

the Periodical

Southern Adventist University Chemistry Department



Chemistry Department Prevails in the Face of COVID-19 Challenges

Professors' responses to challenges they faced:

Brent Hamstra: Everything changed rapidly in March and April of 2020. I found that my main focus wasn't primarily on how to master new technology and maintain academic standards, but on how to provide students with a sense of normalcy in an abnormal situation. So one of my goals was to try to make the livestreamed lectures I provided via Zoom and PowerPoint as much like the lectures I would have presented in the classroom on the whiteboard. I know that for some students, this was helpful, even if this approach didn't always meet all of the recommended criteria for providing distance learning materials.

The other goal was to maintain community and connection. This led to interesting conversations on Zoom during virtual office hours, which were a bit more well-attended than the face-to-face hours had been, and a willingness to be available during evenings and weekends. I enjoyed the opportunity to spend some

time on a Sunday morning talking with a student in Korea during her Sunday evening. Overall, it was a time-consuming and energy-consuming experience, but worth the effort.

Nuvia Saucedo: I was scheduled to be on my way out of town when I heard that school was online for the rest of the semester. This was back in March 2020. I canceled my spring break trip to learn how to use eClass more efficiently, essentially moving my class 100% online (as opposed to doing things live from Zoom and proctoring exams online). The first revised syllabus went out, cancelling some material and extending due dates. This worked well until the tornado hit Hamilton County, which left some of the students without power. The syllabus had to be modified again—more material cancelled, more extensions on assignments. I learned how to code for eClass, making my own homework, quizzes, and exams. Keeping a sense of community was difficult, but those who attended office

hours via Zoom maintained their grade. More generosity was required for those who seemed to struggle. Supporting the students through this difficult time was the #1 priority, showing grace was no problem. For the following semester I decided to try "flipped classroom," using pre-recorded lectures and working together through examples in the lecture time, which worked wonderfully.

Rhonda Scott: The last several weeks of Winter semester 2020 were a unique experience. A huge thank you to all of my students who hung in there, particularly those who attended class synchronously—your interaction was invaluable and your patience greatly appreciated! I learned how to operate Zoom, including the use of my iPad as a separate screen to write on during lectures. I became very familiar with Panopto and uploading lectures into eClass. I was grateful for small classes that made it easier to give quizzes and exams online. Adaptability was key, particularly when the Easter tornado went

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From the Department Chair

Ellen White wrote that “God never leads His children otherwise than they would choose to be led, if they could see the end from the beginning, and discern the glory of the purpose which they are fulfilling as co-workers with Him” (*The Desire of Ages*, p. 224). At the beginning of the changes in our work caused by the pandemic, this path’s purpose was not discernable to me. Now, in the midst of these changes, the purpose of this path is still difficult to discern, but I think I see some reasons why God has led us along this portion of the path.

1. I believe God has provided us an opportunity to more fully explore how to use software and electronic devices to effectively supplement the things we do in the classroom and laboratory. There is no good equivalent for time together in these places, but there are ways in which technology can make our time together more effective.

2. I believe God has provided us an opportunity to more clearly see some of the substantial differences in the situations various students face as they live and study. Differences in financial resources and living spaces lead to substantially greater challenges for some students compared to others. With increased awareness of these challenges comes the responsibility to find ways to give our students better support in overcoming these challenges. In some cases, this calls us to deeper examination of structural injustices in our society that burden many of our students.

3. I believe God has provided us an opportunity to promote the value of science and scientific reasoning as a tool for solving problems. Science is one of the greatest gifts God has given us to understand our world and how to be good stewards in it. In a world where science is increasingly questioned and dismissed, we have the opportunity to give our



Brent Hamstra

students the knowledge and skills to use science well and to point to the work of others who are using science well in addressing the common problems we face.

God will reveal other purposes in mind for us as we continue this journey. We are grateful for your continued support and prayers, and we are especially grateful for the work of our alumni and friends who serve in various capacities as healthcare providers as they continue to serve as healers during these exceptionally difficult times.

Chem Department Prevails (continued)

through, again disrupting plans and schedules.

It was a bit scary to do laboratory experiments in front of an audience, but most of them went quite smoothly. I definitely realized my need for a better camera and lighting to improve the quality of the videos and make it easier for students to see what was happening during each experiment. I enjoyed watching the videos the students in CHEM 114 made when they did the final experiment at home. I had mailed them a few supplies, such as plastic test tubes, to make it easier to do the experiment. Students in CHEM 362 also recorded PowerPoint

presentations for the final biochemistry project that were well done.

