



the Periodical

Southern Adventist University Chemistry Department



Duffy joins chemistry faculty

By Brent Hamstra

The Chemistry Department has been operating with only six faculty this year following the departure of Herman Oden. After an extensive search, the Chemistry Department is pleased to announce that Matthew Duffy has accepted the offer to join the faculty for the 2018-2019 school year.

Duffy obtained a Bachelor of Science in Chemistry from La Sierra University in 2003. He attended the University of California, Riverside to pursue graduate study in chemistry, and earned a Master of Science in chemistry. When his graduate adviser relocated to Nanyang Technological University in Singapore, Duffy moved there with him and completed his doctorate

in 2012. While at Nanyang Technological University, Duffy received awards for his teaching and research.

Duffy moved to Université de Rennes in France following completion of his doctoral work. While in Rennes, he has been working as a postdoctoral researcher, collaborating with researchers at other universities and with various chemical companies. Duffy's graduate and postdoctoral research has been in the area of organophosphorus chemistry, and he has synthesized a number of novel compounds with interesting structural and electronic properties. He plans to continue research in this area with our students at Southern Adventist University.



Matthew Duffy joins the Chemistry Department faculty at Southern Adventist University after previously working at the Université de Rennes in France.

Chemistry reflects growing diversity

Every substance that chemists study is made from one or more of only 118 elements, several of which have an extraordinarily brief existence. We neatly organize these elements in the periodic table, arranging them in ways that reflect similarities and trends in their properties and behaviors, and a large part of understanding chemistry is based on using this arrangement of elements to understand and predict their individual characteristics and their behavior when brought into contact with each other.

These elements have diverse characteristics, and additional diversity develops exponentially as elements combine with each other to form compounds. However, some elements rarely react with others, and some elements do not react with others at all, maintaining a stubborn independence of identity and an inability to



**Brent
Hamstra**

change even under the most favorable conditions for interaction.

Like atoms, people exhibit varying degrees of willingness to interact with people who are not like them. Sometimes those interactions are not as productive as they could or should be.

As our university is taking steps to deal with the consequences of past and present failures to fully appreciate the value of all people and to develop and encourage opportunities for productive interactions among and between individuals of different races and ethnicities, we also need to evaluate how we deal with diversity at a departmental level.

The Chemistry Department has a history of producing successful graduates from a wide variety of racial, ethnic, and cultural backgrounds, and our current chemistry students continue to reflect the growing diversity present within the university's student

body. We see this diverse group of students working side by side in our classrooms and laboratories to learn and understand chemistry.

Does what we see demonstrate that all of our students are respected and valued as they should be? Not necessarily, because students may be in close proximity without being in harmony. Therefore, we must thoughtfully examine our actions and motivations and become more aware of how our preconceptions affect our ability to observe God's image in others and to manifest God's image ourselves as we conduct our educational work.

We should recognize that it would be inconsistent to value the benefits of diversity in the properties of elements and compounds while failing to value the benefits diversity produces in individuals and in the relationships that are established as individuals come together to learn with each other, about each other, and from each other. We appreciate the blessings that God brings as He leads in building these relationships.



Micah Chaiprakorb (left) was named the 2018 Outstanding Senior in Biochemistry, and Olivia Londis (right) was named the 2018 Outstanding Senior in Chemistry.

Student shares Majuro memories

By Emily Mulder

From August through December 2017, I worked as the science teacher for grades 7 to 12 at the Delap SDA School on the island of Majuro in the Marshall Islands.

I was responsible for teaching seventh- and eighth-grade earth science, tenth-grade biology, eleventh-grade chemistry, and twelfth-grade anatomy and physiology. I was lucky to be the tenth-grade homeroom teacher, as I started each day with 30 minutes of classroom time so the students would have time for worship and talking. The tenth-graders are a funny, energetic group that I loved getting to know! Out of 420 students in the elementary and high school levels, only about 10 attend the Adventist church. The homeroom worship time and two weekly chapels are some of the only exposure to Christian principles that they receive.

