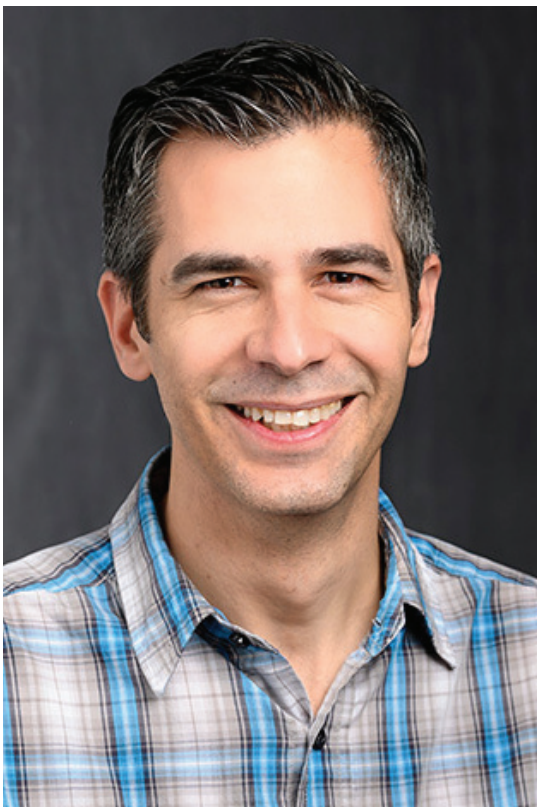
BIOFEEDBACK

Winter 2023-2024

Newsletter of the Andrews University Department of Biology

Biology faculty awarded for faith engagement and research



2023 Faculty Award for Faith Engagement

By: Jose Bourget, University Chaplain

Tom Goodwin demonstrates an absolute commitment to integrating faith into his teaching of biology and engagement with his students. He has his pulse on the needs and concerns of his students and helps them connect with support services when needed.

One colleague notes, “Tom Goodwin has consistently been a winsome Christian influence in the biology department for over 25 years. His class Historical and Philosphical Biology, where students are invited to address the interface of science and faith, has consistently been highly rated. One student shared in the survey that she consults her study notes from that class on a regular basis as she en-

2023 Siegfried H. Horn Award for Excellence in Research

By: Amy Rosenthal, Dean, College of Arts & Sciences

Daniel Gonzalez-Socoloske is an accomplished scholar and vital member of the biology department at Andrews University. His ground-breaking research with manatees was recognized when Daniel was awarded a Fulbright scholarship to pursue collaborative studies in Brazil and more recently with his status as a National Geographic Explorer.

The nature of his scholarship is highly collaborative and has built bridges between Andrews University and several other academic institutions. During his tenure at Andrews, he has mentored numerous students in undergraduate and graduate research leading to multiple opportunities for students to

Also in this issue

Faith engagement (cont.)

gages in conversations with others from different belief systems and points of view.

Ashlee remarks, “Every time I talked with Dr. Goodwin, I could always feel genuine kindness and patience in his words. He always has inspired me to reflect God’s presence in my life, just as he does in his teaching and daily interactions.”

Another student, Lilly, tells us, “Something that has blessed me personally is the fact that he is dedicated to ensuring his students know how to think about relevant issues and not just telling them what to think. I know Dr. Goodwin values and cares for me as an individual, and that motivates me to really excel in his classes and gives me a safe environment to grow as a person and mature in my own understanding of both science and my faith.”

Thank you, Tom, for your commitment to engaging the faith of students and to inspiring them in excellence in science and excellence for the mission of God’s heart.

Excellence in research (cont.)

present their research findings at professional conferences. His excellence in scholarship serves him well in his role as associate editor of the Latin American Journal of Aquatic Mammals and in the classroom where he equips students with the tools needed to grow professionally.

A colleague of Daniel’s shared, “It’s been an honor to track Daniel’s scholarship: from his work in my lab as an undergraduate research scholar over 20 years ago, to his significant contributions as a well-known manatee ecologist, journal editor, and student research mentor in our department over the past decade. He is well-deserving of this award!”

The future is bright for Daniel’s scholarly influence on campus, and his efforts to utilize the Natural History Museum on campus as a research resource promises to generate new avenues of exploration. Thank you, Daniel, for sharing your gifts and talents with the College of Arts & Sciences. Your work continues to serve as a testimony to the importance of scholarship to academic endeavor at Andrews University.

Andrews University and the Department of Biology were recognized in this year’s Niche rankings!

Research from the Department...

