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Fall 2014

### Illuminated Magazine

School of Graduate Studies, East Tennessee State University

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# illuminated

MAGAZINE

fall  
2014

ETSU  
SCHOOL  
OF  
GRADUATE  
STUDIES

VOLUME 4  
NO 1

{ GRADUATE STUDENT }  
{ RESEARCH MAGAZINE }



# ILLUMINATED



## 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. / Karin Bartoszuk, Ph.D. / Brian Maxson, Ph.D.  
Dean / Associate Dean / Assistant Dean

## //GRADUATE STUDENTS & ADVISORS//

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

You might be a perfect fit for Illuminated. There is more than one way to  
// get involved //

### ▶ // For current graduate students and their advisors:

Are you or one of your graduate students working on a culminating experience (e.g., thesis, dissertation, capstone)? Your research could receive additional exposure through *Illuminated* Magazine and help educate the rest of the campus about your department and program. This is a unique opportunity to get your work recognized!

### ▶ // For current graduate students and their advisors:

Did you or one of your students get accepted into an excellent doctoral program or receive an excellent career opportunity? We want to hear about it! Share your story in the "Where Are They Going?" section.

### ▶ // 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.

Form available: [http://www.etsu.edu/gradstud/documents/illuminated\\_nomination\\_form.pdf](http://www.etsu.edu/gradstud/documents/illuminated_nomination_form.pdf)

For more information on nominating students or getting featured in *Illuminated*, please contact:  
Dr. Karin Bartoszuk, bartoszu@etsu.edu

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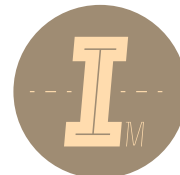
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Literature and Language, M.A.



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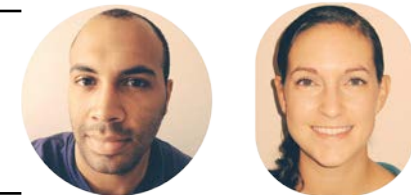


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**Geoff Adebonojo**

English, M.A. & Teaching English to Speakers of Other Languages (TESOL) Certificate

**First, the basics about your degree at ETSU:**

Degree : English, M.A. TESOL Graduate Certificate  
Department of Literature and Language  
Year of Graduation: 2014

**Where do you work?**

I am a guest lecturer of English at Meisei University in Hino, Tokyo.

**What is your position about?**

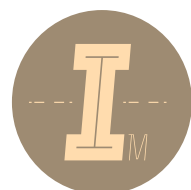
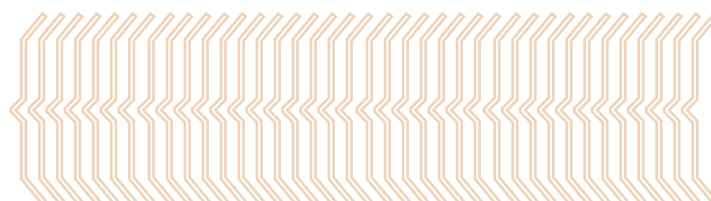
I teach first- and second-year English classes to Meisei students, as well as three higher level Communication classes in the Department of International Studies. There are also informal "Language Lounges" where students can come to practice their English.

**How have your master's degree and TESOL Certificate helped you (personally and/or career-wise)?**

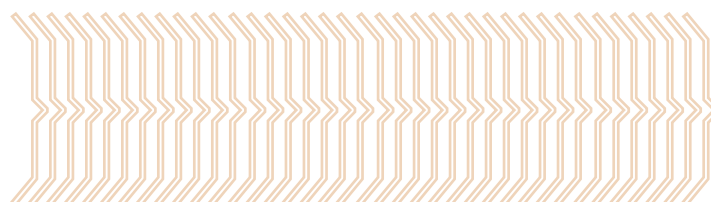
The TESOL courses gave me a wide familiarity with various theories concerning language acquisition. Now I get to test them.

**What advice would you give to current graduate students?**

If you're going to study English at the graduate level, you should be studying things that stimulate you. It is an established (oft bemoaned) fact that job opportunities are a function of who you know. Let your professors get to know you as passionate and deeply engaged, because your passion is your greatest asset. ●



**ILLUMINATED**  
MAGAZINE



**Marla Perna**  
Biomedical Science, Ph.D.  
Emphasis in Anatomy  
// 2012

**First, the basics about your degree at ETSU:**

Degree: Biomedical Science, Ph.D.  
Emphasis: Anatomy  
Year of graduation: 2012

**Where do you work ?**

Vanderbilt University Medical Center, Nashville, Tennessee

**What is your position about?**

I am a postdoctoral fellow in the department of Pharmacology. My research is on mitochondrial dysfunction in bipolar disorder.

