# PASSIONATELY CURIOUS

# What I wish I had known when I was a Sophomore...

The inside scoop on seminars and other helpful tips

Dr. Sharifa Love-Rutledge 2/8/2019



### Ice Breaker-Who is my neighbor?

 On the note card that was given to you when you entered write down your neighbor's responses to the following questions

- What is your name?
- What is your major?
- What is your classification?
- What is something you want to learn from this workshop?



### Who am I?

- Dr. Sharifa Love-Rutledge
- Assistant Professor in the Chemistry Department
- I teach General Chemistry and General Biochemistry
- My lab studies type 1 diabetes, aging, and insulin resistance.
- Yes, I am a faculty member, but I am also a human. I enjoy mentoring aspiring chemists and biomedical researchers.



### What is a seminar?

An organized meeting of individuals focused on original research to facilitate the exchange of knowledge that ends with a question and answer period



# Who gives seminars?

- Faculty/research scientists from UAH
- Students
- Guests from outside the institution
  - Faculty/Researchers from other Universities
  - Research Scientists from Industry
  - Research Scientists from Government

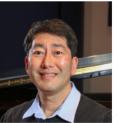


#### **BIOLOGICAL SCIENCES SEMINAR**

Shelby Center for Science and Technology Room 109 Friday, February 1, 2019 12:00p.m. - 1:00p.m.



#### Blending Science, Education and Business in Structural Biology



Dr. Joseph D. Ng Department of Biological Sciences University of Alabama in Huntsville

Structural Biology is the study of macromolecular structure and function using the principles of molecular biology, biochemistry and biophysics.

The science and techniques of X-ray and neutron crystallography have been used to decipher the molecular structure of macromolecules revealing their evolution and biological function. Our work has been focused on determining the three-dimensional structures and functions of extremophilic proteins. Our goal is to determine their molecular features that allow their host organisms to thrive in extreme environments. Discovering adaptive mechanisms in extremophiles may help us in modifying gene products to perform protein engineering that may have therapeutic potential and commercial value.



# Did you know?

- Most departments on campus host seminars...
  - Departmental Seminars
    - Some on UAH Calendar

https://www.uah.edu/events

### The 2019 Scholars Institute Committee Announces Keynote Speaker »

#### FEB 05 | SCHOLARS INSTITUTE

The 2019 Scholars Institute Committee is proud to announce Dr. Alexandera "Sasha" Thackaberry as the keynote speaker. Dr. Sasha ...

### New Postage Rates as of Jan. 27th, 2019 » FEB 05 | BUSINESS SERVICES

PreviousNew Rate Letters (1 oz.)50 cents55 centsLetters additional ounces21 cents15 centsOutbound International Letters (1 ...

#### **Events**





#### Spring 2019 - Training by Request

JAN 02 - APR 30

**♥** SHELBY CENTER



### Volunteer Huntsville: Photo Documentary by Patty Horton

JAN 09 - MAR 01

**♥** SALMON LIBRARY



### Tuesday Physics Seminar: Gravitational Lensing

FEB 05 @ 2:50PM

OPTICS BUILDING

# Did you know?

- Most departments on campus host seminars...
  - Departmental Seminars
    - Some on UAH Calendar
    - Some advertised by flyer in department building



TUESDAY 01/22/19 4 PM SST 121

Department of Biological Sciences Seminar

### AHMED LAWAN

DEPARTMENT OF PHARMACOLOGY
YALE UNIVERSITY SCHOOL OF MEDICINE



# Systemic contributions of Liver and Skeletal Muscle to obesity and Fatty liver Disease

Nonalcoholic fatty liver disease (NAFLD) is a chronic liver disease that is characterized by excessive lipid accumulation within hepatocytes known as hepatic steatosis. The intracellular regulators and cellular pathways that contribute to the development of obesity-linked NAFLD have yet to be fully explained. More importantly, there is no pharmacological treatment approved for NAFLD. A better understanding of the pathogenesis of NAFLD would be helpful for developing novel therapeutic treatments for NAFLD. I propose that perturbations in the MAPK/MKP-1 balance in the liver and skeletal muscle contribute to the altered metabolic status associated with NAFLD. Using a new