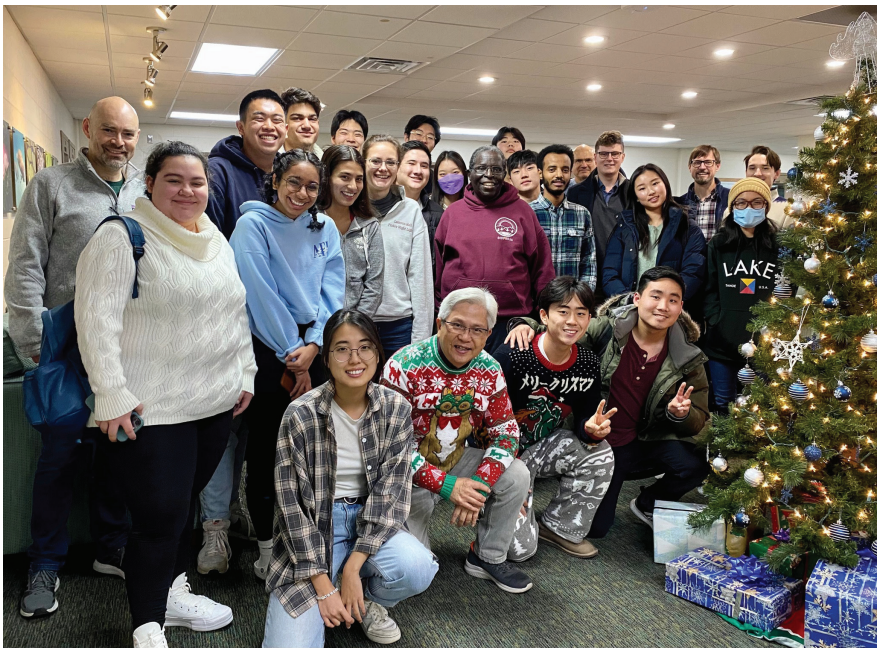
Peter Lyons, Professor of Biology, together with students Daniel Fajardo (BS ‘23) and Ritchie Saint Jean (MS ‘22) published an article in *Scientific Reports* entitled “Acquisition of new function through gene duplication in the metallocarboxypeptidase family.” This paper explores the factors that influence the duplication and maintenance of carboxypeptidase genes in vertebrate genomes.

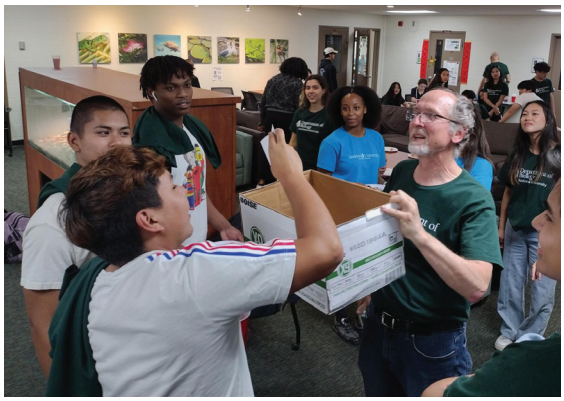
Daniel Gonzalez-Socoloske, Professor of Biology, spent five months of 2022 in Brazil working with colleagues on a project to study alternative detection methods for the Amazonian manatee. This work was supported by a Fulbright U.S. Scholar Award and a National Geographic Explorer award, and was featured in the Winter 2023 edition of *FOCUS, the Andrews University Magazine*, in an article entitled “Seeing through sonar: detecting the Amazonian manatee.” In addition, he co-authored reviews of this and related work in the *Latin American Journal of Aquatic Mammals*: “Seeing in the dark: A review of the use of side-scan sonar to detect and study manatees, with an emphasis of Latin America” co-authored with León David Olivera-Gómez and “Accomplishments and challenges of the research on Antillean manatee: A bibliometric analysis” co-authored with Nataly Castelblanco-Martínez, Leslie Cabrias, Natalia Garcés-Cuartas, Gloria Katerin Arévalo-González, João Carlos Gomes Borges, and Miriam Marmontel. An editorial in the same journal rounds out this work: “Twenty years of the Latin American Journal of Aquatic Mammals.” Recently, Gonzalez-Socoloske coauthored a chapter in the book *Thylacine: the history, ecology, and loss of the Tasmanian tiger*, considering how thylacines walked. He also connected his research with his faith committment through a presentation at the recent Biologos Creation Care Summit 2023 entitled “Only manatees can save us now.”