**What's your favorite part about the research?**

What I love most about research is that you are constantly solving problems and learning new things, whether it is new findings in the literature, or findings from your own experiments.

**How has your degree helped you (personally and/or career-wise)?**

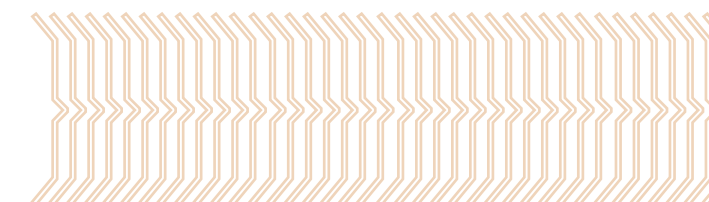
The master's program at ETSU taught me that I wanted to pursue a career in research, which led me to a doctoral program, where I earned a Ph.D. in Biomedical Science.

**What advice would you give to current graduate students?**

Remember that the graduate degree is only the beginning. You will continue to learn and grow as your career progresses. Also, ask a lot of questions and find a great mentor. If you find the right mentor, you will be successful.

**Final thoughts:**

I would like to give special thanks to the department of Psychology, where I earned my master's degree, and especially to my mentor, Dr. Russ Brown. During my career at ETSU (both with my master's and Ph.D.), Dr. Brown was a constant source of support. His mentoring helped me to achieve both degrees and a postdoctoral fellowship at a major research institution. Additionally, Dr. Brown has continued to mentor me in the two years since graduating from ETSU, and his support aided me in obtaining a second postdoctoral fellowship that will allow me to transition into independence. ●



# //EVIDENCE FROM THE EARTH

## RESEARCHING CRANIAL MATERIAL OF MIO-PLIOCENE SALAMANDERS AT THE GRAY FOSSIL SITE

by Brandy Nickels//

*"I have always been interested  
in the creepy-crawlies."*

Hannah Darcy grew up in Florida surrounded by a variety of wildlife, especially lizards and amphibians. "I have always been interested in the creepy-crawlies," Hannah recalled when asked about her interest in Paleontology. Today, her childhood interests are developing into a career. She completed her Bachelor's degree at the University of Florida, where one of her professors knew Dr. Jim Mead, her current research advisor, through years of work in the field. When she heard about the graduate programs at ETSU by visiting a booth set up during a conference, she was encouraged to apply for the Master's program in the Department of Geosciences. She is currently working on research for her Master's thesis studying salamander fossils found at the Gray Fossil Site, a local excavation landmark.

"The site is home to a diverse collection of fossils including impressive vertebrates like rhinos, red pandas, and tapirs, as well as insect, plant, and pollen remains. It's extremely rare to find all of those at one site. The Gray Fossil Site is Mio-Pliocene in age (about 4.5 to 7 million years old). It is one of only two inland sites of this age in the eastern United States, and one of the only fossil localities in the world with a functional museum, lab, and collections on-site," Hannah stated. Most of the sites in the eastern part of the country are aquatic, but Gray allows researchers to discover migratory patterns of species by connecting their findings with modern habitats across the world. Only 1% of the site has been excavated, and Dr. Mead expressed, "We think we know what's going on, but every year we find something new." Hannah and the rest of the team are excavating now at what used to be a pond, but there is cross-bed sediment elsewhere on the site, which indicates a stream or river. Hannah stated, "We are home to the largest biodiversity of salamanders today." Plethodon salamanders are very common here, but there is also one species found in New Mexico and a few in California. One

theory is that they migrated from the Appalachian Mountains to those sites. There are many salamander fossil remains at Gray, but most of them have been identified using vertebra. Hannah began using cranial material found at the Gray Fossil Site to take the research further, possibly to the genus level. Cranial material can be specific to species, so she is capitalizing on an area that has not been researched extensively. We all recognize the skull of most animals, but the salamander has several tiny bones throughout its jaw and extra rows of teeth. Hannah will be focusing primarily on an isolated bone found in early May 2014 called the vomer, meaning "the roof of the mouth." It is a tooth-bearing bone in the salamander that is difficult to recognize and identify, and it is often overlooked because of its size. Hannah narrowed down the isolated bone to a few species and is waiting on permission from North Carolina State University to look at their collections. Hannah has taken pictures and will have to illustrate the bone herself due to a lack of images. The isolated bone has two possibilities for identification. It could belong to a fairly common group found in the eastern United States. However, it also closely resembles a group that only lives in the Pacific Northwest today.