# Did you know: UAH Distinguished Lecture Series



#### 2018 Distinguished Lecture Series



James Clapper, former Director of National Intelligence August 29, 2018



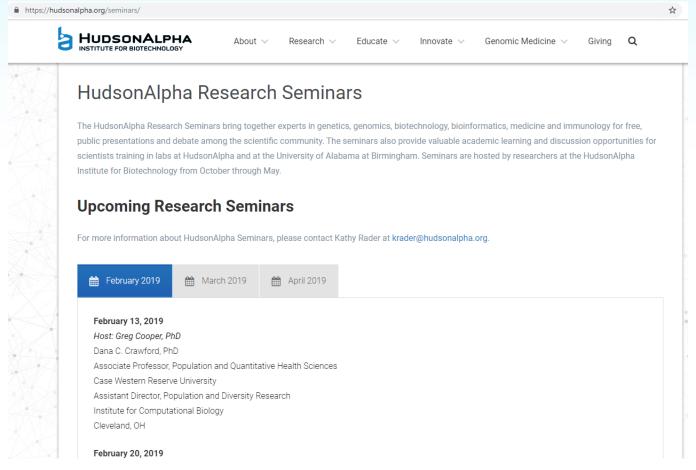
Jim Clapper is one of the finest intelligence minds of the 21st century. From 2010 until 2017, he served as the fourth-ever Director of National Intelligence, the nation's top intelligence official and the principal intelligence advisor to the president. He provided the President Obama's daily morning brief and held one of the broadest portfolios in the entire government, overseeing 200,000 intelligence employees internationally, a \$52 billion budget, and high-profile organizations like the CIA, NSA, and FBI.

Director Clapper is a retired Air Force Lieutenant General who served two tours in Southeast Asia. He brings 50 plus years of military and intelligence experience to discussions regarding the unprecedented breadth of challenges facing the U.S. today—including transnational threats like terrorism, weapons of mass destruction, and cyber attacks, as well as the domestic threats posed by nation states like Russia, China, North Korea, and Iran. He is the author of a new book, Facts and Fears: Hard Truths from a Life in Intelligence.

While a majority of Director Clapper's accomplishments remain shrouded in

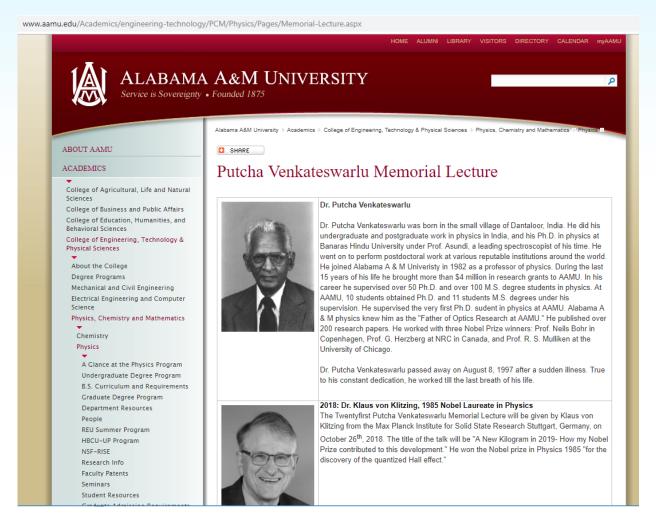


# Did you know: Hudson Alpha offers a seminar series





### Did you know: Alabama A & M has a yearly seminar series given by Nobel Laureates?





### Do I have to prepare?

- Even if you haven't prepared, the point of a seminar is to disseminate knowledge. Most talks begin with a broad introduction to help the audience understand why the researcher is pursuing the science.
  - So if you are interested go!
- Some of your basic preparation occurs on a daily basis by attending classes.
   Some topics will have its roots in the information that you are learning in class.
- No formal dress code but I would discourage pajamas; © you want to make a good impression.



# How should I prepare?

If the topic is something you have never heard of, you can look up the technique, topic, or speaker.