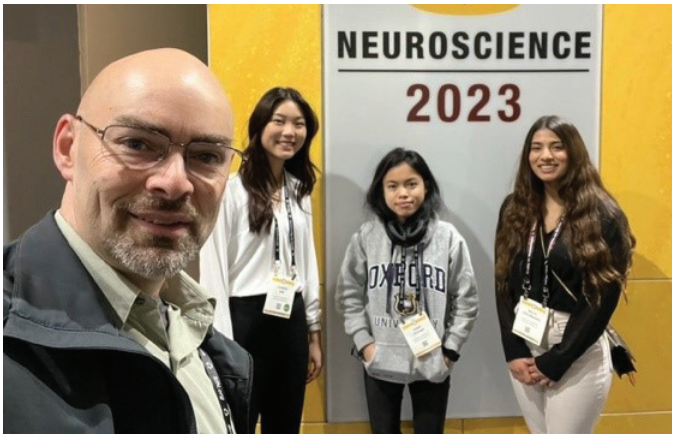
Jim Hayward, Research Professor Emeritus, and Shandelle Henson, Professor of Biology and Mathematics, published a textbook this year, *Mathematical Modeling in Biology: A Research Methods Approach*. This textbook, which is part of the Chapman & Hall/CRC Mathematical Biology Series, is written for upper division mathematics and science students and graduate-level biology students. The “Case Study” chapters involve connecting models to data, and the exercises require students to engage in a way that a researcher would, bringing together many skills to solve novel problems. Many of the data sets accompanying the exercises were collected by the authors and their students. The book has been adopted by faculty at several universities, and Shandelle Henson used it to teach Mathematical Modeling in Biology (MATH 426/BIOL 526) this fall at Andrews University.

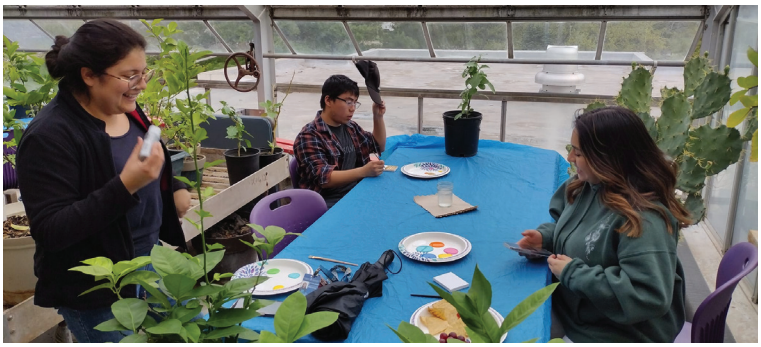
Brian Wong, Professor of Biology, and a group of students, made two research presentations at the annual meetings of the Michigan Academy of Science, Arts, and Letters and the American Association for Cancer Research, describing their recent work investigating the role of the Chinese medicinal herbs *Scutellaria barbata* and *Oldenlandia diffusa* in apoptosis of pancreatic carcinoma cells, and *Bryophyllum pinnatum* in the induction of apoptosis in breast cancer cells. He also joined with Padma Tadi Uppala, Professor of Public Health, in presentations at the 17th Seminary Scholarship Symposium on the topic of faith and health.

