



**Ohio Physiological Society**  
**33rd Annual Meeting**  
**University of Cincinnati**  
**September 28–29, 2018**

**OPS2018 Program**

<b>Friday, September 28</b>	
<i>University of Cincinnati College of Medicine, Medical Campus–East          CARE/Crawley Building and Medical Sciences Building          Enter from 3230 Eden Avenue (opposite Eden Garage) or 231 Albert Sabin Way</i>	
2:00–5:00 pm	<b>Registration</b> <i>Atrium, CARE/Crawley Building</i>
4:00 pm	<b>Opening Remarks</b> <i>Room E351, Medical Sciences Building (Level E)</i>  <b>Opening Remarks</b> Bryan Mackenzie, PhD <i>OPS President</i>  <b>Welcome Address</b> Melanie Cushion, PhD <i>Senior Associate Dean, Research          UC College of Medicine</i>  <b>OPS2018 Keynote Address</b>  Chair: Sakthivel Sadayappan, PhD MBA  <b>Myocardial regeneration: Uncommon sense for common problems</b> Mark A Sussman, PhD <i>San Diego State University</i>
5:45 pm	<b>Reception</b> <i>Atrium, CARE/Crawley Building</i>
6:45 pm	<b>Banquet</b> <i>Kaplan Reception Hall, CARE/Crawley Building</i>

## Saturday, September 29

University of Cincinnati College of Medicine, Medical Campus–East

CARE/Crawley Building and Medical Sciences Building

Enter from 3230 Eden Avenue (opposite Eden Garage) or 231 Albert Sabin Way

8:00–9:00 am

### Registration and Continental Breakfast

Atrium, CARE/Crawley Building

9:00 am

### Session 1

Kowalewski Auditorium, Kowalewski Hall, 3255 Eden Avenue

#### Welcome Comments

James P Herman, PhD

Chair, Department of Pharmacology & Systems Physiology

UC College of Medicine

#### Cardiovascular Physiology and Translational Science

1. Hydrogel mediated delivery of siRNA cocktail results in adult cardiomyocyte cell cycle re-entry and cardiac repair post-myocardial infarction  
Perwez Alam, Rafeeq PH Ahmed, and Onur Kanisicak | *University of Cincinnati*
2. m6A mRNA methylation is a novel regulator of cardiac homeostasis and hypertrophy  
Lisa E Dorn, Jop H van Berlo, Chuan He, and Federica Accornero | *The Ohio State University*
3. Fibrinogen depletion attenuates angiotensin II-induced abdominal aortic aneurysm  
Hannah Russell, Keith Saum, Alexandra C Sundermann, Shannon M Jones, Anders Wanhainen, Todd L Edwards, Lori A Holle, Alisa S Wolberg, Matthew J Flick, and A Phillip Owens | *University of Cincinnati*

#### Student Data Blitz 1

Azucenas	Gawali	Hussein	Murdock	Sandella
Conrad	Hallak	Jahanpanah	Norman	Stogsdill
Crocker	Hanyu	Jones	Rakoczy	Thanekar
Emmert	Ho	Kim	Ramesh	Tran
Fershtman	Holokai	Lakes	Rose	

10:30 am

### Refreshments

Atrium, CARE/Crawley Building

10:45 am

### Poster Session 1

Presenters: Odd-numbered posters

Atrium, CARE/Crawley Building and Medical Sciences Building (Level E)

