Concurrent Session 7A: HfPEF in Metabolic Diseases

<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
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<tbody>
<tr>
<td>Joe Trusso</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Good morning (for everyone who’s in a time zone where it’s morning)!! I am Jonathan Kirk from Loyola University Chicago, and welcome to “HfPEF in Metabolic Diseases”. We have 3 great talks in this session: Dr. Hossein Ardehali from Northwestern Medicine here in Chicago, Dr. Yajing Wang from Thomas Jefferson University, and Dr. Gopal Babu from Rutgers New Jersey Medical School.</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>I’ll remind each of the speakers to keep their talks to less than 20 minutes. If they go over, I’ll have to go back in time 4 weeks when they were recorded and activate a red blinking light indicating their time is up.</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Thank you Dr. Kirk for moderating this session</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>Hey Jonathan! and all</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Thank you for participating Dr. Babu! I’m really looking forward to it.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>Good morning! Look forward to an exciting session</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Good morning everyone! Should be a great session.</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>For anyone with a question, please step up to the Chat Box. Please no YELLING, #hashtags, memes, or gifs. We should have some extra time at the end as well. Thank you and enjoy the session!</td>
</tr>
<tr>
<td>Adam Wende Venkatesh Sundararajan</td>
<td>Jonathan I love the joke, if only time travel were possible... Looking forward to another great session.</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Hi everyone</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Thanks Jonathan for moderating the session</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>go get em Hossein!</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
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</tr>
<tr>
<td>Jiang Chang</td>
<td>Hi Hossein, great to see you again</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Hello, great to &quot;see&quot; all of you here...</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Hi Wally, great to you again</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Hi Ma, nice to you again</td>
</tr>
<tr>
<td>Paola Rosas</td>
<td>Hi everyone. This is Paola Rosas from UIC</td>
</tr>
<tr>
<td>Dhanendra Tomar</td>
<td>Looking forward to exciting session...</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hi All, Looking Forward a nice session</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to an exciting session on HFpEF!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>it is nice to 'meet' everyone here</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>looking forward to your talk Yajing!</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Yes Joe, HFpEF</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>Hey Jay!! congrats on being BCVS vice-Chair and Joe Wu thanks for your leadership last 2 years !!</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>Good to &quot;see&quot; you Hossein</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>good to meet you here Joe Wu, JC, Wally, Venkatesh and everyone</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>sure, thank you Wally!</td>
</tr>
<tr>
<td>Abinayaa Rajkumar</td>
<td>Hi everyone!</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Thank you Wally!</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hi, Raj</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>hello suresh</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Good to &quot;see&quot; you Raj!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>I like this slide Hossein. When you start at the beginning, you really start at the beginning.</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>likewise Joe</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>hello everyone.</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@yajing, looking forward to your talk</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks Hossein!! Excellent start!!</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>the thing about iron that is interesting is its role in evolution of life</td>
</tr>
<tr>
<td>Steven Houser</td>
<td>Looking forward to your talk</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Hi Dr. Ardehali, very interesting topic</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Nice to see you Hossein! Great work!</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Nice to see you, Hossein</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Liya, nice to 'meet' you</td>
</tr>
<tr>
<td>Priscila Sato</td>
<td>Does it matter if it is ferric or ferrous iron in mTOR signaling?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>iron is converted from oxidized form into reduced form in our cells</td>
</tr>
<tr>
<td>Priscila Sato</td>
<td>thanks</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hi Hossein, important metal for every one not only &quot;iron Man&quot;</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Jonathan, We love the way you moderate the session!!</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Hi Hossein, Any interplay between iron and calcium signaling?</td>
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<tr>
<td>Suresh Palaniyandi</td>
<td>Hi Saktthi, nice session and looking forward, my area of research, Thanks!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Thanks, Saktthi. Its easy to moderate a session with great speakers and an engaged audience. Great work organizing!</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Good to &quot;see&quot; you here, Wally</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>probably. we have not studied that, but there is evidence that they affect each other</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Thanks</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@ Dr. Ardehali, does mitochondrial iron level influence mTOR activation?</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>I may have missed this but what cell type are you studying? Could iron regulation be different in different cell types?</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hossein, is there a difference in iron metabolism in each cell types in heart like endothelial cells vs cardiomyocytes?</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>You too Rosie!!</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>unlikely. we think the regulation is through leucine import into the cells and RAPTR.</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>yes, different cells have different levels of regulation, but similar mechanisms.</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>oh ok, that means it can be regulated by a common factors and mechanism, not cell specific?</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>How specific is this for JmJC? Are the other 70+ aKG dioxygenases also involved? (TETs, ALKBs, PHDs/EGLNs)?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Outstanding talk and a great body of work Hossein!</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Thanks, Dr. Ardehali</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>great question Paul. we have also studied TETs and we think most of teh effect on MTOR is through JMJC proteins. TETs are also affected but they have other cellular effects.</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Dr. Ardehali, interesting talk,</td>
