Pacific Union College

BIOLOGY
DEPARTMENT NEWSLETTER

GREETINGS

Hello to you all from dear old Clark Hall. You will remember winter quarter at PUC as a time of extremes – sunny days in the 70s to the landscape brushed with a thin coat of frost and sometimes snow. On this particular day the sun shines through my west-facing window and the mustard is in full bloom. The Napa Valley practically glows!

It is our great honor to welcome you to another issue of the Biology Newsletter. Here we try to catch you up on what's been happening in the last year. PUC continues to thrive and our department does the same. We had some growing pains as we added new faculty in the last few years but we are running along the best we have in years. The Biology Department is more diverse than ever and we continue to improve our curriculum to meet the needs of the modern student.

Please enjoy!

Issue 12 | Winter 2015

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Department of Biology

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Aimee Wyrick, M.Sc.

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Bryan Ness, Ph.D.

Laboratory Coordinator
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The Biology Newsletter is also posted as an e-newsletter on our department website **www.puc.edu/biology**. If you'd like an e-version, please let us know your email by entering your address at **www.puc.edu/biology**.

DEPARTMENT HIGHLIGHTS

BIOLOGY CHAIR

After eight years as the Biology Department Chair, Dr. Robin Vance decided to step away from the duties that he took on following Dr. Terry Trivett's retirement in 2006. Robin has worked tirelessly on behalf of the Biology Department faculty and students. During his tenure, the department added a lab coordinator, grew from six to seven full-time faculty members, and added the environmental studies major. Robin balanced the demands of administration with his teaching load and extensive advising duties. Though we know that he was always busy, he made it look easy! His years of administrative service strengthened the Biology Department and the campus-at-large.

When asked about his years as chair he mentioned that he really enjoyed getting to know the faculty and students of the Biology Department. As chair he represented the department on various committees. The upside of this was that he enjoyed meeting and interacting with faculty from across campus. He says that he won't miss some of the more challenging aspects of the job, like dealing with academic integrity issues or mediating problems that can arise when a student is dissatisfied.

Robin continues to teach and advise students but will now be able to spend more time in the classroom and with students. His classes include systems physiology, histology, human physiology, and biological foundations.

Aimee Wyrick took on the responsibilities of Biology Chair in July 2014. The transfer of duties between Robin and Aimee has gone very well. She was fortunate enough to have gained experience as associate chair and so has been exposed to the "inner workings" of administration for the past few years. Some of you might remember that Aimee is a PUC biology alumna (class of 1996) and she wants you to know that she feels incredibly privileged to teach in our department and plans to give her all as chair.

NEW ADJUNCT FACULTY MEMBER

We have added an adjunct faculty member to our department. Dr. Patty Sanchez-Moore earned her Ph.D. in cell and molecular biology from the University of Pennsylvania in Philadelphia. More recently she worked on a post-doctorate in the hematology/oncology division, also at the University of Pennsylvania. Dr. Sanchez-Moore recently moved to the area with her husband, Dr. Ryan Moore, a surgeon at St. Helena Hospital. The Moore family includes three young children.

Dr. Sanchez-Moore studies cancer cells related to acute myeloid leukemia. In spring 2014 she taught a class in cancer biology, which was very well received by our students. She will continue to teach this class on a contract basis. She also hopes to establish a research program on our campus. Whether or not this can happen depends on our finding adequate lab space and providing the appropriate equipment for this research.

NEW BIOLOGY LAB COORDINATOR

Haruka Ito spent one year as the lab coordinator and made a huge contribution during her short tenure. You may remember from the previous newsletter issue that Haruka is a PUC biology alumna. Because of her vast "behind the scenes" knowledge of our department, she initiated several major improvements: revisions of the general microbiology lab manual and protocols, implementation of a TA evaluation survey, creation of comprehensive criteria for hiring TAs, and the development of a computerized inventory of department supplies and materials. Haruka is currently earning a graduate degree at the National College of Natural Medicine in Portland, OR.

Stephanie Larson is the current lab coordinator.

