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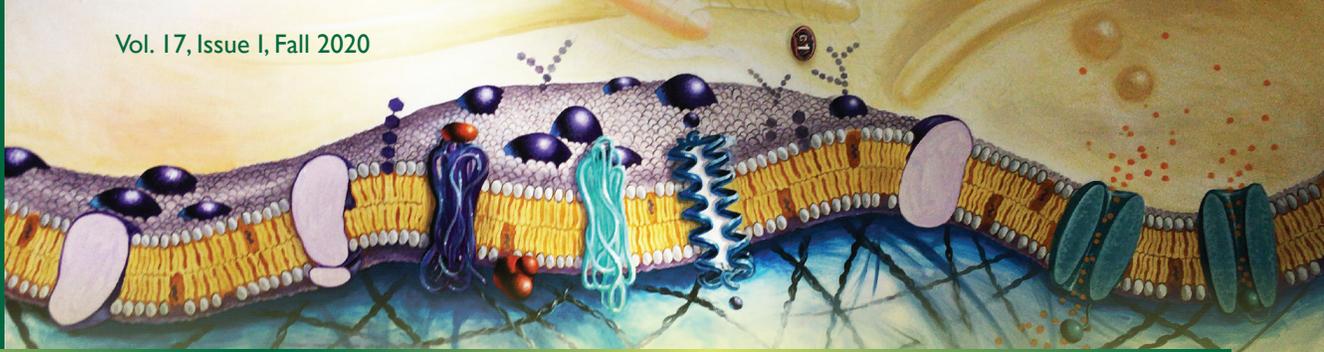


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BIOLOGY/ALLIED HEALTH DEPARTMENT

Insights From the Professor

Fear, Resilience, and Gratitude

“**F**or God has not given us a spirit of fear and timidity, but of power, love, and self-discipline” (2 Timothy 1:7, NLT). This verse impacts our students and teachers daily in this era of COVID-19. We’d like to look at how its wisdom applies to us in the Biology/Allied Health Department at Southern Adventist University.

Fear can be a dream-killer. It makes us think of all the negative things that could happen. “Someone might not like me. I don’t know how to do it. People will talk about me. It might not work.” We can argue ourselves out of doing anything new. Our fears can kill our dreams. It can cause us to put necessary actions off until another time (such as studying) even when it will hurt us. Some of us can become literally immobilized by fearing the outcome.

On the other side, there must be some reason fear is instilled in us. Just as pain is a warning signal that something is wrong, healthy fear is a God-given gift intended to alert us to danger. When we touch a hot stove and feel pain, we need to pull back in order to avoid a severe burn. When we encounter a dangerous situation, healthy fear may provide a life-saving warning and give us the motivation to take action. An important life skill is learning to identify the cause of our fear and to respond appropriately. But how do we deal with fear that

has become unhealthy—fear that is hurting us instead of helping us?

Resilience is something we encourage in our students. Reducing the negative effects of fear and replacing them with a positive focus builds resilience. Gratitude also reduces this fear focus that pervades our culture. The old adage “eliminate the negative and accentuate the positive” still rings true.

The amount of research on gratitude over the past 20 years has exploded (see the paper prepared for the John Templeton Foundation, 2018). Gratitude is “recognizing that one has obtained a positive outcome and recognizing there is an external source for this positive outcome” (Emmons & McCullough, 2003). In other words, gratitude is showing appreciation and thankfulness to others and to God.

The scientific effects of gratitude are now catching up to what Christians have known for 2,000 years. The directions in Ephesians 5:19-20 are key to experiencing gratitude: “singing and making melody in your heart to the Lord, giving thanks always for all things to God. . .”

Overcome your unhealthy fears today. Write down just one thing for which you are grateful. Thank others personally or with a short thank-you note or email. Thank God for the little things He continues to provide for you every day.

By Lucinda Hill, Rick Norskov & Keith Snyder

Life

Res

Alumni Highlight

Selwin Abraham

Having fear of the unknown is something that permeates the daily lives of us all. Sometimes those moments can be intense, such as opening a letter that holds acceptance or rejection into an academic program that you desire, or as mundane as walking into the cafeteria and being unaware of the lunch menu. No matter which side of the spectrum you are sampling, there is an adjective that is a salve to the anxiety that coexists with the unknown, and that is being *prepared*.