12:00 pm

### Lunch

Kaplan Reception Hall, CARE/Crawley Building

1:00 pm	<p><b>Session 2</b>  <i>Kowalewski Auditorium, Kowalewski Hall, 3255 Eden Avenue</i></p> <p><b>Metal Metabolism and Epithelial Transport</b></p> <p>4. Zinc deficiency induces hypertension by promoting renal Na<sup>+</sup> reabsorption  Clintoria R Williams, Monisha Mistry, Aswathy M Cheriyan, Jasmine M Williams, Meagan K Naraine, Carla L Ellis, Rickta Mallick, Abinish Mistry, Jennifer L Gooch, Benjamin Ko, and Robert S Hoover   <i>Wright State University</i></p> <p>5. Ablation of Na<sup>+</sup>/H<sup>+</sup> exchanger-3 prevents iron loading in the Hfe mouse model of hereditary hemochromatosis  Sydney L Stone, T Alex Ruwe, John P Bonamer, Kyle R Vieth, Corbin R Azucenas, Ali Shawki, and Bryan Mackenzie   <i>University of Cincinnati</i></p> <p><b>Student Data Blitz 2</b></p> <table border="0"> <tr> <td>Alogaili</td> <td>Engevik</td> <td>Ibrahim</td> <td>Praljak</td> <td>Ruwe</td> </tr> <tr> <td>Chakraborty</td> <td>Gill</td> <td>Jay</td> <td>Rama</td> <td>Slone</td> </tr> <tr> <td>Choi</td> <td>Green</td> <td>Jensen</td> <td>Ramicone</td> <td>Soska</td> </tr> <tr> <td>Danchine</td> <td>Hosawi</td> <td>Jiang</td> <td>Rosselot</td> <td></td> </tr> </table>	Alogaili	Engevik	Ibrahim	Praljak	Ruwe	Chakraborty	Gill	Jay	Rama	Slone	Choi	Green	Jensen	Ramicone	Soska	Danchine	Hosawi	Jiang	Rosselot	
Alogaili	Engevik	Ibrahim	Praljak	Ruwe																	
Chakraborty	Gill	Jay	Rama	Slone																	
Choi	Green	Jensen	Ramicone	Soska																	
Danchine	Hosawi	Jiang	Rosselot																		
2:00 pm	<p><b>Refreshments</b>  <i>Atrium, CARE/Crawley Building</i></p>																				
2:15 pm	<p><b>Poster Session 2</b>  Presenters: Even-numbered posters  <i>Atrium, CARE/Crawley Building and Medical Sciences Building (Level E)</i></p>																				
3:30 pm	<p><b>Session 3</b>  <i>Kowalewski Auditorium, Kowalewski Hall, 3255 Eden Avenue</i></p> <p><b>Physiology from Adaptation to Z-Lines</b></p> <p>6. Antarctic notothenioids, <i>Chaenocephalus aceratus</i> and <i>Notothenia coriiceps</i>, differ in stress signaling associated with acute warming  Elizabeth Evans and Elizabeth Crockett   <i>Ohio University</i></p> <p>7. Unraveling the complexities of cell cycle dynamics during stem cell differentiation  Richard Ballweg, Lee, Suengwon, Xiaonan Han, Philip Maini, Helen Byrne, Christian Hong, and Tongli Zhang   <i>University of Cincinnati</i></p> <p>8. Selective knockdown of A2AR in CD8<sup>+</sup> T cells using CD8-targeting nanoliposomes  Hannah S Newton, Michael J Arnold, Ameet Chimote, Trisha Wise-Draper, and Laura Conforti   <i>University of Cincinnati</i></p> <p>9. Downstream proteins that facilitate sarcolemma membrane repair have potential as therapeutics for Duchenne muscular dystrophy  Thomas A Kwiatkowski, Aubrey Rose, Kevin McElhanon, Brian Paleo, Eric X Beck, Sayak Bhattacharya, and Noah Weisleder   <i>The Ohio State University</i></p>																				
4:30 pm	<p><b>Business Meeting and Awards</b>  <i>Kowalewski Auditorium, Kowalewski Hall, 3255 Eden Avenue</i></p>																				

*Please visit the Graduate Programs information table!*

## Posters

Atrium, CARE/Crawley Building and Medical Sciences Building (Level E)

