

Southeastern Evolutionary Perspectives Society Annual Meeting 2017



*February 9-11, 2017
Tuscaloosa, Alabama*

University of Alabama

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KEYNOTE AND INVITED WORKSHOP

Keynote Speaker: Patricia Kelley

kelleyp@uncw.edu

Patricia Kelley is an evolutionary paleoecologist who works primarily on mollusks especially the evolution of the naticid gastropod predator-prey system. She received her BA in Geology from the College of Wooster in 1975 and her PhD from Harvard University in 1979. She has taught at New England College, University of Mississippi, University of North Dakota, and University of North Carolina Wilmington and was a program officer at the National Science Foundation. She is a former president of the Paleontological Society and president of the Board of Trustees of the Paleontological Research Institution. She received the Association for Women Geoscientists Outstanding Educator Award in 2003, the AWG Professional Excellence Award in 2011, research awards from UND and UNCW, and five awards for teaching excellence from UNCW and the UNC system. In 2014 she received the United States Outstanding Master's Universities and Colleges Professor of the Year award. Tricia retired from teaching in 2016 but continues to be professionally active. She is interested in the relationship between science and religion and, as the Paleontological Society's Distinguished Lecturer on Evolution and Society, she is active in promoting evolution education.



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Invited Workshop: Tyler Rhodes

tylerrhodesart@gmail.com

Tyler Rhodes is an artist and animator with an interest in science, interactive art, and education. His interest in art began with drawings and a love of dinosaurs and video games at a young age. His recent inspiration and work now centers on the sprawling "Evolution!" project: an educational process that involves "non-artists" and simulates evolution through drawings. These artworks form the basis for the various "Evolution!" animations and virtual reality project. Mr. Rhodes is a recipient of the Virginia Museum of Fine Arts Professional Fellowship for 2015-16, as well as the "Best Virginia Filmmaker" award for the "Evolution!" animation, and the "People's Choice" at the James River Shorts festival. "Evolution!" has also toured the world at the Anima Mundi animation festival in Brazil, the Educational Film Market at Hiroshima, and was featured in Stanford University's "Windows on Evolution" virtual gallery. His animations have also been featured on *Scientific American* and displayed at the Science Museum of Virginia and the Lewis Ginter Botanical Gardens. He studied Kinetic Imaging (experimental video and animation) at Virginia Commonwealth University, and currently works as an animator for the Science Museum of Virginia in Richmond.



SPECIAL EVENTS

KEPS Pre-Conference

Thursday, February 9th, 10:00am—4:10pm

Kids Evolutionary Perspectives Society (KEPS) is an organization promoting evolution education among youth and K-12 teachers. We invite teachers, children, parents, and inquisitive minds to join us on **Thursday, February 9th** in Smith Hall (Alabama Museum of Natural History) Room 100 for workshops addressing how to integrate evolutionary theory in the classroom.

FEPS Pre-Conference

Thursday, February 9th, 4:30—6:30pm

Feminist Evolutionary Perspectives Society (FEPS) bridges two scientific viewpoints that are often in opposition: evolutionary psychology and feminism. We believe that each can be unified into a productive study of the evolution of humans. FEPS will host a pre-conference workshop to continue the development of this organization and provide support for those looking to meld these perspectives in their research and personal lives.

Darwin PJ Party!

Thursday, February 9th, 7:30—9:30pm

Calling all evolutionary enthusiasts! Join us at *Grace Aberdeen Habitat Alchemy* for a *Creation* (Darwin biopic) themed party (science wear/pajamas optional)! Enjoy the conclusion of KEPS with like-minded primates, food, and games!

Darwin Dinner and Keynote by Patricia Kelley

Friday, February 10th, 7:00pm

Join us for a Darwin Dinner at the Embassy Suites at 7:00pm, featuring Patricia Kelley as the keynote speaker! Dr. Kelley's keynote will be on "Galápagos: How Darwin Evolved." (*Tickets for this event only can be purchased at registration for \$35.*)

"Network and Chill" Mixer

Saturday, February 11th, 7:00pm

Join fellow SEEPle for an end of conference mixer at *Loosa Brews*, Tuscaloosa's premier craft beer lounge and 'Barcade.' Featuring over sixty regional micro-brews, wine selections, and complimentary arcade room, this cozy downtown locale is only a short walk from Embassy Suites and T-town's many dining options. Come expand your professional network and toast the evening with a quality ale or soft drink! Located on University Boulevard behind Royal Cleaners across from the Federal Building.

NOTE FROM SEEPS BOARD OF DIRECTORS

SEEPS will not tolerate any form of personal or sexual harassment. Our society comprises members of all ages, social classes, genders, heritages, and creeds. Please be respectful and refrain from behavior or speech that would not be appropriate for a classroom.

However, photos and live tweeting are encouraged except when presenters indicate otherwise.

#SEEPS 2017

@SEEPSociety

SCHEDULE OF EVENTS

Thursday, February 9th KEPS/FEPS Pre-Conferences

KIDS EVOLUTIONARY PERSPECTIVES SOCIETY (KEPS) Workshops

LOCATION: Smith Hall Rm 100 (Alabama Natural History Museum)

10:00 a.m. – 11:00 a.m. **Anthropology is Elemental: A Sharable Model for Primary School Cross-Cultural Evolution Education**

C Lynn, H Tytus, JL Funkhouser, A Stewart

11:20 a.m. – 12:50 p.m. **Lunch**

12:50 p.m. – 1:50 p.m. **INVITED WORKSHOP: Evolution! Learning Science through Art**

T Rhodes

1:55 p.m. – 2:55 p.m. **Declawing the Dinosaurs: Lowering Teacher Anxiety in the Biology Classroom**

P Hawley

3:10 p.m. – 4:10 p.m. **"No More Monkeying Around!": Creating a Rigorous and Meaningful "Evolution Stories" Resource for Middle and High School Students (and Their Teachers!)**

J Mead

FEMINIST EVOLUTIONARY PERSPECTIVES SOCIETY (FEPS)

Workshop

LOCATION: Smith Hall Room 100 (Alabama Natural History Museum)
4:30 p.m. – 6:30 p.m. **The Feminist Evolutionary Perspectives Society**

SPECIAL EVENT

LOCATION: Grace Aberdeen Habitat Alchemy (2124 9th St.)
7:30 p.m. – 9:30 p.m. ***The Creation* (Darwin biopic) “Pajama Party”**
(Science-themed clothing or pajamas optional)

***Chairs for each session will announce speaker and elect someone to keep time.**

Friday, February 10th

SOUTHEASTERN EVOLUTIONARY PERSPECTIVES SOCIETY

LOCATION: Lloyd Hall Rm 132

8:30 a.m. – 8:45 a.m. Introduction from Site Host Christopher Lynn

8:45 a.m. – 9:00 a.m. Introduction from SEEPS President Amanda Glaze

9:00 a.m. – 10:20 a.m. **Session 1: Teaching Evolution**
Science and Beer...What Could Go Wrong?
C Ocobock
Southern (R)evolution: Where We Are and Where We Need to Be
A Glaze (Chair)*
Using Personal Genetics to Teach Evolution in Introduction Biology Class
A Pai
Evolutionary Story Telling for Middle School Students
J Mead

10:20 a.m. – 10:35 a.m. **Break** (Café in Lloyd Hall)

10:35 a.m. – 11:55 a.m. **Session 2: Animal Cognition and Ecology**
Primates or Perish: Can We Rescue Primate Biodiversity and Save Our Evolutionary Models By Rethinking Conservation?
S Alexander (Chair)*, L Cormier, C Lynn

Carbon Stable Isotope Ecology of Chacma Baboons (*Papio*), Bonobos (*Pan paniscus*), and Chimpanzees (*Pan troglodytes*) with Reference to the Paleodietary Patterns of Fossil Hominins

J Loudon

A Cross-Species Comparison of Pinniped Personality: Harbor Seals (*Phoca vitulina*) and California Sea Lion (*Zalophus californianus*)

A de Vere

Laterality of Eye-Use and Species Differences of Bottlenose (*Tursiops truncatus*) and Rough-Toothed (*Steno bredanensis*) while Watching Surprising and Unsurprising Events

M Lilley

12:00 p.m. – 1:30 p.m. **Lunch break**

1:45 p.m. – 2:20 p.m. **Lightning Round 1**

Social Support is an Adaptive Strategy against Stigma Stress: A Proposed Model

Nick Roy (Chair)*

The Sasquatch of the Sangha: A "Sighting" of *Allenopithecus* in Southwestern Central African Republic

C Jost Robinson

How are Catechol-O-Methyl Transferase and Dopamine Related to the Evolution of Human Cooperation

C VanWagenen, C Lynn

An Evolutionary Approach for Understanding Differences in Hostility between Heterosexual Men & Homosexual Men & Heterosexual Females & Homosexual Females

S Flores

2:20 p.m. – 2:35 p.m. **Break**

2:35 p.m. – 3:35 p.m.