We are pleased to introduce Stephanie Larson, who is our current lab coordinator and is originally from Phoenix. She graduated from PUC in June 2014 with a Spanish degree and a minor in biology. In the search to fill this position about a year ago, we were pleased to find that Stephanie had applied. She really impressed us with her clear organization skills, professional demeanor, and ability to adapt in difficult situations. Stephanie has been hard at work since last June and has done an excellent job. This position is demanding and requires an unusual schedule. Stephanie does amazing work behind the scenes, and often her work goes unnoticed by faculty and students since things run so smoothly! We are so thankful for Stephanie.

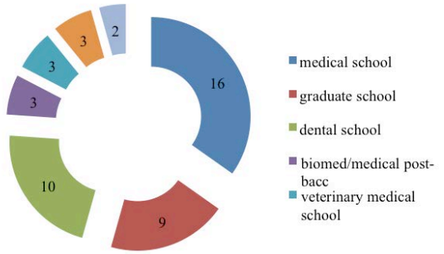
Do you remember Diana Chung, our very first lab coordinator hired in September 2008? She worked for us for two years and then went on to dental school at Loma Linda University. We are happy to report that Diana graduated with her D.D.S. in May 2014 and is currently in practice with her uncle in Dallas.

RECENT GRADUATES

In 2014, 25 students graduated from the department, 23 with biology and two with environmental studies degrees. This is the largest class since 2006! As usual, our department is incredibly proud of our graduates and wishes them continued success.

For several years we have kept better record of where our graduates go after PUC. Of the 64 students that graduated in 2012-2014, 46 of these are currently in professional school, graduate school, or employed. As shown in the graph, most of our graduates continue on to medical, graduate, or dental school. Another 18 of our graduates continue to work towards their goals and most have either applied or will apply to medical, dental, graduate, or veterinary school.

Pictured from L to R: (back row) Joshua Lee, Daniel Stoppelmoor, Finster Paul, Zach Barlow, and Natasha Elloway; (front row) Nathan Lee, Bryan Anamuro, Dustin Davis, Alesha Heinz, Meena Kim, Miriam Petersen, Amanda Schaff, Chloe Dillion, Deanna Lo, and Stacie Lo. Graduates not pictured: Danny Chung, Matt Consensci, Tony Hernandez, Manjae Kim, Candice Kim, Brittney Kleinhans, Hope Niihara, Aimee Penaloza, and Daniel Yu.



Most of the 2012-2014 PUC biology and environmental studies graduates have continued on to graduate or professional studies (N = 46)

FIELD BIOLOGY

Since 2012, our department has been sponsoring study tours for the course BIOL 338 Field Biology. Students may take the course for credit. Non-students, including our alumni, are always welcome to join the tours. The focus of the tours is to learn first hand about the biology of the region by visiting various ecosystems, learning about the plants and animals that live in each, and how they interact with each other. The students experience the joy of learning while exploring God's creation.

During spring break of 2014, Dr. Floyd Hayes, along with Service and Missions Coordinator Fabio Maia, took a group of 15 students on a combined missions and biology trip to Manaus, Brazil. They traveled by river boat, which became their home, about 125 miles up the Amazon and Manacupuro Rivers to a remote village where they helped construct a health clinic. Dr. Hayes and five students taking the course awoke early each morning to explore the tropical rainforest along the bank of the river. They also visited an indigenous village and three nature reserves near Manaus. They observed lots of wildlife including spectacled caimans, green iguanas, Amazon tree boas, many species of birds, river dolphins, sloths, and monkeys. Dr. Hayes and a local missionary, Stephen Horvath, are collaborating on a research project studying the use of floating vegetation by birds.

In July 2014, Dr. Hayes and Dr. Scott Herbert took a group on a trip to Alaska, where they enjoyed traveling through magnificent landscapes by motor home and bus, riding on a ship out in the ocean, hiking in rugged terrain, and even engaging in some technical rock climbing and whitewater rafting. The highlights of the trip included watching salmon spawn while wading in a frigid river and seeing a variety of marine mammals, including Steller sea lions, sea otters, Dall's porpoises, humpback whales and killer whales; a variety of seabirds including clown-like horned puffins; and a variety of terrestrial mammals including grizzly bears, moose, caribou, and Dall sheep. They also enjoyed watching tons of ice calve off a rapidly receding glacier into the ocean, hiking to a spectacular waterfall, and gazing at majestic Mt. McKinley.