</tr>
<tr>
<td>WingTak Wong</td>
<td>Great talk</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>thanks Joe and Raj. all the work of Jason Shapiro, really bright student.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Thanks! Also, since most of these aKGH dioxygenases use ascorbate as a co-factor, it provides some hints as to how ascorbate is so important for iron homeostasis. Cool work!</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>yes, that is why i always tell my patients to take Vit C with their iron supplements.</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>Very interesting talk. Does iron levels correlates with HFpEF? LVH perhaps?</td>
</tr>
<tr>
<td>Name</td>
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<tr>
<td>Hossein Ardehali</td>
<td>yes, there is evidence that iron affects cardiomyocyte relaxation and development of HFpEF.</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>There is high ferritin content levels Covid-19 non-survivor compared to Covid-19 survived patients, any comments on this</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>cool data, Hossein</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>could be due to iron or it is just an acute phase reactant.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>very interesting, Hossein.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Nice work, Hossein!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Regarding the different levels of regulation in different cell types, does this agree with clinical data, i.e., are different organs more/less sensitive to iron deficiency?</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Great talk, curious to know do any specific cell develop iron resistance?</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Dr. Ardehali, Great work!!!</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Fantastic talk!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Hossein, thanks for the Fe-nominal talk!</td>
</tr>
<tr>
<td>Luke Potter</td>
<td>Very cool</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Great work Hossein (and Jason)!</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Very nice work Hossein! Congrats</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>So happy for our lab, Hossein!</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>Nice data Dr. Ardehali</td>
</tr>
<tr>
<td>Priscila Sato</td>
<td>Cool work</td>
</tr>
<tr>
<td>Brian Orourke</td>
<td>Congrats Hossein</td>
</tr>
<tr>
<td>Melissa Lieu</td>
<td>Is mTORC2 iron sensitive as well?</td>
</tr>
<tr>
<td>Laihua Xie</td>
<td>Great talk Hossein! Any comments on DMT1 may account for Fe uptake into cardiac myocyte?</td>
</tr>
<tr>
<td>Nicole Purcell</td>
<td>Great presentation!</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>yes, there is no disease with iron deficiency except for anemia. i have been a cardiologist fro 20 years and have never seen a patient with CM with iron deficiency unless they have significant anemia and get high output failure. our cells are protected from iron deficiency and we only get anemia.</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hossein, Did you check infiltrating cells such as platelets, RBCs, Macrophages contribute to iron-mediated relaxation issue in the heart?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>mTORC2 is unlikely involved. we have checked it and if there is a regulation, it would be through indirect affect by AKT.</td>
</tr>
<tr>
<td>Yu Zhang</td>
<td>Very nice talk, Dr. Ardehali. I may have missed this, do you find iron deficiency in patients with metabolic disease that have HFpEF?</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
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<tr>
<td>Shyam Bansal</td>
<td>Very interesting work, Hossein! Can you comment if Fe regulates HIF or vice versa as HIF is also an important regulator of mTORC?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Suresh, we have not. it's unlikely that they do.</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Hi Hossein, iron deficiency in Covid-19 are reported, have you done any research on that?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Yu, unlikely.</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Yes, iron regulates HIF through PhDs. Jason checked all of his studies in ARNT KO cells to take HIF out of the equation.</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Hi Hossein, are the pathways you showed affected in the aging heart?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Interesting! Thanks.</td>
</tr>
<tr>
<td>Kohta Ikegami</td>
<td>Hi Hossein, that you for the great talk. How does the JmjC reduction only repress mTOR factors given the global increase of H3K9me2 by iron deficiency?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Hi Rosie, no we have not. I think it is an indirect effect of COVID 19. It is unlikely that a virus affects iron levels.</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Farid, likely. We are studying the role of iron in aging, but we have shown that only brain iron levels are affected by aging. Whether it also affects the heart, I doubt it</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Adipocyte dysfunction in cardiac injury is not well studied, thanks for covering this topic Yajing.</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Thanks Hossein!</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Hi Rosie, there are reports covid-19 non-survived had more ferritin content compared to survived patients</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>It is interesting, thank. Hossein</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>I agree, Joe, Thank you for your comment</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Great question Kohta. JmjC reduction has a global epigenetic effect. Jason showed that with his Chip-Seq data. What we know is that one of the effects is on mTOR which leads to significant metabolic changes</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Thanks</td>
</tr>
<tr>
<td>Melissa Lieu</td>
<td>Thank you, Hossein, Very interesting talk</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>Raj, the ferritin levels are likely indirect effects since ferritin is an acute phase reactant</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorapan</td>