Mitch Menzmer:

Due to the COVID-19 crisis of Winter 2020, we had to convert the last few General Chemistry II labs from in-person to online. This included converting lab observation and calculation pages into a web format, using a special coding language in our eClass course-delivery platform. I incorporated pictures of various stages of the experiment taken by Professor Bruce Schilling of the various labs into the pages for students to observe and respond. I also held a number of Zoom

meetings and prepared online pre-lab videos for students. These were shared among all the lab teachers for General Chemistry II. The challenge was complicated by the fact that several students were outside the campus time zone, including several 12 hours away in Korea. This meant I had to do asynchronous teaching. To help things go a little better in this regard, I made a survey that students could use to indicate their time zone, so I knew who was facing challenges due to time zone difference. All in all, I was very impressed with the level of student engagement throughout the last remaining weeks of the semester.

Department Happenings

Chemistry Club 2019—2020

Hello everyone! At the beginning of the winter semester 2020, Chemistry Club president Alex Bahn, having fulfilled his graduation requirements, promoted me from vice president to president. Thus, I am writing the Chemistry Club's section for the department newsletter. This school year has definitely been a year of transition, and it has been quite the experience trying to adjust to our new work/learn-from-home lifestyle.

Here is what Chemistry Club has been involved in this year. At the Organization Showcase in the beginning of the school year, Chemistry Club had a booth where students could answer chemistry quiz questions to win prizes, such as gift cards and glass beaker mugs. Later that week we had our annual welcome party, where we elected the year's Chemistry Club officers. In September we combined forces with the Mathematics and Physics & Engineering departments in a camping trip/picnic outing. In October we participated in the 423 Night Market, selling Professor Bruce Schilling's signature pumpkin bread, and after about 80 minutes, we were completely sold out! We also planned a club vespers event at the Schilling house, where we enjoyed a short dinner (including homemade ice cream) and worship in front of a bonfire.

Later in the month, we celebrated National Chemistry Week by planning a series of activities that included hunting for tiny "moles" hidden around Hickman Science Center, riding a mole mobile across



2019 - 2020 Club Officers: Nicole Onciulescu, Sydney Blackburn, Elaina Bergondo, Elodie Manalo, Tyler Bell, Alex Bahn, Jason Chung

the promenade, guessing the amount of metal inside a jar, watching a metal-based demonstration, and eating cookies with chemistry puns attached to them. At the end of the month, we did pumpkin carving in the study area of Hickman Science Center's third floor, with snacks provided by the faculty. In November, Chemistry Club helped the Samaritan Center by organizing donations. During Giving Day, we participated in the Club Scavenger Hunt Challenge, which had our four-person group (including Professor Nuvia Saucedo) running from location to location, performing activities such as counting bricks and taking selfies. However, our effort was not in vain; we won \$600 (for Chemistry Club) by finishing in first place! I was told that there was a large time gap between when we finished and when the team in second place finished, so maybe we didn't need to run as much as we did. It was quite exhausting!

In December, we held a white elephant Christmas convocation, and while some people may have been salty about their final,

less-than-\$5 gift, it was a fun way to end the semester.

During the winter semester, we participated in Martin Luther King, Jr. Community Service Day, helping out at the Red Clay Farm as we have in years past. In February, we held a Chemistry Club game night, where students and professors met to eat snacks and play card games, board games, and drawing games.

We also planned a fundraiser where we put candy into test tubes and attached fun chemistry puns (we sure love our chemistry puns!) to them. In March, we went to Professor Schilling's house to count jigsaw puzzle pieces for the Samaritan Center (we counted pieces by putting the puzzles together). Later in the month, we celebrated Pi Day by eating tons of pie in the Chemistry Department office. Did you know that there is such a thing as sweet potato pie? It tastes almost the same as pumpkin pie, except that it's sweet potato-flavored rather than pumpkin-flavored. I learned something else surprising on

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Department Happenings (continued)

Chemistry Club 2019—2020

Pi Day, since it was the same day we discovered that our university would be moving to all online classes due to a global pandemic.

Although we all experienced many stressors as a result of moving online and evacuating Southern's campus, we were still able to meet with each other

online via Zoom for chemistry convocations and, surprisingly enough, a vespers event! We organized a Chemistry Club vespers to take place over Zoom and had a fun time seeing familiar faces once again. Professor Schilling even brought his homemade ice cream!