**Poster Session 1** | 10:45 am – 12:00 pm | Presenters: Odd-numbered posters

**Poster Session 2** | 2:15 – 3:30 pm | Presenters: Even-numbered posters

<b>1</b>	<b>Pulmonary epithelial knockout of TSC1 results in alveolar simplification in mice</b> Rahul Sandella <sup>1,2</sup> , Nikolaos M Nikolaidis <sup>2</sup> , John C Ernst <sup>2</sup> , Lori B Pitstick <sup>2</sup> , HuiXing Wu <sup>2</sup> , John G Noel <sup>2</sup> , Jason C Woods <sup>3,4</sup> , Jinbang Guo <sup>4</sup> , Francis X McCormack <sup>2</sup>
<b>2</b>	<b>Dimethylarginine dimethylaminohydrolase (DDAH) siRNA knockdown in a human pulmonary vascular co-culture cell model</b> Avante Milton, Hanadi Almazroue, Leif D Nelin, Jennifer K Trittman
<b>3</b>	<b>Role of transcription factor Sox17 in the development of vertebrate digestive and respiratory systems</b> Melissa MacDonald <sup>1,2</sup> , Scott Rankin <sup>2</sup> , David Ludeke <sup>2</sup> , Aaron Zorn <sup>2</sup>
<b>4</b>	<b>Intracellular calcium mobilization requires TFF2 activation of CXCR4 and EGFR to promote epithelial repair</b> Kristen A Engevik, Hikaru Hanyu, Andrea L Matthis, Eitaro Aihara, and Marshall H Montrose
<b>5</b>	<b>Effect of <i>Helicobacter pylori</i> chemotaxis on gastric epithelial repair</b> Hikaru Hanyu <sup>1</sup> , Andrea L Matthis <sup>1</sup> , Kristen A Engevik <sup>1</sup> , Karen M Otteman <sup>2</sup> , Marshall H Montrose <sup>1</sup> , Eitaro Aihara <sup>1</sup>
<b>6</b>	<b>Hedgehog signaling upregulates PD-L1 expression and promotes gastric cancer progression</b> Jayati Chakrabarti <sup>1</sup> , Loryn Holokai <sup>2</sup> , LiJyun Syu <sup>6</sup> , Nina G Steele <sup>7</sup> , Julie Chang <sup>3</sup> , Jiang Wang <sup>4</sup> , Syed Ahmed <sup>5</sup> , Andrzej Dlugosz <sup>6,7</sup> , and Yana Zavros <sup>1</sup>
<b>7</b>	<b>Heterogeneity of cell-cycle times within the intestinal crypts</b> Yuhui Cao <sup>1,2</sup> , Suengwon Lee <sup>1</sup> , and Christian I Hong <sup>1,2</sup>
<b>8</b>	<b>Development of the intestinal circadian clock and its role in the response to <i>Clostridium difficile</i> toxin B</b> Andrew E Rosselot <sup>1</sup> , Toru Matsu-ura <sup>1</sup> , Taylor R Broda <sup>2</sup> , Nambirajan Sundaram <sup>2</sup> , Michael A Helmrath <sup>2</sup> , James M Wells <sup>2</sup> , Sean R Moore <sup>2,3</sup> , and Christian I Hong <sup>1,2</sup>
<b>9</b>	<b>Functional properties of mouse ferroportin, a cellular iron-export protein</b> Corbin R Azucenas <sup>1,2</sup> , John P Bonamer <sup>1,2</sup> , T Alex Ruwe <sup>2,3</sup> , Kyle R Vieth <sup>3</sup> , Bo Qiao <sup>4</sup> , Tomas Ganz <sup>4</sup> , Elizabeta Nemeth <sup>4</sup> , and Bryan Mackenzie <sup>1,2,3</sup>
<b>10</b>	<b>Hepcidin interaction with ferroportin in the <i>Xenopus</i> oocyte expression system</b> T Alex Ruwe <sup>1,2</sup> , Kyle R Vieth <sup>2</sup> , Sharraya Aschemeyer <sup>3</sup> , Bo Qiao <sup>3</sup> , Tomas Ganz <sup>3</sup> , Elizabeta Nemeth <sup>3</sup> , Bryan Mackenzie <sup>1,2</sup>
<b>11</b>	<b>Oligomerization of ferroportin and the mechanism of autosomal dominance in ferroportin disease</b> John P Bonamer <sup>1,2</sup> , T Alex Ruwe <sup>1,3</sup> , Corbin Azucenas <sup>1,2</sup> , Bo Qiao <sup>4</sup> , Kyle R Vieth <sup>1</sup> , Tomas Ganz <sup>4</sup> , Elizabeta Nemeth <sup>4</sup> , Bryan Mackenzie <sup>1,2,3</sup>
<b>12</b>	<b>TRPM7 channel inactivation</b> Tetyana Zhelay and J Ashot Kozak
<b>13</b>	<b>TRPP2 (PC2)-dependent channel of renal primary cilia also requires TRPM3</b> Gillian S Bryant <sup>1</sup> , Steven J Kleene <sup>1</sup> , Brian J Siroky <sup>2</sup> , Julio A Landero-Figueroa <sup>1</sup> , Bradley P Dixon <sup>3</sup> , Nolan W Pachciarz <sup>2</sup> , Lu Lu <sup>2</sup> , Nancy K Kleene <sup>1</sup>

