

53rd Annual Southeastern Regional Lipid Conference

Conference Chair

Guanghu Wang, PhD, University of Kentucky

Conference Co-Chair

Natalia Krupenko, PhD, University of North Carolina at Chapel Hill

Keynote Speakers

Hong-Gang Wang, PhD., Penn State University College of Medicine

Rosalind Coleman, MD., University of North Carolina at Chapel Hill

Scientific Program Committee

Shai White-Gilbertson, Medical University of South Carolina

Kristen Jeffries, University of North Carolina at Chapel Hill

Santiago Lima, Virginia Commonwealth University

Chunwan Lu, Augusta University

David Montefusco, Virginia Commonwealth University

Jason Newton, Virginia Commonwealth University

Journal of Lipid Research Junior Investigator Award Committee

Wendy Bollag, Augusta University

Natalia Krupenko, University of North Carolina at Chapel Hill

Andy Morris, University of Kentucky

Guanghu Wang, University of Kentucky

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Besim Ogretmen, Medical University of South Carolina

Carole Oskeritzian, University of South Carolina

Kimberly Paul, Clemson University

Walt Shaw, Avanti Polar Lipids, Inc.

Sarah Spiegel, Virginia Commonwealth University

Wednesday, November 7th 2018

4 PM-5:30 PM	Arrival and Registration	Lobby
5:30 PM-6:30 PM	Welcome Reception	Wade Hampton Room
6:30 PM-7:30 PM	Dinner	Dining Room
7:45 PM-8 PM	Opening Remarks Chair – Guanghu Wang	Pavilion
8 PM-9PM	Keynote Speaker Hong-Gang Wang, Ph.D Penn State University College of Medicine Title: Honing in on Sphingolipids in Autophagy and Regulated Cell Death	Pavilion
9 PM–12 AM	Social Time and Preliminary Poster Viewing	Wade Hampton Room

Thursday, November 8th 2018

7 AM-8 AM	Breakfast	Dining Room
8:15 AM-9:45 AM	Oral Session I Frontiers in Lipid Technology Co-Chairs: Jason Newton and Chunwan Lu	Pavilion
8:15 AM	Innovative mass spectrometry-based approaches for structural characterization and quantification of intact glycolipids <u>Barrientos RC.</u> and Qibin Zhang Q	Pavilion
8:30 AM	Biomaterial-mediated local delivery of Aspirin Triggered Resolvin D1 to promote wound healing and early transplant integration <u>Turner T,</u> Sok MCP, Botchwey E.	Pavilion
8:45 AM	Exofacial membrane composition regulates plasma membrane P4-ATPase activity <u>Bartholomew P. Roland,</u> Todd R. Graham	Pavilion
9:00 AM	Astrocyte-derived ceramide-enriched exosomes (“astrosomes”) enhance neurotoxicity of Amyloid beta	Pavilion

	<u>Elsherbini A</u> , Dinkins M, Leanhart S, Zhong L, Wang G, Jiang X, Zhu Z, Spassieva S, Qin H, and Bieberich E.	
9:15 AM	hMSC Sphingolipid Profiles Modulate Exosome Production <u>Pittman F</u> , Turner T, Ogle M, Chiappa N, Botchwey E. Speaker: To Be Determined	Pavilion
9:30 AM	Neo1-any1-drs2 axis is required for viability and plasma Membrane asymmetry Mehmet Takar, <u>Yannan Huang</u> , Jordan D. Best and Todd R. Graham	Pavilion
9:45 AM	C16-Ceramide directly binds and activates p53 in cellular stress response <u>Jeffries KA</u> , and Krupenko N.	Pavilion
10:00AM-10:15AM	Coffee Break with Light Refreshments	
10:15AM-12:15 AM	Oral Session II Regulation of Lipid Metabolism and Biological Role of Lipids Co-Chairs: Shai White-Gilbertson and Kristen Jeffries	Pavilion
10:15 AM	Aryl Hydrocarbon Receptor (AHR) modulates glycosphingolipid synthesis <u>Majumder S</u> , Kono M, Lee Y, Byrnes C, Proia R.	Pavilion
10:30 AM	Loss of Hepatic Sphingosine-Kinase-1 Expression Reveals a Female-Specific Mechanism of Fibrosis Inhibition <u>Montefusco D</u> , Jamil M, Maczis M, Hancock W, Spiegel S, Schroeder W, Cowart L.A.	Pavilion
10:40 AM	Sphingosine Kinase 1 Activity and Niemann-Pick Type C disease: Linking Sphingolipid and Cholesterol Metabolism Inside the Cell <u>Newton J</u> , Lima S, Maceyka M, Enriz R, Milstiena S, and Spiegel S.	Pavilion
11:00 AM	The effect of acetyl-CoA carboxylase reduction on protein lipidation in African trypanosomes <u>Saliutama J</u> and Paul K.	Pavilion