Session 3: Health and Evolution

The Interactive Effects of the Biological and Behavioral Immune Systems

A Makhanova (Chair)*

Infectious Disease, Values, IQ, and the Wealth of Nations

R Thornhill

~~Ancestral Health: A Reply to Critics~~

~~JB Smith [CANCELLED]~~

LOCATION: Embassy Suites—Grand Ballroom

4:30 p.m. – 5:30 p.m.

Reception (Cash Bar)

5:30 p.m. – 7:00 p.m.

Darwin Dinner

7:00 p.m. – 8:00 p.m.

Keynote: Galápagos: How Darwin Evolved

P Kelley

8:30 p.m. – 10:00 p.m.

PowerPoint Roulette

*Chairs for each session will announce speaker and elect someone to keep time.

Saturday, February 11th

SOUTHEASTERN EVOLUTIONARY PERSPECTIVES SOCIETY

LOCATION: Lloyd Hall Rm 132

9:00 a.m. – 10:20 a.m.

Session 4: Communication and Evolution

The Signaling Function of Morality: Deontological Moral Decisions Improve Perceptions of Liking and Trust Relative to Utilitarian Moral Decisions

M Brown

Striving for Status: Dispositional Status Striving and Socioeconomic Status Influence Perception of Trustworthy and Affiliative Cues in Faces

C Lustgraaf (Chair)*

The Evolution of Bullshit

J Wakeham

10:20 a.m. – 10:35 a.m. **Break (Coffee/tea and pastries provided)**

10:35 a.m. – 12:35 p.m. **Session 5: Paleolithic Traces and Symbols**
Is Cyber Dependence Related to our Fireside

**Evolution? Blood Pressure and Skin
 Conductance between Fireside and
 Multimedia Relaxation Responses**

K Meighan, H Tytus, M Wanis, MJ Stein, CD
 Lynn

Semiosis on the Pleistocene Scene

M Kissel, A Fuentes

**The Evolution Underground: How Burrows
 Helped Animals to Survive Mass Extinctions,
 Diversify, and Change the Earth**

A Martin

Of Time and Traces

A Rindsberg (Chair)*

Walker County Seashore, 313 Million BC

D Kopaska-Merkel

**Paleozoic Surface and Behavioral Trackways from
 Walker County, Alabama: Preservation and
 Implications**

R Buta

12:35 p.m. – 2:40 p.m. **Lunch**

Business Meeting (Alabama Natural History Museum
 Rm 114)

LOCATION: Lloyd Hall, Hallway outside Rm 132

2:40 p.m. – 4:10 p.m. **Poster Session**

4:10 p.m. – 4:25 p.m. **Break**

4:25 p.m. – 5:10 p.m.

Lightning Round 2

Mosquitos and Moms: Biology and Culture during Recent Zika Outbreaks in American Samoa

Michaela Howells (Chair)*, C Lynn

"Evolve it Off (Your Tail)": Educating Undergraduates through Interdisciplinary Means

L King, M Howells

The Weak Shall Inherit the Earth: Multi-Level Selection Theory and Religious Involvement at First Wesleyan Church

H Acosta, C Fasel, C Lynn

Living in Shade: A Biocultural Assessment of Vitamin D in Mother-Infant Dyads

C Sweetman, M Burris

Using Gamett's Greater Bushbaby (*Otolemur gamettii*) As an Evolutionary Model for Food Choice in Primates

BK Smith

7:00 p.m.

“Network and Chill” at Loosa Brews

412 20th Ave, Tuscaloosa, Alabama 35401

*Chairs for each session will announce speaker and elect someone to keep time.

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ABSTRACTS

KIDS EVOLUTIONARY PERSPECTIVES SOCIETY

Anthropology Is Elemental: A Sharable Model For Primary School Cross-Cultural Evolution

C Lynn, H Tytus, JL Funkhouser, A Stewart, University of Alabama, cdlynn@ua.edu

Evolution is one of the foundational theories used in anthropology, yet neither evolution nor anthropology are systematically taught until high school—if ever—despite the fundamental importance of such concepts in STEM and other science-oriented fields. We offer a framework for introducing evolution concepts through primary school-level instruction in partnerships between university anthropology departments and local schools. We expose students in Tuscaloosa to anthropology while simultaneously training graduate and undergraduate students in implementing anthropological curricula in a public school setting. Our workshop outlines a means of sharing this program through cross-cultural exchange via video blogging. Video blogs are short videos complemented by text or voiceover. Their length makes them easy to digest and allows for quick production and dissemination. We are currently using camcorders, iPads, and open-access editing software to involve our Alabama students in creating a series of videos detailing the primary school anthropology and evolution learning experience. We caption these videos in languages used by our partners in Madagascar and Costa Rica, providing them directly as well as on our open access web forum. The children are given agency in generating content for these videos in a way that no other medium could facilitate. This program is a replicable, accessible resource for teachers across the globe to use for improving early education in anthropological and evolutionary concepts. The short-term goal of this project is to expose students in underserved schools to these concepts, the long-term goal being the widespread introduction of anthropology to future generations at an early age.

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INVITED WORKSHOP: Evolution! Learning Science through Art

T Rhodes, Science Museum of Virginia, tylerrhodesart@gmail.com

Learn about science, art and animation with award-winning artist and animator Tyler Rhodes! Together we'll create a series of creatures in a simulation of evolution using your own drawings, each drawing building off the last in a paper trail of evolution! Using very simple and easy to get materials, this activity can be performed almost anywhere and expanded upon to cover almost any topic that involves an evolutionary process.

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Declawing the Dinosaurs: Lowering Teacher Anxiety in the Biology Classroom

P Hawley, Texas Tech, patricia.hawley@ttu.edu

Evolution is the unifying theory of all biological sciences, yet teaching it in the classroom is repeatedly called into question. Consequently, teachers may feel uncomfortable teaching it or addressing students' concerns. This workshop will address the false controversies and questions that undermine teachers' confidence with the theory in an effort to help attendees teach effectively and navigate discussions concerning the nature of science and faith. Topics will include, "Why are there still monkeys?", the role of the second law of thermodynamics (and what it *really* says about evolution), a primer on materialism, how reptiles don't actually evolve into birds, to name a few. Many of the exercises will be useful for your students as well.

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"No More Monkeying Around!": Creating A Rigorous And Meaningful "Evolution Stories" Resource for Middle and High School Students (and Their Teachers!)

J Mead, St. Mark's School of Texas, mead@smtexas.org

As a middle school biology (and thus evolution) teacher for the past 27 years, I have been privileged to teach in a place where my colleagues and community members have been highly supportive my teaching of evolution and particularly human evolution. However, my experience is the extreme exception and I found myself dismayed when trying to share high quality evolution resources with teachers who are less well versed or passionate about evolution. Simply put, engaging and scientifically rigorous resources are scarce for middle school teachers and students. I decided it's time to "Stop Monkeying Around" and start using my passion and experience to create what's been missing—an evolution education resource that can serve as an exciting, detailed, and useful tool for both middle school students and teachers. By using the power of storytelling regarding evolutionary past and current discoveries, we can create a library of evolution stories that teachers can choose from to add depth and personality to their evolution teaching. This workshop will serve as a chance for participants to think about their experiences with

evolution education and brainstorm what specific evolution topics they would want included in such a resource moving forward. Participants are also encouraged to become partners in the growth of this project.

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FEMINIST EVOLUTIONARY PERSPECTIVES SOCIETY

Feminist Evolutionary Perspectives Society

A Guitar, Binghamton University, mguitar16@gmail.com

The society exists to bridge two scientific viewpoints that are often in opposition: evolutionary psychology and feminism. We believe that each can be unified into a productive study of the evolution of humans. Each approach has historically adopted some biases that impede a full understanding of the complexities of human psychology, particularly a perspective of psychology that includes aspects of our shared evolution as well as cultural and environmental influences. FEPS supports research that: a) is informed by a female perspective, b) directly investigates the active role that females have had in human evolution, and/or c) studies gender in the evolutionary context with scientific theory and methodology (including a close examination into the way research questions are formulated and research subjects selected). We welcome any members, of any gender or sex, who are sensitive to the combination of feminism and evolutionary psychology. A recent project: Following the FEPS 2013 meeting, we collaborated on a special section of Evolutionary Behavioral Sciences titled The Intersection of Feminism and Evolutionary Psychology. For more information, visit <http://psycnet.apa.org/journals/ebs/7/4/>.

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SEEPS: SESSION 1: TEACHING EVOLUTION

Science and Beer...What Could Go Wrong?

C Ocobock, University of Albany (SUNY), cocobock@albany.edu

Anti-science rhetoric and media misrepresentation of research hinders scientific understanding and progress. The inaccessibility of scientists and scientific writing adds fuel to the fire. In today's world we can ill-afford to ignore the potential solutions science can provide. Finding ways to bring science to the community in a straightforward and open manner is key to bridging the gap between the public and the scientists. Such interactions will help make the public conscientious consumers of information, better arming them against dubious media segments on health and science. Events like this can also be used as a safe and open platform for discussing more publicly controversial topics such as evolution, climate change, and vaccine use. Here I will discuss the Science on Tap/Science Cafe model for engaging the community in scientific discourse. This model involves regular science focused events at local bars, cafes, or restaurants in an attempt to produce a casual environment in which to break down barriers between the public and scientists. I will present my own experience with starting Science on Tap Grand Rapids and provide specific advice on how to start your own Science on Tap as well as what pitfalls to avoid. Finally, I will discuss the positive impact Science on Tap can have not only on your community but also on you as a professional.