# Example: Chemistry Seminar on 1/25/19

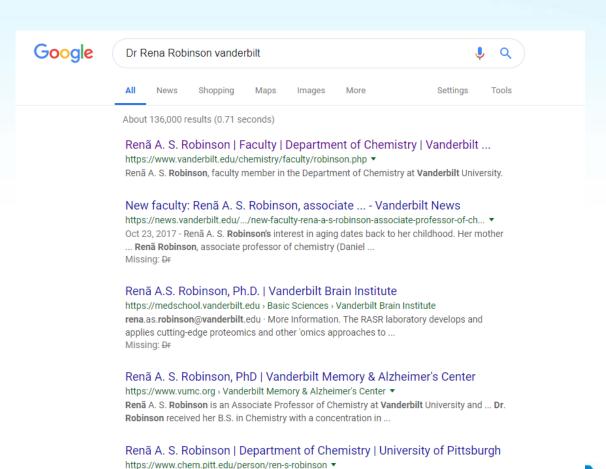
**Department of Chemistry Seminar Series** 

Dr. Renã AS Robinson

Vanderbilt University

Comprehensive Proteomics and Lipidomics Strategies to Advance Alzheimer's Disease Research

> Friday, January 25, 2019 MSB 113, 2:00 pm



The Robinson group utilizes biochemistry, analytical, and bioinformatics tools to ... "Multiple

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Proteases to Localize Oxidation Sites," Gu, Liqing; Robinson, Renã...

https://www.vanderbilt.edu/chemistry/faculty/robinson.php

### Department of **Chemistry**

/ Renã A. S. Robinson

Title and Contact

Associate Professor of Chemistry

Dorothy J. Wingfield Phillips Chancellor's Faculty Fellow

Office: 5423 SC Phone: (615) 343-0129 Vanderbilt University Nashville, TN 37235

Email • Website
Education

Ph. D., Indiana University

B.S. in Chemistry, University of Louisville, 2000

#### Specialties

Bioanalytical Chemistry
Mass Spectrometry
Proteomics
Ion Mobility Spectrometry

In the News

Research News @ Vanderbilt- New faculty: Renã A. S. Robinson, associate professor of chemistry

#### Renã A. S. Robinson



#### Selected Publications

6 orcid.org/0000-0001-6307-8671

"MS3 based Quantitative Proteomics using Pulsed-Q Dissociation (PQD);" Cao, Zhiyun; Evans, Adam R; Robinson, Renă A. S., Rapid Communications in Mass Spectrometry, Vol. 29, 2015, Pages 1025-1030

"Multiple Proteases to Localize Oxidation Sites," Gu, Liqing; Robinson, Renã A. S., *PLoS ONE*, Vol. 10, **2015**, Pages e0116606

"Global cPILOT Analysis of the APP/PS-1 Mouse Liver Proteome," Evans, Adam, R.; Guerrero, Rodolfo, Jr.; Robinson, Renä A. S. Proteomics Clinical Applications Special Issue on Neurological Disorders, 2015, Pages DOI: 10.1002/proa.201400149

"Sample Multiplexing with Cysteineselective Approaches: cysDML and cPILOT," Gu, Liqing.; Evans, Adam R.; Robinson, Renä A. S., JASMS, Vol. 26, **2015**, Pages 615-630 S. Robinson, associate professor of chemistry

#### Research

We are particularly interested in Alzheimer's disease and sepsis and how the periphery is involved in these disorders. Recently, we have become interested in using our technology to understand the molecular basis of health disparities in Alzheimer's disease and sepsis. These questions require high-throughput analytical methodology and we specialize in developing novel proteomics approaches involving mass spectrometry that are useful for analyzing complex biological tissues, increasing sample multiplexing capability, and studying oxidative post-translational modifications.

#### Proteomics Technology:

In order to adequately address problems about aging and disease using proteomics, high-throughput approaches are necessary. This is because investigating changes across many clinical samples, disease stages or aging timepoints, with treatment, or across tissues, etc. can take significant amounts of time. We are working to improve the throughput involved with quantitative proteomics methods with chemical tagging approaches. We have developed an enhanced multiplexing approach that combines precursor isotopic labeling and isobaric tagging (cPILOT) methods and frequently use different types of chemical labeling strategies in our application projects. Currently, we are working to 1) increase sample multiplexing capability for global peptide analysis and 2) develop selective quantitative methods for oxidative post-translational modifications such as 3-nitrotyrosine, protein carbonyls, and cysteine oxidation.

