

ETSU SCHOOL OF GRADUATE STUDIES

SPRING 2013

# Illuminated Magazine

GRADUATE STUDENT RESEARCH MAGAZINE

VOL 2 (II)



## Illuminated Magazine

FROM THE SCHOOL OF GRADUATE STUDIES

The East Tennessee State University School of Graduate Studies is proud to present ILLUMINATED, a magazine that showcases the excellent work of our graduate students and their faculty advisors.

There are over 2200 students enrolled in graduate programs at ETSU. ILLUMINATED presents some of our students' research and creative works that make meaningful contributions to various disciplines, and contribute to our strong graduate programs. ILLUMINATED features research and creative projects that are currently happening on campus, and provides updates on alumni of ETSU graduate programs.

ENJOY!

Celia McIntosh, Ph.D.  
Dean

Karin Bartoszuk, Ph.D.  
Associate Dean



photo by Sara de Miguel

Are you excited about your research and would like to share your hypotheses or findings?

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### For current graduate students and their advisors:

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### For former graduate students and their advisors:

Do you know an outstanding student who graduated from ETSU more than a year ago? We want to hear from them! The "Where Are They Now?" section features former ETSU graduate students who are now professionals in positions across the country.

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Illuminated Magazine

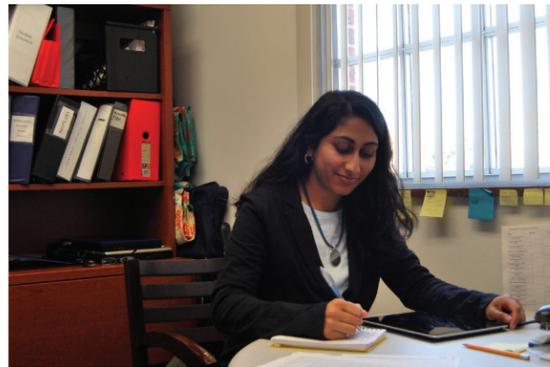
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\*Illuminated would like to extend a special thank you to Larry Smith, Director, ETSU Photographic Services, for providing help with the archived photos

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Archives of Appalachia

On the campaign trail with Richard Nixon, p. 12.

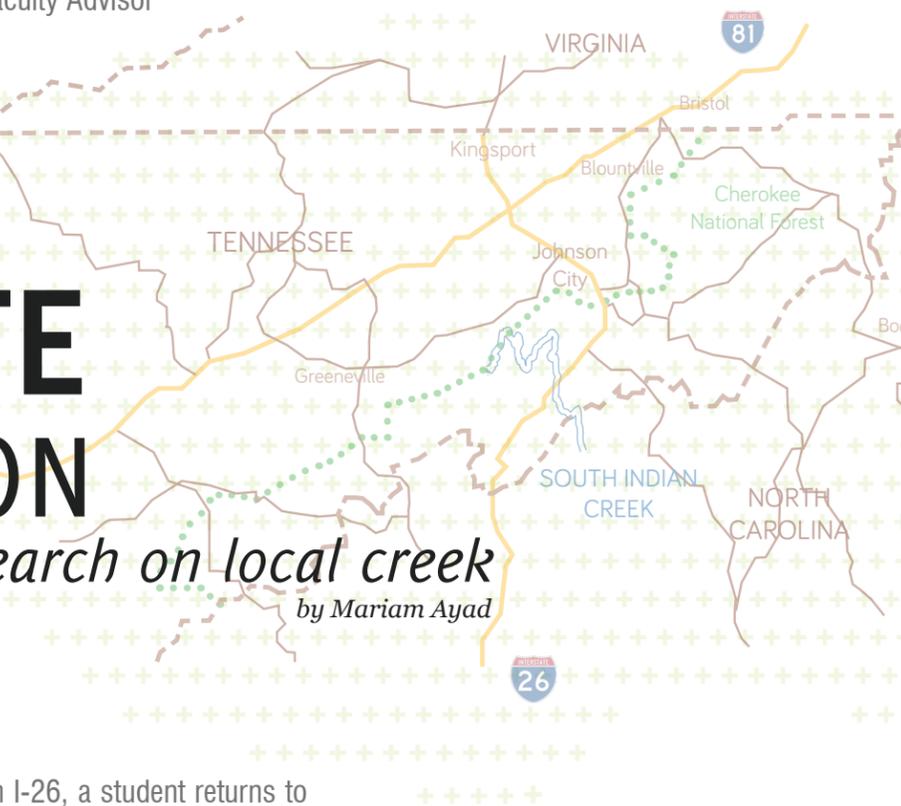
# CONTENTS SPRING 2013

- |   |   |
|---|---|
| <p>06 Interstate construction<br/>ENVIRONMENTAL HEALTH, M.S.E.H.<br/>Graduate Student: Clara McClure</p>  | <p>12 On the campaign trail with<br/>Richard Nixon<br/>HISTORY, M.A.<br/>Graduate Student: Niklas Trzaskowski</p>                     |
| <p>08 Where are they now?<br/>Christy Strong</p>  | <p>15 Fat phobia<br/>CLINICAL NUTRITION, M.S.<br/>Graduate Student: Sarah Welborn</p>   |
| <p>08 Aiming for agility<br/>KINESIOLOGY AND SPORT STUDIES, M.A.<br/>(EXERCISE PHYSIOLOGY AND PERFORMANCE<br/>CONCENTRATION)<br/>Graduate Student: Joel Cowan</p> | <p>16 Where are they going?<br/>John Wyatt Greenlee</p>   |
| <p>10 Tips on how to prepare for a<br/>successful IRB process</p>   | <p>17 Reaching for higher ground<br/>PUBLIC HEALTH, Dr.P.H.<br/>(COMMUNITY HEALTH CONCENTRATION)<br/>Graduate Student: Emma Apatu</p> |
| <p>12 Where are they now?<br/>Maria Julia Pestalardo</p>  | <p>19 Where are they going?<br/>Logan Vess</p>  |

# INTERSTATE CONSTRUCTION

*continues to spawn research on local creek*

by Mariam Ayad



More than 15 years after the road construction on I-26, a student returns to see if the nearby aquatic habitat has recovered.

The pounding of jackhammers, glares from reflective orange and white barrels, and the sight of sticky black tar are sources of frustration for more than just highway traffic. Road construction can severely alter, and sometimes permanently damage, nearby wildlife habitat

because of rock blasting and polluted run-off from the asphalt. When Tennessee was building a section of Interstate 26 in the early to mid-1990s, the construction dramatically affected nearby South Indian Creek. Soil clouded the water and harmed underwater creatures, pollutants entered the streams and fish died. Almost 20 years later, Clara McClure is examining the

creek again, to see if it is still having trouble getting back to normal.