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Southern (R)evolution-Where We Are and Where We Need to Be

A Glaze, Georgia Southern University, alglazephd@gmail.com

The Southeastern United States is known as a place where time stands still and where you can almost go back in time to another era. Unfortunately, this drawing charm is also a major obstacle to science education, especially surrounding evolution teaching and learning. This session looks at where we are in terms of teaching and learning of evolution in k-12 education and what needs to be addressed to mind the gaps.

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Using Personal Genetics to Teach Evolution in Introduction Biology Class

A Pai, Spelman College, apai@spelman.edu

Evolution education remains a priority for life science educators due to the lack of acceptance of evolution science among US citizens. Spelman Biology is pioneering a unique curriculum targeting evolution education and better science literacy via use of personal genomic data. The proposed personalized curriculum will test a novel approach to increase student engagement in STEM fields through development of an introductory biology course intervention centered on a genetics and genealogy (G&G) approach. The G&G approach is aimed at stimulating interest in the study of science and the pursuit of a STEM career by priming students with the discovery of unique facts about themselves (genes and genealogy), their history, and their relatedness to other humans in the world (evolutionary processes). Students will be encouraged to enhance this experience with a visual art project with an app called

"DNA Portrait Builder." This talk will describe the curriculum and assessment resulting from the G&G work at Spelman.

Evolutionary Story Telling for Middle School Students

J Mead, St. Mark's School of Texas, mead@smtexas.org

Middle School students and their teachers are woefully underserved when it comes to evolutionary writings and resources aimed at their interest and skill levels. While there is a plethora of good material for older audiences, the middle school population has very little to look to that is age appropriate, interesting, and scientifically rigorous. I am proposing to begin a multi-pronged approach that seeks to fill this void. I want to start creating a print / web resource that tells the stories of significant evolutionary ideas and discoveries in ways that relate to an engaged youthful audience. Such a resource can serve as curriculum for teachers to teach the science behind evolution as well as the adventure that underlies so many evolutionary discoveries. Initial stories would focus on the better known evolution stories, but over time new stories can tell of more recent research and can be linked to both online interviews with scientists and periodic live online visits with current researchers. Such a project will have the opportunity to teach core evolutionary ideas to new audiences as well as allow young students to learn how modern day science is performed and how it relates to the history of Evolutionary Biology. I also hope such a project can help evolutionary researchers in their outreach effort as a way to tell their stories to a broader audience beyond academia.

SESSION 2: ANIMAL COGNITION AND ECOLOGY

Primates or Perish: Can We Rescue Primate Biodiversity and Save Our Evolutionary Models By Rethinking Conservation?

S Alexander, L Cormier, C Lynn, University of Alabama at Birmingham, sdalexander@crimson.ua.edu

The Anthropocene and the world's sixth largest extinction are upon us. As a result, more than half of all primate species are endangered as a result of human activity. Yet, wild primates fill important niches within their respective ecosystems and their study in situ still represents a vast repository of evolutionary understanding. The question then is, "Is it our place as primatologists and scientists to prevent the further decline of wild primates?" While the field of anthropology is well suited to address this dilemma, ethnoprimateology, an interdisciplinary field that already examines human-nonhuman primate relationships, may well inform conservation. Keeping this in mind, I present a case study of a primate conservation and research program already employing a highly interdisciplinary approach and having visible success in northern Morocco. This organization, Barbary Macaque Awareness and Conservation, focuses on resolving human conflicts as an indirect means of reducing pressures on the endangered Barbary macaque. I conducted ethnographic research with this organization and members of three groups (N=25) in northern Morocco: students, shepherds, and middle class urban residents. Among those I found more support for macaques and macaque conservation when respondents received more exposure to either macaques or the conservation organization. However, all respondents, with or without contact, were positive regarding macaque conservation. In short, the creative and holistic methods of this organization may provide a model for conservation that is vital in insuring the survival of nonhuman primates as critical members of their ecosystems as well as important models for science.

Carbon Stable Isotope Ecology of Chacma Baboons (*Papio*), Bonobos (*Pan paniscus*), and Chimpanzees (*Pan troglodytes*) with Reference to the Paleodietary Patterns of Fossil Hominins

J Loudon, Kimel HM, Waller MT, Wakefield ML, Hickmott A, White FJ, Sponheimer M, East Carolina University, loudonj@ecu.edu

Studies using stable isotope analysis have demonstrated the utility of this technique to understand the diets and ecology of extant and extinct primates. This study analyses the $\delta^{13}\text{C}$ values of free-ranging chacma baboons (*Papio ursinus*) and bonobo (*Pan paniscus*) and chimpanzee (*P. troglodytes*) communities inhabiting forests or savannas. The $\delta^{13}\text{C}$ values presented here align well with feeding observations of Pan and Papio. There was a gradient of $\delta^{13}\text{C}$ values from low to high among the Pan communities based on each site's plants and habitat structure. On one side of the Pan carbon isotope gradient, the bonobo communities exhibited the lowest $\delta^{13}\text{C}$ values ($-26.3 \pm 0.6\%$), suggesting that their diets consist primarily of the fruits and leaves of C3 plants (trees and shrubs), supplemented with terrestrial herbaceous vegetation, which is depleted in ^{13}C . In contrast, the savanna chimpanzees generally had higher $\delta^{13}\text{C}$ values ($-24.0 \pm 0.9\%$) signifying diets consisting of C3 plants with little to no canopy effect coupled with the consumption of some C4 plants (grasses and some sedges). The higher $\delta^{13}\text{C}$ values of the baboons ($-19.0 \pm 0.4\%$) reflect a diet consisting of significant amounts of C4 plants growing on the savannas they regularly

utilize. These data suggest that baboons may be a more suitable ecological analog for early hominins (i.e. *Australopithecus* and *Paranthropus*) whose $\delta^{13}\text{C}$ values also reveal varying degrees of dependence on C4 plants on open savanna biomes.

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A Cross-Species Comparison of Pinniped Personality: Harbor Seals (*Phoca vitulina*) and California Sea Lion (*Zalophus californianus*)

A de Vere, University of Southern Mississippi, amberdevere@gmail.com

Personality has now been studied in a wide range of taxa, from fish to primates (Gosling & John, 1999). The availability of such data from multiple species allows cross-species comparisons to be made, thus providing a window into the evolution of personality. However, marine mammals remain greatly underrepresented in this area, despite their unique life history factors and complex cognitive abilities. A full personality structure has been assessed only in one species, the bottlenose dolphin (Highfill & Kuczaj, 2007); this species has been shown to possess factors analogous to those of the human Five Factor Model that are largely consistent over time, with constituent traits that appear to show individual patterns of contextual plasticity (Kuczaj, Highfill & Byerly, 2012). Consistent individual differences have been identified in one other marine mammal, the grey seal (Twiss & Franklin, 2010; Twiss, Culloch & Pomeroy, 2011; Twiss, Cairns, Culloch, Richards & Pomeroy, 2012), but to date there have been no complete assessments of personality in any marine mammal besides the bottlenose dolphin, and none that utilize the behavioral coding method. Behavioral data were collected from a captive population of California sea lions (*Zalophus californianus*) and Pacific harbor seals (*Phoca vitulina*) over a three month period. An exploratory principal components analysis for each species resulted in extraction of several personality factors. Comparisons of these factors revealed analogues to several of those in the human Five Factor Model (Goldberg, 1990), as well as species-specific differences.