Another discovery at the site will be the second component of her research. "We found an articulated specimen which is rare," Hannah stated. Usually researchers will find isolated bones not associated with anything in particular, but in one case they found a slab that had the vertebral column, limbs, and a skull attached. The articulated specimen was taken apart when discovered, so Hannah will be taking pictures of each part and piecing the skeleton back together through illustrations. She is also identifying bones in order to label them for her thesis. Hannah's research correlates to the habitat of the Mio-Pliocene salamanders.

*Articulated specimen of salamander  
(vertebrae and limbs)*



// "We are home to the largest biodiversity of salamanders today." //

When sediment was being deposited, the Mio-Pliocene boundary was much warmer than it is in Gray, Tennessee today. Since then, we have gone through some cooling, and now we are heating back up again. Knowledge about our climate history has definite implications for climate change in the future. Hannah stated, "Salamanders have very specific needs in terms of temperature and humidity, so if you know who is there, you can have some idea of what the climate was like at the time." This allows researchers to make predictions about what current species might do if the climate changes in the future.

A lot of amphibians are having issues with a fungus that is causing extinctions in frogs and salamanders; new research says that this fungus is temperature-dependent. Consequently, the warmer it gets, the worse amphibians are doing; habitat loss and this fungus are wiping them out. Researchers know it was warmer back then because they have found alligators at the Gray

Fossil Site. Researchers believe that the climate was similar to South Carolina today based on plant fossils. Researchers know that other warm-climate animals such as the gila monster, which is only found in the Southwestern United States today, were present, because their bones have been found at the Gray Fossil Site.

Based on genetics, many groups specific to South America and Asia today are believed to be descended from the creatures found at Gray Fossil site. Dr. Mead expressed that Hannah is working on a small piece of a huge puzzle considering that Gray is such a unique site. "We have this really interesting connection with Asia at Gray, because they were connected at that time," Hannah said. Many groups known from Gray are found in Asia today, including salamanders, alligators, and the red panda. Dr. Mead spoke of his work in China twice during the summer of 2014, and he hopes to coordinate a 6-week research stay in Beijing for Hannah next summer.

She also prepared a poster presentation for early November on the New Mexico and Arizona salamanders as a side project. It was primarily focused on vertebral remains, and the conference was held in Berlin, Germany for The Annual Meeting of the Society of Vertebrate Paleontology. This conference highlighted the new remains of a previously found species as well as two new species not found in the fossil record. Berlin was a whole new audience where Hannah was the voice from America for the salamander fossil research and findings in New Mexico and Arizona.

Many of the research trips that Hannah and Dr. Mead have made involve camping, working in remote areas, lots of physical work, and spartan living conditions. The team has visited the ice-age site in Saltville, Virginia several times. Hannah and Dr. Mead have developed a close working relationship through their trips. Dr. Mead expressed the value of the close relationships Hannah has made with her classmates, and future colleagues, as he remembers making lifelong friends during his graduate work. When asked about her future plans, Hannah said after graduating in May of 2015, "My hope is to move straight into a Ph.D. program and continue this sort of research."



Left, Hannah Darcy // Right, Dr. Jim Mead



Photos by Tijana Stevanović



Photos by Tijana Stevanović

## //HEALTHY PLANT-BASED FATS:

### AN ONGOING EXPLORATION OF TRIACYLGLYCEROL OIL ACCUMULATION IN PLANTS//



by Brandy Nickels//

Motivated by his love for learning and teaching others, Parker Dabbs (Quillen Scholar) is conducting research in Dr. Aruna Kilaru's Biology laboratory at ETSU for the Master of Science degree after graduating from Vanderbilt University with his Bachelor's degree. He is studying the genes that affect oil accumulation in plants in order to find ways to increase oil production. The goal of Parker's research is to contribute to the scientific community's efforts to increase oil production in plants for human use, because oils like those found in the avocado are highly beneficial to human health.

