a firm ability to begin to work as an independent researcher which has been invaluable over the past 20 years.

After graduation, I spent the summer working as an intern at Parke Davis (now Pfizer) in Ann Arbor. This was an excellent preparation for my career as a medicinal chemist. There I learned to design, set up and run organic reactions and make complex molecules. It was only a 3-month internship, but I look back on it as one of the most influential periods in my professional life.

I obtained my PhD in Organic Synthesis at Wayne State University under the direction of Dr. Carl R. Johnson. My work focused on novel methods to make and study aza-C-disaccharides, and my thesis was based on glycomimetics. I found that Andrews had provided me a solid understanding of how to learn and study chemistry. I finished in under 4 years with several publications and was able to secure a post-doctoral position through a simple phone call.

During a 2-year fellowship at the University of Virginia, under the direction of Dr. James A. Marshall, I did natural product total synthesis. I completed the synthesis of the polyketide-based natural product discodermolide while there. Again, independent working and creative thinking were key. My work was funded by a grant I secured from the National Institutes of Health.

Following my post-doc work, I was hired by GlaxoWellcome in Research Triangle Park, NC. I am entering my 15th year with this company—now GlaxoSmithKline. I began working in the area of HIV drug discovery and remain immersed in this therapeutic area. Now I am the chemistry director for all HIV chemistry at

GSK and have a group of about 30 people that report to me. I am also the director in charge of the HIV drug metabolism and pharmacokinetics group.

During my time at GSK, I have been fortunate to have 5 drugs I have discovered enter into human clinical trials. I am most proud to say that this past August (2013), I had the first of those obtain FDA approval. It is an HIV integrase inhibitor for which I was both the program leader and inventor. The trade name is Tivicay and the generic name dolutegravir. It is rapidly becoming known as the best antiretroviral agent ever discovered and has been met with extremely high anticipation by clinicians around the world. Lives are saved as a result of this new drug. I never thought that organic chemistry could be so impactful, but this has been a truly unbelievable experience to live.

I met my wife, Haifa, in graduate school. She is of Palestinian descent and we were married in 1995 in Bethlehem, Israel. She comes from a well-known Christian family from the area, and we have now been married for 18 years. We have two children, Benjamin, who is now 11, and Mackenzie, who is 10 years old. They are both a real blessing to our lives. Since moving to the South, I have taken up a number of hobbies. I am an avid NASCAR fan, enjoy working on a small farm we own in rural North Carolina, and I'm very passionate about an off-road, 4-wheel drive hobby. I build my own rigs from the motor/transmission and drivetrain to metal fabrication and chassis modifications, upgrades and repairs. I have always felt it was important to have many interests beyond my day job and have additional things to focus on to allow a clear mind for research.

If you run into Bill Mutch or Dwain Ford, please give them my best.

Janet Thomas (BS, Chem. '86)

I'd like to update my information. I own a beautiful restaurant called, "3rd Coast Café & Wine Bar." We are located in downtown Chicago. Between the café and my ocean conservation work all over the world, life is very busy. I have no children and am happily in a relationship.

Please come for a visit!
(3rdcoastcafe.com)

David Dassenko (BA, Chem. '75)

For nearly 40 years, I have been married to Jean (Hermesen), who graduated from Andrews in 1976, one year after my graduation. We have two children: one who works for 3M as an analytical toxicologist, and one who is a nurse working in adolescent psychiatric mental health. I am a physician and the director of the cardiac program at Children's Hospitals and Clinics of Minnesota. My specialty is pediatric cardiac anesthesia and critical care.

I have fond memories of moving out of the old chemistry building into the brand-new building and helping Dr. Minesinger set up the organic chemistry department. I would imagine that the "new building" probably looks as old as the building we were vacating. Anyway, it was a great experience—I hope the department is providing the same for a new batch of students.