<td>Dr Hossein, Nice to see you again after your recent visit to UAB. Very impact–full ION story. Congratulations!</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Thanks Hossein, and congratulations for your great talk</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>Yajing, very novel findings! Do you know whether vis fat and subcu fat both contribute?</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>That's a great story Yabing. I am sure you investigated specific cargos in circulating exosomes</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
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<tr>
<td>Viswanathan Rajagopalan</td>
<td>Very nice talk. Thanks.</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Great to see you Raj</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Yajing, did you trace the specificity of exosome targeting to ischemic cardiomyocytes more?</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Good morning, Raj, K</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>morning Rosie</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>great question, Rong. in our study, we didnot separate fat tissue from different place, so I do not know, but very likely they have similar effect.</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Yajing, Cool data, My question is which cardiac cells and how you know the exosomes are specifically from adipose tissue? perhaps i missed it</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>Great talks! learned a lot!</td>
</tr>
<tr>
<td>Mei Methawasin</td>
<td>@Yajing, can the exosome be delivered through the intravenous route? will it be different from injection into the myocardium?, very interesting data.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Liya, excellent question, we didnot trace it, we use maker to pin down it from adipocytes.</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>Yajing: did you try to inhibit miR 130b directly in exosomes before cardiac treatments?</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Hi, Yajing, very novel findings! Does mir130 level change in patients with diabetes?</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@yajing, great talk</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Yajing, this is really interesting. I've been banking epicardial fat from all of our heart transplant patients for the past couple years. If these samples would be of any help to you, please contact me.</td>
</tr>
<tr>
<td>Kimberly Ferrero</td>
<td>What a fascinating talk! Thanks, Yajing</td>
</tr>
<tr>
<td>sini sunny</td>
<td>Hi Yajing, nice information.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Suresh, we transplanted adipotissue from HFD to WT mice whose fat tissue was moved, to find the similar effect. Also injection of cultured adipocytes exo showed similar results.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Very interesting topic, really enjoyed your talk Yajing,</td>
</tr>
<tr>
<td>sini sunny</td>
<td>Whether there is any connection with lipid accumulation and exosome secretion in adipocytes?</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>Fantastic work, Yajing</td>
</tr>
<tr>
<td>Yang Xiang</td>
<td>very interesting! Yajing</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Jonathan, That is a great idea because the epicardial fat has been implicated for cardiac protection@Yajing</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Thanks, Yajing. Your talk was fat-tastic!</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Great talk.</td>
</tr>
<tr>
<td>Yi Tan</td>
<td>Yajing, very nice talk!</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Fat-tastic(haha) Kirk, lol</td>
</tr>
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</tr>
<tr>
<td>Yajing Wang</td>
<td>Mei, we direct inject to heart to focus on the cardiac effect to research the direct effect on heart. tail injection do need more isolated exos.</td>
</tr>
<tr>
<td>Amadeus Zhu</td>
<td>Waiting to see what kind of pun Dr. Kirk comes up with for this talk :)</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Yajing, great work!</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Hi Gopal, Looking to learn about DMD., is it a HFpEF type in DMD?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Not really..but diastolic dysfunction is one of the major start point for HF in DMD</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Raj, great questions, no, we did not do specifically inhibit exosomal miRNA. We could collaborate since I would like to know more how effectively inhibit it in exos. You are expert, no doubt.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Rongxue, yes, it did change in patients.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>thank you, Liya, Kim and all</td>
</tr>
<tr>
<td>Kimberly Ferrero</td>
<td>@Amadeus -- we know Dr. Kirk is the king of sarco-sm with puns like that!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Jonathan, sure! We do need collaborate. Thank you!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Joe, thank you! I am so encourage by all of you and this section. Appreciate the opportunity!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Sini, great question, I do not know so far.</td>
</tr>
<tr>
<td>Elizabeth McNally</td>
<td>Did you look at respiratory function with SLN deletion?</td>
</tr>
<tr>
<td>Michelle Parvatiyar</td>
<td>Hi Gopal, Great talk! Do you think that co-segregating mutations in the sarcolipin locus that alter its expression may modify the severity of dystrophic diseases?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>No</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Dr. McNally, no we did not study the respiratory function in these mice. We measured diaphragm function in mdx:utr-/- and it was improved</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Yajing, Congrats again! My question is do you know what is in the exosomes from normal fat that contributes to the protective effects?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Michelle, I don't think so..however we haven't studied</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>great presentation and exciting science</td>
</tr>
<tr>
<td>Elizabeth McNally</td>
<td>better respiration —&gt; better heart function. Might be really important in HFpEF. Definitely important in DMD.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Kirk, Suresh, lol, fat-tastic!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Dr. Babu, Great to see you and thank you for your presentation.</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>It is a nice work and talk Gopal</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Thank you for all your comments!</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@McNally.. We do have some data on other HF models which so SLN is important for HFpEF</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Dr Babu: Skeletal muscle specific SLN-overexpression mice do not develop any muscle dystrophy/atrophy. Please comment.</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@SLN is abundant in the skeletal muscles of higher mammals..Also it may not have any effect on normal skeletal or cardiac muscle</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>@Hossein, Very exciting talk and discovery. I wonder if the same epigenetic factor regulates mTOR expression as well as LAT3? Or through different mechanisms?</td>