Being prepared was always at the forefront of my mind as I embarked on a journey to be an interventional cardiologist. I wanted to be prepared spiritually, to accept the cloak of trust that patients give me when they ask me for advice about their health. I wanted to be prepared intellectually, so I could give them the best medical treatment that is available today. I also wanted to be prepared physically for the many hours and long days required to obtain my goal.

I consider myself very fortunate to be prepared primarily through

Adventist education. The first 20 years of my classroom preparation took place completely in Adventist education centers. I went to elementary school in a small facility called Pine Bluff Elementary School and graduated from 8th grade there. I spent high school at Ozark Adventist Academy, and my undergraduate training was through Southern Adventist University. I then completed four years

at Loma Linda University School of Medicine. At 25 years of age, I accepted an opportunity to complete my medical residency and cardiac fellowships through Baylor College of Medicine at Houston, Texas.

I can honestly say that the four years I spent at Southern Adventist University were a bedrock for the education that I received after leaving and that they also crystalized all of the learning that I had prepared for up until then. The science classes offered by the Biology Department were absolutely on par with my first-year didactics in medical school. At Southern I was given challenging subjects that honed my study skills for the future. During study groups, I forged friendships that have lasted to this day and that I still lean on vocationally, as



Alex (son), Priya (wife), Selwin, and Asha (daughter).

these friends entered the medical field with me. Most importantly, the atmosphere at Southern helped me develop a commitment that would prepare me for anything that comes my way—and that commitment was to Jesus.

Being prepared is the most useful tool to combat the unknown. Now in my eighth year as an interventional cardiologist, currently working at the Erlanger Heart and Lung Institute, I can firmly say that I am very well prepared by my educational experiences, especially due to my time at Southern. Now, having a strong foundation of intellect, work ethic, and spirituality, the unknown future is no longer something scary, but is an adventure.

*By Selwin Abraham, MD
submitted to Professor Tim Trott*



Selwin Abraham got his feet wet in research while an undergraduate student at Southern.

Department Happenings

The Biology/Allied Health Department has experienced several silver linings from efforts to prevent the spread of COVID-19 while maintaining face-to-face courses. The extra ionization air filtration system installed recently has benefitted the human anatomy laboratories (and everyone else on the second floor of Hickman Science Center during those



Pre-Dental and Allied Health Clubs participated in the 423 Night Market.

labs!) because it has removed the majority of malodorous particles from the air. This filtration system has also enabled the microbiology laboratory to pour Petri plates with agar medium without contamination (reducing contamination from sometimes up to 80% to less than 5%).

You might be wondering what our regular classes and labs look like during these extraordinary times. We are using every available room, since lecture occupancy is at half capacity. The students who would have been in one room during a lab are now spread out into two or three rooms, requiring more lab teaching assistants. Many teachers are pre-recording the pre-lab lectures so that all students can hear at the same time—even if they are in several different rooms. Some classes (especially Southern Connections) have utilized the outdoor classroom

amphitheater between Summerour and Hackman Halls, as weather permits.

God has richly blessed our efforts to hold face-to-face classes and laboratories. To date, ZERO cases of COVID-19 transmission have been linked to exposure in a classroom or lab.

The Southern Connections classes in our department have been restructured. Instead of meeting one time per week for the whole semester, they are meeting twice a week for the first half of the semester. This strategy brings several benefits: (1) students get to know each other (and the instructor) faster and form bonds earlier in the semester; (2) Class sessions on study tips and strategies, use of campus resources, how to survive college classes, etc. are all **Happenings, on page 6**

Old Bones Still Reveal Secrets



Keith Snyder gets to play in the dirt unearthing the remains of a Triceratops that he found.