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Laterality of Eye-Use and Species Differences of Bottlenose (*Tursiops truncatus*) and Rough-Toothed (*Steno bredanensis*) while Watching Surprising and Unsurprising Events

M Lilley, University of Southern Mississippi, malin.lilley@usm.edu

Laterality of eye-use has been proposed as an indicator of laterality of brain function in some species of cetaceans. Despite the proportionately smaller amount research in cetacean species, the neuroanatomy of the cetacean brain suggests that brain hemispheres function more independently than in humans. Evolutionary pressures of visual perception and social cognition are hypothesized to be the driving force behind this dichotomy. Though laterality of eye use has been examined for familiar and unfamiliar stimuli in bottlenose dolphins (*Tursiops truncatus*), laterality has not been previously examined for surprising events, nor has laterality been previously examined for rough-toothed dolphins (*Steno bredanensis*). In the present study, dolphins of two species, bottlenose and rough-toothed, were shown surprising and unsurprising stimuli through underwater viewing windows. Gaze duration for each eye was compared for the surprising and unsurprising conditions and species differences were analyzed for both differences in gaze duration and laterality of eye use. Differences between species may be attributed to evolutionary pressures specific for each species. Furthermore, differences in gaze duration for surprising stimuli may be due to individual or species differences in curiosity

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LIGHTNING ROUND 1

Social Support is an Adaptive Strategy against Stigma Stress: A Proposed Model

N Roy, University of Alabama, ndroy@crimson.ua.edu

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The Sasquatch of the Sangha: A "Sighting" of *Allenopithecus* in Southwestern Central African Republic

C Jost Robinson, University of North Carolina Wilmington, robinsonc@uncw.edu

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How are Catechol-O-Methyl Transferase and Dopamine Related to the Evolution of Human Cooperation

C VanWagenen, C Lynn, University of Alabama, cmvanwagenen@crimson.ua.edu

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An Evolutionary Approach for Understanding Differences in Hostility between Heterosexual Men & Homosexual Men & Heterosexual Females & Homosexual Females

S Flores, Texas A&M International University, seven_flores@dusty.tamui.edu

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SESSION 3: HEALTH AND EVOLUTION

The Interactive Effects of the Biological and Behavioral Immune Systems

A Makhanova, Florida State University, makhanova@psy.fsu.edu

Falling ill is a tremendous obstacle to one's pursuit of goals and survival. Thus, in response to pressures to avoid disease, behavioral and biological immune systems evolved in people that aided in self-protection from pathogens. Research on the behavioral immune system – the psychological processes associated with the avoidance of pathogens – has demonstrated that disease avoidance motivation leads to biases against other people who may be heuristically likely to harbor pathogens. However, although research has demonstrated bidirectional links between the two immune systems, the role of the physiological processes involved in fighting off pathogens has never been examined in relation to the psychological biases. We hypothesized that the activation of the biological immune system would be positively associated with aversive sociocognitive biases toward people with facial deformities. Participants provided a baseline saliva sample, were randomly assigned to either a disease avoidance motivation or control condition, provided a follow-up saliva sample, and performed the dot probe task that measured attention to deformed versus neutral targets. Saliva samples were assayed for IL-6, a pro-inflammatory cytokine. We found that people for whom disease threat was situationally manipulated were more likely to avert attention from deformed targets than people in the control condition. Moreover, people in the disease condition that experienced greater (vs. less) percent change in IL-6 were more likely to avert attention from deformed targets. These findings provide support for the hypothesis that, when people are motivated to avoid disease, the physiological immune system is associated with psychological biases related to assortative sociality.

Infectious Disease, Values, IQ, and the Wealth of Nations

R Thornhill, University of New Mexico, rthorn@unm.edu

The parasite-stress hypothesis of economics proposes that variation in infectious disease across regions causes variation in economic productivity by three proximate causes. (1) Infectious diseases cause morbidity, reducing people's capability to produce. (2) Parasite stress evokes people's values, which, in turn, cause regional economic parameters. E.g., as parasite stress increases, regions become increasingly collectivistic. Collectivism causes parochial economics, political corruption, autocratic governance, and reduced innovativeness and diffusion of innovations. These effects stifle economic productivity. In contrast, individualism causes a willingness to transact with a diversity of people, creating broad economies and interregional sharing of ideas and products, increased innovativeness, governmental transparency, and democracy. These effects promote economic prosperity and equality. (3) Infectious disease limits cognitive ability, which reduces innovativeness and thus economic well-being in a region. We present evidence from cross-national and U.S. interstate analyses supporting the parasite-stress hypothesis of economics.

Ancestral Health: A Reply to Critics [CANCELLED]

JB Smith, Ancestral Health Foundation, brett@ancestryfoundation.org

The ancestral health approach is a loosely aligned array of hypotheses and conjectures based on a combination of evolutionary logic, academic research, and numerous anecdotal reports. However, they all share central, common features, namely 1) the notion that there is a discordance, or evolutionary mismatch, between the current environment and the Environment of Evolutionary Adaptedness (EEA); 2) that these mismatch effects explain many of the "diseases of civilization;" 3) that by altering our environment, we can take measures to mitigate the effects of mismatch diseases and disorders. Critics of the ancestral health model (often referred to merely as "Paleo") have attacked this approach based on a number of arguments. For instance, many (such as Marlene Zuk in her book "Paleofantasy") argue that evolutionary change can happen faster than naive Paleo advocates assume, thus undermining the mismatch hypothesis. In my talk, I will address this and other major criticisms, and hopefully show that while critics' claims are technically true, they are true only in a vacuous sense and that the ancestral health model still provides one of the most useful tools in evolutionary medicine.

Invited Keynote: GALÁPAGOS: HOW DARWIN EVOLVED

P Kelley, University of North Carolina Wilmington, kelleyp@uncw.edu

Charles Darwin acknowledged the seminal role his visit to the Galápagos played in undermining his view that species were unchanging entities. In 2009, the University of North Carolina Wilmington offered an Honors course on "The Shaping of Darwin: Geology and Biology of the Galápagos" as part of its celebration of

Darwin's 200th birthday. The course culminated in a trip to the Galápagos, in which a group of Continuing Studies students also participated. Based on Darwin's writings, the students knew intellectually how his visit to the Galápagos had shaped Darwin's thinking on evolution, but following in his footsteps made the Galápagos impact tangible to the students. This presentation will explore the transformation of Darwin's thinking by his Galápagos visit, as seen through the eyes of these students and as expressed in Darwin's own words.

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SESSION 4: COMMUNICATION AND EVOLUTION

The Signaling Function of Morality: Deontological Moral Decisions Improve Perceptions of Liking and Trust Relative to Utilitarian Moral Decisions

M Brown, University of Southern Mississippi, mitchellbrown@usm.edu

Recent research indicates that morality's evolutionary function may be to facilitate group living. That is, making decisions guided by the moral rules of a group should facilitate cooperative behavior among conspecifics. Nonetheless, we test the hypothesis that individuals whose decision-making is rooted in deontology should ultimately be perceived more favorably among conspecifics, as deontology requires adherence to socially prescribed rules, which suggest deontological individuals' behavior is more predictable. Conversely, utilitarian decision-making should elicit less favorability, because utilitarianism emphasizes outcomes of decisions rather than social rules, which may leave individual conspecifics vulnerable to exploitation. In Study 1, after reading descriptions of the basis of two individuals' morality, participants reported greater trust toward a deontologically minded target than a utilitarian-minded target. When considering individuals' history of moral decision-making, Study 2 participants indicated greater trust and liking toward targets with a history of deontological moral decision-making, relative to targets with a utilitarian history. Study 3 held decisional outcomes constant but varied the underlying moral motivation for the decision (deontological versus utilitarian motivation). Participants reported more positive interpersonal perceptions of the target whose decision was guided by deontology compared the target whose decision was guided by utilitarianism even though both targets made an identical moral decision. Consistent with past research, results suggest deontological moral reasoning partially evolved to facilitate positive relations among conspecifics and aid group living. By enhancing perceptions of trust and likeability, deontological moral decision-making may have the capacity to facilitate interpersonal relationships and foster cooperation.

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Striving for Status: Dispositional Status Striving and Socioeconomic Status Influence Perception of Trustworthy and Affiliative Cues in Faces

C Lustgraaf (Chair), University of Southern Mississippi, cjn.lustgraaf@gmail.com

Research investigating the survival and reproductive benefits associated with group living has suggested that humans evolved specifically to live in social groups and maintain numerous complex social relationships (Richerson & Boyd, 1998). Human social group structure involves the establishment and maintenance of a social hierarchy. Groups are arranged hierarchically based on status level, and those who more effectively ascend this status hierarchy accrue reproductive and resource benefits (Hawley, 1999). Therefore, other group members can serve as a threat to status or as an ally to assist status goals. The ability to accurately identify these cues in social targets would have adaptive utility in status maintenance or status ascension. In the current study, participants were primed with status motives and asked to complete two face perception tasks: trust perception and smile perception. Participants then reported dispositional status striving and SES. Those with higher dispositional status striving demonstrated greater accuracy in the trust discrimination task, while those with higher SES demonstrated lower accuracy in the smile discrimination task. These results demonstrate that dispositional status striving predicts accurate identification of trustworthy and untrustworthy faces while higher socioeconomic status predicts less accurate identification of genuine smiles. This provides evidence for an adaptive process involved in conspecific face perception. Those motivated to pursue high status accurately identify allies (trustworthy individuals) and potential threats to status already attained (untrustworthy individuals) while those with high SES are insensitive to affiliation signals (genuine smiles) and are therefore less accurate when identifying a genuine or false smile.