Parker's advisor, Dr. Kilaru, began research on oil biosynthesis during her time at Michigan State. She has been able to continue the research with her students at ETSU. "Parker's research on identifying candidate genes that likely control oil biosynthesis in plants relies on analyzing large sets of data that were generated by a group of researchers at MSU, including myself," she stated. Now, they continue the research with the help of funds received from ETSU's Research and Development Committee (small and major grants) and also the Sigma Xi-Grants-in-Aid for Research awarded to Parker.

The question that Dr. Kilaru began asking during her initial research was, "What regulates oil biosynthesis in plants?" This question is the focus of Parker's research, as he conducts extensive and time-consuming experiments. His research is funded by the Fraley Memorial Research Award and a research grant from the ETSU Graduate School, which has allowed for the purchase of supplies that makes the time-consuming stages of research much easier. With the initial research question in mind, Parker spent the first semester of his research comparing gene expression data for approximately ten species and different tissue types that accumulate oil. His goal was to identify genes that are commonly associated with high oil content. He focused on available transcription data of thousands of genes in order to create a list of ten candidate genes for his research, focusing on transcription

factors that were highly expressed during periods of oil accumulation. The process of creating a candidate list was arduous, and took an entire semester to complete. The year 2014 brought him into the next phase of research, which involved the various steps in the process for validating the function of candidate genes. He obtained the DNA sequences for each candidate gene. Then, he cloned each gene into a bacterial plasmid in order to subsequently transform it into an *E. coli* bacteria strain. *E. coli* bacteria are optimal for introducing the plasmids into the system and "storing" the gene of interest until the next step is taken in the process. During this middle stage, Parker is using polymerase chain reaction (PCR) in order to obtain the gene sequences. A PCR is a technique to amplify DNA of interest in a sample. This technique is often used to isolate and clone a gene of interest into a system where its function can be verified. However, the next step requires each plasmid, carrying the gene of interest to be transformed into *Agrobacterium tumefaciens*. Parker is currently at this stage of the research and is validating if some of the selected genes indeed play a role in accumulation of oil. During the last stage of his research, he will infiltrate tobacco leaves with each transformed

Left, Dr. Aruna Kilaru /// Right, Parker Dabbs



strain of *A. tumefaciens* and observe the response of the leaves. His hypothesis is that the leaves may accumulate more oil as a result of the introduction of a candidate gene via *agrobacterium*-mediated transformation that may play a role in the regulation of oil biosynthesis. He will present his future findings and his research in a department seminar and will defend his thesis before he graduates in May 2015.

"Setting up reactions is always a little suspenseful, because you don't know if it will work in the end. It may be days of work before you can finally confirm that the procedure was a success, but somehow that makes it more interesting for me."

Parker plans to pursue a Ph.D. in Microbiology or Immunology and become a professor. His interest in biology and his love for teaching will work together, and as Dr. Kilaru states, "I can foresee that he will be an excellent professor one day."

*// The goal of Parker's research is to contribute to the scientific community's efforts to increase oil production in plants for human use. //*

Dr. Kilaru says of Parker, "He is a hard-working, self-motivated, and intelligent student and likes problem-solving...I admire that Parker gives his best in whatever he is doing." As a mentor, Dr. Kilaru encourages students to be independent and attempt to solve problems by using all available resources. She also encourages students to pursue independent funding, which is why Parker has been the recipient of multiple grants and scholarships.

She sees that Parker is not afraid to make mistakes and is proactive in the lab; he has enjoyed the process of trial and error. Parker says of his research in the lab,



# // ETSU HOUSING AND RESIDENCE LIFE //

by Brandy Nickels//

## *Who can use the Department of Housing and Residence Life?*

Housing is available to any enrolled student, staff, and faculty on a temporary and space-available basis. Temporary stays are defined as a set period of time of up to a year depending on availability and circumstances.

## *What accommodations are available for Graduate students?*

Twelve years ago, ETSU began renovating and has now added new student housing developments. The goal was to provide as many different types of housing as possible in different locations around campus. Now, there are several options for students to choose from.

- /// Residence halls: 2 people per room with community bath
- /// Suites: two rooms with a connecting bath
- /// Governors Hall (newest): single bathrooms
- /// Centennial Hall: two bedrooms and efficiency apartments

Buccaneer Ridge was added to provide more space for graduate students and sophomores and above. Buccaneer Ridge is traditional housing for grad students, but they can live anywhere they choose depending on their preferences for cost and amenities. Buccaneer Ridge V also has one-bedroom apartments for couples with one child under seven years old and single efficiencies for graduate students.