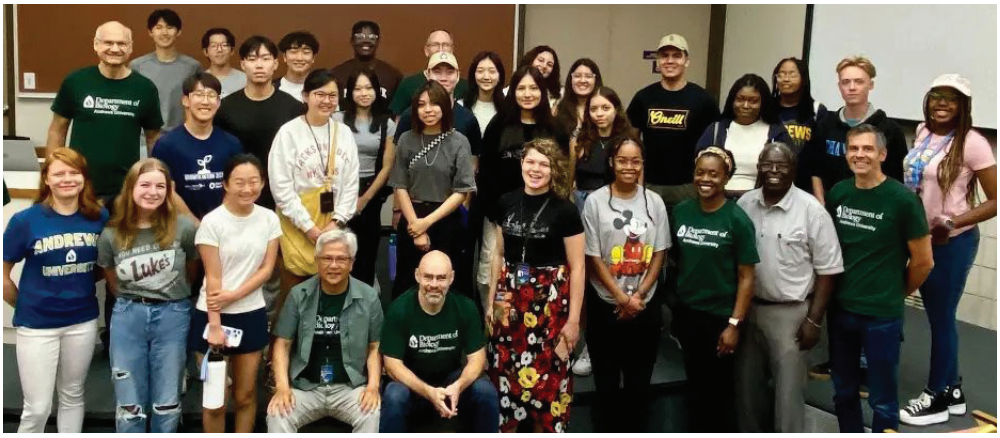
2023 in Pictures











Clockwise from top left: A group of biology students and faculty pose at our annual Christmas social (2022). Dr. Goodwin has a drawing at the spring pizza party. The Biophilia club officers this year were Sarah Wolf, Gloria Oh, and Arianna Coast-Dice; Dr. Lyons was the sponsor. One of the events that Biophilia held during Earth Week was “Art Night in the Conservatory.” All of our seniors, including Geo Kim, Enlai Wang, and Albert Ahn, had personalized pizzas prepared at the pizza party! A great group of freshman joined us this August. A group representing STEM and Business at Andrews, Vitalii Yakushin, Fred the skeleton, Peter Lyons, David Nowack, and Darius Bridges, visited a number of academies on the east coast in March. Students Lauren Kim, Dana Husana, and Maya Sukumaran traveled with Dr. Navia to Washington D.C. to participate in the annual Society for Neuroscience conference.

DENNIS WAYNE WOODLAND (1940-2023)

by Jim Hayward

Dennis W. Woodland, Professor Emeritus of Biology, died on May 20, 2023, at his retirement home in Milton-Freewater, Oregon, following a long battle with cancer. He was 82. Dennis joined the Department of Biology faculty in 1979 and retired 33 years later in 2012. He served as curator of the Andrews Herbarium and the Andrews Arboretum, and he chaired the Andrews Arboretum Council for more than two decades. His life was celebrated on July 23, at the Sunnyside Seventh-day Adventist Church in Portland, Oregon. A recording of the service can be viewed online (https://www.youtube.com/watch?v=ky4X-W0Buk0).

After completing undergraduate and master's degrees in biology at Walla Walla College (now Walla Walla University), Woodland taught high school in Jordan, Montana. He then earned a PhD in botany at Iowa State University, specializing in plant systematics. His textbook, *Contemporary Plant Systematics*, featured an international approach to plant diversity and cycled through four editions. Prior to joining the Andrews faculty, he held a professorship at McGill University and a visiting professorship at the University of Montana.

In 1977, Woodland was inducted into the Linnaean Society of London, the world's oldest active society devoted to natural history. Other awards included the Daniel A. Augsburger Excellence in Teaching Award (1994), the J. N. Andrews Medallion (1997), an Outstanding Service Award from the Michigan Botanical Club (2003), and the Andrews' Ecology and Stewardship Award (2009).

Dennis Woodland was a bigger-than-life character. He was powerfully built, and his opinions were stated with confidence and vigor. He argued with equal passion about the significance of museum collections and traditional systematics to the superiority of tracker pipe organs over electric organs in churches. He was an avid outdoorsman who enjoyed cross-country skiing, hiking, and cutting and splitting firewood for his woodstove. He loved operating his tractor on the Woodland property along Long Lake Road, Berrien Springs, and driving his yellow Jeep Wrangler, "Old Yellar," to work each day.

Among his many adventures, Woodland hiked the route over the Swiss-Italian Alps used by the 5,000-year-old Ice Man, traversed the famous Milford Tract in New Zealand, climbed Mount Kilimanjaro in Tanzania, and ascended to the base camp of Mount Everest. He led several field trips for students to the Amazon rain forest, as well as a study tour to Australia. And over the course of several years, he and his daughter, Heather, bicycled coast to coast across the United States.

Dennis Woodland and I occupied adjacent offices in the Department of Biology for 28 years. We shared a common interest in the science of ecology, a passion for environmental stewardship, and unnumbered conversations over lunch and in the field. His strong voice carried through the wall that separated our offices, and I often heard him touching bases with other friends on the phone. Some were fellow botanists, others were former students, and still others were people who shared his passion for the wise utilization of natural resources. He remained in touch with some of the world's top botanical scientists.

Underneath an external bluster, Dr. Woodland was a highly sensitive and caring human being. He was intensely proud of his family. I commonly heard him talk about concerts in which his wife, Dr. Betty Woodland, an organist and vocalist, and daughter, Cherie, a music professor and vocalist, performed. Sometimes he played recordings of these concerts while he worked. He was intensely proud of his daughter Heather, later an elementary teacher, when she was crowned Miss Berrien Springs. Once Cherie and Heather became parents, he relished the time spent with his four grandchildren.

Dennis W. Woodland contributed in significant ways to the success of the Department of Biology and to conservation of the natural resources in southwestern Michigan and beyond. His legacy will continue to inspire former students and colleagues toward a broader view of the natural world and to encourage the responsible stewardship of all living things.