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The Evolution of Bullshit

J Wakeham, University of Alabama, jwakeham@ua.edu

This paper explores the possibility that bullshit is a byproduct of the evolutionary forces that shaped human cognition. Although some philosophers (e.g. Quine, Dennett, Fodor) have argued that selection pressures should favor organisms that have true beliefs, the growing body of research coming from cognitive psychology and related fields has thrown into question the rational nature of human cognition. Evolution, it seems, did not select for

individuals who develop consistent rational, accurate beliefs. Mercier and Sperber's argumentative theory (2011) suggests that the primary function of human cognition is to persuade and be persuaded—that is, evolution selected for cognitive capacities that serve social rather than individual success. In this paper, I extend on Mercier and Sperber's argument to consider additional ways that social success often depends on individual's capacity and willingness to put aside strong epistemic demands of others. If group success depends largely on individuals willing to get along and go along with others—even at the cost of accurate beliefs—then, arguably, group level selection acts as a possible counter-pressure against the individual's need for accurate beliefs. In light of this, the stubborn persistence and proliferation of bullshit begins to make more sense. It is not simply that argumentation is main function of individual cognitive capacities, but that sufficiently complex social cooperation requires individuals to selectively apply epistemic vigilance. Put simply, the truth is not central to our success. It might not hurt, but bullshit might help.

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SESSION 5: PALEOLITHIC TRACES AND SYMBOLS

Is Cyberdependence Related to our Fireside Evolution? Blood Pressure and Skin Conductance between Fireside and Multimedia Relaxation Responses

K Meighan, H Tytus, M Wanis, MJ Stein, CD Lynn, University of Alabama, kameighan@crimson.ua.edu

Studies find television and other multimedia forms to be addictive. Televisions emit intermittent light patterns analogous to that of a fire, which elicit similar orienting responses. No studies have sought to explain the connection between campfires and cyber dependence. The orienting response is an organism's immediate sensory reaction to novel stimuli. Brain activity, heart rate, blood pressure, and skin conductivity are altered during and after an orienting response. After four to six seconds, heart rate decreases creating a subsequent relaxation effect. Previous findings indicate that multisensory exposure to campfire stimuli lowers blood pressure inducing relaxation. In the current study, we hypothesize that watching television produces a similar biological response to fire which may explain the relaxation effect associated with fire and television. Using a randomized crossover experimental design, we examined the physiological responses to four simulated conditions: (1) fire with sound, (2) fire sounds only, (3) an audiovisual media clip, and (4) an inverted static photo of fire as a control. We found significant pre-posttest reductions in blood pressure for the fire with sound ($p = .02$) and media conditions ($p = .07$) with large effect sizes (partial $\eta^2 = .36, .27$). These data may shed light on the obsessive human attraction multimedia and fire's influence on cognitive evolution.

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Semiosis on the Pleistocene Scene

M Kissel, A Fuentes, University of Notre Dame, marc.kissel@gmail.com

When, where, and how humans became behaviorally modern is an open question in human evolutionary studies with scholars disagreeing on the timing and geographic origin of modern human behavior. The phrasing of this questions suggests that symbolic behavior evolved sometime after the first appearance of fossils unambiguously assigned to *Homo sapiens* at ~200,000 years ago. However, there remains much debate as to what data are available in the archaeological record to assess these questions. Here, we present a new open-access database, the Worldwide Instances of Symbolic Data Outlining Modernity, which records the available archaeological evidence of human symbolic action from over 1,000,000 years ago to 45,000 years ago. The contents of this database suggest that human origins, even when looking at the specifics of symbolic behavior, is better seen as a process rather than a specific transition event which suggests that the human cultural niche may be older than previously supposed. We also propose that a more nuanced view of what a "symbol" is, combined with aspects of Peircean semiotics, can help to bridge the gap between the material record of the past and current interpretive assessments. To illustrate this we apply these data to three classes of artefacts showing how communication and meaning are symbolic.

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The Evolution Underground: How Burrows Helped Animals to Survive Mass Extinctions, Diversify, and Change the Earth

A Martin, Emory University, geoam@emory.edu

Animals have burrowed for the past 550 million years and nearly every environment on the surface of the earth today – from the deep sea to mountains – contains burrowing animals. Modern invertebrate burrowers include anemones, nematodes, annelids, arthropods, mollusks, and echinoderms. For vertebrates, burrowing fish, amphibians, lizards, turtles, crocodilians, birds, and mammals are also represented quite well. Burrowing was likely selected initially in animals as protection against predators, but going below sedimentary surfaces also provided access to previously untapped food resources. Burrows later served as homes and stable places for feeding, nesting,

denning, and other functions. However, the main adaptive advantage of burrows throughout geologic time was as exaptations helping animals survive unusual and widespread environmental stresses that led to mass extinctions of non-burrowing animals. Burrows enable animals to endure droughts, fires, storms, volcanic eruptions, extreme cold or heat, and seasonal extremes. These same traits gave distinct advantages during times of exceptional ecological collapses, such as those experienced at the end of the Permian Period (252 mya, ~95% species extinction rate) and end of the Cretaceous Period (66 mya, ~70% species extinction rate). Some terrestrial and marine burrowers – such as ghost shrimp, earthworms, ants, gopher tortoises, and pocket gophers – also qualify as ecosystem engineers, changing environments and thus imparting evolutionary impacts on other animals. Lastly, humans have clearly tapped into their burrowing-mammal heritage by using underground environments as places of safe haven from environmental stresses that vary from bad weather to nuclear war. In short, burrows matter, evolutionarily speaking.

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Of Time and Traces

A Rindsberg (Chair), University of West Alabama, arindsberg@uwa.edu

Trace fossils are, in essence, fossilized behavior representing locomotion, deposit-feeding, predation, hiding, and so on. How are the different kinds of behavior recognized in the geological record, and when did specific behaviors first evolve? Is there such a thing as extinct behavior? The impact that ichnology, the study of trace fossils, has had on evolutionary biology in recent decades will be made clear.

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Walker County Seashore, 313 Million BC

D Kopaska-Merkel, Geological Survey of Alabama, jopnquog@gmail.com

Thousands of footprints nearly a third of a billion years old have been discovered in Walker County, Alabama. The Pennsylvanian in eastern North America was a time of rapid sedimentation, profuse growth of forests, and deposition of tremendous amounts of coal. The Lower Pennsylvanian Pottsville Formation in central Alabama contains many coal seams. Above one of these, the Jagger coal seam, lies a thin interval of rock called the *Cincosaurus* beds. These thin layers of shale, once mud deposited on an ancient tidal flat, are full of trace fossils--marks made by living organisms. Trace fossils in the *Cincosaurus* beds include footprints, burrows, fish fin trails, and so on. These traces, laid down in an ancient estuary, can be found across much of north Alabama. Nearly 10,000 specimens have been collected to date from about a dozen sites. Trackways and other traces made by some of the earliest reptiles, contemporary amphibians, millipedes, horseshoe crabs, fish, insect larvae, and more, are found with plant fossils, insect wings, and arachnids. The earliest known examples of group behavior in animals are preserved here. These include evidence of schooling in fish, groups of reptiles walking together, and primitive insects traveling together. The early evolution of reptiles is documented in these deposits, including the oldest known example of association of amphibians and reptiles. Exposures of the *Cincosaurus* beds in north Alabama are an important window into the evolution of life.

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Paleozoic Surface and Behavioral Trackways from Walker County, Alabama: Preservation and Implications

R Buta, University of Alabama, rbuta@ua.edu

In recent years, Walker County, Alabama, has yielded a treasure trove of trace fossils left by animals that lived during the Coal Age (Pennsylvanian subdivision of the Carboniferous Period, Westphalian A stage/substage, 310-315 Ma). Vertebrate traces in the form of tetrapod footprints made by (likely temnospondyl) amphibians and very early reptiles have been found in abundance at discontinued surface coal mines in the county, and enough specimens have been collected to provide the basis for a new understanding of life during a time when the world's tropical forests grew explosively. The tetrapod tracks are complemented by a diverse background of invertebrate traces. Although the bulk of vertebrate trace fossils from Walker County are undertracks, surface tracks are also found that shed light on trackway preservation and foot morphology. In this presentation, I want to introduce the trace fossils of Walker County by focusing on rare surface and behavioral tetrapod tracks found recently at the Crescent Valley Mine near Carbon Hill and the Minkin Paleozoic Footprint Site near Jasper. The two sites are 23 miles apart but the tracks from each site nevertheless likely come from layers of shale within the same stratigraphic interval. In my presentation, I will show some of the surface and behavioral tracks found at these sites, examine their connection to different kinds of undertracks, and describe what the tracks tell us about how the animals interacted with their environment.

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POSTER SESSION

Investigating Tooth Marks Created by Captive and Wild Lions: Implications for Understanding Carnivore Chewing Damage on Fossil Bones

KL Woolard, B Pobiner, University of North Carolina Wilmington, klw7150@uncw.edu

Butchery marks on fossilized animal bones show that by 2.6 million years ago, early hominins were eating meat and marrow from a variety of animals. This increased early hominin interaction with ancient carnivores and led to competition over prey carcasses. Knowing which species of carnivores early hominins were interacting with leads to a better understanding of these ecological relationships. However, many studies done with the intent of identifying specific carnivore bone modification patterns utilize captive rather than wild carnivores. To evaluate whether the size and patterning of tooth pits on bones left by captive and wild lions are similar, we collected data from tooth pits on lion-chewed bones from Kenya. Using a Dino Lite microscope to measure the tooth pits, we found that the size (area and perimeter) of tooth pits on the captive and wild samples are not statistically different. However, there is a significant difference between the frequencies of tooth pits left by larger versus smaller groups of carnivores. Because of this we recommend caution in using captive carnivore tooth pit data in models of the patterning of carnivore tooth pits in the past, as many captive carnivores are kept in artificially small groups. This finding could also be useful for identifying whether a social (e.g. lion, hyena) or solitary (e.g. leopard, saber tooth) carnivore was responsible for tooth pits on bones in the fossil record.