There were some challenges regarding classroom materials. For example, there was only one biology textbook. Only a



Chemistry major Emily Mulder interacts with students in 2017 while a science teacher on the island of Majuro.

few students had calculators, making some calculations in chemistry class more difficult. Depending on who came to school each day, sometimes there were not even enough stools for everyone to sit on! With more than 100 students coming through my classroom each day, I did plenty of lesson planning, tutoring, test drafting, grading and keeping track of all the kids! Based on the

number of parents who showed up for parent-teacher conferences, I concluded that many students receive no encouragement or help at home with their schoolwork. Despite these challenges, some students excel, and I enjoyed working with them and helping them dream.

The 10 other student missionaries and I also played a large role in preparing weekly prayer meetings,

vespers, church services, Sabbath school, and Sabbath afternoon youth programs. We spent much of our time outside of school hours exploring the ocean that was yards from our door. Majuro is a coral atoll with an area of 3.7 square miles, so water and sea life are abundant! The reef right outside our door was home to turtles, sharks, stingrays, and numerous fish species. One of my favorite Sabbath memories was sitting by the ocean helping with the youth Sabbath school class and watching a pod of 30 dolphins playing!

Though I definitely felt challenged many times by this experience, I made some happy memories, gained great new friends, actively participated in the worldwide church, and learned something about how I want my life to be. Even if my mess-ups outweighed my successes, I hope at least one of those children will feel less intimidated by science, be more willing to dream big, and be curious to know more about the God we talk about so much!