11:15 AM	1-Deoxysphingolipid toxicity in dorsal root ganglia neurons Goins L, Doolen S, and <u>Spassieva S.</u>	Pavilion
11:30 AM	TrypSpotting: Identifying Lipid Droplet Proteins in Trypanosoma brucei <u>Raja S</u> , Featherstone E, Hannah R, Begley B, Walkowiak A, Pazzo K, Fowler K, Jones C, Walker S, Mummey H, Winston B, and Paul K.	Pavilion
11:45 AM	Apolipoprotein E Isoforms Modulate Astrocytic Lipid Metabolism <u>Farmer BC</u> , Kluemper J, Johnson JA.	Pavilion
12 PM	<i>DENND5B</i> Regulates Intestinal Triglyceride Absorption and Body Mass <u>Gordon S</u> , Neufeld N, Yang Z, Pryor M, Fan X, Kullo J, Biesecker L, Remaley A	Pavilion
12:15 AM-1:30 PM	Lunch	Dining Room
1:30 PM- 4:00 PM	Free time	
4 PM-6 PM	Poster Session	Wade Hampton Room
6:00 PM	Award Presentations: Journal of Lipid Research Junior Investigator Award. Travel Awards, Poster Awards, and Photo Contest Award	Pavilion
6:30 PM–7:30 PM	Junior Investigator Award Lecture Raymond Blind , Vanderbilt University Title: The acyl chains of dioleoyl PIP3 adopt multiple conformations within the hydrophobic core of the nuclear receptor SF-1	Pavilion
7:45 PM–9 PM	SERLC Banquet	High Hampton Inn Dining Room
9 PM–11PM	Square Dancing (Compulsory Participation)	Lobby High Hampton Inn
11 PM –12 AM	Social Time/ Additional Poster Viewing	Lobby High Hampton Inn/Wade Hampton Room

Friday, November 9 2018

7:00 AM–8:00 AM	Breakfast	High Hampton Inn Dining Room
8:15 AM–9:30 AM	Oral Session III Lipids in Disease Chairs: Santiago Lima	Pavilion
8:15 AM	Spinster 2, A Bidirectional Transporter of Sphingosine-1-Phosphate <u>Singh M</u> , Maczys M, Green C, Allegood J, Milstien S, Spiegel S.	Pavilion
8:30 AM	Linking iPLA₂β-Derived Lipids with Development of Type 1 Diabetes <u>Nelson AJ</u> , White TD, Tusing YG, Park MA, Chalfant CE, and Ramanadham S	Pavilion
8:45 AM	Newly uncovered angiogenic remodeling in asymptomatic eczema requires mast cells and sphingosine kinase 1 <u>Fuseler JW</u> , Kumte NI, Wedman PA, Aladhani A, Chumanovich AP, Oskeritzian CA.	Pavilion
9:00 AM	Phosphatidylglycerol suppresses toll-like receptors' ability to induce inflammation <u>Patel H</u> , Chen X, Choudhary V, Bollag WB	Pavilion
9:15 AM	Sphingosine kinase 1: An enigmatic regulator of the adipocyte circadian transcription complex <u>Anderson AK</u> , Lambert JM, Cowart LA	Pavilion
9:30 AM–9:45 AM	Coffee Break	Pavilion
9:45 AM–11 PM	Oral Session IV Lipids In Cancer Chairs: David Montefusco	Pavilion
9:45 AM	Ceramide regulation of colon tumor response to immune checkpoint inhibitor immunotherapy <u>Lu C</u> , Klement JD, Ibrahim M, Yang D, Redd P, Lebedyeva L, and Liu K	Pavilion