## *Special Circumstances*

/// Interns from other schools may arrange a temporary stay while they are here on rotations as long as space is available. The Department of Housing and Residence Life must receive a letter from the student's home institution and his/her supervisor at ETSU.

/// Graduate students who are taking online classes or are living off campus and need to come to campus for rotations/ classes may arrange accommodations for the specified time period (i.e., 1-2 days per week) as long as space allows.

/// Dissertation Boot Camp/other meetings/conferences- students have made arrangements to stay temporarily.

/// Bad weather accommodations may also be made when students have classes during the occasional winter storm or emergency weather event. Call ETSU Public Safety in order to check in for the night during a weather event. Leave a bag with basic necessities in your car in case you need to stay overnight.



Dr. Bonnie Burchett //



# // THE CREATIVE PROCESS //

## PAINTINGS INSPIRED BY HISTORY AND CONNECTIVITY

by Brandy Nickels//

/// There may also be temporary housing available for students in transition on a case-by-case basis. The department is here to address the needs of students and help them reach their educational goals.

### Conferences and Events

Any on-campus group meeting or conference attendees may be accommodated during their stay if space is available. Arrangements need to be made well in advance.

### What is the benefit of living or staying on campus temporarily?

/// The cost of staying per night averages to be much less than the cost of a hotel room in the area. The prices for individual and temporary stays range depending on availability.

/// Some students choose to live on campus for the spring semester only. The contract may be set according to student needs and availability.

/// We have a Room Swap Program where students apply and allow us to show their room. They get paid to keep their room in showing condition.

### Important to Remember...

Your agreement with Student Housing is a contract and is bound to terms and conditions just like any other rental

agreement. Getting out of a housing agreement requires going through the appeals process, and housing agreements are not cancelled just for the convenience of the student.

### Job Opportunities

The Department of Housing and Residence Life employs graduate students to be Resident Directors. The job requires the graduate student to supervise a hall or area in one of the housing facilities. The Assistant Resident Director is an undergraduate and reports to the RD. They receive management, human relations, and supervision experience. Because the position is a Graduate Assistantship (GA), they are provided a furnished apartment and a stipend. Being a Resident Director is a nice complement to a graduate education, and provides invaluable life experiences. The GA positions are posted on the Housing website as they become available.

### How do I contact the Department of Housing and Residence Life to schedule a tour and/or inquire about living on campus?

The department's website (<http://www.etsu.edu/students/housing/>) provides information on all the categories mentioned above. Students may apply online, and email is the easiest way to get a quick response and make arrangements. Please contact us for any questions or concerns. •

/// Phone: 423-439-4446 /// Fax: 423-439-4690  
/// Email: [Housing@etsu.edu](mailto:Housing@etsu.edu) /// Hours: Mon-Fri 8:00 am- 4:30 pm



Katherine Block //  
Photos by Tijana Stevanović



Photos by Tijana Stevanović

In addition to creating work for her Master's Degree in Studio Art at ETSU, Katherine Block is a mother, a nurse, and an artist with work showcased in a Chattanooga art gallery near her home. An exhibit of her most recently completed series, entitled *The Arab Spring*, was held at ETSU December 5th-10th, 2013. Her love of art began in high school when her talent was recognized by her art teacher, but she pursued a nursing degree in college and was a registered nurse for 32 years. She went 6 years part-time with three children to earn her Bachelor's Degree in Fine Art in 2000 from the University of Tennessee, Chattanooga. A few years later, Kathy decided to pursue the M.F.A at ETSU because she loved the area, looked forward to working with Mira Gerard, and she felt close to home and her family. She sees her art as a way to express emotion and exhibit personal growth. Kathy specializes in abstract or nonobjective art. She states, "I've always appreciated the Abstract Expressionists from the '40s

and '50s." Usually her concepts come out of an experience that she translates into color and form, spacial relationships, and texture. "I try to communicate the experience that I had through the paint, and the color, and the texture," she expressed. Kathy says that her paintings take on a life of their own: "They become these living, breathing...entities... they start to tell you what they want." Her process in creating pieces is organic and evolves as the art evolves. She has learned to be open to new methods and to be patient in her creative process. Gerard, Kathy's advisor, spoke of a unique opportunity for her students to have their work critiqued by the world-renowned art critic, Jerry Saltz. "We brought him here through the Mary B. Martin School of the Arts...he met individually with Kathy and the other graduate students and gave them one-on-one critiques." Kathy received heavy-hitting criticism of one of her pieces, and she decided out of frustration to take the piece home and burn the surface