#### Alzheimer's Disease and the Periphery

Alzheimer's disease is a neurodegenerative disorder that devastates millions of aged persons. By 2050, ~15 million persons will suffer from Alzheimer's disease. There is currently no way to cure, delay, or prevent this disease. Many advances have been made that give us valuable insight about the role of the central nervous system in Alzheimer's disease. We believe that bodily systems outside of the central nervous system contribute significantly to disease pathogenesis and in fact could be initiators of Alzheimer's disease. We are using proteomics and other 'omics analyses of animal models and human tissues of Alzheimer's

R.; Robinson, Renã A. S., *JASMS*, Vol. 26, **2015**, Pages 615-630

"Insight into the Mechanism of Graphene Oxide Degradation via the Photo-Fenton Reaction," Bai, Hao; Jiang, Wentao; Kotchey, Gregg P; Saidi, Wissam A.; Bythell, Benjamin J.; Jarvis, Jacqueline M.; Marshall, A. G.; Robinson, Renā A. S.; Star, A., J Phys Chem C Nanomater Interfaces, Vol.118. 2014. Pages 10519-10529

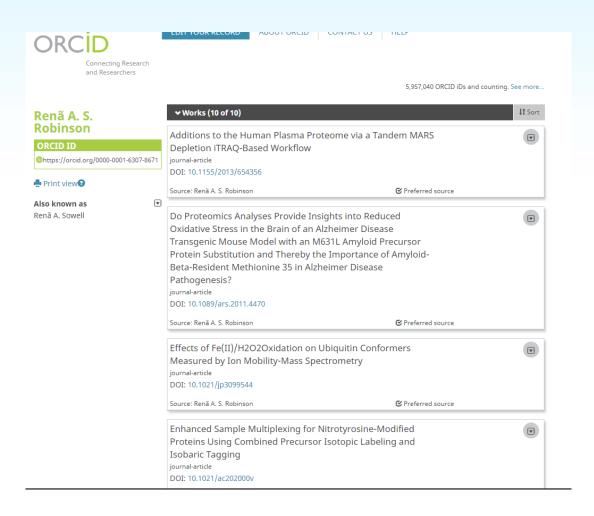
"The Role of Proteomics in Understanding Biological Mechanisms of Sepsis," Cao, Zhiyun.; Robinson, Renã A. S. , Proteomics Clinical Applications, Vol. 8, **2014**, Pages 35-52

"Proteome Characterization of Splenocyte Populations from a Double Transgenic Alzheimer Mouse Model," Cao, Zhiyun; Robinson, Renä A. S., Proteomics, Vol. 14, **2014**, Pages 291-297

"Proteomics Reveals Age-related Differences in the Host Immune Response to Sepsis," Cao, Zhiyun; Yende, Sachin; Kellum, John A.;Angus, Derek C.; Robinson, Renã A. S., Journal of Proteome Research, Vol. 13, 2014, Pages 422-432

"Global Combined Precursor Isotopic Labeling and Isobaric Tagging (CPILOT) Approach with selective MS3 Acquisition," Evans, Adam R.; Robinson, Renã A. S., Proteomics, Vol. 13, 2013, Pages 3267-3272

### You can use the ORCID



Antioxidants & Redox Signaling, Vol. 17, No. 11 Forum News & Views

Do Proteomics Analyses Provide Insights into Reduced Oxidative Stress in the Brain of an Alzheimer Disease Transgenic Mouse Model with an M631L Amyloid Precursor Protein Substitution and Thereby the Importance of Amyloid-Beta-Resident Methionine 35 in Alzheimer Disease Pathogenesis?

Rukhsana Sultana, Renã A. S. Robinson, Miranda Bader Lange, Ada Fiorini, Veronica Galvan, Joanna Fombonne, Austin Baker, Olivia Gorostiza, Junli Zhang, Jian Cai, William M. Pierce, Dale E. Bredesen, and D. Allan Butterfield

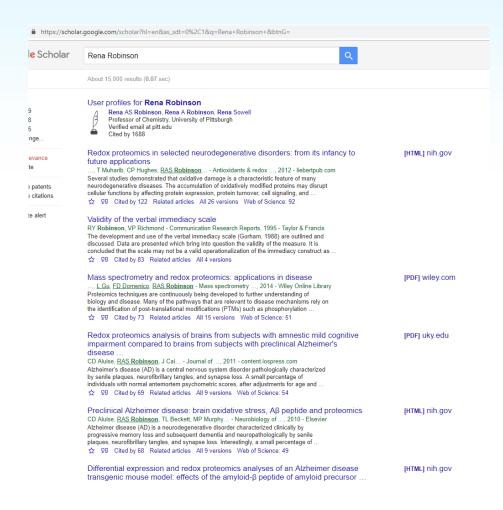
Published Online: 25 Sep 2012 | https://doi.org/10.1089/ars.2011.4470