10:00 AM	<p>The tumor suppressor p53 is required for Beclin1-and ATG5-dependent cell death induced by Sphingosine Kinase 1 inhibition <u>Lima S</u>, Takabe K, Newton J, Saurabh K, Young MM, Leopoldino AM, Hait NC, Roberts JL, Wang HG, Dent P, Milstien S, Booth L, Spiegel S.</p>	Pavilion
10:15 AM	<p>The NMR structural characterization of the SET and FTY720 complex reveals a mechanism for the activation of PP2A <u>De Palma RM</u>, Parnham SR, Li Y, Oaks JJ, Peterson YK, Szulc ZM, Xing Y, and Ogretmen B.</p>	Pavilion
10:30 AM	<p>Expression of the SNAI2 transcriptional repressor is regulated by C₁₆-ceramide Lu P, White-Gilbertson S, Nganga R, Kester M and <u>Voelkel-Johnson C</u></p>	Pavilion
10:45 AM	<p>Ceramide mimetics regulation of tumor cell death <u>Redd PS</u>, Payne D, Lu C, Yang D, Klement J, Ibrahim M, Lebedyeva I, and Liu K</p>	Pavilion
11:00 AM-12:00PM	<p>Keynote Speaker Rosalind A. Coleman, MD University of North Carolina at Chapel Hill Title: Compartmentalization of Hepatic Lipid Metabolism</p>	Pavilion
12 PM–12:30 PM	<p>Business Meeting Co-Chair: Natalia Krupenko PH.D. Selection of 2019 Co-Chair</p>	Pavilion
12:30 PM–1:30 PM	Lunch	High Hampton Inn Dining Room
1:30 PM	Conference Adjourn	

Posters

1. **Lack of skin mast cell activation and sphingosine-1-phosphate elevation in male mice may explain gender disparity observed in pre-symptomatic atopic dermatitis**
Ross M. Tanis, Piper A. Wedman, Alena P. Chumanevich, Ahmed Aladhami, John W. Fuseler, Carole A. Oskeritzian
2. **Lipid Transporter SPNS2 Promotes Microglia Pro-Inflammatory Activation in Response to Amyloid-Beta Peptide**
Liansheng Zhong, Xue Jiang Haiyan Qin, Erhard Bieberich, and Guanghu Wang
3. **ABC294640 downregulates the Androgen Receptor mediated by inhibition of DEGS in prostate cancer cells**
Erin Clayton, Shai White-Gilbertson, Ping Lu, and Christina Voelkel-Johnson
4. **The Role of Acid Ceramidase in Prostate Cancer Relapse**
Shai White-Gilbertson, Ping Lu, James. S. Norris, and Christina Voelkel-Johnson
5. **The Role of Sphingosine-1-Phosphate in De Novo and Acquired Tamoxifen Resistant Breast Cancer**
Melissa A. Maczis, Michael Maceyka, Michael R. Waters, Manjulata Singh, Tia H. Turner, Mohammad Alzubi, J. Chuck Harrell, Sheldon Milstien, and Sarah Spiegel
6. **Understanding the homeostatic regulation of mammalian SPT activity by ORMDLs**
Muthukumar Kannan, Deanna Davis and Binks Wattenberg
7. **Effect of Fatty Acid Synthesis Inhibitor Cerulenin on Bloodstream Form T. brucei**
Walkowiak, O. Agata, and Paul, Kimberly S.
8. **Ceramide-dependent regulation of hepatic glucocorticoid sensitivity**
Banerjee, D., Rodgers, J., Deevska, G, Karakashian, A, McClintock, T., Nikolova-Karakashian, M.
9. **Elucidating the Regulation of Sphingolipid Biosynthesis by ORMDL Proteins**
Suemitsu, J., Davis, D. and Wattenberg, B.
10. **S100A9-induced inflammatory cytokine expression is mediated by TLR2 and TLR4 in keratinocytes and macrophage cells**
Vivek Choudhary, Rawipan Uaratanawong, and Wendy B. Bollag
11. **The Hunt for the GPI sn1 Remodelase in Bloodstream Form African Trypanosomes**
Nava R. Poudyal and Kimberly S. Paul
12. **Dynamic Time-Series Experiments Identify Defect in the Export of Sphingoid Base-1-phosphates in Sickle Red Blood Cells**
Balakumar D, Chiappa N, Botchwey E