Unfortunately, no one else at the vespers event could partake in the ice cream. Anyway, as we close this semester with final exams and final projects, my prayer is that we can continue to stay connected with each other and, most importantly, with God.

By Jason Chung

Chemistry Club 2020—2021 Events

It has been a different year with a unique set of challenges, but we have done our best to still have fun. We were not able to have many of Chemistry Club's usual events this year due to COVID-19. However, we still had an outdoor vespers at Professor Schilling's house—with homemade ice cream, of course.

Another highlight of the Fall semester was National Chemistry Week. We had a scavenger hunt and gave away gift boxes. Another student favorite is Professor Schilling's pumpkin

bread, and we were able to sell that winter semester. I know that was enjoyed by many! Chemistry Club was able to offer a community service event at the Samaritan Center, where we helped with organizing donations. Something new for Chemistry Club this year was a Sabbath afternoon hike. It was a beautiful day and much enjoyed by everyone who came.

I asked Nicole Onciulescu, the next club president, to share some plans for next year and this is what she said: "Despite

the unknowns ahead, we are beginning to plan for the 2021-2022 school year. We hope to continue with our traditions of vespers at Professor Schilling's home, pumpkin carving, volunteering at the Samaritan Center, puzzle Sabbath, and selling pumpkin bread. We are also excited to be planning a chemistry olympics with several events, including a periodic table fill-in contest and a titration-palest possible persistent pink-race!"

By Sydney Blackburn

Chemistry Club Officers Winter 2020

President - Jason Chung
Vice President - Nicole Onciulescu
Secretary - Nicole Onciulescu
Treasurer - Tyler Bell
Pastor - Sydney Blackburn
Sergeant at Arms - Elodie Manalo
Public Relations - Elaina Bergondo

Chemistry Club Officers 2020 — 2021

President - Sydney Blackburn
Vice President - Nicole Onciulescu
Secretary - Elodie Manalo
Treasurer - Tyler Bell
Pastor - Elie Sagage
Sergeant at Arms - Keiffher Rosendo
Public Relations - Elaina Bergondo

Alumni Spotlight

Burtrand Lee, '76



Chemistry Professor Burtrand Lee presents at the Hickman Science Center.

During a specially scheduled departmental convocation March 12, the last day prior to Spring Break, Burtrand Lee, PhD, presented a seminar on the value of undergraduate research and opportunities for funding research available through the American Chemical Society (ACS).

Lee graduated from Southern Adventist University with a degree in chemistry in 1976 and then worked as a chemist on NASA's Viking Project. He completed his PhD in Materials Science and Engineering from the University of Florida in 1986 and then joined the faculty at Clemson University, where he served on the faculty until 2008 and now has Professor Emeritus status. He currently works for the American Chemical Society, where he manages research grant programs.

Lee's presentation

emphasized the ways in which chemistry students benefit from participating in undergraduate research and encouraged students to take advantage of undergraduate research opportunities. He referred to undergraduate research as "Stellar Awesome Undergraduate" (SAU) research and gave a brief overview of the materials science research he conducted with students over the course of his academic career. Students appreciated his energy and humor and his ability to apply concepts they had learned in their courses as he conducted his research. Faculty benefitted from Lee's insights into the research grant programs administered by ACS and his understanding of the elements of successful grant proposals.

This seminar, as it turned out, was the last of our face-to-face departmental events

for the 2019-2020 academic year. During his presentation, students and faculty were notified that following Spring Break, all course instruction would be provided online for the remainder of the semester. In this unprecedented situation, Lee's words reminded us of the importance of the Chemistry Department's undergraduate research program and gave us reasons to be committed to preserving and growing this program in order to ensure that our current and future students continue to benefit from Stellar Awesome Undergraduate research.

By Brent Hamstra

Biblical Applications

“Bridging the Gap During Our Journey”

Genesis 28 tells us the story of Jacob’s sudden departure from his home and family after deceiving his father and denying his brother access to their father’s blessing. In this account, we read about Jacob’s dream in which a ladder extended from earth to heaven, with angels traveling back and forth along the ladder and God above the ladder, assuring Jacob that He would be with Jacob and bring him back home.

As Jacob found himself socially distanced from his parents and brother to protect his life, he found himself in a difficult situation. Without the comforts of home, he faced an uncomfortable and challenging journey with no fixed end in sight. But through this dream, Jacob found reason for faith and hope and a willingness to commit himself to God’s leading along the way.

