



the Periodical

Southern Adventist University Chemistry Department



New professor finds calling

By Nuvia Saucedo

I am so glad to be here at Southern Adventist University as an assistant professor of chemistry. I received a PhD in Analytical Chemistry from the University of California, Riverside, in 2015.

However, my trajectory to this position began much earlier. Unknown to me, God had been preparing the way for me to get to Southern since before my birth. My family converted to Adventism when I was in elementary school.

In high school, I was chosen as a recipient of a science scholarship in the form of a summer internship working on a research project to develop antimicrobial additives in paint. (Don't tell anyone, but the secret ingredient was silver nanoparticles.) I felt cool having a job at a "real" company but didn't know at the time that



Assistant Professor Nuvia Saucedo joined the Chemistry Department after receiving her doctorate in analytical chemistry.

it was preparation for the future, because I wanted to be a symphony orchestra conductor.

During my senior year, my parents decided I would attend Andrews University. I remembered that I liked science and my research experience, so

I decided to major in chemistry. There seemed to be a large demand for chemists, so there was no way I could fail at being employed after graduation.

My time at Andrews University was amazing and a spiritual blessing. I presented a research project during my senior year regarding my personal interest in gold nanoparticles. Getahun Merga, a new professor at Andrews, who was collaborating with Dan Meisel from the University of Notre Dame on gold nanoparticle synthesis, asked me to join that project. The project was a success and the results were published. I presented the research as my senior project.

After graduation, I decided to pursue graduate school. While I always enjoyed science, I fell in love with chemistry during my senior year.

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Faculty changes require adjustment

After nearly 20 years as a college professor, I have started to adjust to the idea that our students are here for a short period of time. They come, impact our lives, create memories, and move on to the next stage of life. We enjoy having them here, we celebrate their accomplishments, we miss them when they leave, and we appreciate it when they return to visit or make homes in this community.

I am less adjusted to the idea of my colleagues being here for a short period of time. I am dealing with this discomfort because Jan Cathey and Herman Odens left the Chemistry Department at the end of May. Cathey was part of our department for six years, and she had a passion for helping students become better learners and for inspiring the professors to be



**Brent
Hamstra**

better teachers. Odens taught at Southern for five years and worked hard to provide quality research opportunities for our students. I am grateful to both of them for their commitment to our students.

Fortunately, departures are not the only changes that require adjustments. Nuvia Saucedo joined our faculty in August, bringing enthusiasm and fresh perspectives. In the short time she has been here, she has demonstrated that she will be a valuable addition to our team. I am excited about her potential for contributing to our program in many ways in the future.

We have started the search process to fill our remaining faculty position; this will give us another opportunity to experience the positive aspects of change.

We ask for your prayers during this process, as we

are confident that God will provide the Chemistry Department with the person who has the knowledge, skills, and talents that we need as we continue to offer excellent education.

Meanwhile, our remaining faculty are shouldering additional course responsibilities. Loren Barnhurst is teaching all of our organic chemistry courses this year. Mitch Menzmer has taken over leadership in our research program. Rhonda Scott, Bruce Schilling, and I added additional duties as we divide the work of seven professors among six people.

We thank you for your prayers and support this year as we fulfill our commitment to maintaining the high standards we have established while enrollment in our courses and degree programs remains high. And we thank our students for the memories they create, the accomplishments we celebrate, and the relationships we appreciate.

Professor

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I wanted to perform research in my career, and graduate school seemed a wise choice that would lead to a high-paying job in research and development.

I encountered many twists and turns during my time in graduate school, but I enjoyed the cycle of learning and

accumulating knowledge. I taught chemistry for several years during graduate school, and teaching was the anchor that kept me sane.

When I graduated, I applied for research jobs, but four months passed by without finding employment.

A friend suggested I apply for a temporary teaching job, and I found a position quickly.

When I started teaching,

many pieces of my life and experiences came together. I was supposed to be Professor Saucedo.

I am a professor at Southern now because I can be both a Christian and a scientist here. I am the happiest I've been in my life. I look forward to developing a research project and interacting with students daily, and I thank everyone for their warm welcomes.