14	<b>Expression pattern and sequence analysis of <i>Aedes aegypti</i> sodium-dependent cation-chloride cotransporters</b> Christopher M Gillen <sup>1</sup> , Grace F Riley <sup>1</sup> , John C Crow <sup>1</sup> , Adrienne C DeBrosse <sup>1</sup> , Mary E Sawyer <sup>1</sup> , Megha Kalsi <sup>2</sup> , Peter M Piermarini <sup>2</sup>
15	<b>Acetazolamide inhibits ammoniogenesis and prevents the correction of metabolic acidosis in rat</b> Perwez Alam, Sihame Amlal and Hassane Amlal
16	<b>High-protein diet and potassium depletion exacerbate ammonia synthesis and renal hypertrophy in rats with type I diabetes</b> Sihame Amlal <sup>1,2</sup> , Perwez Alam <sup>2</sup> and Hassane Amlal <sup>2</sup>
17	<b>Disparate effects of antibiotics on hypertension</b> Sarah Galla <sup>1</sup> , Saroj Chakraborty <sup>1</sup> , Xi Cheng <sup>1</sup> , Jiyoun Yeo <sup>1</sup> , Blair Mell <sup>1</sup> , Helen Zhang <sup>1</sup> , Anna V Mathew <sup>2</sup> , Matam Vijay-Kumar <sup>1</sup> , and Bina Joe <sup>1</sup>
18	<b>Salt-responsive metabolite, <math>\beta</math>-hydroxybutyrate, attenuates hypertension</b> Saroj Chakraborty <sup>1</sup> , Sarah Galla <sup>1</sup> , Xi Cheng <sup>1</sup> , Jiyoun Yeo <sup>1</sup> , Blair Mell <sup>1</sup> , V Singh <sup>1</sup> , BS Yeoh <sup>1</sup> , P Saha <sup>1</sup> , Anna V Mathew <sup>2</sup> , Matam Vijay-Kumar <sup>1</sup> , Bina Joe <sup>1</sup>
19	<b>Effect of osmotic mini-pump implantation on hypertension induced by chronic intermittent hypoxia</b> Kajal Kamra <sup>1</sup> , Ryan J Rakoczy <sup>1</sup> , Richard JA Wilson <sup>2</sup> , and Christopher N Wyatt <sup>1</sup>
20	<b>Effect of AT1 receptor on renal and urinary biomarkers of acute kidney injury in 2K1C model of renovascular hypertension</b> Sanjeev Dhakal, Anhar Hosawi, Laale F Alawi, Nadja Grobe, Khalid M Elased
21	<b>Effect of sodium glucose co-transporter 2 (SGLT-2) inhibitor on the urinary shedding of ACE2 and neprilysin (NEP) in db/db diabetic mice</b> Unmesha Thanekar, Rupinder Gill, Sanjeev Dhakal, Anhar Hosawi, and Khalid M Elased
22	<b>Effect of insulin on renal and urinary shedding of biomarkers of diabetic kidney disease</b> Rupinder K Gill, Esam Salem, Nadja Grobe, and Khalid M Elased
23	<b>Circadian rhythm regimen combats type 2 diabetes in 2 subjects: Could disease progression be caused by a positive feedback loop?</b> Kathleen Broomall <sup>1</sup> , Avi Milgrom <sup>2</sup>
24	<b>Hepatic HAX-1 inactivation improves insulin sensitivity and mitochondrial energetics in mice</b> Fawzi C Alogaili <sup>1</sup> , Sivaprakasam Chinnarasu <sup>2</sup> , Anja Jaeschke <sup>2</sup> , Evangelia G Kranias <sup>1</sup> , and David Y Hui <sup>2</sup>
25	<b>Global dysfunction of low-density lipoprotein receptor related protein-1 (LRP1) exacerbates diet-induced obesity and insulin resistance in mice</b> Emily M Igel <sup>1</sup> and David Y Hui <sup>2</sup>
26	<b>Apolipoprotein E receptor-2 deficiency impairs dendritic cell migration and efferocytosis</b> Patrick Wolfkiel <sup>1</sup> , Anja Jaeschke <sup>2</sup> , Yan Ma <sup>2</sup> , and David Y Hui <sup>2</sup>
27	<b>Human antigen R (HuR) regulates brown adipose tissue function</b> Sarah R Anthony <sup>1</sup> , Lindsey Lanzillotta <sup>1</sup> , McKenzie Crist <sup>1</sup> , Adrienne Guarnieri <sup>1</sup> , Lisa Green <sup>1</sup> , Sam Slone <sup>1</sup> , Shannon Jones <sup>1</sup> , Robert N Helsley <sup>1</sup> , Jonathan M Brown <sup>2</sup> , Mete Civelek <sup>3</sup> , A Phillip Owens <sup>1</sup> , and Michael Tranter <sup>1</sup>
28	<b>Effects of omega-3 and omega-6 fatty acids on NO and IL-6 cytokine concentrations in murine macrophages</b> Veronika Danchine and Cristina Caldari-Torres