Clara, a master's student in Environmental Health, is exploring ten of the most impacted sites along South Indian Creek. "These are some of the same sites the environmental health team looked at when the highway was being constructed," said Dr. Phil Scheuerman, the leader in a series of water quality studies on the creek in the 1990s (and Clara's thesis advisor).

"Those are very fragile ecosystems and very fragile streams because they're at the very top. They're the headwater first-order streams, so they have very little buffering," Dr. Scheuerman explained. "Any small change has a big impact and then it cascades down because if you hurt the headwater, then you're going to hurt the waters down below them."

Clara, who received a research grant from the School of Graduate Studies and Graduate Council, has gone to the creek once a month since June to collect water quality data. She and a partner take water samples and sediment samples to bring back to the lab to test for microbial enzyme activity, which tells the researcher a great deal about the life in the creek. She also collects data on the water's pH, conductivity, temperature, dimensions and

other details. Clara will focus much of her research study on microbial activity because of its significance to life in the creek.

"Microorganisms are the base of an ecosystem," Dr. Scheuerman said. "Energy and nutrient movement into an ecosystem, aquatic or not, starts with the microbial population."

Clara will complete her data collection in May. Although she has yet to run her formal analysis, she is hypothesizing that the creek has not recovered completely since construction began in 1990.

"I expected it to have not recovered because of increasing traffic volumes on the interstate; and there's still a lot of instability on some of the sites because of the interstate construction," Clara said.

It's likely that the sites haven't recovered completely because of the dramatic changes in the environment brought on by the interstate highway's construction. The mountainside that was blasted for construction contained a rock called pyrite, better known as fool's gold. When pyrite interacts with bacteria, oxygen and water, it produces sulfuric acid. In addition to erosion into the stream, researchers were also concerned about this acid leaching out into the environment and destroying the habitat.

"It slowed the construction down quite a bit because they had to do a lot of things to make sure they removed the pyrite correctly," Dr. Scheuerman said.

Despite the precautions, researchers were still concerned about the pyrite that was newly-exposed after the side of the mountain was blasted to make way for the new road. Construction workers also used some of that rock for the bridge abutments. Some of the bridge abutments were made with layers of geotextile membrane, lime and pyrite.



Left, Clara McClure. Right, Rebecca Day

"They cover it over and use that as the abutment for the bridges to stabilize them going over the creek," Dr. Scheuerman said. "There's a lot of concern because nobody knows how long that lasts."

Another major concern was the erosion along the side of the steep mountain. Because the construction crew was removing brush up to the edge of the creek, there was a lot of silt and debris running into the water.

"One of the problems with the silt is that in those streams, there's no sediment at the bottom. The aquatic insects live on those rocks and they serve

as food source for the fish. Well, when you put sediment on that, that kills all of them," Dr. Scheuerman explained.

"Those are very fragile ecosystems and very fragile streams because they're at the very top. They're the headwater first-order streams, so they have very little buffering."

"I've always wanted somebody to go back, and Clara found it interesting enough to go back at about 20 years after the construction," Dr. Scheuerman said.

Clara has several elements she can include as she begins processing the data. Because the previous studies on the creek were conducted quarterly, she can compare her data with those reports and examine the temporal effects. She can also compare the upper stream to the lower stream to see the differences between those two sections of the creek. She will likely analyze the interaction of the temporal and spatial data.

"I've always been interested in science, and I want to help people somehow, but I didn't want go the doctor way," Clara said. "Environmental health is broad enough to where I don't have to be specific and choosy because it's such a broad field."



photo by Jim Sledge



photo by Sara de Miguel

Left, Clara McClure. Right, Dr. Scheuerman

# Where are they now?

## CHRISTY STRONG

Degree:  
Master of Science in Biology

Department:  
Biological Sciences

Year of graduation:  
2005

Current job:  
Postdoctoral scholar

Location:  
University of  
Nevada, Las Vegas



### → What are your work responsibilities?

I work in a research laboratory that combines bioinformatics with “wet lab” work. My projects involve experiments to tease out interactions between HIV and the host cell. In addition, I train undergraduate and graduate students to work in a laboratory setting.

### → What’s your favorite part of the job?

There is always something new to learn, because once you’ve answered one question, it leads you to ask another.

### → How has your master’s degree from ETSU helped you?

My master’s degree provided me with a lifelong mentor in Dr. Cecilia McIntosh. Over the years, she has provided me with great career advice. In addition, the research and writing skills that I acquired in the program have served me well during my doctoral and postdoctoral careers.

### → Did you pursue a PhD as well?

I received my PhD in Integrative Microbiology and Biochemistry from the University of Montana in Missoula in 2011. My PhD work focused on elucidating the role of HIV genomic RNA structures in HIV translation.

### → What advice would you give to current graduate students?

Never hesitate to ask questions. This is a key way to develop as a researcher.

### → Anything else you’d like to share?

The graduate program exists because of you, so use the resources around you to their maximum potential.

Joel Cowan, Graduate Student  
Kimitake Sato, Ph.D., Faculty Advisor

# Aiming for AGILITY

Student hopes to improve training  
for soccer athletes.

by Mariam Ayad

**J**oel Cowan has been playing soccer for more than twenty years. An avid soccer player and fan, he wanted to learn what makes some players better than others. Because it is so important to the game, Joel investigated what factors affect a soccer player’s agility. His exploratory study will help soccer and strength and conditioning coaches to incorporate more meaningful exercises to improve athlete performance.

“I grew up playing soccer, so I always had an interest,” said Joel, a master’s student in Kinesiology and Sport Studies with a concentration in Exercise Physiology and Performance. “I was always trying to find ways to better my performance, so coming from that and being a

part of this program that strives to improve athletes’ performance, this might be a good avenue for me.”

Previous research has shown that professional soccer players use their agility to quickly change direction on the field an average of 1200 to 1400 times per game.

“It’s a huge part of soccer, so being able to improve agility performance would definitely have some positive effect on the overall soccer performance,” Joel said.

Joel wanted to see if three variables in particular correlated with a player’s agility. These include limb length, power and strength. Most athletes at ETSU are tested for these three measures each year as part of a sports science monitoring program.



“Athlete monitoring and sports science studies are very, very rare in the United States. This is the only doctoral program in the U.S. that does purely sports science.” said Dr. Kimitake Sato, Assistant Professor in the Department of Exercise and Sport Science.

Joel used data from this year’s men’s and women’s soccer teams and men’s soccer teams from the previous four years. He hopes to find a way to narrow down the best way to seek out good talent, and help soccer players improve their performance.