May 2018 graduates



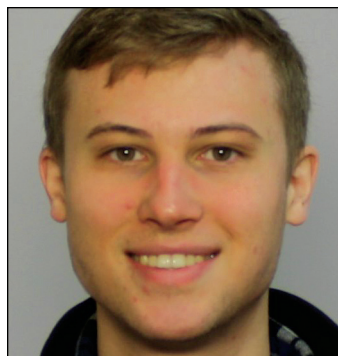
Christopher Celis
BS, Biochemistry

Future plans: Apply to medical school



Micah Chaiprakor
BS, Biochemistry

Future plans: Take a year off for mission work then apply to medical school



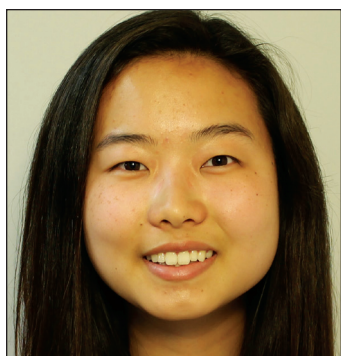
Ryan Davis
BA, Chemistry

Future plans: Attend Loma Linda Medical School



Justin Deluca
BA, Chemistry

Future plans: Work as chemist; pursue masters in chemical engineering



Lauren Kim
BS, Biochemistry

Future plans: Teach English in Korea, attend law school



Natalia Kim
BA, Chemistry

Future plans: Take a gap year, apply to dental school



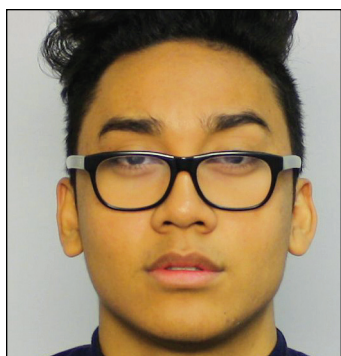
James Larson
BS, Biochemistry

Future plans: Attend graduate program at Florida State University



Olivia Londis
BA, Chemistry

Future plans: Attend Loma Linda Medical School



Jonathan Mancao
BS, Biochemistry

Future plans: Work as research lab technician at Kennesaw State University



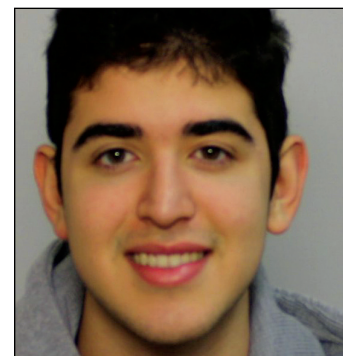
Emily Mulder
BS, Biochemistry

Future plans: Attend Loma Linda Medical School



Peter Mulder
BS, Biochemistry

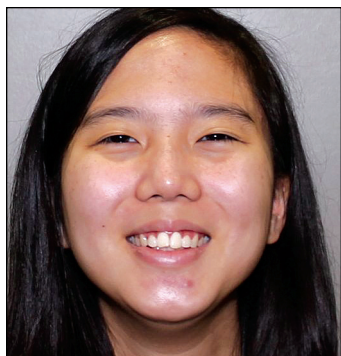
Future plans: Attend Loma Linda Medical School



Herman Odens Jr.
BS, Biochemistry

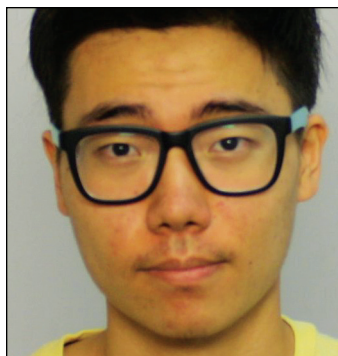
Future plans: Attend medical school

May 2018 graduates



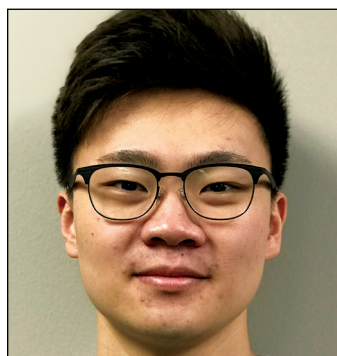
Sarah Pak
BA, Chemistry

Future plans: Work as a research lab technician at Vanderbilt



Ethan Park
BS, Biochemistry

Future plans: Attend Loma Linda Medical School



Martyn Rhee
BA, Chemistry

Future plans: Work, apply to dental school



Michael Smith
BS, Biochemistry

Future plans: take a gap year, apply to medical school



Yoshiaki Suzuki
BS, Biochemistry

Future plans: Attend Loma Linda Medical School



Alysia Wright
BA, Chemistry

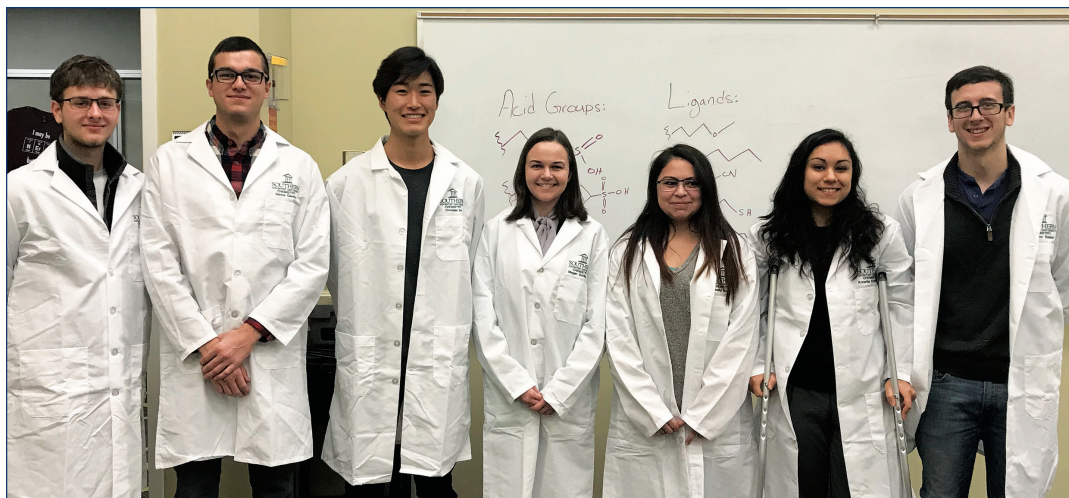
Future plans: In graduate school at Southern for Clinical Mental Health Counseling