29	<b>Developing a method of co-incubation of macrophages and adipocytes to evaluate cellular communication</b> Jordan Beck and <u>Cristina Caldari-Torres</u>
30	<b>A novel compound, D-CYSee, reverses the deleterious effects of opioids</b> Monica Ghosh, Derek Damron
31	<b>Synergistic depression of breathing due to concurrent ethanol and opioid use is centrally mediated</b> Kajal Kamra, Yoon-Jae Yi, Christopher N Wyatt, <u>Ryan J Rakoczy</u>
32	<b>Increasing or decreasing the excitability of V2a neurons activates accessory respiratory muscles</b> Victoria N Jensen <sup>1</sup> , Kari Seedle <sup>4</sup> , Sarah M Turner <sup>4</sup> , Steven A Crone <sup>2,3,4</sup>
33	<b>Role of afferent innervation in neuromuscular contractures</b> Brendan Ho <sup>1,2</sup> , Sia Nikolau <sup>2</sup> , Liangjun Hu <sup>2</sup> , and Roger Cornwall <sup>2</sup>
34	<b>Sialic acid therapy and gene therapy in a GNE myopathy model: Visualizing the endpoints</b> Kelly E Hardin <sup>1,4</sup> and Paul T Martin <sup>2,3</sup>
35	<b>Mechanisms of muscle stem cell fusion in muscular dystrophy</b> Michael J Petrary <sup>1,2</sup> , Douglas P Millay <sup>2</sup>
36	<b>Survival of satellite cells underlies dystrophic skeletal muscle remodeling in the mouse</b> Sarah S Han <sup>1,2</sup> , Justin G Boyer <sup>2,3</sup> , Jeffery D Molkentin <sup>2,3</sup>
37	<b>Effects of altering plasma membrane lipid composition through dietary approaches on muscle membrane repair capacity</b> Diana Hallak, Thomas A Bodnar Kwiatkowski, Kevin McElhanon, Brian Paleo, Eric X Beck, and Noah Weisleder
38	<b>Membrane repair defects in the pathogenesis of myositis</b> Kevin E McElhanon <sup>1</sup> , Nicholas Young <sup>2</sup> , Jeffrey Hampton <sup>2</sup> , Eric X Beck <sup>1</sup> , Zarife Sahenk <sup>3</sup> , Rohit Aggarwal <sup>4</sup> , Chester V Oddis <sup>4</sup> , Wael N Jarjour <sup>2</sup> , Noah Weisleder <sup>1</sup>
39	<b>Specific poloxamers increase membrane repair in dystrophic muscle fibers in a cell type dependent manner</b> Aubrey L Rose, Thomas A Bodnar, Sayak Bhattacharya, Kevin McElhanon, Brian Paleo, Ana Capati, Eric X Beck, and Noah Weisleder
40	<b>Dissecting the critical role of slow skeletal myosin binding protein-C in striated muscle function</b> James W McNamara, Taejeong Song, Jennifer Schwanekamp, John N Lorenz, and Sakthivel Sadayappan
41	<b>K<sup>+</sup> and Rb<sup>+</sup> affinities of the Na,K-ATPase <math>\alpha</math>1 and <math>\alpha</math>2 isozymes: An application of ICP-MS for quantification of Na<sup>+</sup> pump kinetics in myofibers</b> Natalie J Norman <sup>1,2</sup> , Hesamadin Hakimjavadi <sup>1,2</sup> , Cory A Stiner <sup>4,5</sup> , Tatiana L Radzyukevich <sup>1</sup> , Jerry B Lingrel <sup>3</sup> , Julio A Landero Figueroa <sup>1,4,5</sup> , Judith A Heiny <sup>1,2</sup>
42	<b>Characterization of postnatal cardiomyocyte maturation and proliferation in pigs</b> Nivedhitha Velayutham, Christina M Alfieri, Emma J Agnew, Kyle W Riggs, R Scott Baker, Farhan Zafar, and Katherine E Yutzey
43	<b>Classifying of arrhythmogenic cardiomyopathy-linked desmoplakin variants through molecular mechanisms of pathogenicity</b> Tyler L Stevens <sup>1</sup> , Heather Manning <sup>1</sup> , Taylor Albertelli <sup>2</sup> , Nathan T Wright <sup>2</sup> , and Maegen Ackermann <sup>1</sup>