</tr>
<tr>
<td>Rachelle Crosbie</td>
<td>@ Dr. Babu. Really great talk. The effect of SLN on mdx:ur-nulls is very impressive, particularly with fibrosis reduction. Did you look at cardiomyocyte membrane damage?</td>
</tr>
<tr>
<td>Kimberly Ferrero</td>
<td>Dr. Babu, great talk! Curious, was that an increase in the ryanodine receptor in the mdx:utr-/- mice compared to WT? In your western blot series a few slides back. And if so, do you think it's related to the change in mito morphology?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@ Dr. Babu: Did sarcolipin levels affect inflammation in the hearts/muscles/circulation?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Rachelle..yes..it was better than mdx:utr-/-</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Dr. babu, Is there a difference in the level of SLN expression between mouse strains? Fvb/N versus C56BL6?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>in skeletal muscles</td>
</tr>
<tr>
<td>Grace Muller</td>
<td>Dr. Babu, is SLN more highly expressed in the atria? Were there any atrial pheotypes that you noted that were striking?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Kimberly, We did not find any change in RyR</td>
</tr>
<tr>
<td>Rachelle Crosbie</td>
<td>very nice!</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>No Sakthi...</td>
</tr>
<tr>
<td>Elizabeth McNally</td>
<td>Hi Rachelle!</td>
</tr>
<tr>
<td>Rachelle Crosbie</td>
<td>Hi Beth!! great to see you here!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Gopal, that was a Darn Magnificent Discussion of sarcolipin in DMD. Thank you!</td>
</tr>
<tr>
<td>Susumu Minamisawa</td>
<td>Hi Dr. Babu, great talk! we also found the similar results in skeletal muscles of mdx/slnko mice. In the heart, gene dosage effect seems weak. Do you think that heterozygous deletion would be sufficient?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Greta talk Gopal!</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Great talk!</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Shyam..yes but we do not know the mechanisms</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Thank you to all 3 speakers! We have 9 minutes for additional questions and discussion on all 3 talks.</td>
</tr>
<tr>
<td>Viswanathan Rajagopalan</td>
<td>Thanks Dr. Babu</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Great talk Gopal</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>Great talk Dr. Babu!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>thank you</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Laihua Xie</td>
<td>Great talk Babu! Congrats...</td>
</tr>
<tr>
<td>Elizabeth McNally</td>
<td>Thank you all the speakers for introducing me to new concepts in metabolic diseases. -and Jonathan for showing off his better than moderate moderation skills!</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Thank-you Dr. Babu! Are there any therapeutic drugs available to reduce SLN expression?</td>
</tr>
<tr>
<td>Supriya Hota</td>
<td>Excellent work!!! Dr. Babu</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Extra credit points to the moderator!</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>Great session! Thank you</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Grace..there is a small upregulation in atria also..also sln+- mice show improvement</td>
</tr>
<tr>
<td>Dominic DelRe</td>
<td>Great talk, Babu! Thanks to all speakers and to Jonathan for superb moderation!</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Nice talk Gopal</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Jonathan..thanks</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Excellent moderating, Kirk</td>
</tr>
<tr>
<td>Grace Muller</td>
<td>Thanks for the talk!</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Dr. Babu, do you think the effects are specific to sarcolipin or any treatment that affects calcium levels?</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Great talk, Babu!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Dr. Babu, are there any known post-translational modifications on SLN that can affect function?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Susumu..yes..heterozygous mutant is sufficient...complete KO is not good for diaphragm</td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Good session, Thanks speakers, moderator and the organizers</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@J Wu..Thanks</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Thanks Danish</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Thanks Lai-Hua</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Yibin, great question! We donot know so far. That is our future work....</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Question to Dr. Hossein - Great talk, curious to know do any specific cell develop iron resistance?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Supriya..no we are screening for small molecules</td>
</tr>
<tr>
<td>Jun Feng</td>
<td>Thanks all presenters, great work. I would like to ask Dr. Wang about animal models of diabetic cardiomyopathy. It seems that Dr. Wang used a myocardial infarction model under HFD?</td>
</tr>
<tr>
<td>Hossein Ardehali</td>
<td>i am not sure what iron resistance means. but all of our cells are sensitive to the oxidative stress of iron excess.</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
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<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Farid...effects are because of Calcium normalization..we found some signaling pathways that are activated in the SLN deficient DMD hearts</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Dr Babu: Do you think inhibition of RyR-mediated Ca2+ leak would have similar effect as SLN deletion in DMD?</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Thanks Sakthi, Loren and Jill .. Great session.. Thanks for the opportunity</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Thank you D. Hossein !</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>@Santosh...there are some studies on RyR leak and DMD</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks to all the speakers for their excellent presentations and the star moderator, Dr. Kirk, for this wonderful session!!</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Thank you. Excellent work. A novel insight on SLN.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Jun, yes, you are right, we did infarction on diabetic model. the relationship between adipocyte and cardiomyopathy is on going....</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Thanks everyone!</td>
</tr>
</tbody>
</table>
## Concurrent Session 7B: Cardiotoxicity of Cancer Therapeutics: Mechanisms and Potential Therapies