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The Complementary Processes of the Behavioral and Biological Immune Systems

JR Rodriguez, A Makhanova, EA Plant, LA Eckel, L Nikonova, JK Maner, Florida State University, jrr13j@my.fsu.edu

Over the evolutionary history, humans have developed behavioral and biological immune responses to protect themselves against pathogens in the environment. The behavioral adaptation – a set of psychological mechanisms – allows people to avoid individuals or objects that could harbor infectious diseases. This cautious behavior saves the body energy that it would otherwise expend in inflammation and healing. Inflammation, associated with increased IL-6 proinflammatory cytokines, is a sign that the body is gearing up to fight off pathogens. We predicted that individuals who are higher in behavioral disease avoidance would have less inflammation than those who are low in behavioral disease avoidance. Across 3 lab studies, participants provided baseline saliva samples, which were assayed for IL-6. Participants also completed a measure of chronic behavioral disease avoidance tendencies. The participants who generally engaged in behavioral avoidance had lower baseline IL-6 levels; whereas, participants who generally were more likely to come into contact with pathogens because they avoided possibly contaminated objects less had higher baseline IL-6 levels. These results indicate that individuals weary of pathogens in their environment conserve more energy because of lower indiscriminant inflammation. Furthermore, the biological immune system acts in a compensatory manner such that individuals who may more frequently encounter pathogens have higher inflammation to effectively deal with those pathogens at initial stages of contagion. These findings support the overarching hypothesis that the behavioral and biological immune systems are complementary and compensatory.

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Assessing Life History Variation Using a Brief Stability Questionnaire

MJ Frederick, DJ Kruger, University of Baltimore, mfrederick@ubalt.edu

Life history theory suggests that organisms adjust the timing of developmental events in order to maximize reproductive success. In humans, life history strategies are thought to vary on a dimension from fast to slow. Fast strategies entail pursuing short-term goals and reproducing early and often, while slow strategies involve planning ahead, finding the ideal mate, and investing heavily in a relatively smaller number of offspring. The most frequently used survey for assessing life history variation is the Mini-K Life History Battery. Although there is empirical support for its use, the Mini-K is rather long (20 items) and it contains questions about sexual preferences that may make some participants uncomfortable. We developed a series of alternative questions for measuring life history variation and examined how responses related to Mini-K scores in a sample of 112 participants. Seven items asked about the relative degree of stability experienced in terms of 1) good place to live, 2) a healthy diet, 3) personal safety, 4) support from family, 5) support from friends, 6) good opportunities for employment, and 7) a good romantic partner. This seven item scale showed good reliability ($\alpha = .852$) and was strongly correlated with Mini-K scores [$r(110) = .497, p < .001$]. We suggest that this stability scale is a useful alternative to the Mini-K for measuring variation in life history.

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Physiological Responses when Viewing Trypophobic Imagery vs. Manipulated Trypophobic Imagery

D Walters, Adams State University, waltersdi@grizzlies.adams.edu

Trypophobia, the fear of small clusters of holes in close proximity to each other, is a relatively new phenomenon that has recently been investigated by the scientific community. Although research into this area is in its infancy, recent research suggests that this seemingly irrational fear of holes may be linked to a primitive and adaptive threat detection ability, as trypophobic images tend to share similar spectral frequencies often found in animals that are dangerous or poisonous. In a previous study, we validated previous work that showed higher levels of discomfort when participants viewed trypophobic images as well as further validation of a questionnaire designed to measure a person's level of trypophobia and showed higher levels of physiological responses as measured by GSR in participants that viewed trypophobic images. In the present study, we try to partition physiological response differences to trypophobic images (both animal and non-animal), as well as to non-trypophobic images (animal and non-animal), to images that were manipulated in a way to try and reduce levels of trypophobic discomfort. We found that participants tended to have higher levels of discomfort when viewing the trypophobic images, but the manipulation of the images did not significantly lower levels of discomfort when viewing the manipulated trypophobic images when compared to the manipulated control images.

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What is the Biology of Religious Absorption? Testing Associations between Catechol-o-Methyl Transferase and Capacity for Focused Attention

I Rivera, C Walker, C Fasel, H Acosta, C VanWagenen, M Wanis, MJ Stein, C Lynn, University of Alabama, irivera@crimson.ua.edu

Luhrmann's (2010) absorption hypothesis holds that the more vested individuals feel in their respective religious group, the stronger the feeling of religious experience. Those with greater proclivity for absorption have better ability to focus on culturally relative religious activities. We propose this predisposition involves the ability to focus attention and that focused attention is a trait influenced, in part, by genetic mechanism. This study examines a gene-trait-environment interaction among catechol-o-methyl transferase (COMT), absorption, and religious belongingness. COMT is an enzyme in the dopaminergic pathway that has been associated with hypnotizability, which involves focused attention and suggestibility. We suggest that COMT is part of a gene-trait network that interacts with religious belief and focused practice to influence religious group belongingness, and, ultimately, cultural success. We measure belongingness through social network analysis (SNA). SNA involves measuring interrelations within a social group, using concepts such as centrality or actors' importance to their network. We hypothesize that members of religious groups with higher belongingness in secular and religious ways will have greater proclivity for absorption, as measured by the Tellegen Absorption Scale and the COMT genotype. Thus, members from First Wesleyan Church in Tuscaloosa, the site of our field study, with a higher proclivity for absorption should be more central members within their church and that this interaction will be associated with heterozygote genotype for COMT. This study is in preliminary stages but has potential to illustrate the importance of design models that incorporate gene networks and gene-trait-environment interactions.

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Inoculation Hypothesis of Body Modification: Prevalence of Tattooing, Body Piercing, and Health Complications among Varsity Athletes and Non-Athletes

C Fasel, ND Roy, C Lynn, University of Alabama, cfasel@crimson.ua.edu

Cross-culturally and throughout history, tattoos have communicated sociocultural information, from status to success in war. For example, among the Dayak of Borneo, tattoos symbolize the whole of an individual's experiences in life. Among the heavily marked Huron of aboriginal North America, sources suggest that tattoos and permanent "painting" were believed to "harden" the body against weather and other insults. This is consistent with our recent study that found that tattooing may prime the immune system to be ready to fight infection and serve as an inoculation. Thus, an indirect influence of this inoculation effect is that people who are tattooed may be seen as "tougher" and more resistant to illness. The current study tests the hypothesis that people use tattooing and piercing to advertise underlying biological quality or vigor. We conducted a survey of 805 individuals (85% female), examining rates of tattooing, piercing, and health complications related to tattooing and piercing among varsity athletes ($n = 40$) and non-athletes ($n = 765$). We did not find significant associations between tattooing and piercing and athletes or non-athletes. However, we did find positive correlations between tattoo complications and varsity sports ($r^2 = .636$; $p < .001$). Studies of immune response in elite athletes suggest that high-level training increases susceptibility to upper respiratory tract infections. If being a varsity athlete is already a marker of quality, the

immunological costs of tattooing might not be worth the benefits of enhanced fitness signaling. Further analyses will focus on the signaling roles of tattooing, piercing, and health among non-athletes.

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The Physical Activity/Health Relationship from an Evolutionary Perspective: A Literature Review

M Richardson, University of Alabama, mtrichar@ua.edu

Physical inactivity continues to be a major public health burden. Over half a century of research provides evidence which indicates a consistent inverse relationship between physical activity (PA) and a variety of adverse health outcomes, in particular, coronary artery disease. This has resulted in public health recommendations concerning PA levels. However, dose-response issues remain unresolved. One approach from an evolutionary perspective is to study the exertional requirements of our hunter-gatherer ancestors (which shaped our genome) and consider if this represents an optimal level of PA for disease prevention. That is, many of the adverse health consequences of a sedentary lifestyle in modern day humans may result from a genome suddenly thrust into an environment very different from the one in which it was selected. Therefore, the question, “How active were our ancestors?” is an important one. Several excellent papers have been written on this topic. I propose to review the literature in this regard.

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Moral Framing of Evolution in Social Media

W Evans (Chair), University of Alabama, wevans@ua.edu

Online discourse related to evolution is laden with moral considerations. This discourse can be understood and analyzed in its bio-social context using moral foundations theory which posits that media content can trigger innate moral dispositions. Partisan journalists and bloggers seem adept at triggering audience moral dispositions. Recent research on climate change communication finds that bloggers frequently frame climate change primarily as a moral issue and only secondarily as a scientific issue. This study examines stories about evolution posted to Facebook by top-50 Facebook publishers associated with partisan political views, publishers such as Breitbart and Huffington Post. Content analysis techniques are applied to determine the extent to which stories about evolution are framed in terms of morality and to test hypotheses derived from moral foundations theory that liberal and conservative Facebook publishers will differ in terms of specific moral institutions targeted by stories about evolution.