Many of us found ourselves in a similar situation in March 2020 as the necessity of social distancing led to changes in our schooling, our work, and other aspects of our lives. For Southern students, a sudden mid-semester departure brought uncertainty about how to continue learning with different kinds of instruction in different locations, and the challenges of learning without the comforts of the educational resources available on a university campus. For Southern faculty, this sudden departure brought uncertainty and questions about how to provide knowledge and skills to students near and far, across the country and across oceans.

For both students and faculty, maintaining connections was



essential. Just as God showed Jacob His commitment to maintaining their connection and fulfilling His promises, faculty and students found ways to maintain connections and transmit knowledge. A combination of new uses of technology and existing knowledge and relationships provided ways for God to fulfill His promises to help students learn what they needed to learn and continue their journeys toward becoming the people God calls them to be.

Now we find ourselves together again on campus, experiencing a changed educational environment that incorporates elements of the way things were before the pandemic and things we’ve learned to do over the past few months. As it was for Jacob, things we experienced along the journey have been essential to our success once we returned to where we started.

As you read this article, you may be thinking of your own journeys over the past few months and the sudden changes to your life at home, on the job,

or in your church. God has been active in your journey, as He has been in ours. His angels have been at work on your behalf, and you may be working as one of God’s messengers, bridging the gap between God and someone else on an uncertain journey.

Paul told the believers in 2 Corinthians 5 that just as Christ was God’s agent of reconciliation to bridge the gap between divinity and humanity, so we also are God’s ambassadors of reconciliation to help others experience connection with God and each other as they travel life’s path. Jacob’s ladder still stands straight and tall today. Wherever you may go and in whatever challenges you may face in school, at home, on the job, or as you participate in church life, God remains committed to you and to others through you.

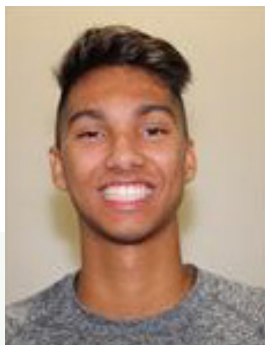
By Brent Hamstra

2020 Chemistry Graduates

and Their Plans for the Future



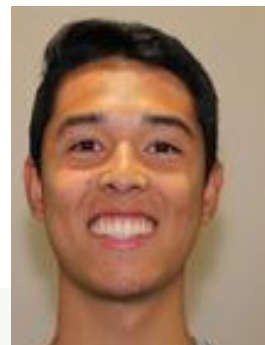
Matthew Baker
BA Chemistry
Join the workforce



Alex Bahn
BA Chemistry
*Loma Linda University
School of Dentistry*



Jisu Chang
BA Chemistry
Attend medical school



James Chin
BA Chemistry
*Loma Linda University
School of Medicine*



Nolan Chu
BA Chemistry
*Loma Linda University
School of Medicine*



Josiah Chung
BA Chemistry
Attend dental school



Melody-Joy Drummond
BA Chemistry
*Loma Linda University
School of Medicine*



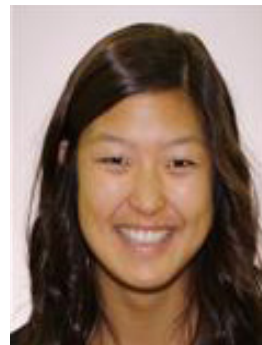
Christian Im
BA Chemistry
*Loma Linda University
School of Dentistry*



Jessica Kim
BA Chemistry
Attend dental school



Bryan Knuppel
BS Biochemistry
Attend medical school



Amber Lee
BA Chemistry
Attend medical school



Matthew Nanbu
BA Chemistry
Join the workforce

Outstanding Seniors

2020 outstanding seniors were: Christian Im (BA, chemistry) and James Chin (BA, chemistry).

2021 Chemistry Graduates

and Their Plans for the Future



Tyler Bell
BA Chemistry
Belmont University
College of Pharmacy



Erin Burke
BA Chemistry
Attend graduate school



Mason Clark
BA Chemistry
Attend medical school



Annette Echevarria
BS Biochemistry
Attend medical school



Tyler Fisher
BA Chemistry
Southern College of
Optometry



Hae Soo Kim
BS Biochemistry
Loma Linda University
School of Medicine



Anna Lee
BA Chemistry
Teaching Licensure
Loma Linda University
School of Medicine



Daniel Lee
BA Chemistry
Loma Linda University
School of Dentistry



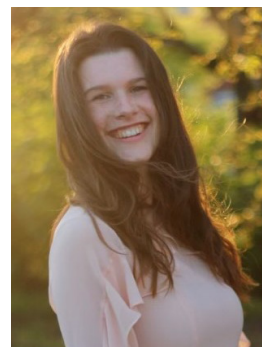
Parker Litchfield
BS Biochemistry
Attend medical school