“Joel is taking a step to find how physical demands and actual body stature influence the agility movement,” said Dr. Sato. “This becomes such a good factor for talent identification. When we’re looking at teenagers, if you have a certain body structure and body strength and power, chances are that you can be good in certain sports.”

Joel used the data taken each year by the sports science program. The program uses the Arrowhead Agility Test as well as a repeat agility test to determine athlete agility. The peak power output is determined by two jumping tests, a static jump and a countermovement jump. Strength is measured using a test called the isometric mid-thigh pull. As athletes pull harder on a stationary bar, they push harder on the ground with their feet, which lets researchers measure their strength. For the limb length, Joel used leg length, thigh length and shin length.

“Joel is taking a step to find how physical demands and actual body stature influence the agility movement.”

“We used the results from those tests, and then checked if the athletes that have good results in those tests also have good results in agility tests,” Joel explained.

Although he still has to incorporate previous years’ data, initial results show that peak power output is a good indicator of agility movement. Joel’s research will serve as an important addition to sport science literature, because there is little previous research correlating physical characteristics and agility performance, especially studies that take limb length into account.

“There’s a big chance that their training in the weight room might change depending on his research results, and that will further help our ETSU athletes and other levels of athletes,” Dr. Sato said.

After obtaining his master’s degree, Joel hopes to further his education in athlete rehabilitation, and study biomechanics or physical therapy.

“I want to work at keeping the athletes healthy, and if they get injured, how to bring them back as quickly as possible and prevent any further occurrence of injury,” Joel said.





# Tips on how to prepare for a successful IRB process

..... straight from the leaders of ETSU's review programs .....

Most graduate students are thrilled about their research topic, but are often misinformed about how to initiate a human subject study. Before any study involving human subjects can be started, approval from the Institutional Review Board (IRB) must be obtained.

Although IRBs around the country are sometimes seen as hurdles in the research process by graduate students, they serve an important purpose. They aim to protect study participants, researchers, and their institutions by upholding ethical principles

in academic research. ETSU is one of only two universities in Tennessee that are accredited by the Association for the Accreditation of Human Research Protection Programs, or AAHRPP.

"We're not here to stop research from going forward, but to assist the researcher in implementing it in a fashion that ensures human subjects protection," said Dr. Bill Duncan, Vice Provost for Research and Sponsored Programs.

A lot of times, that means following rules about ethics and consent that

many graduate students, who are new to academic research, are still learning. The IRB can help you understand and follow these rules. ETSU's Institutional Review Board, part of the Office for the Protection of Human Research Subjects, wants to make the process as painless as possible. Janine Olive, Director of Human Research Protection Program, and Dr. Duncan offered some great advice on the best way to approach an IRB submission.

by Mariam Ayad

## Tip #1:

### Think about principles of ethical research as you're designing the study

"We follow the rules, but the point of the rules is to make sure that the research is ethical," Ms. Olive said.

Keeping ethics in mind when designing the study and consent process can help make the IRB forms easier to fill out, and make for a stronger application. Although training in human subjects protection is not required prior to submitting your study for review by the IRB, it's a good idea to complete the online CITI Human Subjects training program before you begin preparing your application. The CITI training teaches the ethical principles of research, and can help students understand what issues to address when completing the IRB forms. It is important to note that all study staff must have completed CITI training before IRB approval.

"If students just think about that consent process, like imagining 'If this were my sister or this were me, what would I want to know about this study before I made a choice about participating?,' that would be really helpful in writing the consent," Ms. Olive said.

## Tip #2:

### Talk to the IRB staff before you submit your application.

After you've laid out your research design with the help of your advisor and committee, email the IRB staff and set up a meeting. Although this is not a requirement for the submission process, connecting with the IRB beforehand can help provide guidance to you on the best way to fill out the forms.

The level of review – exempt, expedited or full – may have a major effect on the amount of information you're expected to fill out on the form and how much time it will take for the IRB to get back to you. If it's possible to complete a study with a lower level of review, it can mean an abbreviated process and shorter time frame. For example, an expedited review requires additional information on the informed consent and takes an average of one month to process. A study that meets the qualification for an exempt review usually has an abbreviated consent process and the average IRB review time is cut in half to an average of two weeks.

"In the way you design a study, you may be able to make it less

risky, like by not collecting identifiable information, and this may enable a different level of review," Ms. Olive said.

Although IRB staff members don't make the decision on level of review, their experience and knowledge of the IRB process can help students adapt their research designs, if possible, to make the study easier to carry out while still obtaining the same results.

On the other hand, if you're not sure you even need IRB approval for your study, asking the IRB by submitting a Form 129 is a good idea. Nothing is worse than filling out lots of paperwork and then realizing you didn't need to go through the process in the first place. *Any research involving human subjects needs to be reviewed and approved by the IRB.* However, some types of research designs can be difficult to assess against only that requirement. A Form 129, which is available on the IRB website, can help students know for sure if they need to go through the IRB before beginning the process. You can expect to hear back in about a week about whether or not your study will need IRB approval.

## Tip #3:

### Submit your application online

The IRB office now offers an online submission option so that students and faculty can submit all their paperwork online and track the status of their application. To submit IRB applications online, students and their faculty advisors must first become certified for the process. The IRB offers training in university classes when requested, and also offers one-on-one training over the phone, which takes about 20 minutes.

"The advantage of submitting your study electronically is we're able to embed in the questions a lot of helpful text, as well as links to other information, in a way that you can't do in a paper application as much," Ms. Olive said. "That's been really helpful."

Along with text and links, the online form also offers examples of what information the IRB requires, which can help students formulate more complete answers. Also, rather than turn in multiple forms, the online system formulates all the relevant questions in one form, adding items as needed.

## Tip #4:

### Ensure your application is clear and complete before submitting it

Although it seems simple enough, double-checking the application to make sure you've answered all relevant questions, and that there are no inconsistencies can make a big difference. If there's a question on the application that's required, but left blank or labeled as not applicable, the IRB has to send it back to the researcher and the process takes more time. Similarly, if different parts of the application contradict each other, the IRB has to send it back to the researcher for clarification.

"If there is confusion about the research activity, it will delay the review," Dr. Duncan said. "The IRB can't approve a study until everything is clear."

## Tip #5:

### Allow sufficient time for the process of review and approval

Remember: You cannot start collecting data until after you have the final IRB approval letter, *so start early* to ensure you finish the IRB application process with enough time to complete your study.

The IRB at ETSU ranks at or below the average turnaround time on applications in comparison with other AAHRPP member universities. Expedited reviews take about one month from the time of submission to approval, and exempt reviews take about two weeks. However, those time frames are averages and not guaranteed. Researchers conducting a study at the Mountain Home VA Medical Center or Mountain States Health Alliance need to receive additional clearance as well, which adds to the turnaround time. The sooner you can submit your application to IRB, the better.