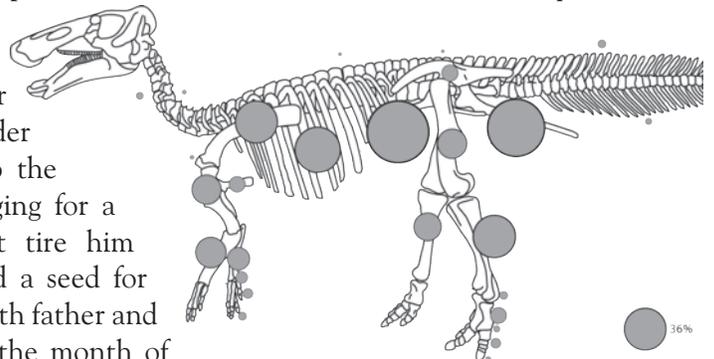
Lee Spencer, the state paleontologist for Utah, one day received a call to come “look at

some bones.” When he arrived at a ranch south of Newcastle, Wyoming, he was overcome by the number of bones eroding away on the ground. Realizing the importance of this bonebed, he did all he could to preserve the specimens. He invited his friend, Professor Art Chadwick, from Southwestern Adventist University, and together they slowly built up the “Dino Dig” into the strong teaching and researching enterprise that it is today.

About 13 years ago, Lee Spencer invited Keith Snyder and his son, Ivan, to the dig. Five days of digging for a 9-year-old boy didn't tire him out; rather, it planted a seed for future exploration. Both father and son have now spent the month of

June for 12 years in the stark beauty of Wyoming, trying to understand how the beautiful dinosaurs that God created lived and died.

Three years ago, Keith Snyder was awarded a one-semester sabbatical. During this time, he and Art Chadwick started working on a scientific publication describing this amazing bonebed. It was published in May 2020, and within one month it had drawn over 2,000 inquiries, with



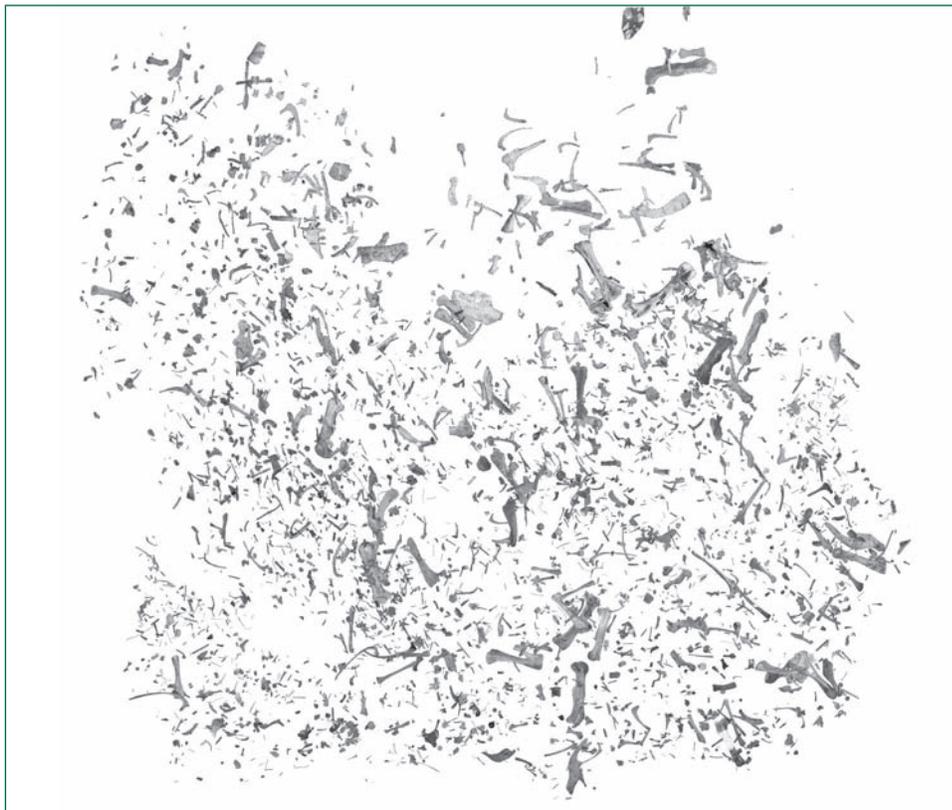
about 50% of readers downloading the article. The title of “Over 13,000 elements from a single bonebed help elucidate disarticulation and transport of an *Edmontosaurus thanatocoenosis*” basically says that because we have



Professor Snyder helps students uncover and reconstruct a rare braincase from a duck-billed dinosaur.

a lot of bones (more *Edmontosaurus* bones than any other research institution in the world), we can better figure out how the creatures died and how their bones were transported to this particular area in Wyoming.