Chemistry major learns lessons of love as student missionary in Peru

By Sarah Lim

Last September I went to the jungle city of Pucallpa, Peru, to work as a student dental worker in a clinic called AMOR Projects. One of my main objectives for that year was to gain experience within the dental field. However, I left with much more than just professional experience.

I learned a lot about God's love in Peru. At the beginning of the year, I expected that selfless love for my neighbor would be easy, especially since I was a missionary. However, I soon found out that the gift of love was not something that I was able to achieve on my own. Ironically, I was able to experience love first and best from the locals whom we were there to serve.

AMOR Projects' main mission in the area is to perform mobile clinics and assist dental, medical, and eye patients. During the first week of every month, the student missionaries would pack up the *combi* (12-seat van) with medicine, glasses, and



At left, Sarah Lim stands next to her father, who visited for a week to train students at a dental clinic in Peru. Above, a typical inside view of a home in Dos de Abril, one of the poorest communities in central Peru.

dental instruments, and they would drive to the neighboring communities to serve people. About 500 patients receive care each month, in addition to those who visit the AMOR Projects property for advanced treatment.

We spent the majority of our time, however, was getting to know the people, and this ended up being the most impactful part of my year. Besides running clinics, one of our main tasks in Peru was to prepare health talks and go door-to-door in the community.

My house-visiting partner, Southern nursing major Kathleen Napitupulu, and I met a young mother named Señora Julisa, who had two young children named Taira and Ramsey. They lived in a shanty community about 15 minutes from AMOR Projects. The community was one of the poorest sections in town with weary wooden shacks enclosed with holey tarps or tin and hard-packed dirt floors.

In that humble place, I was able to experience God's love through Señora Julisa. Despite less than ideal living

conditions that might make one bitter and upset with life, Julisa always radiated with love for her children, for God, and for us. One time after a Bible study, she offered to prepare one of her chickens for us, even though the chickens were her main source of income and food. As vegetarians, we politely declined, but her display of sincere love and sacrifice affected me greatly.

Coming from a first-world country, I felt rebuked by the generosity and love of these people. They have nothing, but they are willing to give everything for others' well-being.

How often do we complain about first-world problems? Do we let inconveniences in our lives distract us from showing God's love to others? We believe in missions because we believe in God's love for us, but manifestations of God's love are not limited to Peru or other third-world countries. Will you allow God to work in your life and be a missionary, starting here at home?

Students learn about forensic science

The Chemistry Department held its second forensic chemistry summer camp in June. Six high school students took advantage of this opportunity to learn about various aspects of forensic science and some of the chemistry knowledge and techniques used by forensic scientists.

Jan Cathey and Emily Hamstra (BA Chemistry, 2003) led out in this year's camp. Cathey graciously handled the leadership responsibility, even though her employment at Southern ended in May. Hamstra used her training and experience as a laboratory analyst and crime scene investigator to provide the camp participants with a better understanding of what tasks forensic scientists perform on the job.

The chemistry department faculty also were involved in camp activities. Mitch Menzmer led students in the use of ultraviolet-visible spectroscopy to analyze a copper sample. Brent Hamstra showed students how atomic absorption analysis could be



High school students learned about fingerprint collection and visualization and water-quality testing during forensic chemistry summer camp at Southern.

used to measure lead concentrations in water. Rhonda Scott helped students see how the chemical properties of carbohydrates, proteins, and lipids could help to analyze stomach contents. Loren Barnhurst instructed students

in the principles and use of infrared spectroscopy, and he helped them use the infrared spectrometer to analyze possible drug samples. Bruce Schilling worked with the students to use gas chromatography-mass spectrometry to analyze hydrocarbons,

as might be done as part of an arson investigation. These activities, along with activities in water-quality testing, chromatography, gel electrophoresis, and fingerprint collection and visualization gave the students who attended the camp a broad range of experiences illustrating the use of chemical principles in forensic investigations.

"We had a really interested and engaged group of students this year," said Brent Hamstra, chemistry department chair. "Putting on a camp like this is easier and more enjoyable when the students are excited about being actively involved in experimenting and in analyzing their results."