"It adds additional stress to students if it's a really tight timeline, and the review process is taking longer than they thought; and that makes it much harder on the student," Ms. Olive said.

Another tip related to reducing processing time is responding quickly to questions and requested changes from the IRB. This helps move the study through the process more smoothly.

"And if you don't understand the question, get back with the office," Dr. Duncan recommended. "Communication is the only way to speed it up."

The IRB staff is always looking for ways to improve the process and has plans on designating a staff member soon to work specifically with graduate students. They also hope to offer additional workshops in the near future on the ethics of working with human subjects.

"The more we can offer students the opportunity to get trained in ethical conduct of research, the better we'll be and the better they'll be as they move on in their career," Dr. Duncan said.

You can find more information about the IRB on their website at:

[www.etsu.edu/irb/](http://www.etsu.edu/irb/)



Left, Dr. Duncan. Right, Janine Olive

# Where are they now?

## MARIA JULIA PESTALARDO

Degree:  
Master of Arts in Professional  
Communication

Department:  
Communication department

Year of graduation:  
2006

Current job:  
The National Council of la Raza

Location:  
Chicago, Ill.



➔ What are your work responsibilities?  
Monitoring United States Department of Labor Career Pathways grantees to ensure compliance with federal regulations and achieving proposed goals.

➔ What's your favorite part of the job?  
Knowing that what you do makes a difference in people's lives. Career Pathways advance low-income, low-skilled workers through education and training to high-wage jobs that lead to economic self-sufficiency. The NCLR Workforce Development Department supports organizations that offer a variety of services to their participants that help them successfully complete their training, get placed in jobs, and stay employed.

➔ How has your master's degree helped you (personally and/or career-wise)?  
Professionally, I was able to be promoted as a Department of Education Regional Coordinator, not only because of my achievements, but also because I had a master's degree. It depends on each industry, but typically, you will need a master's degree to apply to senior-level positions.  
Personally, it gave me the opportunity to meet local and international people, some of whom became lifelong friends.

➔ What advice would you give to current graduate students?  
Build your network and professional experience. Ask a professor to be your mentor. Professors are well connected and can always lead you to job opportunities. Participate in activities that build your professional potential, including participating in departmental events, joining professional associations, networking at conferences or campus activities and seeking opportunities to present projects.  
Enjoy the ride. Graduate school is a great time. You meet interesting people and have the chance to challenge your own ideas. Do not take everything too seriously and make use of your free time.

➔ Final thoughts:  
Go Bucs!!

Niklas Trzaskowski, Graduate Student.  
Daryl A. Carter, Ph. D., Faculty Advisor



## On the campaign trail with Richard Nixon

by Mariam Ayad

Nixon's staff relations and campaigns provide a new lens from which to view the life of the unpopular president

**R**ichard Nixon left quite a legacy. But few know the details of how the former U.S. president conducted his campaigns and selected his staff. Niklas Trzaskowski, a master's student in the Department of History, examined archival records, consumed oral histories from Nixon's staff, and read memoirs to give historians a comprehensive view of what Nixon's campaigns really looked like from an insider's perspective.

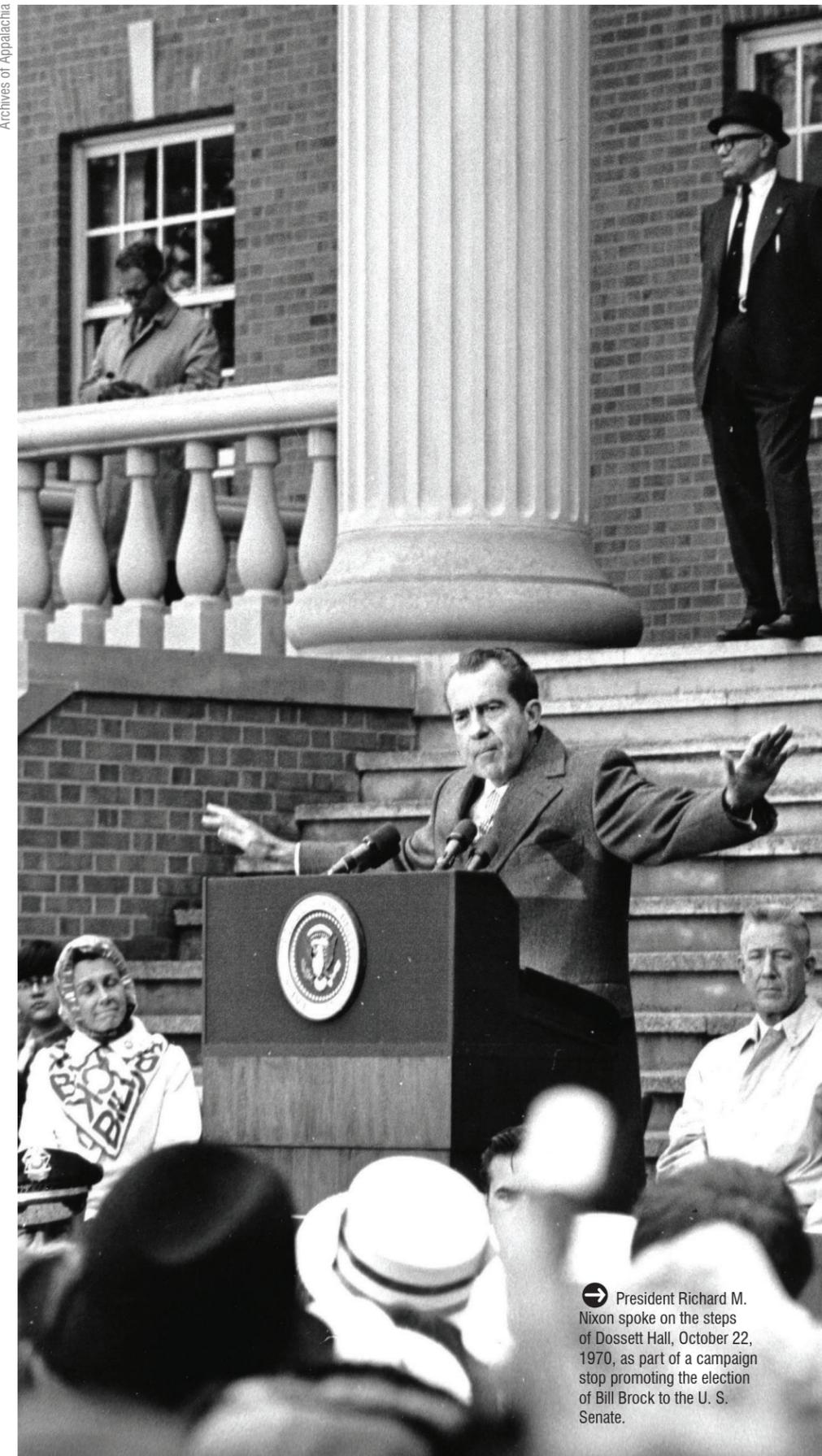
"The thing that always fascinated me was looking at campaigns and looking at the behind-the-scenes stuff ... and I wanted to know how did these [political staffers] come about," Niklas said. "Nixon is the perfect example because he relied on these people a lot, so I wanted to give a behind-the-scenes look at the political campaigns of Richard Nixon."