In 2015 Dr. Hayes will return with students to the Amazon River during spring break, and Professor Wyrick will teach field biology during the summer at Albion. Drs. Hayes and Herbert plan to lead another trip to Alaska during the summer of 2016.

BIOLOGY CLUB

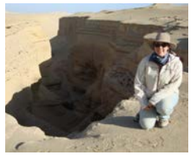
This year the Biology club has reached even more students through its participation in several campus-wide programs. New students started signing up as members the week before school began. The club's Fall Fest booth combined a photo shoot where students posed with Dr. Ness' (nonvenomous) snakes and a pie throw at various PUC faculty members who volunteered for the job. Additionally, the club helped with pre-vespers at Dr. Backil Sung's home, where students mingled with friends and faculty alike. Mrs. Sung's home-made Korean food was the highlight of the evening. Nearly 40 students enjoyed a weekend at Albion at the end of January. In the spirit of biology, students hiked to a waterfall, watched passing whales at Pt. Cabrillo lighthouse, enjoyed Glass Beach and the numerous tide pool animals. Many students also woke up early each day to canoe or kayak up the Albion River. Biology Club plans to do even more in winter and spring quarters.

UPDATED BIOLOGY OFFICE

Over Christmas break the biology office was modernized. The office space was looking drab and a bit cluttered. The purchase of a new desk, several work tables, and some wall art has spruced up the area. We have a more professional space to work in and invite you to take a look when you visit.

STUDENT RESEARCH & INTERNSHIP REPORTS

WHO ARE YOU?



Lily Hufmann spent several weeks in Peru studying the Pisco Formation.

I am Lily Hufmann and I am a Senior biology major. I plan to teach at the secondary level.

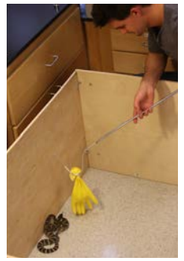
What did you do? I participated in research studying the geologic layers of the Pisco Formation. We collected rock samples containing coccoliths, which are calcium carbonate microfossils. I helped to prepare and label samples in Whirl-Pak bags for later uranium-thorium dating. The purpose of this research is to determine the geologic age of the layers of the Pisco Formation.

When and where did you do this work? My research experience was through Loma Linda University. It was for two weeks in July 2014 in the Pisco Formation near Ocucaje, Peru. I worked with Dr. Kevin Nick, a LLU geologist and several LLU graduate students.

What did you learn? I learned that fieldwork can be challenging. The Pisco Formation is composed mostly of sedimentary rock. When climbing up steep mountains, it felt that for every two steps I took forward, I slid one backward. I also learned a lot about geology. The last time I studied geology was in high school. During the trip I learned that scientific data and creationism are not mutually exclusive ideas. Although many geologists agree that the earth is ancient, an individual who struggles to accept these ages should learn the facts, study the issues, and come to their own thoughtful conclusion.

How did your experience at PUC help you prepare for this experience? General chemistry probably helped me the most. The reaction between hydrochloric acid and carbon carbonate in rocks confirmed the presence of coccoliths. General chemistry taught me about isotopes and half-lives to understand how uranium-thorium dating would give the age of the Pisco Formation.

WHO ARE YOU?



Matthew Consensci studied venom expenditure of rattlesnakes exposed to different threat levels.

I am Matthew Cosensci and I graduated with a biology degree at Pacific Union College in 2014. I plan to become a physician's assistant.

What did you do? I studied venom expenditure by rattlesnakes: one study on the effects of threat level and the other on the effects of habituation. A limb model was prepared using a latex glove filled with phosphate buffer saline heated to body temperature and smell of a human. In the threat level study, the rattlesnake would strike the glove under different conditions of threat. The habituation study compared the amount of venom expended by those snakes that bit each week versus those that were isolated for weeks. In both studies, the venom expended was determined by a total protein assay. Analysis was done to determine if different threat levels affected the amount of venom expended.