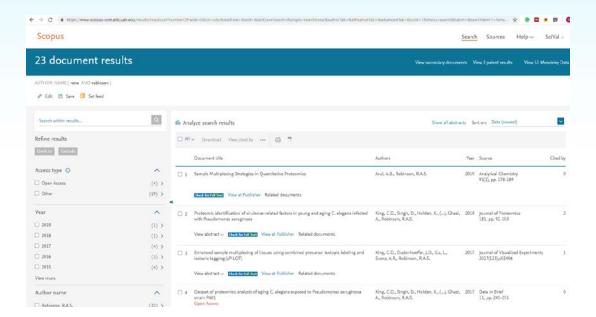


#### Abstract

The single methionine (Met/M) residue of amyloid-beta (A $\beta$ ) peptide, at position 35 of the 42-mer, has important relevance for A $\beta$ -induced oxidative stress and neurotoxicity. Recent *in vivo* brain studies in a transgenic (Tg) Alzheimer disease (AD) mouse model with Swedish and Indiana familial AD mutations in human amyloid precursor protein (APP) (referred to as the J20 Tg mouse) demonstrated increased levels of oxidative stress. However, the substitution of the Met631 residue of APP to leucine (Leu/L) (M631L in human APP numbering, referred to as M631L Tg and corresponding to residue 35 of A $\beta$ 1-42) resulted in no significant *in vivo* oxidative stress levels, thereby supporting the hypothesis that Met-35 of A $\beta$  contributes to oxidative insult in the AD brain. It is conceivable that oxidative stress mediated by Met-35 of A $\beta$  is important in regulating numerous downstream effects, leading to differential levels of relevant biochemical pathways in AD. Therefore, in the

### Or a search engine







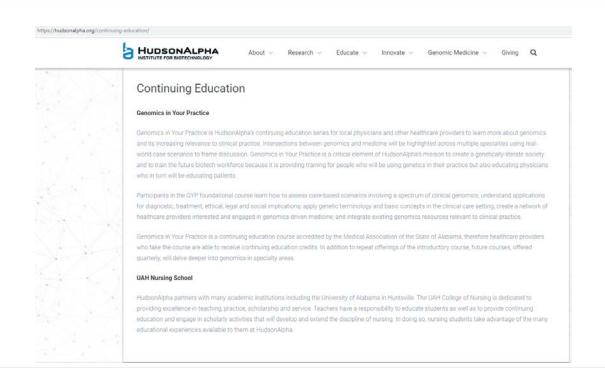
### What should I do?

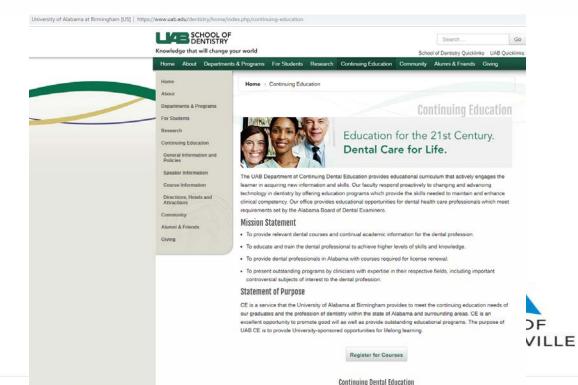
- Please don't sleep in the seminar.
- Silence or turn off your cell phone.
- It is ok to take notes or even write down questions.
- It is ok to meet other audience members around you before/after the seminar.
- You can also take the time to introduce yourself to faculty within your department. This time is a great time to make a good impression as well as learn what types of research that are going on in their labs.



# Are seminars only for academics?

Seminars aren't just for students interested in graduate school.
 Physicians and other health-related professionals will have to participate in Continuing Education courses and seminars.





# What are additional benefits to attending seminars?

Presentation skills are honed over time.

 Seminar is a great time to be inspired to the techniques utilized by the speakers to convey complex information.