of the painting. The sheen that resulted inspired her to experiment and create the final result, "Spring Forever." Kathy was inspired by Robert Motherwell, an abstract painter from the '40s-'60s, who "had this experience at a poetry reading" while visiting a college campus and created over 100 paintings in a series entitled *Elegy to the Spanish Republic*. Kathy states, concerning the revolution in Egypt, "I was so moved by the bravery of the Egyptian people to come out and overthrow the government and how united they were...I was emotionally overwhelmed by the whole process."

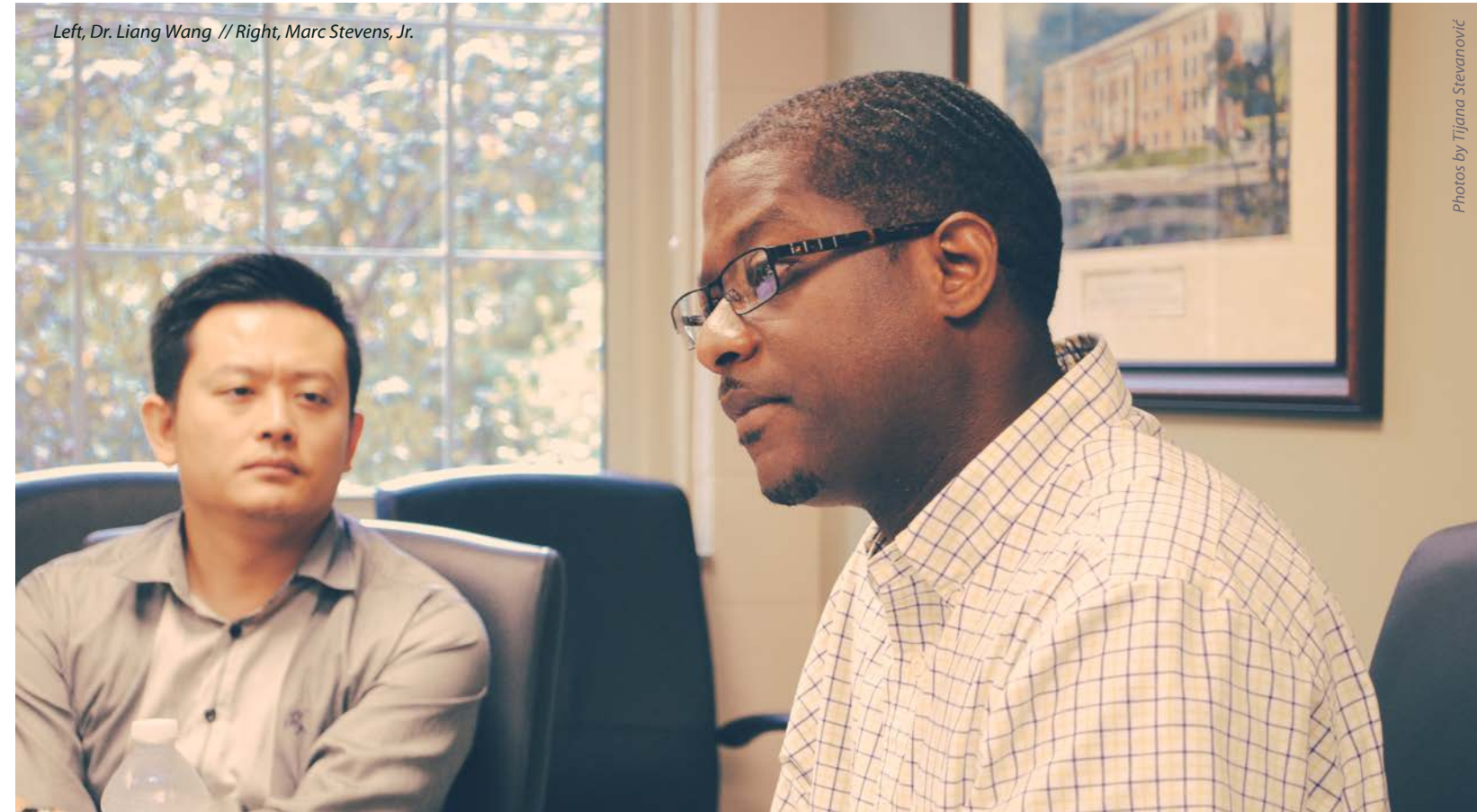
Her inspiration for the exhibit came from graffiti, rap music, powerful demonstrations, and violence that occurred during the events in Egypt. She included significant phrases in her work that carry the emotions of each event. Kathy also acknowledges that regardless of the inspiration or the history of the piece, the viewer comes to her art with his or her own perceptions and experiences. On another level entirely, Mira states that the viewer may appreciate abstract art based on the "forms, mark-making, and structure" alone. Kathy knew that she had to depart from *The Arab Spring* and to continue working with the Egyptian people in mind. She began exploring their liberation and her personal experiences of liberation. She began her newest work by writing on the canvas secret ideas that had held her back personally from feeling liberated. She covered the secrets with paint and began the process of creating art inspired by "flashes of color" and the bright hues of spring and rebirth. Kathy explained, "In the end, my painting will communicate to somebody whatever it needs to communicate to that person."