This research has revealed several unexpected results. *Edmontosaurus annectens*, the duck-billed dinosaurs, were approximately 35 feet long and weighed from 4 to 6 tons. They lived and traveled in herds and apparently grew rapidly, as baby horses do today. At some time in the past, probably during the Flood, something killed a large herd of these creatures. After they died and bloated, as dead creatures do in water today, they were driven by the winds to a shoreline. For a period of between 3-9 months, a few scavengers such as *Tyrannosaurus rex*, *Nanotyrannus*, *Troodon*, and various Dromaeosaurs fed on the carcasses. The remains were then transported in another cataclysmic water event to their resting place today.



Twenty-four years of unearthing *Edmontosaurus annectens* bones on the Hanson Ranch has resulted in a major paper, with figures such as this one, that seeks to understand how dinosaurs died and were buried.

A naturalistic view of this bonebed says that over hundreds of thousands of years, some individual *Edmontosaurus* were swept away while crossing flooded rivers and buried downstream in the bend of the river. This happened many times over, and eventually a large accumulation of bones resulted.

Because we are not limited by the naturalistic view, we are able to see more possibilities that better fit the data. Our research has shown that all of these creatures (we are now estimating about 4,500 in this single bonebed) were killed in a single unique water event. The bones we recover are pristine, having very little weathering (only a few months of exposure after death). They have almost no abrasion, very little rounding of broken surfaces, are graded from small bones at the top to large bones at the bottom, and are randomly oriented (all suggesting

transport in a thick mud). They are all disarticulated (needing only 6-12 months for decomposition), but some have concretions (denoting flesh was still on the bones at time of burial). All of these indicators point to a single cataclysmic event.

The single-most important discovery of the paper is the comparison of this bonebed with others across the nation. Most attributes of this bonebed are statistically significant to bonebeds in South Dakota, Montana, and Alaska. There is even a strong correlation with a bonebed in Eastern Russia. Although not stated in the paper, it leads readers to wonder if a single worldwide cataclysmic event happened sometime in the recent past. God has given us the opportunity to look at science through different lenses, enabling us to see things that others miss.

By Keith Snyder

Southern Biology Students Follow God's Command to Preach the Gospel

We have seen major changes to our lives with the SARS-COVID 19 pandemic, civil unrest during the summer, and uncertainty for the future. Yet, two Southern Biology students have accepted God's great commission to take the gospel to all nations and serve as student missionaries this year.

Alaina Burrowes is serving at Riverside Farm Institute in Zambia and will be the first student missionary to serve as a dental assistant in the new clinic that's opening there in December.

Also, Chad Harty is serving in South Korea. He began his student missionary experience last school year and decided to extend his time and serve for another year. He will be teaching there until January 2021.

By Ann Foster



Alaina Burrowes with children at Riverside Farm Institute, Zambia.



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Happenings, continued from page 3

front-loaded in the first half of the semester, when they will do the most good. Having two extra hours per week for their other classes during the second half of the semester is also an added bonus.

We are excited about a new class our department is offering starting in January of 2021. Epidemiology will be taught by Professor Aaron Corbit. Although this class has been planned for more than a year, it is very applicable to our lives today.

Field Ecology is being transformed for summer 2021 due to COVID-19 international travel restrictions that prohibit the traditional trip to the Bahamas. The plan for summer 2021 is that students will study ecology during

a three-week road trip to: Rocky Mountain, Yellowstone, Glacier, Badlands, and Wind Cave National Parks, as well as Jewel Cave, Mount Rushmore, and Devils Tower National Monuments, and various other sites of interest.

Thanks in large part to the volunteer efforts of a former professor, David Ekkens, and his wife, Sharon, our biology museum is more organized than ever! They spent countless hours over the last few years cataloging and organizing birds and mammals, and now we can find things.

We aren't sure if it stems from chasing three little girls around the house, or from chasing scorpions and spiders to do research projects with Southern students, but Professor David Nelsen has gotten so fit lately

that when he ran in the Seven Bridges half-marathon, he placed first in his age class and ninth overall. We are very proud of him! *By Joyce Azevedo*



David Nelsen just before beginning the Seven Bridges half-marathon.