Nixon ran for different offices many times, including the House of Representatives, the Senate, Vice President, Governor and President. By looking at the details of all of Nixon's campaigns, Niklas learned more about Nixon's style of campaigning and how he selected his staff.

Niklas found that Nixon had a unique set of staff that had different backgrounds than those of many other modern presidents. Nixon admired the rags-to-riches stories of his appointed aides, who, much like himself, were born into poor households and worked hard to secure financial success. Nixon's staff consisted of business-minded individuals, rather than experienced political aides.

"Throughout his career, Nixon always wanted to have people on his staff that ... worked themselves up and were as far removed from politics as possible," Niklas explained. "They would not be working with

Archives of Appalachia



➔ President Richard M. Nixon spoke on the steps of Dossett Hall, October 22, 1970, as part of a campaign stop promoting the election of Bill Brock to the U. S. Senate.

him because they wanted to advance their own political standing but instead wanted to win it for Nixon.”

Not only was his staff different, but Nixon also conducted his 1960 presidential campaign very differently from those who came before and after him – he ran the campaign himself. Most of Nixon’s campaign staff was handed down from Eisenhower’s administration because Nixon was the vice president of the administration. Because he hadn’t hand-picked the staff himself, Nixon distrusted the aides and chose to make all the calls in the campaign, an unusual move for presidential candidate.

“The thing that always fascinated me was looking at campaigns and looking at the behind the scenes stuff... and I wanted to know how did these come about.”

“In most presidential campaigns in the modern era, the presidential candidate has very little to do with the actual campaign,” Dr. Daryl Carter, Assistant Professor in the History Department, explained. “The campaign is essentially turned over to either one person or a group of people, and those people make all the decisions. The fact that Nixon takes it upon himself in 1960 to do those types of things and make those types of decisions, it contributes to his loss.”

Among his failures on the 1960 campaign trail was his promise to stop in every state. Despite a knee injury, Nixon continued with this promise and ended up appearing unrested and unprepared at debates and rallies.

After losing the 1960 presidential campaign, Nixon spends the next eight years off the campaign trail for the most part, running for just one election, for governor, during that time. During this time, he studies the American political system, accumulates a new staff and a new vision for his political future. In 1968, he runs for president again, this time running on the platform of representing the “silent majority.”

“There’s a lot of violence and protests in the street and a lot of Americans are in disgust of what is happening in the post-war world. Nixon wants to represent the non-shouters, the non-protestors, the people that stood on the sidelines,” Niklas explained.

Successful in this strategy, Nixon won the election, although he later resigned while facing the possibility of impeachment following the Watergate scandal.

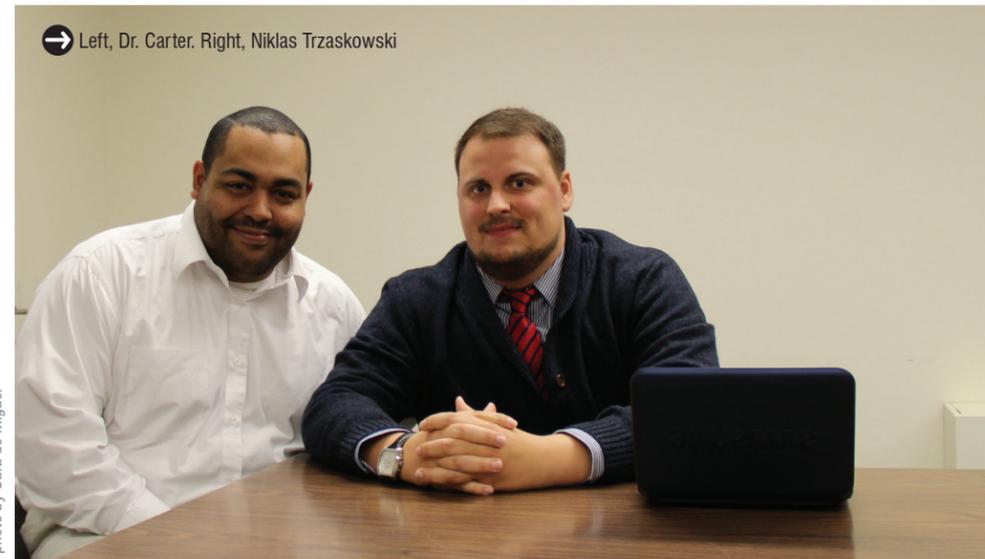


photo by Sara de Miguel

→ Left, Dr. Carter. Right, Niklas Trzaskowski

Throughout all of Nixon’s campaigns and during his years in office, he trusts only a few people and is always suspicious of the “liberal elite” of the time.

“Nixon’s whole life, not just his political campaigns, but his entire life, is ‘me versus the elite’ or ‘me versus the so-called educated,’” Dr. Carter explained. “Nixon relies heavily, at any given time, on a few individuals and no more. Sometimes it’s only a handful.”

In conducting his research, Niklas had to use archival material that was sometimes difficult to obtain. Many of Nixon’s records are archived at the Nixon Presidential Library and Museum in Yorba Linda, California, which was previously run by Nixon’s most ardent supporters. Much of the material on Nixon’s earlier years is still owned by the Richard Nixon Library and Birthplace Foundation, and the organization is not required to release the information.

“It’s a very dicey situation which is another reason that Niklas’s work stands out as noteworthy, because he’s had to negotiate through all this,” Dr. Carter said. “The issues at the Nixon library, you do not encounter at the Johnson, Clinton, Kennedy, Carter, Hoover libraries. You only encounter them at the Nixon library, which makes it difficult.”

Niklas explored the Nixon library last summer with a grant through ETSU’s history department. Because of the difficulties in obtaining archival material on Nixon’s early years, Niklas relied in huge part on oral histories left by Nixon’s staff and their memoirs to complete his thesis.

“People haven’t looked at Nixon in terms of what Niklas has put together, meaning these issues regarding Nixon’s persona, Nixon’s staff, the people around him, the people that he needed to function,” Dr. Carter said.