<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Trusso</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Anand Singh</td>
<td>Good Morning Joe..</td>
</tr>
<tr>
<td>Richard Becker</td>
<td>Hi everyone! My name is Richard Becker, MD from University of Cincinnati Heart Institute. I am one of the moderators for session 7B: Cardiotoxicity of Cancer Therapeutics: Mechanisms and Potential Therapies. We have terrific speakers and great topics. Please feel free to post your questions to the speakers in this chat. Enjoy the session!</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Thank you, Richard! Welcome everyone! This is Bonnie Ky.</td>
</tr>
<tr>
<td>Richard Becker</td>
<td>Good morning Bonnie. Richard</td>
</tr>
<tr>
<td>Anand Singh</td>
<td>Thanks Richard, Looking forward for the awesome talks..</td>
</tr>
<tr>
<td>Keith Jones</td>
<td>Good morning everyone</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Looking forward to the presentations this morning!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Fantastic and timely topic</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Keith, good to ‘see’ you</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to an exciting session on chemo cardiotoxicity!</td>
</tr>
<tr>
<td>Richard Becker</td>
<td>Off to a wonderful start.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>well said! Thanks to the organizers for a timely topic</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Part of our continuing efforts to include clinical investigators to help set the framework and present the primary questions that need new basic approaches to answer.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>echo Rong Tian</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Great approach, Jil. You, Sakthi and Loren have put together an outstanding program.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>I agree. Good way to start the session with a clinical talk, and no better choice of speaker than Bonnie (editor of JACC CardioOncology)</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>The differences in those curves is truly interesting. These longitudinal studies are game-changing in cardiomyopathy studies</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Are the patents also undergoing cMRI to evaluate changes in myocardium, fibrosis, or edema? Just curious.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Dr. Becker, Thank you for sharing this exciting session.</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Thank you, Jill. Appreciate the feedback and the honor of this invite. I agree with others. Thank you for highlighting cardio-oncology and also bringing clinical investigators to the sessions.</td>
</tr>
<tr>
<td><strong>Richard Becker</strong></td>
<td>An honor and a pleasure Sakthi.</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Dear Matthew, in the Penn CCT cohort, we have not obtained cardiac MRIs. We only have cardiac MRIs in a small subset as part of another study of patients evaluating effects of radiation therapy.</td>
</tr>
<tr>
<td><strong>Sakthivel Sadayappan</strong></td>
<td>Dr. Becker leads the cardio-oncology program at University of Cincinnati Medical Center!</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Matthew (part 2) - I will say, however, the W. Greg Hundley has a strong body of work evaluating cardiac MRI and the changes seen in cardiac function seen with anthracyclines.</td>
</tr>
<tr>
<td><strong>Matthew Wolf</strong></td>
<td>thank you</td>
</tr>
<tr>
<td><strong>Sumanth Prabhu</strong></td>
<td>Bonnie, can you comment on the conceptual difference between direct cardiotoxicity (DOX) versus more of an interruption of cardiac homeostasis (herceptin), with implications for recovery</td>
</tr>
<tr>
<td><strong>Fady Malik</strong></td>
<td>Is background HF therapy initiated in these patients when the drop in EF is observed? Does that account for any of the recovery or is that in the absence of background therapy?</td>
</tr>
<tr>
<td><strong>Jil Tardiff</strong></td>
<td>It's like re-setting the baseline, kind of re-setting contractile reserve in genetic cardiomyopathies. Fascinating.</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Sumanth, thanks for that question. Certainly, the concept of recovery is more prevalent with trastuzumab. Actually, Joe Wu - if he’s still on - had a great paper in Circulation detailing this and discussing metabolic modulation. See his Figure 6.<a href="https://www.ahajournals.org/doi/full/10.1161/CIRCULATIONAHA.118.037357">https://www.ahajournals.org/doi/full/10.1161/CIRCULATIONAHA.118.037357</a></td>
</tr>
<tr>
<td><strong>Madhumita Basu</strong></td>
<td>Is there an increase in uncoupled endothelial nitric oxide synthase levels noticed?</td>
</tr>
<tr>
<td><strong>Rene Packard</strong></td>
<td>This is a terrific body of work - congrats.</td>
</tr>
<tr>
<td><strong>Sumanth Prabhu</strong></td>
<td>Thank you</td>
</tr>
<tr>
<td><strong>Joseph Wu</strong></td>
<td>Great talk, thank you Bonnie!</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Fady, great question. Yes, typically with a decline in EF, neurohormonal therapy is initiated. However, we are looking to evaluate the longitudinal data in greater detail with greater numbers. There are transient declines in LVEF that will also spontaneous recovery. I do think it depends upon the cardiotoxic therapy - i.e., doxorubicin or trastuzumab or radiation.</td>
</tr>
<tr>
<td><strong>Hind Lal</strong></td>
<td>Thanks @ Bonnie for the great presentation</td>
</tr>
<tr>
<td><strong>Richard Becker</strong></td>
<td>Thank you Bonnie. Terrific presentation.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>impressive work, learned a lot! congrats Bonnie for the outstanding work and thanks for sharing w/ us</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>This was great, Bonnie - thanks a million for participating. Madhumita, we have not specifically evaluated that question. If you have suggestions on how to quantify that, please let me know.</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Fantastic talk.</td>
</tr>
<tr>
<td>Steven Houser</td>
<td>Very nice talk Bonnie</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>This was great, Bonnie - thanks a million for participating.</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Thank you Rene!</td>
</tr>
<tr>
<td>Ivor Benjamin</td>
<td>Excellent talk, Bonnie</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Outstanding presentation, Bonnie!</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Thank you, Joe!</td>
</tr>
<tr>
<td>Fuli Xiang</td>
<td>Excellent talk, I have learned a lot! Thank you Bonnie:)</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Excellent presentation, Bonnie!! Well done..</td>
</tr>
<tr>
<td>Xiongwen Chen</td>
<td>Hi Dr. Field. Good to see you here.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>I am a fan of Dr. Field's research!!</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Ditto :)</td>
</tr>
<tr>
<td>Madhumita Basu</td>
<td>Sure! Thanks for an excellent presentation, Bonnie.</td>
</tr>
<tr>
<td>Steven Houser</td>
<td>Great to see you Loren</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Thank you all for the kinds words (I won’t clog up the chat with individual thank you’s) - again, I appreciate the invite and thank you for your inspiring science. Privileged to be part of this stellar group.</td>
</tr>
<tr>
<td>Huabo Su</td>
<td>Great to &quot;See&quot; you again Dr. Field</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Steve &amp; Huabo</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>Exciting research Dr. Field!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Hi Loren - nice to &quot;see&quot; you. Did you see any diastolic dysfunction in your Dox mice? We did (actually very similarly to Bonnie's findings). We were perplexed at first.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Loren, Could CM &quot;atrophy&quot; be lack of physiologic hypertrophy?</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Katherine - we see the same atrophy in adult hearts, as do many other labs using acute delivery</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Jil - not sure about dystolic - If Wuq is on-line (he did the analyses) he might be able to comment... Thanks!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Luay Boulahouache</td>
<td>Dr. Ky thank you for your presentation, I was wondering how did class 3 recover while class 2 failed to do so and maintained that moderate level</td>
</tr>
<tr>
<td>Anand Singh</td>
<td>What dose was used to treat animals with DOX</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Luay- given the significance of the magnitude of the decline, Class 3 were typically treated with cardiac medications. Given the &quot;low level&quot; declines in Class 2, which were still largely</td>
</tr>
</tbody>
</table>
above the threshold of normal, there was typically no meds initiated. These are also all core-lab quantified LVEFs.