The Chemistry Department is planning for another forensic chemistry summer camp in 2018. High school students who have completed a year of chemistry before the camp and are interested in a career in chemistry, forensic science, medicine, or a related field, should contact the Chemistry Department for additional information.

December 2017 graduates



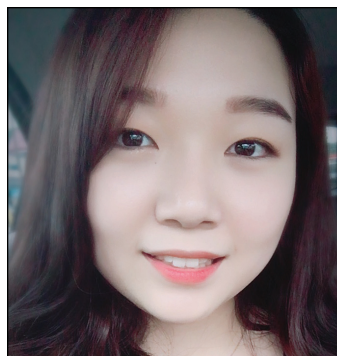
Elaine David
BS, Biochemistry

Future plans: Apply to medical school



Mariana Gonzalez
BS, Biochemistry

Future plans: Attend pharmacy school at Loma Linda in the fall



Jihye Lee
BS, Biochemistry

Future plans: Work and travel; attend medical school



Brandon Williams
BA, Chemistry

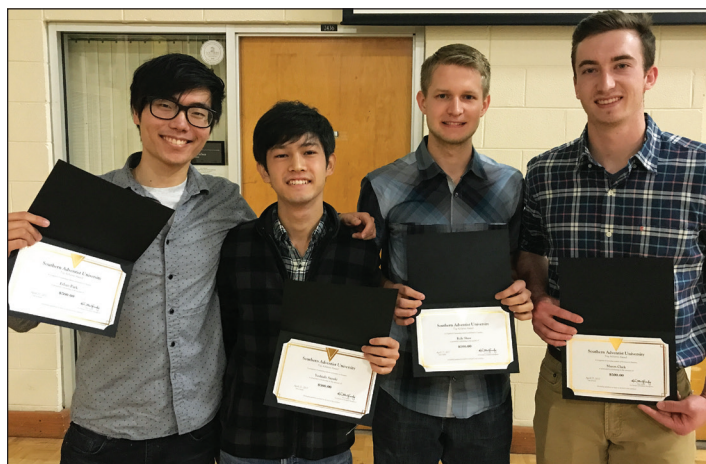
Future plans: Attend medical school

Chemistry faculty, students win awards



Loren Barnhurst is presented the 2017 President's Award of Excellence for Commitment to Student Success by President Dave Smith during the May 2017 commencement.

At right, Herman Odens received the Advisor of the Year award during the 2017 awards convocation for his work with students. Below, four chemistry majors received top achiever awards during awards convocation (From left: Ethan Park, Yoshiaki Suzuki, Kyle Shaw and Mason Clark).



BIBLICAL APPLICATION

Focus on God, not your mistakes

By Loren Barnhurst

The story of my hobbies as an adult revolves around the idea of complete immersion, which some might even call obsession.

In the last three years, my former hobbies have taken a back seat to my newly discovered passion for disc golf. I dream about throwing new plastic; I read blogs about the nuances of maximizing distance on throws; I have two baskets for practicing putting in my backyard, and I even keep a database of all my discs (with pictures to boot). When I go on vacations, my goal is always to find at least one new course to play during the trip, which I successfully did on our recent visit to Hilton Head Island in South Carolina.

The course I found was a recent installation, and when I showed up to play Sunday morning, I was the only player there.

I played the nine-hole course once and, as I finished my round, another player arrived. He was a resident of the island and asked if I was interested in playing a round together, to which I agreed.

My disc golf companion started raving about his skills. He told me about his travels and the tournaments he played. He showed me his discs that he had been using for more than 15 years. After his boasting, I



was expecting to see some solid play and be soundly beaten. On the first hole, both of our drives were mediocre, but I made my putt and he missed his putt. I then went on a tear, making birdies (one under par) on the next four holes, and I led him by four shots after five holes. I was silently ecstatic, while he was vocally less enthusiastic with his results.

But then we reached hole #7, the most difficult on the nine-hole course.