Chuck Zimmerman
BA, Chemistry

Future plans: Work while researching graduate school options

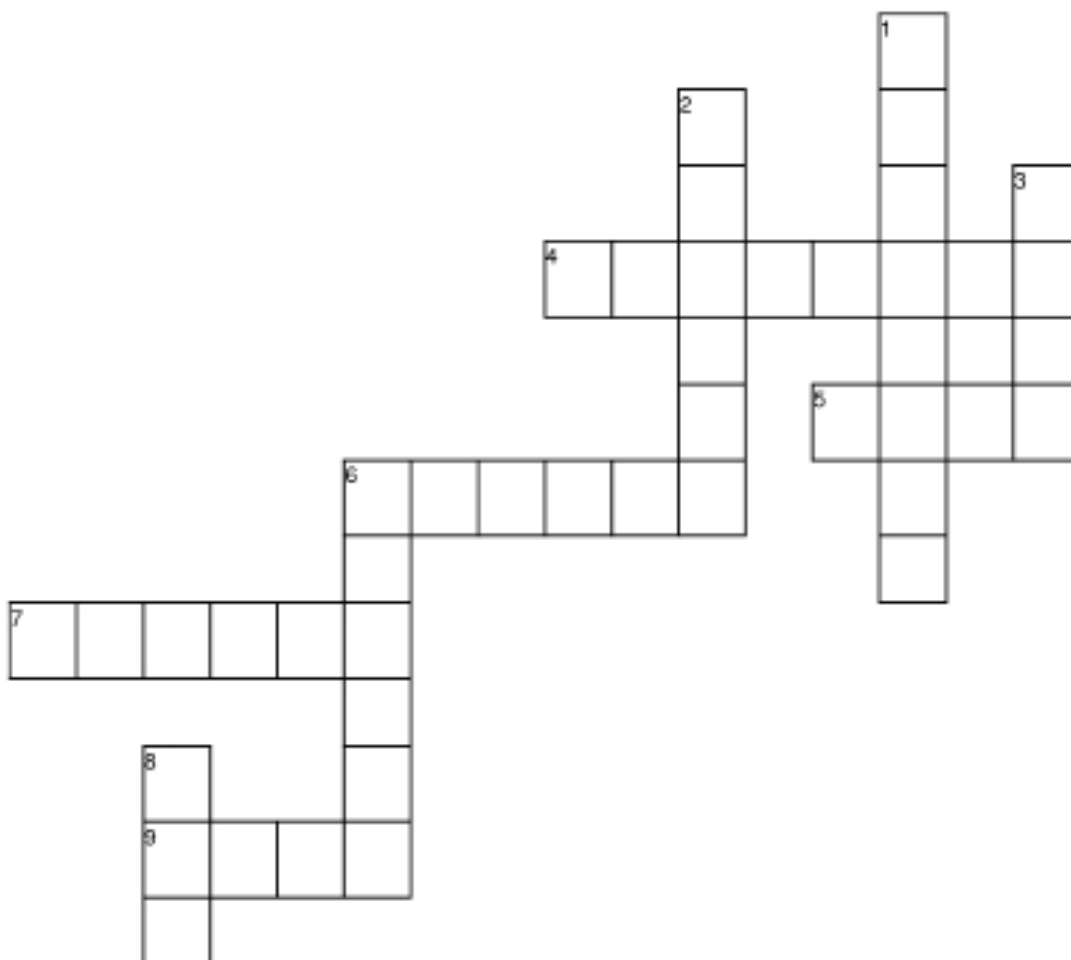
Students receive lab coats



The first Lab Coat Commitment Ceremony by the Chemistry Department featured the presentation of lab coats to students starting Quantitative Analysis, or had successfully completed the course. The lab coats included the department logo and their monogram. Students and faculty read the lab coat commitment, adapted from the American Chemical Society's Chemical Professional's Code of Conduct.