Alumni Reflections

Ellery Troyer (MS ‘09): Dr. Woodland made my time at Andrews special. He was a warm and generous man who could talk to just about anyone. He fought for what was right and was a formidable fighter at that. He had a passion for biology, and plants in particular, and you couldn’t help but be interested in what he was teaching. I have many good memories of our conversations. They ranged from our shared faith to laughing out loud at *Calvin and Hobbes* and *The Far Side*. My time spent in his lab on the 3rd floor will remain some of my best memories from all my time in school and university. Thank you Dr. Woodland. I am privileged to have been able to study under you.

Laura Prescod Roberts (BS ‘82, MS ‘84): I did not work with Dr. Woodland directly since at that time plants were not my main interest, but I did take a plant taxonomy class from him. It involved tramping through Berrien county looking for plants, classifying them and pressing them. It was tedious but I actually enjoyed and learned a lot from that exercise and developed a new appreciation for plants. That plant collection remained precious and treasured for many years. I actually transferred a lot of that knowledge to my students when I taught Foundations of Biology. I joined the Field Naturalist club because of Dr. Woodland’s influence. I took my kids on hikes and pointed out various plants along the way, generating interest all because of what I learned from Dr. Woodland. So while Dr. Woodland has passed away, his legacy lives on.

Rahel Wells (BS ‘01, MS ‘08): I took every class that Dr. Woodland taught when I was a Biology major (not pre-med!) and during my MS in Biology at Andrews. Dr. Woodland helped deepen my love of nature and the desire to protect it. I loved botany and ecology labs, often spent tromping through the woods identifying flowers or counting trees. One of my favorite memories was the lab on different types of fruits, where we were able to sample many that he had brought, including figs. Only afterwards, he told us how figs were pollinated; the wasps died inside the fruit, so we had just eaten a bunch of dead wasps. He laughed and laughed at our reactions, and I vividly remember the delight and mischief on his face. It was all in good fun, and I still enjoy sharing that same bit of information after I see someone eating a fig! It is hard to imagine this world without Dr. Woodland in it, and I look forward to heaven when we can once again tromp through the woods together and enjoy God’s creation and a good laugh!

Katherine Koudele (BA ‘79, MS ‘83): I started my MS in Biology the same year Dr. Woodland came to Andrews University from McGill University in 1979. I took his botany class that first year and then TA’ed the lab with him the following year. He was a dynamic, engaging and very knowledgeable teacher. He understood that great teaching is both a performance art as well as a science for content. When I returned to Andrews University as a faculty member in 1995, he kindly mentored me during the first challenging transition years. I feel truly blessed to have known him as a mentor, colleague, and friend.

Lorinda Loftonbrook (MS ‘96); Dr. Woodland was a wonderful professor and a lot of fun! He asked me, or I expressed interest, or both (I can’t recall), to manage the greenhouse while I was a Biology Master’s student, 1994-96. I thoroughly enjoyed the time I spent in that fabulous space, even when it meant coming in during evenings, holidays and weekends to water and care for the plants. I sometimes studied up there to get away from the noise and just enjoy the peace! While I didn’t take too many of Dr. Woodland’s classes I recall enjoying picking his brain, reviewing controversial scientific topics, joking around and absorbing his love of plants! I’m thankful to him for making my Master’s studies memorable.

Shunrong Zhuang (MS ‘93): Dr. Woodland was always very kind, patient, and helpful. He truly cared about his students beyond the grades that his students could achieve. The first time I flew from China to the U.S. to study at Andrews University, Dr. Woodland went above and beyond to ensure my smooth transition. He drove from Michigan to Chicago O’Hare airport at 4 am in the morning to pick me up and took me to my apartment at Andrews. He also thoughtfully furnished my new apartment with bed linens, cookware and more, allowing me to settle in seamlessly. My last interaction with Dr. Woodland was last Christmas, 2022. I proudly shared the news that my older daughter, Susan, got admitted to Harvard University. He extended his heartfelt congratulations to me, then we discussed his recently edited book “Contemporary Plant Systematics”. The next day, I ordered that book from Amazon. As I hold that book in my hands today, I am compelled to express my profound gratitude: Dr. Woodland, I truly appreciate you and the time you spent helping me on many occasions. Your patience, kindness, and understanding helped me grow and succeed in ways that I never thought possible. Thank you for being more than a professor–you were a friend, a mentor, and a role model. I am so grateful for everything you did for me.