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Slow Life History Strategy Predicts Five Moral Foundations

P Gladden, Middle Georgia State University, paul.gladden@mga.edu

Moral foundations (MF) theory proposes at least five evolved and universal psychological systems (“foundations”) on which cultures construct diverse moralities. MF theory further proposes individual differences (e.g., political liberals vs. conservatives) in reliance on various moral foundations. Life History (LH) theory suggests that slow LH individuals develop under stable socio-ecological conditions where displaying moral traits may have been particularly adaptive. Human LH theory has been used to help explain individual differences in rule-governance (Gladden, 2011), positive in-group bias (Gladden, 2010), and various emotion-driven moral intuitions that relate to those five moral foundations (Gladden, 2009), but these findings have not been entirely consistent (Leeuwen, Koenig, Graham & Park, 2014). Across 2 studies, samples of undergraduate students completed self-report questionnaires assessing their reliance on each of five moral foundations and their life history strategies. In both samples, slow LH strategy was positively associated with each of the five moral foundations. The five moral foundations were also positively intercorrelated. Implications for moral foundations and life history theory are discussed.

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Are Small-for-Norm Andean Children Really Stunted?: A Longitudinal Test of Peruvian Highlander Reproductive Fitness

R Copeland, R Madey, HN Smith, MJ Stein, KS Oths, University of Alabama, rdcopeland1@crimson.ua.edu

Reproductive fitness is typically measured by how many children a person has as this represents the successful passing-on of genes. In the Peruvian highlands, stunting, or infant and child heights and weights that are below international standards, have long been assumed primarily to be the result of a poor diet, with potential lifelong consequences (Leonard 1989, 1990; Niermeyer et al. 2009; Pomeroy 2014). This research aims to longitudinally observe the effects of growth on various fitness measures, such as women’s age at the time of first childbirth and total number of children born. Anthropometric data on n=39 Andean Peruvian children ages 0 to 5 were gathered in 1988. Recent research has gathered data on offspring age and completed family size to date for these same individuals. Relations between earlier growth and current family characteristics are examined using multiple linear

regression. This research will help examine to what degree factors such as development and malnutrition are linked to later fitness and aging, and if these relationships hold for children born at high altitude.

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LIGHTNING ROUND 2

Mosquitos and Moms: Biology and Culture during Recent Zika Outbreaks in American Samoa

M Howells, C Lynn, University of North Carolina Wilmington, howellsm@uncw.edu

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"Evolve it Off (Your Tail)": Educating Undergraduates through Interdisciplinary Means

L King, M Howells, University of North Carolina Wilmington, lk3833@uncw.edu

...
The Weak Shall Inherit the Earth: Multi-Level Selection Theory and Religious Involvement at First Wesleyan Church

H Acosta, C Fasel, C Lynn, University of Alabama, hmacosta@crimson.ua.edu

...
Living in Shade: A Biocultural Assessment of Vitamin D in Mother-Infant Dyads

C Sweetman, M Burriss, University of South Florida, chloe4@mail.usf.edu

...
Using Gamett's Greater Bushbaby (*Otolemur gamettii*) As An Evolutionary Model for Food Choice in Primates

BK Smith, University of Southern Mississippi, bonnie.smith@usm.edu

ACKNOWLEDGEMENTS

Thank you to our hardworking team for making SEEPS possible another year!

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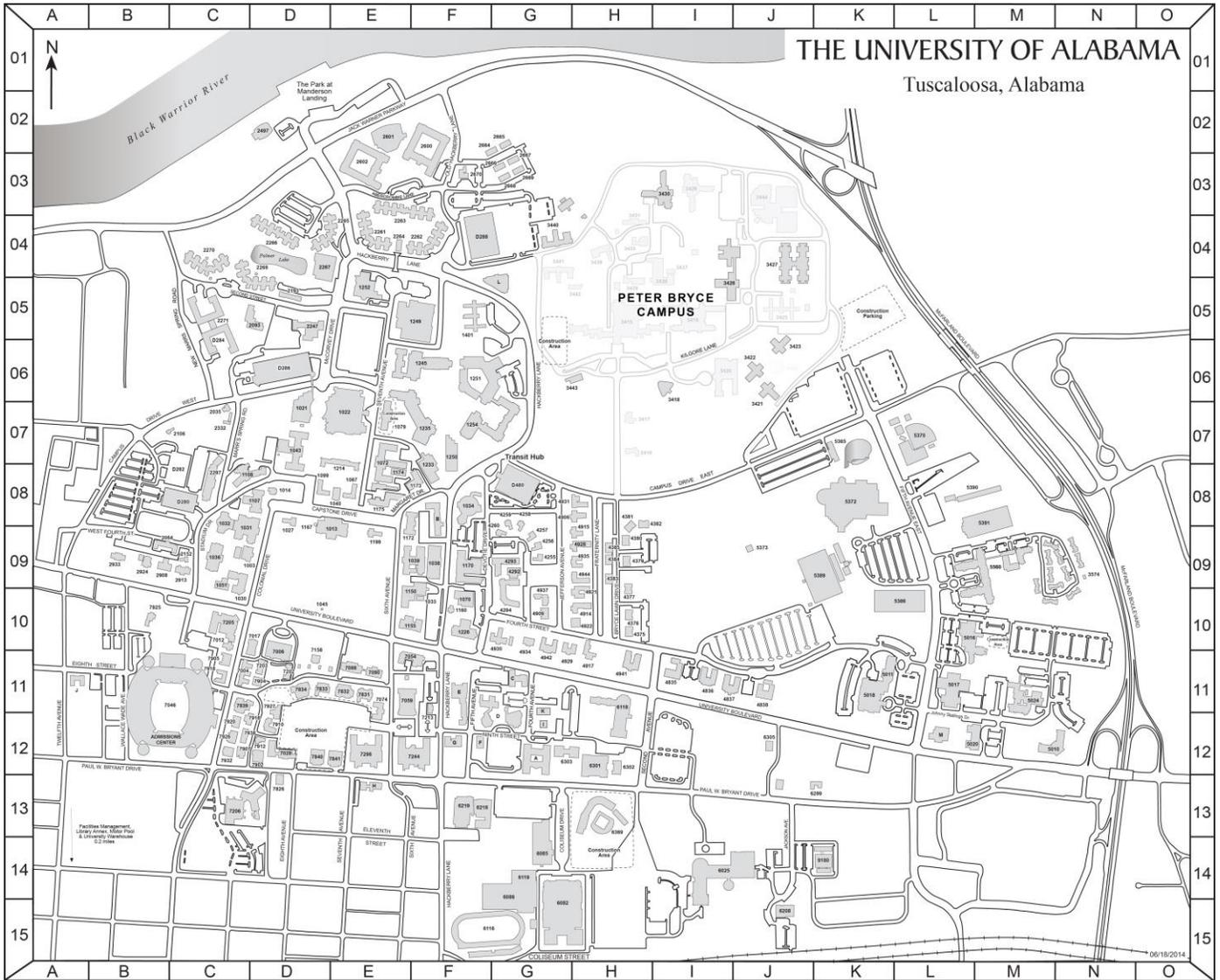
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CAMPUS MAP