 Alternatively, seminar is also a great time to learn what techniques not to use to convey complex information



### How do I ask questions?

- There often is a short window (10-15 minutes) after the seminar where you can ask the speaker questions
  - This can be approached in three ways
    - 1. Asking the question during the Q&A portion of the talk
    - 2. Approaching the speaker immediately after the seminar and Q & A portion closes to ask a question one on one.
    - 3. Email the speaker directly to ask your question



### How do I ask questions? First option

- 1. Organize your thoughts, during the summary of the presentation
- 2. Wait until the Q & A period opens up.
- 3. Raise your hand and wait to be acknowledged by the moderator or presenter.
  - a. In some instances, it may be a great idea to complement the seminar and state your name and classification.
- 4. Ask, but remember to project your voice to ensure that everyone in the room can hear you.



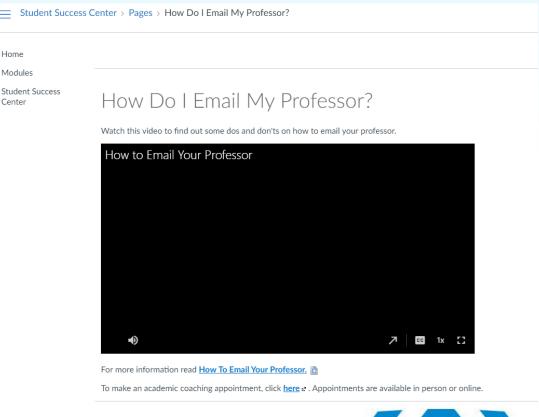
# How do I ask questions? The Second option

- The approach the speaker option may be more difficult because you will probably one of many who wants the one on one interaction.
  - It is a valuable tool to begin to increase your network.
  - It should be reserved for speakers that you have a genuine interest in engaging with. Be strategic, clear, and concise. You are competing with others for the time.



# How do I ask questions? The Third option

- I would encourage anyone who wants to pursue the third option to introduce themselves after the seminar so that the speaker can put a face with an email.
  - Although this option seems the safest, most speakers are inundated with emails.
  - The SSC has great advice on how to appropriately develop emails, and I would encourage you to watch the video.





# How do I ask questions?

Speakers love undergraduate questions. A large portion of the speakers are faculty and are excited to engage with the next generation of scientists. We find the act of asking brave!

- Some speakers come with the thought of recruiting students for graduate programs or summer research opportunities. If you ask good questions, they will be impressed.
  - Sometimes the question you can ask in a one on one meeting is if they have summer research opportunities?



### Quotes from faculty about questions

- I think an undergraduate questioning after listening to a seminar sends some signals:
  - Speaker is impressed that UG student is so much engaged in the talk, he/she will think highly of our students.
  - An instructor (like me) is impressed and am proud of our UG student.
  - It also reflects that we as teachers a doing such an excellent job of educating the students that they are confident in asking a question(s), and comprehending the subject matter.
  - This also shows to me that students are relating things they learn in class to a real research problem.
  - -Dr. Mukherjee, Assistant Professor-Chemistry

- This one is my observation: When I give a talk to my department I always look forward questions from both grad and undergrad students because I know that the faculty will not help me resolving the problem, fresh eyes are always better:)
- -Dr. Cruz-Vera, Associate Professor-Biology



### Quotes from faculty about questions

- They should attend, and they absolutely should ask questions. This is not only OK, it's expected by the speakers. Students will certainly have LOTS of questions, so ask away. Speakers love questions and opportunity to talk more. There is sometimes the perception that questions need to be "deep" or "insightful." Nonsense. Anything you don't understand is a question.
- -Dr. Miller, Chair-Physics

- Your question may lead to a completely new research direction. So, please ask questions! (and I am too old to think of new research ideas on my own)
  - Dr. Scholz, Professor-Chemistry



How do I benefit from attending? (Audience participation)