44	<p><b>Inhibition of the RNA binding protein HuR reduces cardiac cell death following ischemia/reperfusion injury</b></p> <p>Samuel Slone<sup>1,2</sup>, Sarah R Anthony<sup>1</sup>, Lisa Green<sup>1,2</sup>, Michelle L Nieman<sup>2</sup>, John N Lorenz<sup>2</sup>, and Michael Tranter<sup>1</sup></p>
45	<p><b>Zebrafish Stx4 is crucial to the regulation of cardiac conduction during normal embryonic development and is an effective model of human disease</b></p> <p>Eliyahu Perl<sup>1,2,3</sup>, Padmapriyadarshini Ravisankar<sup>3</sup>, T LeighAnn VanDyke<sup>3</sup>, Carlos E Prada<sup>5,6,7</sup>, and Joshua S Waxman<sup>3,4,5</sup></p>
46	<p><b>Nr2f1a is required to repress sinoatrial node identity within atrial cardiomyocytes in zebrafish</b></p> <p>Kendall E Martin<sup>1,2</sup>, Padmapriyadarshini Ravisankar<sup>2</sup>, and Joshua S Waxman<sup>2</sup></p>
47	<p><b>Sectm1a deficiency aggravates endotoxin-induced inflammation and myocardial dysfunction</b></p> <p>Yutian Li<sup>1</sup>, Shan Deng<sup>1,5</sup>, Xiaohong Wang<sup>1</sup>, Nathan Robbins<sup>2</sup>, Xingjiang Mu<sup>1</sup>, Kobina Essandoh<sup>1</sup>, Tianqing Peng<sup>4</sup>, Jack Rubinstein<sup>2</sup>, David E Adams<sup>3</sup>, and Guo-Chang Fan<sup>1</sup></p>
48	<p><b>Magnesium metal electrospun with polycaprolactone into nanofibrous fabrics has tissue reparative effects in vivo</b></p> <p>Xiaoxian An<sup>1</sup>, Udhab Adhikari<sup>5</sup>, Tracy M Hopkins<sup>2</sup>, Kevin J Little<sup>2,4</sup>, David B Hom<sup>2</sup>, William R Heineman<sup>3</sup>, Narayan Bhattarai<sup>5</sup>, Sarah K Pixley<sup>2</sup></p>
49	<p><b>Chronic vagus nerve stimulation prevents sudden cardiac death in failing hearts</b></p> <p>Jeffrey S Crocker<sup>1,2,3,4</sup>, Daiana Vieira<sup>3,4</sup>, Kenneth G Parks<sup>3,4</sup>, Deeptankar DeMazumder<sup>1,3,4</sup></p>
50	<p><b>Heart repair by CRISPR-induced cardiovascular progenitor cells</b></p> <p>Lin Jiang, Jialiang Liang, Wei Huang, Wenfeng Cai, Christian Paul, and Yigang Wang</p>