When and where did you do this work? My research was done during winter and spring quarter of 2014 at PUC and worked with Dr. Scott Herbert.

What did you learn? Before this research, I underestimated the effort required to produce a reliable and valid study. The work itself was very rewarding and gave me a chance to grow, learn, and make strides in the world of science. Research keeps you current with what others know about a topic and you may also contribute to new understanding in the scientific discipline. This experience confirmed my passion for the life sciences and motivates me to take part in novel research that will impact biology.

How did your experience at PUC help prepare you for this experience Studying biology at PUC prepared me for my research study. Classes such as vert biology and animal behavior helped give me the knowledge and expertise to handle rattlesnakes. Intro to research methods taught me to write a competent research proposal. Immunology taught me to perform total protein assay and to analyze results. PUC provided a strong foundation in the study of biology and prepared me for research.

WHO ARE YOU?

Jackie Lopez worked with the Land Trust of Napa County working with groups of community members and students on various conservation projects.

I am Jackie Lopez and I am a senior environmental studies major. Following graduation in June, I will start graduate school at Loma Linda University and earn an M.S. in occupational therapy.

What did you do? I am a co-leader at the Land Trust of Napa County. I help guide groups of volunteers in removing invasive species at various Land Trust properties and sites. I am responsible for demonstrating to the volunteers how to properly identify and remove the invasive species being targeted. I also ensure that all volunteers are working in a safe manner as well as provide first aid should anything occur.

When and where did you do this work? My internship at the Land Trust of Napa County started about a year (2014) ago in Angwin and other parts of Napa. I work primarily with the Land Steward Manager Mike Palladini and Lands Program Assistant Megan Lilla.

What did you learn? Working with the Land Trust made me realize that there are a growing number of people who are concerned about the environment and that conservation biology is an interdisciplinary science. It is clear that conservation is achieved through hard, mostly physical work. As I interact with groups and teach them basic ecology and plant names I am also convinced that what a volunteer learns about conservation will sustain his or her continued involvement.

How did your experience at PUC help prepare you for this experience? Conservation biology and ecology have prepared me well to achieve the tasks that the Land Trust of Napa County require of me. Conservation biology taught me how various conservation plans are developed and carried out. Consequently, as I observed the Land Trust developing a conservation idea, I had the proper knowledge to follow along and recognize their purpose. Ecology was very helpful when understanding the significance of invasive species and developing an on-site plan to control it.

WHO ARE YOU?

Brandon Painter studied the association between shrimp and sea anemones living in the coral reefs of Kosrae, Micronesia.

I am Brandon Painter and I am a senior biology major. I am passionate about medicine and will continue on to medical school to specialize in orthopedics.

What did you do? I worked on a project studying the associations of the small shrimp *Thor ambionensis* with anemones. I spent the majority of my time conducting snorkel and scuba surveys in lagoons and reefs. During the survey whenever I found an anemone, I would measure and record its size and note what kind of substrate it was growing on. Any shrimp found on the anemone would also be identified, measured, and photographed.

When and where did you do this work? My research was conducted for a few weeks in the tropical Pacific on the Micronesian island of Kosrae, alongside Dr. Floyd Hayes.

What did you learn? My research in Kosrae gave me the hands-on experience of collecting data. I more fully understand what it takes to create a research proposal and tackle the time-consuming data collection process. I realize that finding what you are looking for is not always easy, but using the locals' knowledge was helpful on such a small and remote island. This was an excellent opportunity (and a first for me) to apply my snorkeling and scuba experience to scientific research.

How did your experience at PUC help prepare you for this experience? The Biology Department prepared me well to conduct research. Third quarter biological foundations and its lab helped train me to properly plan and conduct research. Intro to research methods was also extremely helpful, as it teaches how to formulate a research proposal and how to write in proper scientific format.

WHO ARE YOU?