<table>
<thead>
<tr>
<th>Walter Koch</th>
<th>Hey Loren! - hope all is well!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guo Huang</td>
<td>Hi Loren, can you also see whether the mRNAs of Ku70/80 are also reduced in the late stage?</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Anand - will look up and post it for you during the next talk...</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Jill, how did you measure diastolic dysfunction in the animals? We have also in some tumor-bearing animals treated with doxorubicin observed more of a HFrEF phenotype and with a relatively preserved LVEF.</td>
</tr>
<tr>
<td>Anand Singh</td>
<td>Thanks Loren.</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>Dr. Field, Excellent talk! DNA-damaging chemotherapy selectively kills cells with higher proliferative activity. Could you comment how D2 heart has reduced level of apoptosis?</td>
</tr>
<tr>
<td>Fuli Xiang</td>
<td>Bonnie, may I ask what is the current major treatment for the onco-cardiotoxicity in patients?</td>
</tr>
<tr>
<td>Loren Field</td>
<td>70/80 went up in late stage wt but was about the same in late stage D2; barely detectable in saline treated animals</td>
</tr>
<tr>
<td>Loren Field</td>
<td>You to Wally!</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Measuring diastolic function in mice is feasible but difficult. To measure E/A they require significantly more / longer sedation which changes their heart rate and is problematic if doing a survival / longitudinal study.</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Loren, Nice work!!! DOX also significantly accumulates within mitochondria. Did you see any effect on mitochondrial function?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great to &quot;see&quot; you Loren. Really enjoy hearing these interesting experiments and studies you’re working on.</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Very exciting, Loren!</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Do the S-phase events in the D2 mice correspond to an increase in ploidy, proliferation, or both? Just curious.</td>
</tr>
<tr>
<td>Luay Boulahouache</td>
<td>Thank you Bonnie!</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Anand - mice got 5 weekly intra-peritoneal injections of 5 mg/kg DOX (25 mg/kg cumulative dose</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Activation of the fetal gene program with atrophy?</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Fuli, can you please clarify? Do you mean what is the distribution of cancer therapies across all cancer patients? I have not seen that reported. But in general, the list of cardiotoxic therapies includes anthracyclines, trastuzumab, TKIs, proteasome inhibitors, immune therapy. There is an example though here - please see this central illustration.<a href="https://cardiooncology.onlinejacc.org/content/2/2/270">https://cardiooncology.onlinejacc.org/content/2/2/270</a></td>
</tr>
<tr>
<td>Anand Singh</td>
<td>@ Loren. Got it. Thanks.</td>
</tr>
<tr>
<td>Author</td>
<td>Message</td>
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<tr>
<td>----------------------------</td>
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</tr>
<tr>
<td>Richard Becker</td>
<td>Loren, How is your group approaching the translation to patients treated with DOX? Richard Becker</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Rene, thank you.</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Venkatesh - we looked at a few mitochondrial markers but were never comfortable with the readout, so cannot answer your question with any degree of certainty</td>
</tr>
<tr>
<td>Coralie Poizat</td>
<td>Very nice work! I am wondering if the reverse proliferation of cardiomyocytes, which is clearly beneficial for Dox-induced cardiomyopathy, could be detrimental in clinical setting for cancer cells?</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Looking forward to your talk Carrie !!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Loren, In some pilot studies that CDK 4/6 inhibitors can perform tumor suppressive and normal tissue protection during cancer therapy. Do you have any comments on using palbociclib, an CDK4/6 inhibitor, along with cancer drugs?</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Great talk Loren!</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Hi Carrie, look forward to your presentation!</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Thank you Dr. Field</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Joe - Hope you are well - I just changed an old Fiat motor and thought of you :)</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>Great talk, Loren!</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>Very exciting data Dr. Field.</td>
</tr>
<tr>
<td>Carrie Lenneman</td>
<td>Great set of talks by Loren and Bonnie.</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>great talk Loren!</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Loren, Thanks for the answer</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Matthew - there is cell division in the model (see increased CM number as the animals age) - I am sure that there is also ploidy increases occurring in the model as well.</td>
</tr>
</tbody>
</table>
| Joseph Wu                 | Loren, send me photos :-|)
<p>| Guo Huang                 | Nice work, Loren! Is it possible to express D2 in the heart to reverse the Dox-induced cardiotoxicity rather than to prevent it?                                                                         |
| Loren Field               | Hi Heinrich - hope you are well, and that we can meet up at a meeting in Germany some time soon!                                                                                                             |
| Matthew Wolf              | thank you, great presentation                                                                                                                                                                             |
| Bonnie Ky                 | Great talk, Loren! I may reach out to you to discuss your acute/chronic models.                                                                                                                                 |
| Richard Becker            | Carrie, I love the time scale and history as a backdrop. Do anthracyclines exert vascular toxicity?                                                                                                     |
| Fuli Xiang                | Bonnie, I meant the treatment for the cardiac function impairment in the onco-patient:) The reason I am asking is that Entrasto only showed effect on the moderate EF group in |</p>
<table>
<thead>
<tr>
<th>Loren Field</th>
<th>HFpEF. I saw the different classes of your patient and wondered if it may also correlated to the treatment outcome.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loren Field</td>
<td>Hi Zhaokang - the measurements were performed 1 week or 13 weeks after DOX treated - we did not look when the drug was onboard but I suspect that we would see more similar numbers as you suggest.</td>
</tr>
<tr>
<td>Carrie Lenneman</td>
<td>Yes we know that endothelial dysfunction occurs very early during treatment, but we do not test for that on regular basis. EndoPat is a good way we have looked at early toxicity from Ac.</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>Thank you Dr. Field for an excellent talk!</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Sakthivel - we never tried the CDK4/6 inhibitors in our system but suspect that they would further impair the cyclin D2 phenotype.</td>
</tr>
<tr>
<td>Richard Becker</td>
<td>Have you been able to document impaired brachial reactivity that persists after treatment?</td>
</tr>
<tr>
<td>Bonnie Ky</td>
<td>Fuli, okay thanks! We have not systematically compared therapies. Honestly, our treatment for cardiovascular complications are not very targeted, with possibly the exception of what Carrie is showing here (although dex is prophylactic). Typically, we treat with neurohormonal antagonists... someone should do a trial with sGLT2!! There is an entresto study in Norway - PRADA 2 by Torbjorn Omland underway. This is for anthracyclines.</td>
</tr>
<tr>
<td>Carrie Lenneman</td>
<td>No I have not looked at long term survivors vascular function, but definitely something we should do.</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Guo - yes, I would think that cell cycle induction post-DOX would reverse damage.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Loren, thank you. Hope to see you again soon.</td>
</tr>
<tr>
<td>Fuli Xiang</td>
<td>Thank you Bonnie:) Agree, sGLT2i rocks!</td>
</tr>
<tr>
<td>Ronald Vagnozzi</td>
<td>Hi Loren, thanks for a great talk. Wondering your thoughts on how much just reactivating the cell cycle might intrinsically protect myocytes in your model (for example via DNA damage pathway you showed), versus increasing myocyte number?</td>
</tr>
<tr>
<td>Carrie Lenneman</td>
<td>Agree with Bonnie - many new CV agents out that we need to examine the CV impact such as sGLT.i.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Carrie, thank you for connecting clinical case presentations with the biology of cardiotoxicity</td>
</tr>
<tr>
<td>Carrie Lenneman</td>
<td>Thank you Joseph - cardio-oncology is the perfect field for translational research - bridge between bench and bedside.</td>
</tr>
<tr>
<td>Loren Field</td>
<td>Hi Richard - I think it would be really interesting to see if there are intrinsic variations in CM cell cycle activity vs. patients who recover better than others - the cleanest way to do it would be via the approach that Frisen and Bergmann used with C14</td>
</tr>
</tbody>
</table>
incorporation. That would be a good proof of concept. Translation would require ongoing efforts from a lot of groups to promote CM renewal to work. ljf