BUILDING #	NAME	LOCATION	BUILDING #	NAME	LOCATION	OTHER BUILDINGS	LOCATION	SORORITIES	LOCATION
3430	1 North	3-I	1173	Joint Student Projects Building	8-F	A	7839	Alpha Chi Omega	11-C
5020	600 University Blvd.	11-L	6025	Law Center	11-E	B	7832	Alpha Delta Pi	11-E
5224	700 University Blvd.	11-M	7088	Little Hall	11-E	C	7833	Alpha Gamma Delta	11-D
7090	A. B. Moore Hall	11-E	1039	Lloyd Hall	9-F	D	7912	Alpha Kappa Alpha	12-D
7203	Adams Hall	11-D	2035	Maintenance Grounds	7-C	E	7905	Alpha Omicron Pi	12-C
1252	AIIME (Ala. Institute for Mfg. Excellence)	5-E	2332	Maintenance Quonset	7-C	F	7961	Alpha Phi	12-E
6302	Alumni Hall	11-H	1099	Manly Hall	8-D	G	7910	Chi Omega	12-D
1013	Amelia Gayle Gorgas Library	9-F	1032	Mary Howell Alston Hall	8-C	H	7834	Delta Delta Delta	11-D
1036	Angelo Bruno Business Library	9-E	1038	Mary Harmon Bryant Hall	8-F	I	7831	Delta Gamma	11-E
6219	Aquatic Center	13-E	1051	McLure Education Library	9-C	J	4258	Delta Sigma Theta	8-G
7043	B. B. Comer Hall	7-D	1401	McMillan Building (University of Alabama Press)	5-F	K	7916	Delta Zeta	12-C
6116	Balmy Track Stadium	15-G	2106	Moore House (unoccupied)	8-B	L	7907	Gamma Phi Beta	12-C
1028	Barnwell Hall	12-D	1107	Morgan Hall	8-D	M	7840	Gamma Phi Beta - Future Site	12-D
1031	Bidgood Hall	9-C	6218	Naturium	13-F		7918	Kappa Alpha Theta	11-C
1034	Biology Building	8-C	D282	North ten Hour Parking Deck	8-C		7904	Kappa Delta	11-D
1027	Blount John T. Oliver Academic House	8-D	1150	Nott Hall	8-E		7920	Kappa Kappa Gamma	12-C
1199	Blount-Tourney Academic House	8-E	1033	Nott Hall Annex	10-F		7926	Phi Mu	12-C
6301	Bryant Conference Center	12-G	7074	Osbard Hall	11-E		7927	Pi Beta Phi	11-D
4294	Bryant Hall	10-G	5365	Outdoor Pool Facilities	7-K		4257	Sigma Delta Tau	8-G
7946	Bryant-Denny Stadium	11-B	6303	Paul W. Bryant Museum	12-C		7902	Unoccupied	12-D
3418	Bryant Jordan Hall	6-J	3440	Peter Bryce Campus Printing & Mail Services	4-G	4292	4293	Unoccupied	12-C
3527	Bryce Medical Center	4-I	7158	President's Mansion	11-D	4292	4293	Unoccupied	12-C
D480	Campus Drive Parking Deck / Action Card / Transportation Services	8-G	5373	Recreation Fields and Restrooms	10-K	4292	4293	Unoccupied	12-C
5010	Capstone College of Nursing	12-N	5386	Recreation Tennis Courts	10-K	4292	4293	Unoccupied	12-C
2294	Capstone Village Garden Center	9-N	7285	Riese Philter Hall	11-D	4292	4293	Unoccupied	12-C
1063	Capstone Village Retirement Center	9-M	D288	Riverside East Parking Deck	4-G	4292	4293	Unoccupied	12-C
5560	Carmichael Hall	9-C	1250	Rogers Library for Science and Engineering	7-F	4292	4293	Unoccupied	12-C
6305	Center for Community-Based Partnerships	12-J	7096	Rose Administration Building	10-D	4292	4293	Unoccupied	12-C
1160	Child and Family Research Clinic	10-E	1167	ROT and A&S Programs Building	8-E	4292	4293	Unoccupied	12-C
5016	Child Development Research Center	8-E	1168	Round House	8-D	4292	4293	Unoccupied	12-C
1040	Clark Hall	10-F	2497	Rowing Facility	2-D	4292	4293	Unoccupied	12-C
6082	Coleman Coliseum	15-G	1226	Russell Hall	10-F	4292	4293	Unoccupied	12-C
6086	Crop/Indoor Practice Facility	14-C	1254	Science and Engineering	7-G	4292	4293	Unoccupied	12-C
7826	Dance Studio on Bryant	13-D	3441	Searcy Building	4-G	4292	4293	Unoccupied	12-C
1045	Denny Chimes	10-D	6369	Sewell-Thomas Baseball Field	13-H	4292	4293	Unoccupied	12-C
7017	East Annex	10-D	1172	Smith Hall / Alabama Museum of Natural History	8-E	4292	4293	Unoccupied	12-C
7202	East Quad Energy Plant	10-F	5389	Soccer Complex	8-E	4292	4293	Unoccupied	12-C
1070	Enterprise Hall	10-F	1235	South Engineering Research Center	14-K	4292	4293	Unoccupied	12-C
3443	Environmental Health and Safety	7-F	9180	South Lawn Office Building	8-F	4292	4293	Unoccupied	12-C
3421	Farah Hall	6-J	D280	South ten Hour Parking Deck	14-K	4292	4293	Unoccupied	12-C
D286	Ferguson Center Parking Deck	6-D	5017	Stallings Center (RICE Program)	11-L	4292	4293	Unoccupied	12-C
1022	Ferguson Student Center	7-E	2601	Strength and Conditioning Facility	14-G	4292	4293	Unoccupied	12-C
6085	Football Complex	14-C	1174	Student Activity Center at Presidential Village	3-E	4292	4293	Unoccupied	12-C
7059	Footer Auditorium	11-G	5011	Student Engineering Projects Building	8-E	4292	4293	Unoccupied	12-C
1233	Frank M. Moody Music Building	11-H	3422	Student Health Center	11-K	4292	4293	Unoccupied	12-C
2152	Frederick R. Maxwell Hall	9-C	5372	Student Media Building	6-J	4292	4293	Unoccupied	12-C
1235	Fresh Food Company	8-E	1021	Student Recreation Center	10-K	4292	4293	Unoccupied	12-C
1155	Gallalee Hall	10-F	7012	Student Services Center	7-D	4292	4293	Unoccupied	12-C
1067	Galland Hall	8-E	2297	ten Hour Hall	10-C	4292	4293	Unoccupied	12-C
1170	Gordon Palmer Hall	9-F	5390	Tennis Facilities - Outdoor	8-L	4292	4293	Unoccupied	12-C
1014	Graves Hall	9-C	5391	Tennis Facilities - Indoor	8-L	4292	4293	Unoccupied	12-C
1030	H. M. Comer Hall (Mineral Industries Building)	6-E	3423	Theater and Dance Set Design Studio	6-J	4292	4293	Unoccupied	12-C
1245	Hardway Hall	7-E	3426	Tom Barnes Education Center	4-J	4292	4293	Unoccupied	12-C
7213	Hayden-Harris Hall	11-E	1249	Tom Bevilacqua Energy, Mineral, and Materials Science Research Building	5-F	4292	4293	Unoccupied	12-C
3418	HEB Design House	6-I	5018	University Medical Center	11-K	4292	4293	Unoccupied	12-C
1079	Houser Hall	7-E	6208	University Police Center	7-E	4292	4293	Unoccupied	12-C
1251	Interdisciplinary Science Building - Shelby Hall	6-F	5370	Women's Softball Complex	7-L	4292	4293	Unoccupied	12-C
6299	ISSR Building	13-K	1214	Woods Hall	7-E	4292	4293	Unoccupied	12-C

Places to Eat and Drink

(And favored by the host committee)

Near Campus

Holler & Dash (Biscuits)

1130 University Blvd, (205) 752-3310, <https://holleranddash.com/>

Mr. Chen's

514 14th St, (205) 343-6889, <http://www.mrchenstuscaloosa.com/>

Ruan Thai

1407 University Blvd, (205) 391-9973, <http://www.rollthai.com/>

Surin of Thailand

1402 University Blvd, (205) 752-7970, <http://surinofthailand.com/location/surin-tuscaloosa/>

Swen Chinese Restaurant

1130 University Blvd B2, (205) 391-9887

Hours: Sun-Thur 11am-10pm | Fri/Sat 11am-11pm

Downtown

301 Bistro, Bar, & Beer Garden

301 Greensboro Ave, (205) 764-1395, <http://301bistro.com/>

Avenue Pub

405 23rd Ave, (205) 759-4900, <http://www.avepub.com/>

DePalma's Italian Cafe

2300 University Blvd, (205) 759-1879, <http://www.depalmadowntown.com/>

Hours: Sun 11am-9pm, M-Thr 11am-10pm, Fri/Sat 11am-10pm

Five Bar

2324 6th St, (205) 345-6089, <http://five-bar.com/bar-locations/tuscaloosa-alabama/>

Jim 'n' Nick's (BBQ)

305 21st Ave, (205) 469-2060, <https://www.jimnicks.com/menus/tuscaloosa/bar-b-q/>

Mellow Mushroom (Pizza)

2230 University Blvd, (205) 758-0112, <http://mellowmushroom.com/store/tuscaloosa>

Hours: Sun 12-9pm | Mon-Sat 11 am – 10 pm

Miss Dots (Chicken)

1715 University Blvd, (205) 632-5321, <http://lovemissdots.com/>

Sweet Home Food Bar

2218A University Blvd, (205) 764-9346, <http://www.sweethomefoodbaral.com/>

Taco Mama

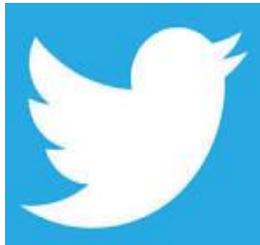
2104A University Blvd, (205) 409-8173, <http://www.tacomamaonline.com/TacoMamaMenu-Tuscaloosa.pdf>

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Stay tuned for information about SEEPS 2018, which will be held at Georgia Southern and hosted by Amanda Glaze!



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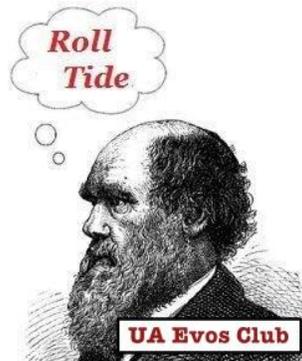
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