The hole required throwing a disc about 350 feet over an alligator-infested pond. I knew I didn't have the distance to get all the way over the pond safely, so I attempted to throw my driver over the corner and seek to make par. I heaved my disc as hard as I could and expected to see a long flight curving safely to the left.

Instead, a moderate

headwind turned my disc to the right, and the disc splashed in the center of the pond. I was really frustrated, as I'd had a good round until that mistake. I threw another disc and successfully avoided the water this time, but I was distracted by my terrible first throw and disappointed over losing a disc. I ended up with a 6 (triple bogey) on the hole.

I've kept track of every round of disc golf I've played. As of the writing of this story, I've played 454 rounds, which includes 5,498 holes. In that time, I've recorded only 13 triple bogeys (0.24 percent of the holes). I couldn't get that triple bogey out of my head and on the last two holes, I threw my shots straight into trees. I finished the round at only one shot under par.

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ALUMNI SPOTLIGHT

Jonathan Schilling, MD

What years did you attend Southern Adventist University?
2004-2009

What attracted you to Southern?

Honestly, I grew up in the area and Southern was always there. I thought about going away for college, but Southern had the strong science program that I wanted. I liked all of the teachers I knew, and they really cared about their students.

Why did you choose to study chemistry?

Well, chemistry professor Bruce Schilling is my father, so I was exposed to it for my whole life. I had a periodic table on the wall of my bedroom for years. I really enjoyed my high school chemistry class, and when I started college I was thinking about getting a doctorate in chemistry.

What are your favorite memories of Southern?

I had a good time at Southern. I liked the teachers and had



Jonathan Schilling lives in Southern California with his wife, Kristen, and their daughter, Jocelyn.

great classmates. My favorite memories are orchestra and playing ultimate Frisbee on Friday afternoons.

Where was your favorite place to study?

The chemistry library near the study area on the third floor of the Hickman Science Center.

Tell us about your life immediately after Southern.

After graduation, I started medical school at Loma Linda

University. I also met my wife while working at camp that summer. Our relationship worked out because she was starting in the nursing program at Loma Linda that fall. After medical school, I did an emergency medicine residency in Tulsa, Oklahoma. Our daughter was born in Tulsa.

What are your plans for the near future?

We are currently living in Southern California. I am

working as an emergency medicine attending at two of the local hospitals, and my wife is teaching in the graduate nursing program at Loma Linda. The next big thing for my career is boards in a couple of months. As for my family, I am enjoying spending time with my wife and watching our daughter grow up.

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

Get involved—consider intramural sports, music, clubs, or something else. Those are the things you will remember. I did an ACA year in Austria, and it was amazing. I recommend taking a year to be a student missionary or to study abroad. The exposure to other cultures and ways of life gives you an expanded perspective when dealing with people for the rest of your life.

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



Power for Mind & Soul

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Application

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As I was reflecting on my poor performance, I realized how often I have fallen into this same mental trap in my life. Even though I'm living my life as a Christian, serving students in my role as an educator and daily striving to do my best, there are still times when I make mistakes and get that triple bogey. I get pushed to the limits (physically, mentally, or spiritually) and have a hard time forgetting my mistakes. That negativity then reflects in my relationships with coworkers, students, and most

often, family members. Then guilt starts to creep in and a downward spiral can ensue.

Because we are human and all make mistakes, we reach a point where we need to be uplifted and encouraged. I found the following text to be meaningful:

"Therefore, my dear brothers and sisters, stand firm. Let nothing move you. Always give yourselves fully to the work of the Lord, because you know that your labor in the Lord is not in vain" (1 Corinthians 15:58, NIV).

We are supposed to stand firm. Nothing should move us. In my role as a Christian educator, I should not be

swayed by the ever-changing, unstable world in which we live. I should not be overly burdened by my own mistakes, but instead recognize that I know why I am doing what I'm doing in life (serving others) and what my big-picture goal is. I believe that Jesus Christ is my Savior and is coming again to take us home and live with Him forever, and I want everyone I interact with to know that grace in their lives.

My labor, even if it is a triple bogey, is not in vain, and I need to remember to let God's mercy motivate me to continue to work for Him with the same passion that I give to my hobbies.