Kelly McWilliams (BS ‘05, MS ‘10): During my time as an undergrad at AU, I was one of the few biology majors who was not pre-med, and one of the very few who chose a botany emphasis. I actually wanted to take botany class, and I was amazed to be sitting in a class in which the professor wrote his own textbook. His passion for botany and conservation was inspiring. I appreciated how he supported my idea to have a recycling program in the science complex, and let me use his lab to clean and sort the recyclables people dropped off in the bins. I ended up doing my honors thesis with Dr. Woodland. I will never forget trying keeping up with him as we walked at a prodigious pace in the cold rain in the forest behind the campus apartments, as he showed me how to sample the woody plant biodiversity. I still enjoy learning about plants, and I hope I can inspire my students, who are mostly pre-professional, to care a little more about plants, just as Dr. Woodland did for so many. It was a privilege to be his student, and his friend.

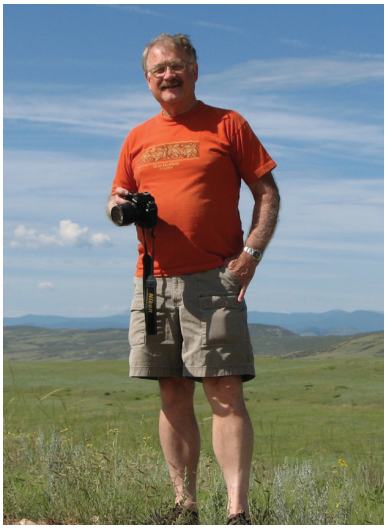
Eva Ryckman Durbin (BS ‘03): I took medical botany from Dr. Woodland. It was a very enjoyable class. I remember we learned not just about medical uses of plants but also nutrition, which was the beginning of my interest in “food as medicine”

approach to life. I have spent several education rotations at different lifestyle medicine clinics where I have been able to continue to build on the foundation started in Dr. Woodland's class. Pre-pandemic I was able to put this knowledge to use by offering plant based cooking classes to the community through my local church. One other lasting impact Dr. Woodland had on me was through an unplanned comment: he told our class something to the effect that "if you could only support one charity, support The Nature Conservancy, they do good work with the donations they receive." So I include The Nature Conservancy in my charitable giving.

Pam Smith (MS '06): Dr. Dennis Woodland was my graduate adviser from 2004-2006. I was one of his last graduate students. He and I kept in contact (as he did with many of his students) and he also became a beloved friend and colleague. If I had to describe Dr. Woodland to somebody that did not know him, I would say he was a combination of David Attenborough, Sir Edmund Hillary and Santa Claus. He was passionate about his family, teaching, tea, Gary Larson, and visiting botanical gardens, had the most fantastic laugh, and could out snore anyone!

Like David Attenborough (British broadcaster, biologist, natural historian and author), Dr. Woodland was outspoken about the plight of the natural world and protecting the biodiversity of our planet. He loved to travel all over the world investigating, researching, and teaching. During my time as a grad student, I saw how masterfully he handled students that came from diverse backgrounds in culture, religion and science. He was extremely dedicated to his undergraduate and graduate students. He put his heart and soul into his teaching. For example, he wrote his own textbook for his plant taxonomy class (Contemporary Plant Systematics, Editions 1-4), and he made sure you got to meet the fields' most influential authors by inviting them to speak to his class or by going to visit them. If you took his course on rainforest ecology, you also took a weeklong trip to the Peruvian Amazon organized by Dr. Woodland. If you were a lucky graduate student like myself, you got to go along as a teaching assistant and watch Dr. Woodland change students' lives.

In the Amazon, what stood out about Dr. Woodland was how he interacted with the students, the guides and the Peruvian children. He did something when we arrived that I will never forget. He brought bubbles! When he started blowing them for the kids, it was magical. The children had never seen anything like it. In addition to moments like that, Andrews students learned about medicinal plants and met the village witch doctor as well as a medical doctor both of whom provided important services to the jungle people and shared their experiences of life in the jungle. We had great times identifying the gigantic insects that would hang out in our living quarters. I had a tarantula under my bed (still traumatized). We went out in the middle of the night in canoes to see wildlife and experience the jungle. While it was great fun and an adventure for us, Dr. Woodland made sure the students really understood the hardships of the people that lived there. We visited a village and could see what one family would be eating for dinner: one large snail and a small amount of tapioca flour. We saw people who were drinking polluted water, and children that were bloated from worms. We saw young girls, some of them as young as 14 with children they had to take care of. Snake bites and pneumonia were the top causes of child mortality. It was a humbling awakening and life changing experience for all of us, facilitated by Dr. Woodland.