<p>| Jil Tardiff | Beautiful talk, Carrie. So important to present these trajectories to drive home how dynamic the remodeling really is - important for basic scientists to visualize this process and not assume that the time course is inexorably downward or linear. Changes the perception of possible mechanisms |
| John Ralphe | Very nice talk Carrie– heartedly agree with Jill’s previous comment! |
| Loren Field | Hi Ron - that is a good question, and I had not thought of it previously. Easy enough to test (ie just score the apoptosis rates in BrdU positive vs negative cells) - that being said, there are so few cells per section it would be a hell of a lot of screening... |
| Carrie Lenneman | It is very dynamic state of the CV system after cancer treatment. Agree we are finding ways to improve CV repair after cancer treatment. |
| Rong Tian | questions for all speakers: What is the state of art patient management for chemo cardiotoxicity? |
| Rong Tian | Oh, Carrie, your slide answers that!!! |
| Venkatesh Sundararajan | @Carrie, Very interesting topic and most wanted!!! connecting Oncology and Cardio- systems involved in two top leading causes of morbidity, Curious to know whether DOX resistance are reported in patients? |
| Rong Tian | Thx for a great talk, Carrie! |
| Rene Packard | Thank you to the speakers and organizers for a terrific session. The intertwining of basic science and clinical course was very informative. |
| Bonnie Ky | Rong, I think it depends upon what exact treatment you are talking. And also if you are talking prevention or management. I think a critical need in the field is risk-guided cardioprotection. |
| Carrie Lenneman | It really depends on the cancer treatment a patient is exposed to during treatment. Great talk Carrie! |
| Bonnie Ky | |
| Sumanth Prabhu | Outstanding talk, Carrie. Can you comment on endothelial predominance of effects (versus direct myocyte effects) and the implications for prognosis |
| Anand Singh | Great Talks on this session. Thanks |
| Joseph Wu | Great talk Carrie! |
| Richard Becker | We have time for questions and comments. |
| Fuli Xiang | Thank you Carrie. Very informative and inspirational talk! |</p>
<table>
<thead>
<tr>
<th><strong>Bonnie Ky</strong></th>
<th>Rong (continued): And risk guided can mean - clinical risk, risk by iPSC phenotyping, risk by imaging or risk by biomarker. We have 2 ongoing pilot studies of risk guided cardioprotection with biomarkers in one and clinical risk score in another. However, treatment for HF/cardiomyopathy is largely neurohormonal antagonists.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sakthivel Sadayappan</strong>&lt;br&gt;<strong>Sumanth Prabhu</strong></td>
<td>Great session. Thanks to the speakers and moderator!! Thank you for these presentations!</td>
</tr>
<tr>
<td><strong>Heinrich Taegtmeyer</strong></td>
<td>To follow up on Sumanth’s question: Can you comment on the loss of pericytes with sunitimib treatment? Beautiful talk!</td>
</tr>
<tr>
<td><strong>Jil Tardiff</strong></td>
<td>Bonnie - will be interesting to see how the genetic predisposition sorts out. Eventually &quot;easy&quot; to evaluate prior to therapy and let this information help select less &quot;risky&quot; drug combos.</td>
</tr>
<tr>
<td><strong>Rong Tian</strong></td>
<td>@Bonnie, thx! That is really helpful information for non-physicians.</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Jill, definitely. We are trying to do those studies... if only NIH will agree with us to its significant, impact and approach. ;)</td>
</tr>
<tr>
<td><strong>Carrie Lenneman</strong></td>
<td>It is thought that if we can detect endothelial dysfunction early that cardiomyocyte damage may be mitigated with anthracyclines. There is some nice work with statins and anthracyclines. For anthracyclines the myocyte death is not thought to be reversible. However with VEGF, Her2 antagonist and TKI CV effects are felt to be reversible because the cardiomyocyte damage is not seen.</td>
</tr>
<tr>
<td><strong>Sean Wu</strong></td>
<td>Thanks a lot Carrie for the clinical insights and the latest therapeutic approaches to cardio-oncology.</td>
</tr>
<tr>
<td><strong>Jil Tardiff</strong></td>
<td>Laughing - been there, done that. Going to reach out at some point, may have just convinced the NIH re: our work on potential genetic risk.</td>
</tr>
<tr>
<td><strong>Richard Becker</strong></td>
<td>If there are no additional comments or questions, I will offer a sincere “thank you” to our expert speakers who provided scholarly, thought-provoking and inspiring perspectives on the important topic Cardiotoxicity of Cancer Therapeutics: Mechanisms and Potential Therapies. I thoroughly enjoyed the session and trust that you, our attendees did as well. Enjoy the remaining sessions and have a great day. A special thanks to the BCVS organizers for bringing high impact to a virtual platform.</td>
</tr>
<tr>
<td><strong>Bonnie Ky</strong></td>
<td>Aarif Khakoo also had a nice paper on pericycle loss with sunitinib years ago in Sci Translational Med.<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3833098/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3833098/</a></td>
</tr>
</tbody>
</table>
Venkatesh Sundararajan  @ Thanks, Carrie