“Nixon conducted his 1960 presidential campaign very differently from those who came before him — he ran the campaign himself.”

Niklas became interested in studying Nixon because his favorite author, Hunter S. Thompson, abhorred him and wrote about Nixon extensively.

“I didn’t know a lot about Richard Nixon, so I finally said to myself, ‘I want to find out more about this man that my favorite author absolutely despised,’” Niklas said. “Ever since then, I started to be more interested in American political culture, especially in the 1960s when Nixon is so important.”

Niklas was awarded best graduate paper at the Ohio Valley History Conference in October. He also presented his work at the Phi Alpha Theta Tennessee Regional Conference and the University of Alabama at Birmingham History Forum.

“It’s an important piece of political history. I’m very proud of Niklas. He has worked his heart out to do this,” Dr. Carter said. “Niklas has engaged quite extensively in archival research, and research just generally, which is not typical of a lot of our MA students here. He is one of our bright lights in the department.”

Sarah Welborn, Graduate Student  
Michelle Lee, Ph.D., Faculty Advisor

# FAT phobia

Dietitians aren’t free from obesity bias, but research shows they improve over time

by Mariam Ayad

When Sarah Welborn was an undergraduate student, she participated in a research study that changed her perceptions of herself and her profession. She discovered that she and most of her fellow nutrition students were unknowingly discriminating against overweight and obese individuals by stereotyping them. Known as obesity bias, this type of disposition leads people to treat overweight and obese people differently and cause them to feel uncomfortable.

“I had never heard of obesity bias, but after taking the survey I felt very shallow and realized that this is a problem,” Sarah said. “I had two [overweight] clients that year, and they were some of the hardest working people I’ve ever met. I may not have thought that if someone hadn’t brought it to my attention that there was an issue [of bias].”

Obesity bias can lead people to assume that the overweight and obese are undisciplined, inactive or eating too much-stereotypes

that may or may not be true of anyone. Even indirect cues, such as facial expressions or a chair that’s too small, can make the overweight and obese uncomfortable in a dietitian’s office.

“If they’re not comfortable there, they’re not going to come back, and that’s really alarming to me,” Sarah said.

The study that she participated in during her undergraduate course surveyed only nutrition students. Sarah was interested in learning if obesity bias decreased during the progression of a nutrition student becoming a registered dietitian. She conducted a cross-sectional study and compared the obesity bias attitudes of undergraduate dietetic students, dietetic interns and practicing registered dietitians. The participants were all from southern universities — ETSU, Mississippi State University and Middle Tennessee State University.

Sarah used two previously-validated surveys to capture obesity bias in the participants. One was the fat phobia survey, which asked participants to mark where they believed obese individuals ranked between two opposite adjectives, like hardworking and lazy. The other survey was the anti-fat attitudes scale, which asked participants the same types of questions. Rather

than just marking between words, however, this scale required participants to read a sentence and rate how much they agreed with it.

Sarah hypothesized that the undergraduate students would have a higher obesity bias than interns, who would have a higher obesity bias than registered dietitians. This would show that dietitians learned to overcome obesity bias as they progressed in their studies.

“Unfortunately, there was no statistical significance between it, but we did see a trend where obesity bias did improve,” said

Sarah discovered that she and most of her fellow nutrition students were unknowingly discriminating against overweight and obese populations by stereotyping them.

Dr. Michelle Lee, Assistant Professor in the Department of Allied Health Sciences.

The study also yielded other interesting results. For the 26 registered dietitians in the study, Sarah also categorized them based on their workplace, such as clinical, hospital and



photo by Sara de Miguel

→ Left, Dr. Lee. Right, Sarah Welborn

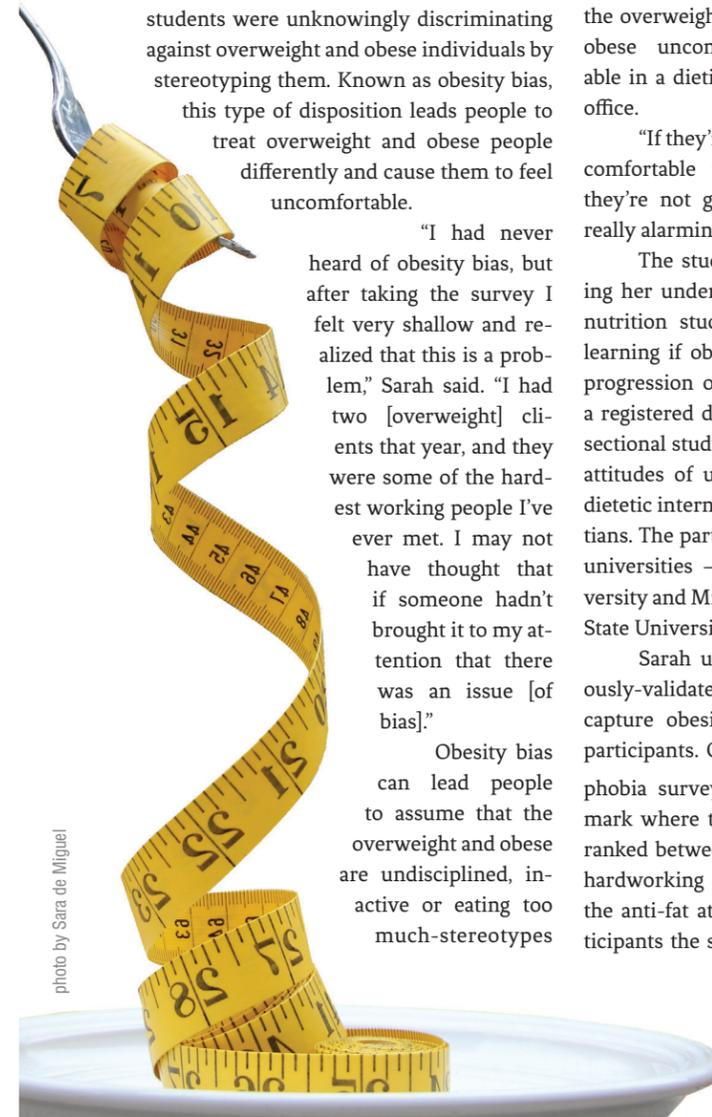


photo by Sara de Miguel

educational. She found that the educators experienced the highest level obesity bias.

“This was a red flag to me because in order for students to learn what obesity bias is and to learn how to not project those biases onto their patients, they should start learning in the classroom,” Sarah said. “If the dietitians that are teaching them have the most bias then that poses a big problem to me as far as future dietitians coming out.”

In her study, Sarah recommended that current dietetic educators incorporate obesity bias awareness into their courses. As students learn more about their own bias and how it can harm their relationships with clients, they will be better equipped to deal with it in a clinical setting. In fact, Dr. Lee has already included obesity bias in her nutrition education course following Sarah’s results.