Daniella Rodriguez studied degenerative neurological diseases using the model organism C. elegans.

My name is Daniella Rodriguez, and I am a junior biology major. I hope to go to medical school and become a surgeon.

What did you do? I studied the effects of food overconsumption on degenerative neurological diseases (e.g., Alzheimer's). I prepared cultures of *C. elegans* (a microscopic roundworm) with different food concentrations; from normal (0.05 mL) to overconsumption (0.08, 0.10, 0.12 mL). After a few days, worms were measured and data show the mean body mass increased by 38%, 62%, and 246% for worms at the three overconsumption treatments! The worms were then put through a chemotaxis assay to measure their sensitivity to different chemicals. Small amounts of a worm attractant (benzaldehyde) and worm repellent (ethanol) were put on opposite ends of a culture plate. Sodium azide was also placed on the odorant spots to immobilize the worms when they came into contact with the chemicals. After two hours of activity, I counted the number of worms at each odorant. For all treatments, more worms were present at the attractant than at the repellent. However, worms exposed to higher food levels were less likely to move to either location and instead stayed in the center of the plate (0.05 mL = 2 worms in the center versus 0.12 mL = 33 worms in the center). The difference between these two groups was significant and confirms that overconsumption affects the sensitivity of the worms' sensory neurons.

When and where did you do this work? I worked on this research for eight weeks in summer 2014, at PUC under the guidance of Dr. Backil Sung.

What did you learn? ? I was involved in the planning of the experiment through to the final analysis, and I learned something new at each step. Most of the difficult work occurred before the actual experiment; doing the background research, planning the methods, and preparing the appropriate media. I also learned several lab techniques; to operate an autoclave, to prepare cultures, to observe small creatures under a dissecting microscope, and to organize and take detailed notes.

How did your experience at PUC help prepare you for this experience? The most helpful class was intro to research methods which helped me to learn and practice fundamental writing skills. This gave me competence to write the final analysis of the research and to present my results. Lab techniques learned in several biology and chemistry classes also proved crucial to several of the experimental procedures.

WHO ARE YOU?

Kristine Maxam spent the summer in Alaska identifying invasive plant species and recording population details.

I am Kristine Maxam, and I am a senior environmental studies major. I plan to do wildlife and plant conservation.

What did you do? I surveyed invasive plant species within the boundaries of Fort Greely, a 169 mi^2 military installation southeast of Fairbanks, Alaska. I walked 10-15 miles a day locating invasive plants (weeds) designated by a priority invasive plant species list. I estimated the population size, recorded the location (using GPS), and noted the type of environment (i.e., animal related, roadside) for each weed occurrence.

When and where did you do this work? My internship lasted for two and a half months in the summer of 2014 for the Soil and Water Conservation District of Delta Junction, Alaska.

What did you learn? I learned that I love working outside.

How did your experience at PUC help prepare you for this experience? The flowering plants class prepared me for this internship because I already knew many of the plants I surveyed and the basic characteristics of plant families. When I had to identify species that were new to me, it was easy. Also my research experience in several biology classes helped me to understand what I was doing and why I was doing it.

FACULTY DEVELOPMENT

A few examples of what faculty members are up to outside of their classroom and other campus responsibilities.

BACKIL SUNG, M.D., P.H.D.

Summer is very special to me because I have the opportunity to participate in mission trips. Since I joined the PUC biology department in 2011, I have spent two summers as a medical missionary to foreign countries. So far, I have traveled to Africa, Central America, and Asia. In summer 2015 I plan to go to visit Northeastern Asia.

For me, summer is the time to share the love of Jesus with people whom I have never met before. During these mission trips I prescribe medications, perform surgery to remove masses in the skin, and instruct patients about how to improve their health condition. I have even come across a handful

of patients with congenital heart disease who require urgent open-heart surgery and have helped these patients to find an NGO to provide the surgery service. Though these trips are not easy and certainly exhausting, I participate in these mission trips to keep a promise that I made 20 years ago as a medical student.