Bob Webster (BA, Chem. '74)

Upon graduation, I was married in June of '74. My wife,

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Debra, and I honeymooned to Loma Linda University where I attended for the next 3 1/2 years, graduating in 1978 with a Masters of Health Care Administration and a Masters of Public Health Education, as well as a Doctorate in Health Science. For the next 26 years, I worked in hospital and health care administration in various facilities and companies in senior management positions. In 1998, I attended a college in Illinois and graduated with a Registered Nursing degree. The plan was to incorporate the clinical component with the administrative component and become a well-rounded administrator. I enjoyed the clinical component greatly and worked for the next 13 years in Emergency Room and Cardiac ICU for a couple of hospitals.

We relocated for “sun, sand, and ocean” to Florida and have resided in the Orlando area for the past three years. I was recruited to Florida Hospital, Cardiac ICU. I have determined the time is right to put the clinical and administrative components together and have accepted a position as Supervisor of the Health Care Division for Orange County Corrections. I am active in the academic arena as well, teaching and writing programs and classes for several masters programs.

I have very fond memories of friendships developed at Andrews and am grateful for the opportunity of attending Andrews. I wish the best to all of you.

George Grow (BA, Chem. '69)

I was in the class of 1968, but came back in the summer of 1969 to take some more classes and graduate. I worked for Dr. Ford as a lab assistant during my last two years and summers. He was a great inspiration to me. During one of the summers, I was privileged to tutor my Mt. Vernon Academy chemistry teacher, Leon Curtis, as he was finishing an MAT from Andrews that summer. He hadn't had the good opportunity to learn organic chemistry from a teacher like Dr. Ford.

My next degree, a Masters of Education with an emphasis in biology, was from Western Carolina University. This gave me a good balance in my background for teaching biology, chemistry and earth science at Mt. Pisgah Academy for my whole career of 43 years. I've benefited from several classes in field geology under the teaching of the GRI personnel during six summers throughout the western USA.

My wife, Linda (Freese, class of '68) and I are retired, living close to our Mt. Pisgah Academy community near Asheville, NC. We enjoy traveling, serving our community, and our many friendships. Linda is a leukemia survivor, and we praise God for His gift of each day. Thanks for keeping in touch with us old timers.

Herb Domke (BA, Chem. '63)

It has been 50 years since graduation, but I was unable to make it to the alumni homecoming. I enjoyed my 1 1/2 years there and have fond memories of friends at Green Gables.

My next degree was an MD from Loma Linda in 1967. I took two years of internship and the first year of an internal medicine residency in Vancouver before starting my family practice in Victoria, BC. I am still in practice 44 years later.

In 1974, I completed my Masters in Public Health at Loma Linda. It was their first off-campus program and held

in Alberta.

We live in the capital city of British Columbia—with probably the best climate in Canada. My wife, Carol (Rogers), is a graduate of Hinsdale and Walla Walla College nursing with a Masters in Public Health from Loma Linda. We have two children: a son in Abbotsford, BC, who is in commercial transport; and a daughter in Portland, Oregon who is a nurse.

Unfortunately, my wife had a stroke 7 years ago due to cardiac arrhythmia, and that limits our travels at times. We did go as a whole family to Europe and the Mediterranean last fall for a month. Had a fabulous time. Our home project now is trying to get funds together to start a new church building program.

Everett Smith (BA, Chem. '49)

I went to Loma Linda after graduating from Andrews, and received my MD in 1953. Currently I live in Winston Salem, NC, with my wife, Alyce, my daughter, Tricia, and my grandchildren: Hampton, age 15, and Mary Caroline, age 11.

I have been retired for 18 years and enjoy reading and spending a lot of time on the computer.

Best of wishes to all.

Westward Ho

Readers of the Molecular Sieve will remember that Professor Emeritus Bill Mutch retired in the spring of 2009. He served Andrews students for 35 years as a chemistry teacher. His general chemistry, quantitative analysis and quantum chemistry courses certainly made those subjects memorable to many students. Bill was also involved in the student association and served as the president of the local ACS section and chaired the St. Joseph Valley ACS “paper day.” Since retiring from Andrews, Bill and Pat Mutch have continued to reside in Berrien Springs in the house they moved into shortly after coming to Andrews in early 1970. For decades, the Mutches graciously hosted various chemistry & biochemistry department functions in their home. This summer they finalized their plans to relocate to Northern California—about 115 miles north of San Francisco, in a home with an ocean view.