51	<p><b>Cardiac fibroblasts play a critical role during both fibrosis and reverse remodeling</b></p> <p>Shannon Jones<sup>1</sup>, Hadi Khalil<sup>2</sup>, Zhenling Liu<sup>1</sup>, Yanli Zhao<sup>1</sup>, Jeffery Molkenin<sup>2,3</sup>, and Onur Kanisicak<sup>1</sup></p>
52	<p><b>Pharmacological inhibition of human antigen R (HuR) blunts fibroblast activation and cardiac fibrosis</b></p> <p>Lisa C Green<sup>1,2</sup>, Sarah R Anthony<sup>1</sup>, Samuel Slone<sup>1,2</sup>, Lindsey Lanzillotta<sup>1</sup>, John N Lorenz<sup>2</sup>, Liang Xu<sup>3</sup>, and Michael Tranter<sup>1</sup></p>
53	<p><b>PKA-phosphorylation of Hsp20 is associated with detrimental cardiac remodeling and early death</b></p> <p>George Gardner, Yutian Li, Guan-Sheng Liu, J Qian, Min Jiang, Wen-Feng Cai, Michael Tranter, Guo-Chang Fan, Jack Rubinstein, Evangelia Kranias</p>
54	<p><b>Tumor susceptibility gene 101 promotes physiological cardiac growth and attenuates pathological cardiac remodeling</b></p> <p>Kobina Essandoh<sup>1</sup>, Xiaohong Wang<sup>1</sup>, Shan Deng<sup>1</sup>, Nathan Robbins<sup>2</sup>, Wei Huang<sup>3</sup>, Xingjiang Mu<sup>1</sup>, Jiangtong Peng<sup>1</sup>, Yutian Li<sup>1</sup>, Yigang Wang<sup>3</sup>, Jack Rubinstein<sup>2</sup>, Guo-Chang Fan<sup>1</sup></p>
55	<p><b>MicroRNA-33a/b inhibition attenuates microvesicle and monocyte tissue factor activity in the plasma of atherosclerotic non-human primates</b></p> <p>Bailey Stone<sup>1</sup>, Adrien Mann<sup>1</sup>, Sierra Paxton<sup>2</sup>, Ryan E Temel<sup>2</sup>, and A Phillip Owens<sup>1</sup></p>
56	<p><b>Thrombin activation of platelet protease-activated receptor-4 (PAR4) augments atherosclerosis</b></p> <p>Megan S Jay<sup>1</sup>, Shannon M Jones<sup>1</sup>, Hannah M Russell<sup>1</sup>, Adrien Mann<sup>1</sup>, Nathan Robbins<sup>1</sup>, Deborah A Howatt<sup>2</sup>, Alan Daugherty<sup>2</sup>, and A Phillip Owens<sup>1</sup></p>
57	<p><b>Gut microbiota and circulating trimethylamine N-oxide (TMAO) are associated with aortic aneurysm formation</b></p> <p>Kelsey A Conrad<sup>1</sup>, Shannon M Jones<sup>1</sup>, Robert N Helsley<sup>2,3</sup>, Rebecca C Schugar<sup>2,3</sup>, Zeneng Wang<sup>2,3</sup>, Stanley L Hazen<sup>2,3</sup>, J Mark Brown<sup>2,3</sup>, and A Phillip Owens<sup>1</sup></p>