| ATS-ESS     | Wednesdays 1:00-2:20    | CRH 4065                            |  |
|-------------|-------------------------|-------------------------------------|--|
| Date        | Speaker                 | Affiliation                         | Seminar Title  |
| Spring 2019 |                         |                                     |  |
| 01/09/2019  | AMS Meeting             |                                     |  |
| 01/16/2019  | Graham Sherwood         | Gulf of Maine<br>Research Institute | Field notes from one of the most rapidly warming fishery ecosystems on the planet          |
| 01/23/2019  | Sarah Bang              | NASA MSFC/NPP                       | Tropical Oceanic Thunderstorms: Evolution, Organization, and Electrification               |
| 01/30/2019  | Mike Newchurch          | UAH                                 | TOLNet and TEMPO: the Future of Air-Quality Measurement                                    |
| 02/06/2019  | Kelley Murphy           | UAH                                 | Assessing Lightning Risk in Vulnerable Outdoor Environment                                 |
| 02/13/2019  |                         |                                     |  |
| 02/20/2019  | Dr. Naiara Pinto        | Jet Propulsion<br>Laboratory        |  |
| 02/27/2019  | Dr. Bhaduri Bhudendra   | Oak Ridge Nat'l Lab                 |  |
| 03/06/2019  | Ian Chang               | Oklahoma University                 |  |
| 03/13/2019  | Dr. Yangyang Xu         | Texas A&M                           | aerosol pollution in the context of climate variability and change: attribution and impact |
| 03/20/2019  | Spring Break            |                                     |  |
| 03/27/2019  |                         |                                     |  |
| 04/03/2019  | Students (3) - Possible |                                     |  |
| 04/10/2019  | Students (3)            |                                     |  |
| 04/17/2019  | Students (4)            |                                     |  |

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#### Chemistry Seminar Spring 2019 Friday at 2pm, MSB 113

| Date       | Speaker                        | Affiliation     |
|------------|--------------------------------|-----------------|
| 01/18/2019 | Seminar Expectation Discussion | Mukherjee,      |
|            |                                | UAH             |
| 01/25/2019 | Renấ A. S. Robinson            | Vanderbilt      |
|            |                                | University      |
| 02/01/2018 | Paul Russo                     | Georgia Tech    |
|            | (Host: Dr. Scholz)             |                 |
| 02/8/2018  | Jesse Carrick                  | Tennessee Tech  |
|            | (Host: Dr. Foster)             | University      |
| 02/15/2018 | Anu Subramanian                | UAH             |
|            | (Host: Dr. Foster)             |                 |
| 02/22/2018 | Chengshan Wang                 | MTSU            |
|            | (Host: Dr. Love-Rutledge)      |                 |
| 03/01/2018 | Russell Schmehl                | Tulane          |
|            |                                | University      |
| 03/8/2018  | 03/8/2018 Reserve              |                 |
| 03/15/2018 | Reserve                        |                 |
| 03/22/2018 | Spring break                   |                 |
| 03/29/2018 | Ivan Lomakin                   | Yale University |
|            | (Host: Dr. McFeeters)          |                 |
| 04/5/2018  | Shanlin Pan                    | UA              |
| 04/12/2018 | Davita Watkins                 | University of   |
|            | (Host: Dr. Love-Rutledge)      | Mississippi     |
| 04/19/2018 | Student speaker                |                 |
| 04/26/2018 | Last class                     |                 |



### Physics & Astronomy

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    Jan. 15:

      Speaker: Dr. Chong Ge (UAH)
      Time/Location: 2:50PM / OPB234-237
      Host: Dr. Ming Sun
      22:
      Speaker: Mr. Rithvik Reddy Gutha (UAH)
      Time/Location: 2:50PM / OPB234-237
      Host: Dr. Seyed Sadeghi
      24:
      Speaker: Dr. Massimo Gaspari (Princeton)
      Time/Location: 10:50AM / OPB234-237
      Host: Dr. Ming Sun
      29:
      Speaker: Dr. Hao-Yi Wu (Ohio State University)
      Time/Location: 2:50PM / OPB234-237
      Host: Dr. Ming Sun
      31:
      Speaker: Dr. Stephen Waalker (GSFC/NASA)
      Time/Location: 10:50AM / OPB234-237
      Host: Dr. Ming Sun
   Feb. 5:
      Speaker: Dr. Matthew Bayliss (MIT)
      Time/Location: 2:50PM / OPB234-237
      Host: Dr. Ming Sun
      7:
      Speaker: Dr. Hsiang-Yi Karen Yang (University of Maryland)
      Time/Location: 10:50AM / OPB234-237
      Host: Dr. Ming Sun
      12: NO seminar because of special Thursday seminars
     19: TBD
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26. TRD

Mar. 5:
 Speaker: Dr. Peter Veres (UAH)
 Time/Location: 2:50PM / OPB234-237
 Host: Dr. Ming Sun
 12: NO seminar because of special Thursday seminars
 26: NO seminar because of special Thursday seminars