Seven years ago, my cousin asked me whether I had been on any mission trips to Africa. I felt ashamed when she asked this question because she knew how hard I had struggled in medical school. As a medical student, I told her that if and when I became a doctor, I would go on mission trips and provide medical care. Unfortunately, I forgot this resolution after I earned my degree. Following medical school graduation, I kept busy finishing my Ph.D. program in Seoul, Korea, and then postdocs in Minneapolis and Boston. Suddenly seeing my cousin and hearing her question wounded my heart. I was humbled because God had answered my prayer to become a physician, yet still forgave my "amnesia" about the broken promise to help people in need.

I prayed to God to find a mission opportunity that same year. My prayer was soon answered when I found a group that was going to Awassa, Ethiopia. During this first mission trip, I had many exciting experiences such as removing a mass on the scapula from a patient who had a difficult time lying on his back, learning about different cultures and various tribes, and making friends with the locals. Since then, I have been to Kenya, Haiti, the Dominican Republic, the Philippines, and Bangladesh.

I value the patience of God as He waited for me to remember and act on my mission trip pledge. In my day-to-day job as a biology professor I get to instruct students inside and outside of the classroom – academically and spiritually. It is a blessing to also have the opportunity to spend my summer vacation fulfilling my promise to God, practicing medicine, and helping those in need.

JOHN DUNCAN, PH.D.

We expect that our alumni and current students understand how diverse the subject of biology is. This science attempts the study of living things, those with backbones, to those without bones at all. The varying fields taught under the umbrella of biological science include topics concerned with organisms and habitats in our environment: marine science, animal behavior, and flowering plants. Additionally, the department teaches health-related topics concerned more with the human organism: neurophysiology, anatomy, and histology.

The diversity found in the subject of biology is also reflected in the dedicated and talented faculty who teach in the department here at PUC. Within the department you can find interests and research including snake venom, tarantula genetics, the Lake County grebe colony population, cancer, rare plants, and jujitsu.

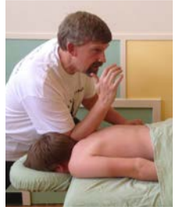
At this point you may be experiencing a similar feeling to when you were reading one of Professor Wyrick's multiple-choice questions. You know the answer should be "all of the above," but there seems to be at least one thing that just doesn't seem to fit. So after reading the question that should have had an "easy" answer, you are left wondering, "What did I miss?" It's that last subject, jujitsu, that has you scratching your head and asking, "Really? How does jujitsu fit into the study of biology?" I know Academic Dean Nancy Lecourt must have had the same slightly stunned look that you may be wearing now when she was first approached for support for this faculty development.

For the past several years, I have been doing jujitsu as a way to fulfill a lifelong interest in the martial arts. At this point, I am studying Danzan Ryu Jujitsu. This martial art has philosophical principles set down by its founder, which require that the study of this art should lead to the development of the entire person to benefit oneself and those around him or her. Thus, following the principle of yin and yang: if you train in the martial side of the art that can potentially cause harm, then you should also train in the healing side of the art. This mentality mirrors PUC's mission: seeking wholeness and seeking to educate the whole person.

This year, I officially commenced my study of Seifukujitsu, the healing arts, as passed down by my particular sensei-to-student lineage. This is primarily a result of getting closer to attaining my beginning-student status (black belt), as the student of jujitsu is a lifelong learner. These healing arts grow out of traditional Chinese medicine practiced in China as early as 2696 BCE. The founder of our particular branch of jujitsu, Master Okazaki, studied several different forms of traditional Chinese medicine before he put together his practice of Seifukujitsu.

This is not the first time Chinese medicine has been a subject of study at PUC. Several years ago, Dr. Brian Wong conducted research in Chinese herbal medicine to determine the efficacy of *Plantago major* in treating cancer. In fact, many institutions study the herbs and practices of traditional Chinese medicine, seeking ways to treat different maladies for which we are still researching cures.