13. **LEW.1WR1 rats have altered inflammation responses during Type 1 Diabetes Induction**
Madushika Wimalarathne, Kayleigh Cantrell, Sharifa Love-Rutledge
14. **Hepatic LDL receptor-related protein 1 deficiency alters mitochondrial lipids and function**
Sivaprakasam Chinnarasu and David Y. Hui
15. **Discovery of production of N-acyl-N-methyl-sphingolipids (i.e., N-methyl-Cer, -HexCer and – SM) from N-methyl-sphingosine using HAP1 cells in culture and reverse-phase liquid chromatography in combination with tandem mass spectrometry**
Samuel L. Kelly and Alfred H. Merrill, Jr.
16. **The Role of the ORMDL3-Ceramide Axis in Asthma**
James B. Oyeniran C, Sturgill J, Newton J, Maceyka M, Conrad D, Cook-Mills J, Spiegel S
17. **Biphasic Responses of Sphingolipids in Airway Inflammation and Airway Hyperreactivity**
Sturgill JL, Oyeniran C, Allegood J, Montpetit AJ, Milstien S, and Spiegel S.
18. **Phosphatidylglycerol inhibits TLR2-mediated immune activation by β -defensin 2 and heat shock protein beta-4**
Wendi Bao, Sara Chen, Vivek Choudhary, and Wendy B. Bollag
19. **Bioactive lipid mediators in plasma are early predictor of preeclampsia**
Daniel J. Stephenson, L. Alexis Hoeflerlin, Sonya J. Washington, Margaret A. Park, Jerome F. Strauss, III, Scott W. Walsh, and Charles E. Chalfant
20. **Metabolomic response to dietary folic acid alterations in CerS6 knockout mice**
Keri Barron and Natalia Krupenko
21. **Ceramide regulates interaction between tubulin and voltage-dependent anion channel 1 and ATP level in astrocytes**
Z. Zhu, J.N. Kong, A. Elsherbini, G. Wang, H. Qin, M. B. Dinkins, Y. Itokazu, W. Zhi, X. Jiang, L. Zhong, S. Leanhart, Tarki, S, Tripathi, P, S. D. Spassieva, and E. Bieberich
22. **LipidQuan: Comprehensive and High Throughput HILIC based LC-MS/MS Targeted Lipid Quantitation Platform**
Nyasha Munjoma, Giorgis Isaac, Lee Gethings, Suraj Dhungana, and Robert Plumb
23. **CRISPR/Cas9 deletion of ORMDL isoforms reveals unexpected sphingolipid shunting**
Christopher D Green, Jason Newton, Clement Oyeniran, Briana James, Deanna Davis, Michael Maceyka, Jeremy Alegood, Brian Wattenberg, and Sarah Spiegel