“One of the things I’m trying to emphasize in class is that just because someone is overweight or obese doesn’t mean that they’re lazy and they don’t eat healthy or they aren’t concerned or that they don’t have discipline,” Dr. Lee said. “That is not always the case. There could be other factors.”

There is a lot of previous research on obesity bias of physicians and nurses, but very little on dietitians. Sarah’s work adds weight to the argument that obesity bias is a problem in the healthcare field overall.

“We know with overweight individuals and especially obesity, there are so many more co-morbidities that go with it,

“ If the dietitians that are teaching them have the most bias then that poses a big problem to me as far as future dietitians ”

like cardiovascular disease, hypertension, diabetes, cancer, so really they could be the population that really needs to be there and needs help the most,” Sarah said.

After obtaining her MS in Clinical Nutrition, Sarah wants to work in a clinical setting for a few years and then return to school for a PhD. She hopes to continue her research on obesity bias and educate future dietitians.

“I think it’s so important because we need to be aware of our personal bias and in turn help other people be aware of their own. If we can do that, it can help dietitians play a crucial role in helping their clients succeed and that should be the reason that we’re practicing.”

# Where are they going?

**JOHN WYATT GREENLEE**

Degree: Master of Arts in History



photo by Sara de Miguel

➔ What doctoral program will you be attending?

Cornell University, the Medieval Studies program, with a concentration in Medieval and Renaissance history.

➔ Will you receive funding?

Yes. The offer from Cornell included five years of guaranteed funding, including two years of funding through a Fellowship and three years funded through a Teaching Assistantship.

➔ How has your master’s degree helped you?

My classes and my professors at ETSU opened up new avenues of study to me, while helping me to sharpen the focus of my research interests. The faculty of the History Department has pushed me to think about ideas and issues in new ways, and has never stopped challenging me to grow as a historian. I believe that my work at ETSU has laid a strong foundation for doctoral work and beyond.

I would also add that the Graduate School and the History Department made available funding opportunities for conference travel and research trips. This helped me to be able to engage in the field on a more professional level and to demonstrate to doctoral programs that I have the ability to make meaningful contributions.

➔ What professors/advisors were instrumental in helping you?

Dr. Brian Maxson and Dr. Daniel Newcomer have been especially helpful in shaping how I understand the study of history. Both men also proved instrumental in directing me through the process of researching and applying to doctoral programs. Dr. Doug Burgess has been an inspiration and instructive to my goal of becoming an excellent classroom instructor. Lastly, Dr. Thomas Crofts’ classes in Latin have helped me to develop a base for the language work I will have to do in the future.

➔ Why did you choose to pursue a doctoral degree?

I came back to school after a ten-year professional career with the hope of going on to doctoral work. I am interested in teaching history at the collegiate level.

➔ Will you expand on the topic you worked on during your master’s?

I hope to continue with the work I have begun at ETSU. I believe that my master’s thesis ties into broader historiographic arguments about early nationalism and imperial ambitions in medieval Europe, and I look forward to investigating those connections.

➔ What advice would you give to current graduate students who would like to pursue a doctoral degree?

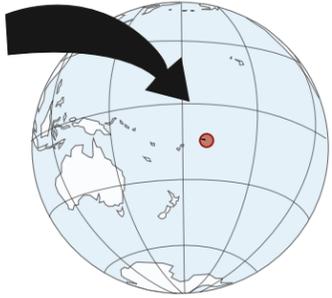
Work with your advisor to figure out what you want in terms of a doctoral program and how best to work toward finding the best fit for your scholarship. Then, craft a strong writing sample that will show potential schools that you have something valuable to bring to the academic conversation.

➔ Anything else you would like to share?

ETSU offers great opportunities to its graduate students to go on to succeed in many different areas, and I would wish all ETSU graduate students to have the same enjoyable experience that I have had here.

Emma Apatu, Graduate Student  
Christopher E. Gregg, Ph.D., Faculty Advisor  
Robert P. Pack, Ph.D., Faculty Advisor

American Samoa



# REACHING FOR higher ground

by Mariam Ayad

Public Health major studies human response that took place immediately after residents of American Samoa learned of an impending tsunami wave.

In 2009, a tsunami caused by a 8.1-magnitude earthquake swept over the islands of American Samoa, a U.S. territory in the South Central Pacific Ocean. The giant waves caused 34 deaths in American Samoa and nearly 200 total deaths across all the islands in the South Pacific Ocean. The tsunami reached heights over 12 meters and swept inland up to 600 meters. It arrived on American Samoa’s coast in as little as 15 minutes after the preceding earthquake, leaving very little time for coastal people to evacuate to high ground.

Emma Apatu, a doctoral student in the College of Public Health, with a concentration in community health, is studying the informal and formal ways in which the residents of American Samoa were alerted to the tsunami and how they communicated with each other about it during the event. Her study is guided by a theoretical framework called the Protection Action Decision Model (PADM).

To conduct her research, Emma visited American Samoa twice to organize interviews with the local population and learn about how they reacted to the earthquake and subsequent tsunami. She went to the island in a team headed by Dr. Chris Gregg, an Associate Professor in the Department of Geosciences, who is advising Emma in her dissertation work. Together, with a former classmate, Dr. Kasie Richards, and a team of ten local interviewers, they arranged interviews with 300 local Samoans.

“A lot of people were able to feel the strong ground shaking [caused by the earthquake] and they evacuated,” Emma said. “Also, there were some educational trainings that went on in July 2009 and a week before the tsunami, which really helped people to know that when the ground is shaking strongly, you need to head for the hills.”



Debris of every kind is spread across a beach in Leone, American Samoa, following the 2009 tsunami. photo by Casey Deshong

Emma will use the PADM to develop a descriptive piece around behavioral response to the earthquake and tsunami. Emma’s research is unique because the model has never been applied to a tsunami or to a non-Western culture.

“Traditionally, these models have not been used in diverse settings. They’ve been used predominantly in Western cultures in the continental U.S.,” Emma explained. “Being able to use this data set in a different setting will definitely help us understand more about the cultural nuances that the model needs to address.”

There is no way to tell that there will be an impending tsunami until after the submarine earthquake has already occurred. There are three waves of energy that run through the ground after an earthquake begins. The primary wave, also called a compression wave, is the fastest, travelling at several kilometers per second. Compression waves



→ Emma Apatu enjoys her time in Honolulu during the Asia Pacific Leadership Program.

photo courtesy of Emma Apatu

travel through the Earth and aren't easily felt by humans. Sensitive instruments, like seismometers, can sense this first wave and so can some animals.