Like Sir Edmund Hillary (New Zealand Mountaineer, Explorer), Dr. Woodland was an explorer and an adventurer. I knew something was up when he took me to see my study site at Warren Dunes State Park. He was about 20 years my senior, and I have never seen anybody fly through thick eastern deciduous forest like he did. For fun, I went backpacking with Dr. Woodland and friends to Isle Royale in Lake Superior. That was an adventure, the first four hours was on a boat lovingly nicknamed the "Barf Barge" (it lived up to its name). The first day of a seven day trip the belt buckle on Dr. Woodlands brand new backpack busted! Besides having his belt buckle break, he had a 60 lb. pack! He packed regular cooking pans and a box of waffle mix (with the box!) because we have to have waffles. My adventures with Dr. Woodland were fairly tame compared to some of his adventures he shared with me, like a trip he went on to Australia to seek out the gympie gympie (*Dendrocnide moroides*) plant which is a species of stinging nettle. For those who may not know, Dr. Woodland was a specialist in the Nettle family (Urticaceae). I did ask him how he chose that family and that is another story! He said he fell into it… he literally fell into a stinging nettle while talking with his graduate advisor about a specialty! So back to the gympie gympie–It is considered one of the most dangerous plants in the world. Apparently it is not very easy to find, but Dr. Woodland and his friend found it! Unfortunately, his friend unintentionally touched it! While he did not die, he has permanent injury from the incident. Other adventures he was involved in just while I knew him included biking across the country with one of his daughters, hiking the Milford Tract in New Zealand, summiting Mt. Kilimanjaro and, at 70+ years old, hiking to Mount Everest Base Camp!

Like Santa Claus, Dr. Woodland was a giver. He was a jolly man with a laugh that you could hear when he walked in the building. He gave gifts of his time, enthusiasm and expertise to people all over the world and in his local community. I was one of the lucky people to have had the privilege to call him advisor, mentor and friend. His teachings are still meaningful to me now.

Dr. Woodland was a true believer in adventures. He said to me many times, in order to be happy you must always have a plan for your next adventure. What is yours?

Alumni calling songs

We want to hear your stories! Here are some notes we have received over the past year.

Adrienne James (BS, 2003) attended medical school at the University of Nebraska after finishing at Andrews. She currently resides in Alexandria, VA, and works as an internal medicine physician in the DC area. She also serves as an assistant professor of clinician education to Georgetown University medical students and residents.

Eva Ryckman Durbin (BS, 2003) graduated from Loma Linda University Medical School with an MPH in epidemiology and an MD. She interned for a year at Loma Linda, did a residency in radiology at Geisinger Medical Center in Danville, PA, and a fellowship in abdominal imaging at the University of Wisconsin Madison. She met Mark Durbin, an MRI technologist, while in Danville and they were married after she finished her fellowship. They then spent one and a half years in Trinidad, West Indies, doing medical mission work, helping the local SDA hospital improve their Radiology Department. After returning to the USA, they started work at Pomerene Hospital, a small hospital in rural Ohio. Eva says "We now have two precious boys, 4 years old and 20 months old. We help out in our local church's community service outreach by directing an annual 5k which raises money for a local food pantry. Life is busy, but we are blessed."

Tatnai Burnett (BS, 2003) has been working for 8 years at Mayo Clinic in Rochester MN as an endometriosis surgeon and pelvic pain specialist. After Andrews, he attended University of Michigan for medical school, remained there for residency in obstetrics and gynecology, and then did a minimally invasive gynecologic surgery fellowship at Southern Illinois University. He joined the staff at Mayo clinic after fellowship, and built a complex endometriosis surgical program. In his free time, he snowboards in the winter and cycles in the summer.

Sandy Mattison (BS, 2003) went to Loma Linda University for medical school. She completed an internship and residency at Geisinger Medical Center in Pennsylvania and currently resides in Wallingford, CT, working in private practice as an OB/GYN.

Andre Moncrieff (BS, 2014) completed his PhD at Louisiana State University this past December. Congrats, Andre! He is continuing at LSU as a postdoctoral researcher. He recently published a large part of his thesis on the the effects of riverine barriers on bird evolution in the Amazon Basin: https://doi.org/10.1093/evolut/qpad187.

Some of our most recent alumni!

Retirement Does Not Mean the End of Science

by Richard Tkachuck PhD (BA Biology '64)

I was interested and inspired by the marvelous opportunities that students have in the Department of Biology as seen in the latest issue of Biofeedback. Thus, I wanted to tell former graduates that even after retirement one can still have adventures in science.

After graduation in 1964, I received a PhD from UCLA, and completed postdocs at the University of Notre Dame and the University of Iowa. I had a teaching career ending at now La Sierra University, after which I left science and obtained an additional degree in Information Systems at Syracuse University. During retirement I did some adjunct teaching.