 Apr. 2:
 Speaker: Dr. Jeremy Bailin (UA)
 Time/Location: 2:50PM / OPB234-237
 Host: Dr. Ming Sun
 16:
 Speaker: Dr. Hayk Harutyunyan (Emory)
 Time/Location: 2:50PM / OPB234-237
 Host: Dr. Seyed Sadeghi





#### **BIOLOGICAL SCIENCES SEMINAR**

Shelby Center SST 301 Monday, February 11, 2019 11:00 PM



### Mate choice and speciation in North American freshwater fishes

#### Tamra Mendelson

Professor and Associate Chair Department of Biological Sciences University of Maryland Baltimore County



#### The University of Alabama in Huntsville Computer Science Department

Charles Fleming, Ph.D.

Xi'an Jiaotong-Liverpool University

Candidate for the Position of Assistant Professor of Computer Science

Monday, February 11, 2019 10:00 am -11:00 am OKT N302

SemanticLock: An Authentication Method for Mobile Devices Using Semantically-linked Images

ABSTRACT: In this talk I will introduce SemanticLock, a simple, fast, and memorable single factor graphical authentication approach for mobile devices. SemanticLock uses a set of graphical images as password tokens to construct a semantically memorable story representing the user's password. While graphical passwords have been shown in some cases to have lower entropy than other password types, we avoid this problem by studying user preferences and selecting images that avoid any type of explicit or implicit bias, resulting in an effective password space that is essentially the same as the total password space. Results of a five-week user study comparing SemanticLock against other authentication systems show that SemanticLock outperforms or matches PIN and PATTERN in speed, user acceptance, security, usability and like-ability and is significantly more memorable.

BIOGRAPHY: Charles Fleming is an Associate Professor in the Department of Computer Science and Software Engineering at Xi'an Jiaotong Liverpool University. He received his PhD in Computer Science from the University of California Los Angeles and a BS degree in Mathematics from the University of Southern Mississippi. His research interests include security and privacy, computer vision and machine learning, and the intersection of the two fields.



#### The University of Alabama in Huntsville Computer Science Department

Charles W. Walter, Ph.D.

The University of Tulsa

Candidate for the Position of Assistant Professor of Computer Science

Wednesday, February 13, 2019 10:00 am – 11:00 am OKT N302

Securing Wearables through The Personal Fog

Abstract Wearable computing devices have become ubiquitous, with fitness and health trackers, smart watches capable of making payments, and hearables tracking heart rate and providing real-time language translation. Wearables repeatedly collect data from their users and surroundings, transmitting that data back to their base station via Bluetooth. Sometimes this data is anonymized and sent to cloud servers for analysis and additional storage, though often the data is associated with a user when it is sent to the cloud. Unfortunately, wearables are open to attack vectors that most users are unaware of. Attack vectors such as eavesdropping, Man-in-the-Middle attacks, Denial of Service attacks, and phishing attacks are all possible. Worse, wearables can fall prey to these attacks without the user becoming aware of the situation. Because wearables are designed to be worn at all times, a user can unwittingly move from a secure to an insecure environment, increasing the security threat. The challenge to experimenting with attacks and potential mitigations on wearables is the proprietary restrictions on consumer wearables.

In this talk, I discuss research to design, implement, and evaluate an architecture and application for securing wearables. The creation of the personal fog architecture provides additional power to the wearables at the network edge, allowing them to make decisions about their own security state. Experimentation is performed using a developed testbed of Raspberry Pis, that simulate near-future wearables and their base stations in a social setting. I illustrate wearable attack vectors and describe how an application created for use by wearables in the personal fog architecture provides security and social awareness. An approach to automatic evaluation and verification of the wearable user is shown using a shared data method based on the personal fog architecture.

Bio Dr. Charles Walter is a post-doctoral researcher at The University of Tulsa. He received his PhD from The University of Tulsa in 2018. His research interests include wearable security, fog computing, cybersecurity, self-adaptive systems, human trust in code, software engineering, computer science education, robotics, and Augmented and Virtual Reality.



### Panel

 During this time if you have a question feel free to raise your hand and ask or you can write it on a piece of paper and pass it to the end of your row.



# Audience participation

What are some of your barriers to participating in seminar?

What would you need to feel comfortable attending?



# What's next?

Now that you have learned about attending seminars, keep an eye out for the upcoming workshop on "Speaking your science"