The second wave of energy, called a shear wave, is slower than the first one. The shear wave actually causes the ground to move enough that people can notice it quite easily.

"A whole series of things start to happen in terms of people responding to the threat of a potential tsunami," Dr. Gregg said. "They'd been told [in American Samoa] that there could be just a few tens of minutes between the time the earthquake happened and the time that the waves arrive on the shore, so they're supposed to run inland to higher ground as far as they can."

Emma visited American Samoa twice to organize interviews with the local population and learn about how they reacted to the earthquake and subsequent tsunami.

The third wave of energy from an earthquake, called a surface wave, is the slowest and also the most damaging. By this point in the 2009 earthquake, the island's formal alert system was in full gear, with warnings on the radio, TV, and Internet. But Emma's focus is on the informal exchanges between residents and what kinds of channels they used to ensure their safety after the signs of a tsunami threat.

"Many people want to communicate informally," Dr. Gregg explained. "They want to call someone that they know on the cellphone, or on the telephone, or on the radio to find out if they're OK. They want to go physically to the place to see if the people are OK, like a grandparent, a parent, or a sibling."

The closer the island is to the source of the earthquake, the smaller the time interval between the earthquake and the first tsunami. American Samoa was fairly close to the starting point of the earthquake, only 100 miles north of the epicenter.

"The time between the passing of the first earthquake waves and then the second and third waves was very quick, so the people were alerted to the fact that an earthquake had happened almost instantaneously, because they couldn't stand up or their home was shaking," Dr. Gregg said.

"It was really a life-changing experience being able to visit places I never dreamed of seeing before, like China, and to really look internally and really ensure that I have a set of values that I want to go forward with for the rest of my life"

In addition to studying the formal and informal responses of the inhabitants of American Samoa to the 2009 tsunami, Emma also plans to look at cultural perspectives related to evacuation response.

With a collaboration between the College of Public Health and the Department of Geosciences, Emma was able to work with Dr. Gregg, an expert on earthquakes and tsunamis, while pursuing a degree in public health. When considering ETSU, Emma expressed her interest in exploring public health issues in island settings. When she learned about Dr. Gregg's well-known work on natural hazards on islands, it was easy for her to decide that this is where she wanted to be.

"This kind of interconnectivity is one of the valuable things about being at ETSU," Dr. Robert Pack, professor and Associate Dean for Academic Affairs in the College of Public Health, said. "Dr. Gregg's work is internationally known, and though he is not in the College of Public Health, he works closely with our faculty and students. In fact, while I am Emma's dissertation advisor and chair, Dr. Gregg has served as world-class research mentor to her in the application of public health principles and models to natural disasters of geological origin."

While working on collecting research for her dissertation, Emma also received a fellowship to attend the Asia Pacific Leadership Program, the premier program on Pacific-regional and island leadership



→ From left to right, Dr. Gregg, Dr. Slawson, Emma Apatu and Dr. Pack

photo by Sara de Miguel

sponsored by the East-West Center at the University of Hawaii in Honolulu.

"It was really a life-changing experience being able to visit places I never dreamed of seeing before, like China, and to really look internally and really ensure that I have a set of values that I want to go forward with for the rest of my life," Emma said. Just being in the presence of amazing leaders really had an impact on me and what I value."

In addition to Emma's research she also has a strong passion for developing community health programs. Last year, she was awarded a UnitedHealth Heroes grant through Youth Service America to work with the Boys and Girls Club of Johnson City, the College of Public Health, and ETSU's women's soccer team. The program offered free soccer clinics and healthy food education to children at the Club.

Emma eventually wants to combine her interests in natural hazard preparedness and health promotion program planning to develop a Community Health Practice Innovation Lab.

"I see myself as a person that bridges research and practice," Emma said. "I want to work in the translation of it, to be on the face of new knowledge, but also create pro-

grams that prepare people for natural hazards and increase health and wellness."

There is no way to tell that there will be an impending tsunami wave until after the first underwater earthquake has already occurred.

grams that prepare people for natural hazards and increase health and wellness."

Emma presented some of her research at the European Geosciences Union conference in Vienna, Austria last year. She also presented in the National Hazards Workshop in Colorado last summer. Emma was awarded first place for her poster presentation at the 2012 Appalachian Research Forum.

"We were excited to be able to recruit her to our program," Dr. Pack said. "When she graduates this year, her work will serve as a great example of what's possible in terms of translating public health theory to practice."

The research for her dissertation was supported by a grant awarded to Dr. Gregg from the National Science Foundation.

# Where are they going?

## LOGAN VESS

Degree: Master of Arts in Counseling (with a concentration in Higher Education)

- What doctoral program will you be attending?  
Kent State University, Counseling & Human Development Services
- Will you receive funding?  
Yes. I was very pleased to learn that I will be receiving a graduate assistantship at KSU.

- How has your master's degree helped you?  
I have learned what it takes to make good grades in a master's program and what is expected of students who are at this level. My professors and classes have helped increase my knowledge in the areas of counseling and higher education. I believe this will be helpful in my work with clients as I further my career.

- What professors/advisors were instrumental in helping you?  
I was extremely fortunate in being able to work with Dr. Karin Bartoszuk. Throughout my time working as her graduate assistant, so many amazing opportunities have arisen that may not have been possible if I had worked with another professor. We have worked on research together and our findings have been presented at national and international conferences. In working on this research, Dr. Bartoszuk has helped me understand not only how to conduct good research, but she also helped spark an incredible interest for research within me.

I can firmly say that there is a very good chance I would not be progressing on to a doctoral degree if not for the help, instruction and encouragement.

I would also like to mention Dr. Graham Disque and Dr. Rebekah Byrd from the counseling program as well. Both professors were extremely helpful in my development as a counselor. I am thankful for their wisdom, guidance and kindness throughout my career as a student.



photo by Sara de Miguel

- Why did you choose to pursue a doctoral degree?  
Working with Dr. Bartoszuk and the wonderful professors from my program have led to my desire to become a professor. I feel strongly about the power of counseling and want to gain as much knowledge about it as possible.  
Beyond that, I genuinely love the college environment. I enjoy a place where learning and research are placed at the forefront.

- Will you expand on the topic you worked on during your master's?  
I plan to expand on my research in emerging adulthood and higher education during my time at KSU.

- What advice would you give to current graduate students who would like to pursue a doctoral degree?  
"There's no line on your vitae you don't love." This was good advice that was given to me by Dr. Bartoszuk. Although humorous, it has certainly held true for me. I would encourage my fellow graduate students to pursue every opportunity they can to become involved in groups, committees and projects related to their interests.  
Try to maintain the best GPA you can, and also try to do as well as you can on the dreaded GRE.

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