Gerard proposes that, "A different standard is imposed on visual art...people are afraid of having their own thought or reaction" to nonobjective art; "a painting communicates an emotion without defining all of the things that were in the painter's head." The idea is that art speaks its process, in the case of "Spring Forever," burning, which reflects the artist's emotional connection to others. The distressed surface is

more than just a technique. People who are outside of art-making practices are often confused about what they should think or feel while viewing abstract art. The truth is that art is valuable according to the connections made by the viewer; whether it is a simple appreciation of color, or an emotional reaction to the story of the painting.

Mira spoke about the binary that is commonly used to claim that there are not standards in an art program and that subjectivity rules. What is vital is that artists mentor each other and maintain an active relationship and exchange. Mira states, "When students enter the program at such a high level, we are committed to challenging students." Critique can be brutal, because their work is directly connected to emotional response and personal creativity. Gerard explains, "We treat every artist as a singularity." The approach of the artist is critiqued, and the amount of rigor and level of creativity shows in their work. Kathy thinks of the process as organic, and states, "we are allowed to go there, but we are guided in the process...If one direction is not working," we are encouraged to change directions. "Mira understands where you are and...knows how to push you in a direction without making you feel like a failure." It is a relationship based on trust and frequent guidance in the creative process.

The M.F.A. is a three-year program and is considered to be the terminal or final degree. The M.F.A. Thesis Exhibition includes Kathy's core work and the supporting document of between 40 and 60 pages discussing personal process and journey. It also includes specifics related to influences from other artists and philosophies. Kathy's thesis will include detailed descriptions of the paintings, how they came into conception, and how they were created. Kathy's plans for the future include working at the university level teaching art. She wants to continue her creative work and currently has work in a local gallery. Kathy will have her thesis show during the last two weeks of April of 2015. Above all, she wants the rest of her life to be spent immersing herself in her passion. •



Left, Dr. Liang Wang // Right, Marc Stevens, Jr.

Photos by Tijana Stevanović

## //MATERNAL AND CHILD HEALTH:

### INFORMING AND ENCOURAGING HEALTHY FAMILIES//

by Brandy Nickels//



Left, Kathy Block // Right, Mira Gerard, MFA



Photos by Tijana Stevanović

**M**arc Stevens, originally from Patterson, Louisiana, earned a Master's degree in Public Health from East Carolina University and came to ETSU pursuing a Doctor of Public Health degree. His interest in family health was sparked when he attended a Preconception and Peer Educator's workshop provided by the United States Department of Health. One of the issues discussed during the workshop was infant mortality- in regards to when an infant dies before its first year of birth. The presentations discussed the disparity between White/Non-Hispanic women

and African American women in infant mortality rates. The infant mortality rates associated with African American women in the US are twice as high as rates associated with Caucasian women. Stevens was shocked by that statistic and became interested in researching the causes. For Marc, a career in the field of Public Health will allow him to apply his knowledge in practical ways and to make a positive impact. Although he had already fulfilled the field-practicum requirements for the degree, he wanted to gain more experience in the field of epidemiology. He applied and was granted an