And now the reason for this note. During my retirement I was able to find volunteering opportunities in which I could use my science background. I was able to find a number of facilities and projects helping scientists with their field studies in ornithology. These included being a guide at an Amazonian jungle lodge, three months in the Yucatan doing species surveys, a month in Turkey banding migrating birds, three weeks in Panama collecting speciation data on two species of herons from North America and South America as they meet at the isthmus, two months in Costa Rica netting toucans and aracaris for a PhD student, and counting migrating hawks in Egypt and shorebirds in South Korea. I also worked with retired Andrews professor Jim Hayward on two month-long gull projects. As a result, I was included as a co-author on three papers.

A second retirement activity was lecturing on cruise ships. Here I gave lectures on the biology and geology of places we stopped. I also prepared a series on the history of criminal forensics. These trips included tours through the Mediterranean and the Caribbean, sixteen days from Sydney to South Korea and Singapore, a trip up the Amazon to Manaus, trips from Abu Dhabi to Mumbai and back, a couple trips to Cuba, and two trips around Cape Horn, one of these to Antarctica joined by Jim Hayward.

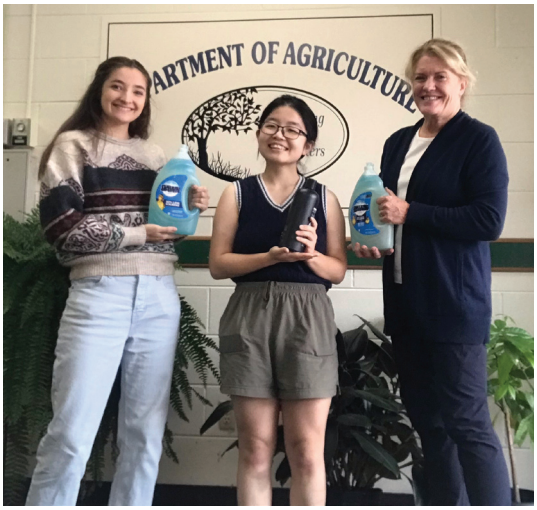
My education starting at Andrews and beyond provided me with an interesting retirement allowing me to travel, assist in research projects and see the world. Good stuff! If anyone would be interested in knowing how these opportunities came about,

feel free to contact me at rictka@gmail.com.

Refill to Reduce: a Biophilia Innovation

Greetings, dear BioFeedback readers! My name is Gloria Oh, and I was the president of the Biophilia Club last year. With my friend Ariana Coast, the current president of the Biophilia Club, we entered the Andrews University Pitch Competition last March. We won 4th place ($4,000) and a social innovation award ($5,000) to make a positive impact in Berrien County via a refillery. What is a refillery? A refillery is a low-waste shop where your reusable containers can be refilled with daily necessities like soap and shampoo!

When you look at your living room, bathroom, and kitchen, what kinds of plastic containers do you see? Household cleaners, shampoo, hand soap, dish soap, laundry detergent and more! But where do these containers go when you are done using their contents? Most of the time, they end up in the trash bin. And even if they get thrown into the recycling bin, only a few really get recycled due to factors like contamination or plastic types that make them difficult to recycle. So most end up in landfills regardless. We believe that our refillery can help to minimize that pollution by creating an alternative for you to reuse your plastic bottles.



Our Refillery store, Refill to Reduce (www.refilltoreduce.com), which officially opened in early October, holds weekly pick-up/pop-up stores at the campus center every Monday and Wednesday evening from 8 to 10 PM and Fridays from 1:30 to 2:30 PM so that you can come pick up the items you purchased online or buy them physically at our booth. Even if you don't have a bottle to reuse, but want to try our products, you are welcome to use our glass bottles for a $1 deposit, which will be given back when you return them. We also offer delivery every second and fourth Sunday of the month! On top of being biodegradable, we strive to offer items that are hypoallergenic, vegan, and locally made. We hope you will join the wave and make a change, one bottle at a time.

If you have extra plastic containers, please donate to Refill to Reduce refillery and receive a 10% discount when you donate ten items. We are always open to feedback and reviews, so let us know your thoughts at contact@refilltoreduce.com. Thank you!

We'd love to hear from you! Send us an email or letter to let us know what is new in your life. Photographs are great too.

Name: _____

Address: _____

Year you graduated from AU _____ AU degree _____

Other degrees since graduating from AU _____

Your current employment _____

Your current interests and activities _____

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BioFeedback
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Department of Biology

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