58	<b>Metabolism of mTORC1-inhibited vascular endothelial cells</b> Alyssa Solano <sup>1,2</sup> , Yoshi Odaka <sup>2</sup> , and Richard Lang <sup>2,3</sup>
59	<b>In vitro and in vivo strategies to develop targeted therapies for capillary lymphatic venous malformations</b> Nora Lakes <sup>1,2</sup> , Jillian Goines <sup>2</sup> , Patricia Pastura <sup>3</sup> , Timothy Le Cras <sup>3</sup> , and Elisa Boscolo <sup>2</sup>
60	<b>Analysis of pulsatile flow through an elastic tube using computational methods</b> Niksa Praljak <sup>1</sup> and Andrew Resnick <sup>1,2</sup>
61	<b>Inhibition of UBE2N as a therapeutic approach in myelodysplastic syndromes (MDS) and acute myeloid leukemia (AML)</b> Vighnesh Ramesh <sup>1,2</sup> , Avery M Sampson <sup>2</sup> , Laura Barreyro <sup>2</sup> , Lyndsey C Bolanos <sup>2</sup> , William L Seibel <sup>3</sup> , Daniel T Starczynowski <sup>2,4</sup>
62	<b>FOXM1 inhibitor RCM-1 decreases carcinogenesis and nuclear <math>\beta</math>-catenin</b> Nihar Rama, Samridhi Shukla, David Milewski, and Tanya Kalin
63	<b>Myeloid-derived suppressor cell mediated evasion of immune surveillance in pancreatic ductal adenocarcinoma</b> Loryn Holokai <sup>1</sup> , Jayati Chakrabarti <sup>2</sup> , Jiang Wang <sup>3</sup> , Marina Pasca di Magliano <sup>5</sup> , Timothy Frankel <sup>5</sup> , Nina Steele <sup>5</sup> , Syed Ahmad <sup>4</sup> , and Yana Zavros <sup>2</sup>
64	<b>Myeloid-derived suppressor cells in pancreatic cancer: Implications in novel therapeutic approaches</b> Mamdouh Salman A Alshehri, Anita Thyagarajan, and Ravi P Sahu
65	<b>KRAS murine models in pancreatic cancer therapies</b> Shorooq Khader, Anita Thyagarajan, and Ravi P Sahu
66	<b>Ca<sup>2+</sup> fluxes in PD1 positive exhausted T cells in head and neck cancer</b> Martina Chirra <sup>1,2</sup> , Vaibhavkumar S. Gawali <sup>1</sup> , Hannah Newton <sup>1</sup> , Ameet Chimote <sup>1</sup> , Trisha Wise-Draper <sup>2</sup> , and Laura Conforti <sup>1</sup>
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