internship during the summer of 2014 at the Louisiana Department of Health. "It was an opportunity for me to go home [to Patterson, Louisiana], do work in my field, and also spend time with my family," Marc stated. His major role at the Department of Public Health was to analyze data from the Pregnancy Risk Assessment Monitoring System (PRAMS) survey of 2011. PRAMS is a survey distributed by the CDC (Centers for Disease Control and Prevention) in every state in order to inform policy and reduce the rate of infant mortality and low birth weight. Each state coordinates its

own survey, with a population-based surveillance system which randomly selects pregnant women to participate. A notification letter is first mailed to the mothers followed by the survey during the following weeks. The questions asked on the survey address smoking, alcohol use, and prenatal care services. The data is used to identify the behaviors that make a difference in infant mortality and birth weight. PRAMS is also used to plan, implement, and monitor health programs as well as to inform government policies. The Bureau of Family Health, where Marc worked, is responsible for creating, distributing, collecting, and analyzing the survey data to inform policy for the state of Louisiana. The 2011 data was skewed based on a staffing change during the analyzing stage of the process. Officials estimated that approximately 7,000 women who were eligible to be put into the system for random selection to receive the PRAMS survey were not included. Marc was brought in to analyze the data and present his findings on the 2011 survey outcomes.

Of the 62,240 births that occurred during 2011 in Louisiana, 59,914 mothers were eligible to receive the survey. After analyzing the data and researching the processes that two employees had completed, Marc found that only 170 women were left out instead of 7,000. This number is average for the number of mothers left out due to error. When he compared the mothers who were included and those who were excluded, he noticed that generally mothers who were left out had a significant chance of giving birth outside of a hospital. Additionally, they were more likely to have a child with a low birth weight, and the child was less likely to live during the birth certificate processing period. The number of women excluded does not make any significant impact on the final 2011 PRAMS data for Louisiana. Marc expressed that the error simply shows 170 missed opportunities for obtaining valuable feedback from mothers, although the final records for 2011 are statistically correct. The second part of his research was looking at the response rate and suggesting ways for increasing the number of survey responses. Approximately 56% of the women who received the survey responded. The CDC has a standard response rate of 65%. Women who did not respond were typically younger African American women who had no college education, did not seek out prenatal care, were on Medicaid, were more likely to be unmarried, and were less likely to breastfeed. As a part of his presentation to the department, Marc suggested ways to improve the coding for multiple births so that children would not be left out. He also suggested offering new incentives for returning the survey and new notification letter formats with a more encouraging tone.

Knowledge gained from the PRAMS survey about breastfeeding practices helps inform policies for workplace support for infant care. The data can be used to increase healthy practices for pregnant women and mothers. The Title V Block Grant funds many programs in the Bureau of Maternal and Child Health, so data is required in order to receive funding from the federal government. During his time at the Louisiana Department of Health, Marc participated in their National Breastfeeding Week. Breastfeeding is known to help mothers lose weight

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and helps children maintain a healthy weight through adolescence. They focused on the importance of a supportive workplace environment for breastfeeding which allows mothers privacy and opportunities to breastfeed while at work. Their goal was also to inform fathers that their support strongly influences breastfeeding success for their partners and children. Marc emphasized the importance of the family unit and expressed that the father's involvement and support impacts the health of the child before it is born.

Stevens' dissertation research is in the beginning stages, and he is currently conducting a literature review in order to see how he can add to the body of existing knowledge. He wants to focus on low birth weight outcomes and is also interested in the father's role in infant health. He expressed, "Obviously the father is very important because they help make the child, so why should we leave out the father when it comes to raising the child." He would like to explore paternal influence on prenatal care, breastfeeding, and infant development outcomes. He prefers to focus on "having a unit of health" in which the mother and the father contribute to their child's health as well as their own.

Dr. Wang, Marc's advisor and mentor, expressed that his job was first to be an advisor, but that they have developed a close working relationship and conduct research together quite often. Marc served as Dr. Wang's Research Assistant and has published work in the European Journal of Pediatrics. He also won second place presenting at the Appalachian Student Research Forum. Dr. Wang stated, "Marc has grown as a professional, and we are very proud of him." Marc will be completing his dissertation and graduating in May of 2015. He says about his future plans, "I will pursue a postdoctoral 2-year fellowship program in order to gain applied epidemiology training. This training will enhance my epidemiology skills and prepare me to assume a leadership position at a state health department or federal agency as a maternal and child health epidemiologist."



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