BIBLICAL ACTIVITY

Chemical elements in the Bible



ACROSS

- 4. Revelation 6:8 (ask a theology major in Greek class)
- 5. Genesis 2:11
- 6. Ezra 8:27
- 7. Genesis 19:24
- 9. Genesis 4:22

DOWN

- 1. 1 Chronicles 29:2 (KJV)
- 2. Genesis 19:2
- 3. Numbers 31:22
- 6. Exodus 28:18 (THINK about it!)
- 8. Numbers 31:22

Duffy

Continued from page 1

Along with his work in advancing our undergraduate research program, Duffy will teach our organic chemistry

labs, Advanced Organic Chemistry, and Survey of Health Chemistry. His experiences in teaching and learning chemistry on three continents and his expertise in research and education effectively complement the

expertise and experience of our current faculty.

Duffy is married and is the father of two daughters. The entire family expects to arrive in Collegedale in July, and they look forward to becoming part of the Southern community.

ALUMNI SPOTLIGHT

Emily Moses

What years did you attend Southern Adventist University?
2010-2015

What attracted you to Southern?

Southern has always been part of my community. I attended Collegedale Academy, and many of my friends attended Southern. I was familiar with the school and looked forward to joining the symphony orchestra.

Why did you choose to study chemistry?

My biology teacher in high school was fantastic, so I started out in the Biology Department. I quickly learned that I love solving chemistry problems more than memorizing biological terms, so I switched.

Describe your experience at Southern. What is your favorite memory from those years?

My best memories involve people I met at Southern: professors, roommates, and fellow orchestra members on tour.



Emily Moses visits Lake Elsinore. She is pursuing her doctorate at the University of California, Riverside.

Where was your favorite place to study?

I was most productive in the Hickman Science Center third-floor study room. Someone was usually around who could try to answer my questions, and I was just down the hall from the chemistry professors.

What was your favorite class?

I have so many! My top five are Music and the Christian Church with Bruce Ashton; Ancient Classics with Jan Haluska; Pirates, Captives, and

Slavery with Lisa Diller; Developmental Psychology with Rob Coombs; and Orchestra with Laurie Minner.

Tell us about your life after Southern.

I'm currently a PhD candidate at the University of California, Riverside.

What are your plans for the near future?

I plan to finish my PhD and focus on teaching opportunities in Southern California. I hope to return to the Southeast as a chemistry professor.

What experiences at Southern helped you in your professional and/or personal life?

Working for chemistry professor Bruce Schilling in the stockroom did so much to prepare me for graduate school, and my TA experiences helped me fall in love with teaching. On a personal note, my choice of a lab partner (my fiancé) ended up being one of my best decisions.

What advice do you have for students who want to make the most of their time at Southern?

Seek opportunities to expand your world. Choose professors who inspire you, friends who support you, and don't be afraid to take risks on unknown lab partners. Finding balance is a tricky thing, but I've rarely regretted putting in the work and developing solid habits. Halbe Stunde forever.

Note: This interview has been edited for brevity and clarity.



SOUTHERN
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Power for Mind & Soul

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Nuvia Saucedo, PhD
Bruce Schilling, PhD
Rhonda Scott, PhD
Heidi E. Olson, Office Manager

New endowed scholarship to benefit chemistry majors

A gift of \$1 million from Southern Adventist University alumnus Rahn Shaw has established the Dr. Rahn and Natalia Shaw Endowed Scholarship Fund.

This fund will provide scholarships to students majoring in biology, business, chemistry, computer science, mathematics, and physics.

One student from each of the above academic areas will be awarded a scholarship each

year, and the first scholarships from this fund will be awarded in the fall of 2018.

"Dr. Shaw's generous gift will allow us to provide substantial scholarships to students who have demonstrated a passion for pursuing excellence in their classes here in the Chemistry Department," said Brent Hamstra, chair of the Chemistry Department. We are exceedingly grateful to Shaw

for this significant investment in our work and for his confidence in the value of our professors and students. This scholarship is going to make a difference for our students."

If you are interested in contributing to this endowed scholarship fund or in other opportunities to support the work and students of the Chemistry Department, contact Hamstra at 423.236.2203 or email bhamstra@southern.edu.