There were several benefits derived from my first series of classes and hands-on study of Seifukujitsu that are continuing into this next year. First, because of contacts created, I have become aware of several programs at Berkeley and in San Francisco that are teaching Traditional Chinese Medicine



(TCM) that some of our students may wish to pursue. I have also had the opportunity to look at the understanding of the functions of the human body from the perspective of a culture that has studied health for thousands of years before Western medical techniques developed. This change in perspective has been challenging to biases and prejudices, as well as informative to my own understanding of the art of healing.

A surprising discovery during the examination of the history of Master Okazaki's development of Seifukujitsu was a connection to Adventism. The intent of Chinese medicine is to return the body to normal functioning - to make man whole, if I might paraphrase. Thus, Chinese medicine likely will not give a prescription to treat the symptoms of a cold, but rather to strengthen the immune system so that the body can heal itself.

Out of this underlying premise, Master Okazaki taught all students restorative massage, what is typically called "long-life massage," as it is not only healing but preventive and thought to give life extension. During the development of his practice, Okazaki was influenced by the practices of Dr. John Kellogg at the Battle Creek Sanitarium in Michigan. Thus, Adventism influenced the development of Seifukujitsu, and much of Chinese medicine's emphasis on a balanced life parallels the Seventh-day Adventist emphasis of a healthy lifestyle and prevention of disease.

Hopefully as you have read this, you can see that the department of biology maintains a diverse set of classes and continues to explore new ways of understanding the life around us and our interaction with it. Additionally, we continue to examine differing perspectives in order to understand how to maintain our own health and that of those around us as a core institutional value.

BRYAN NESS, PH.D.

I periodically receive requests to preach at churches in the Bay Area on the topic of origins and intelligent design, but usually this represents a drive of just an hour or two to reach the church. This last summer, to my surprise, I was invited, relayed to me by a PUC biology alumnus, to travel to the SDA Church in Whitehorse, Yukon Territory, Canada. The church has a strong community presence and often has almost as many non-members attending as members.

I gave three presentations, two of which were to be held in a convention space in a local hotel, so that non-members would feel more comfortable attending. As with all such ventures, the pastor was concerned that not enough would attend, but the meetings ended up being more successful than expected. A majority of the seats were filled and about half of those in attendance were not church members. The topics included the origin of life and intelligent design. A question and answer period at the end of each presentation showed a strong interest in the topic of origins. Even the presentation given for Sabbath morning services at the church was well attended, so the pastor and local congregation were pleased with the success of the meetings.

While there I was also able to visit with several PUC alumni. My wife, Judy, accompanied me on the trip and after the weekend series we traveled around the Yukon and parts of Eastern Alaska, which was a delight to us since we both have an avid interest in Klondike gold rush history. Since the trip

was in late August and early September, we were also lucky to see the first display of the aurora borealis of the season from the shore of the Yukon River in Eagle, AK. It was truly a memorable trip.

COLLEGE COURSES AT ALBION

The past year has been a time of change at the Albion Retreat and Learning Center. For the first time in many years, the painting and digital photography workshops were canceled in summer 2014 because of low enrollment. Even though we attempted to better advertise the courses, especially to the college community, few people showed interest. We made a decision in early June based on the confirmed registrants, and there weren't enough to make it cost effective.

A success was the return of a traditional college course to Albion. The students in summer 2014 Biological Foundations (BIOL 113) spent a week in August at Albion. Mornings were dedicated to lecture. The class met in the Field Lab building where they could look out the windows and see the Albion River. The lab activities focused on local habitats; tide pools, mudflats, and redwood forest. A week at Albion is now part of the summer BIOL 113 curriculum.

We are excited to offer two related college classes in summer 2015. Eco-theology (RELT 240) will be taught by Floyd Hayes and Field Biology of Coastal California (BIOL 338) will be taught by Aimee Wyrick. These classes are appropriate for both the general and science students. In addition, each class fulfills a different general education requirement. Eco-theology examines the relationship of religion and nature while Field Biology studies the unique plants and animals that live along the northern coast of California. The hope is that a set of general education classes will be taught each summer at Albion on a rotating schedule.

Pacific Union College

BIOLOGY

DEPARTMENT NEWSLETTER

Pacific Union College

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