To provide a venue for a farewell from Bill and Pat's extensive network of friends from the Berrien Springs and Andrews communities, faculty members David Randall and Lisa Ahlberg hosted a come-and-go reception in August. Over 70 people attended the informal gathering to wish the Mutches well before their move west.

The best way to reach Bill Mutch is still through his Andrews e-mail address: mutch@andrews.edu.

~ David Randall



D. David Nowack, PhD

Message from the Chair

Well, it's been a remarkable year since we last wrote you. The completion of the HVAC renovation of Halenz Hall, the renovation of the organic chemistry teaching labs, the upgrading of the chemistry amphitheater and the ACS program review of the department all occurred in the last 12 months. And somewhere in there, we managed to teach, grade, research, assess our department and mentor our majors. Whew!

I am pleased to let you know that our number of majors in chemistry and biochemistry has held steady over the past few years and this year is no exception. While other schools around the US and other departments in our University have faced a decline in majors and student population, the Department of Chemistry and Biochemistry has not. We are continually evaluating our recruitment and retention activities to attract and to keep the best and the brightest.

In fact, the total number of students, non-majors and majors, taking our classes has increased by 5-10% this first semester of school year 2013. The increase in our student population is caused, in part, by the decision (at last!) of the Department of Nursing to require one semester of introductory chemistry! (Yes, I know, an RN that hasn't had any chemistry?!?) Also, the Department of Physical Therapy has chosen to make a full year of General Chemistry a pre-requisite for entering the Physical Therapy program rather than the Introduction to Chemistry sequence. This change creates a challenge to teach a class of 140 General Chemistry students. Thus, we created a second section of G. Chem with Dr. David Randall teaching it. Dr. Ryan Hayes continues to teach the first section and organize the G. Chem labs.

The University administration continues to support additions to our instrument suite. The alumni support of the Department is a crucial part of those additions as we can use some funds from alumni to cover a small part of the instrument costs. The University administration is pleased when a department believes enough in its purchasing decisions to commit its own alumni funds. And we would not have those funds without your support. Thank you!

We are continually seeking God's leading in our Department as we mentor our majors and teach our specialties. We are thankful for the material and spiritual support we receive from our friends and alumni.

All The Best!

~ D. David Nowack, Chair

Program Review

This summer, our Department completed our 5-year program review as required by the American Chemical Society to maintain our status as an ACS-approved program. The review materials were web-based forms that were filled out and/or uploaded into the ACS Committee on Profession Training site (ACS-CPT).

The program review inquired about our curriculum, faculty training, budget, space, faculty load, number of graduates in the last five years, instrument availability and recent renovations/upgrades. Because of the strong support from the University, we were able to write very positive self-evaluations in each of the areas above and others. Because we are an ACS-approved school in good standing, a site visit from the ACS-CPT was not necessary to complete the review. We look forward to receiving the results of the review in the months ahead.

~ David Nowack

Forensics Laboratory

Summertime 2013 has been an interesting time for drug enforcement in Southwestern Michigan. Dozens of submissions were connected to people attending various music festivals in the area where banned substances are frequently sold. Along with the familiar standbys such as marijuana and methylenedioxymethamphetamine (MDMA or ecstasy), unexpected substitute drugs were found as well.

I have seen more than twice as many LSD cases this summer than in all of the previous five years combined. There was also one case of an LSD analog, several amphetamine analog and numerous THC analog submissions. Analogs are drugs with a similar chemical structure and physiological function to an established drug. Drug abusers hope that by changing the drug structure only slightly they will achieve the same high without the danger of prosecution since the new drug is not named in the existing laws. The strategy often fails on both counts. Newer laws include wording that allows prosecution of an analog as if it were the original compound. More important, the effect on the body of some analogs is unpredictable and in some cases much worse than the effect of the original drug. Multiple hospitalizations and deaths have been linked to these drugs sold at music festivals this past summer.

The Andrews University Chemistry department is pleased to partner with the Berrien County Prosecutor's Office and play an important role in removing these drugs from the reach of the unsuspecting public.

~ John Rorabeck