Noah Manestar
BA Chemistry
Loma Linda University
School of Medicine



Patrick Marx
BS Biochemistry
Loma Linda University
School of Medicine



Kianna Mohns
BA Chemistry
Teaching Licensure
Teaching at Shenandoah
Valley Academy



Max Park
BA Chemistry
Attend dental school



Keiffher Rosendo
BA Chemistry
*Rosalind Franklin University
College of Pharmacy*



Allan-Roy Sison
BA Chemistry
Attend dental school



Morgan Stevenson
BA Chemistry
Attend law school



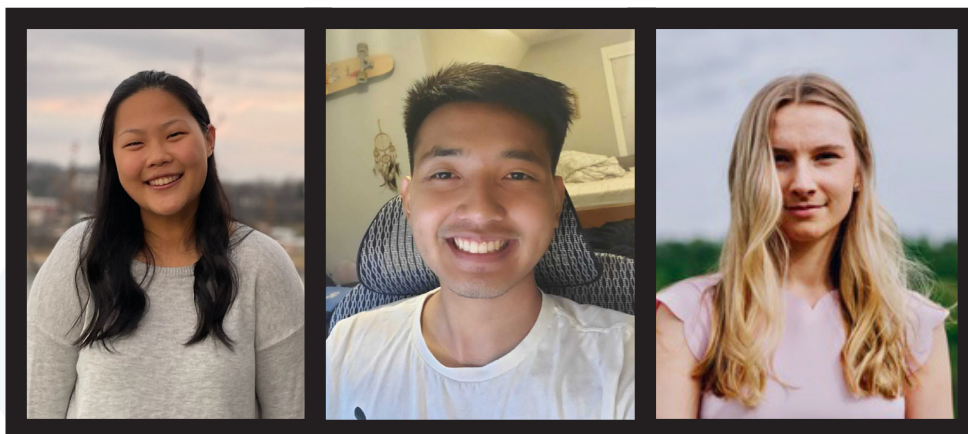
Claudia Velasquez
BA Chemistry
Attend dental school



Madeleine Ware
BS Biochemistry
*University of Virginia
PhD Chemical Biology*

Outstanding Seniors

2021 outstanding seniors were (left to right) Anna Lee (BA, chemistry teaching licensure), Daniel Lee (BA, chemistry), and Madeleine Ware (BS, biochemistry emphasis).





Power for Mind & Soul

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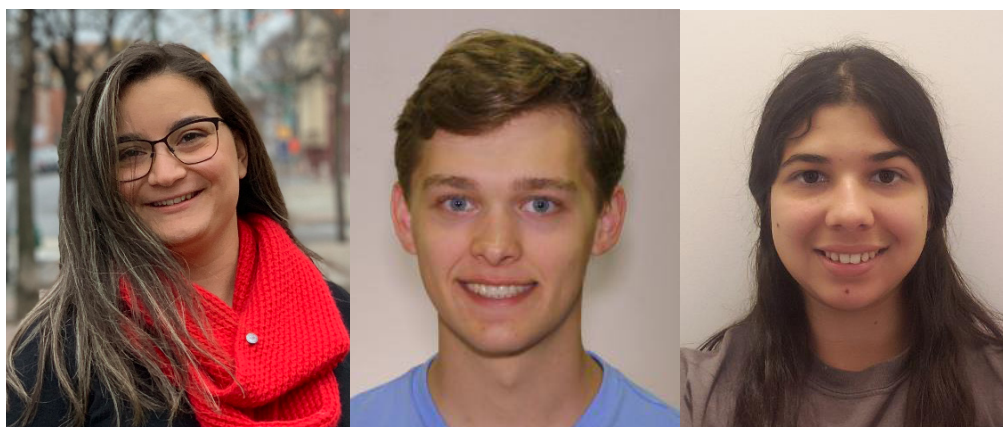
Bruce Schilling, PhD

Rhonda Scott, PhD

Tamie Suzuki, PhD

Dennisse R. Blood, Office Mgr.

Top Achievers and Outstanding Seniors



Three students each received \$666.67 scholarships as Top Achievers in the Chemistry Department during the 2021 annual Awards Convocation. Pictured from left to right are Nicole Onciulescu, Connor Schell, and Ana Guerrero. Due to the pandemic, no top achiever scholarships were awarded in 2020.