Carrie Lenneman  HT - great question about pericytes with suentent. Not sure it has been examined, something I need to investigate.

Rong Tian  Each class of drug has distinct mechanism of toxicity, would it be effective to develop mechanism specific biomarker and/or protection?

Maria Cimini  Dr. Lennmeman, are lymphatic vessels very impaired also?

Fuli Xiang  Bonnie and Carrie, I am wondering if the cardiac damage caused by the onco drugs are similar to the Methamphetamine-Induced Cardiomyopathy (MACM).

Jil Tardiff  Just a reminder - chat transcripts are also available to review, usually posted the next day!

Sean Wu  @Bonnie and Carrie - With the expanding use of immunotherapy, have you see any who had previous anthracycline toxicity that then receives immunotherapy? Is there additional risk that you anticipate for doing this?

Carrie Lenneman  Clinically speaking in breast cancer there is injury to lymphatics due to radiation and surgery. Not sure anyone has looked at the their response to various chemotherapies.

Bonnie Ky  Rong - Yes!!! That would be the goal! We have been limited in achieving these successes in cardio-oncology. But we are trying to discover more mechanistic biomarkers, certainly. Right now, clinically, we are using troponin and ntproBnp only. But we need more science and have been investigating oxidative stress markers (ADMA, MMA, etc).https://pubmed.ncbi.nlm.nih.gov/28683962/

Rong Tian  thx, Bonnie!

Bonnie Ky  Sean, this has not been studied systematically but one of my patients just did suffer from ICI myocarditis - normal LVEF - but also did have anthracyclines before. Anthracyclines cause "low level injury" - as manifested by our human data with echo and biomarkers. Whether somehow that translates to an inadequate compensatory response of some sort is not clear. Mechanisms of dysfunction here completely different though, as of course you know (better than me with the great work you are doing!)

Sean Wu  Thx Bonnie! Really enjoyed your talk.

Bonnie Ky  Thanks Sean! Great to chat with you!

Carrie Lenneman  Currently not known if immunotherapy after anthracyclines poses more risk. More systematic studies are greatly needed. We know CV ICI related effects appear to occur early after exposure and more common in combined immunotherapy.

Sean Wu  Ditto!
<table>
<thead>
<tr>
<th>Carrie Lenneman</th>
<th>Thank you everyone!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sean Wu</td>
<td>Thanks Carrie!</td>
</tr>
<tr>
<td>name</td>
<td>message</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Joe Trusso</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Hello everyone and welcome to this session. I am your moderator, Rebekah Gundry from the University of Nebraska Medical Center. We have three excellent talks lined up for you. If you have any questions, please post them in the chat and if they are not answered during the session we will have time at the end for questions. Enjoy the Session!</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Hi Rebekah, thanks for moderating this session</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to the session Rebekah. Congrats to new job at UNMC! Joe</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>My pleasure, Qutuba! Thanks for joining us today!</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Hi Rebekah-- thanks for moderating!</td>
</tr>
<tr>
<td>Dhanendra Tomar</td>
<td>Looking forward to exciting session..</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Thanks, John! Thanks for joining us today!</td>
</tr>
<tr>
<td>Laura Senatus</td>
<td>Looking forward to this session.</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Hi Carter! Looking forward to your talk.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Good morning everyone. I am looking forward to an exciting session. Thank you Rebekah for moderating.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Welcome everyone. This is the first time effort to have a collaborative session with the Heart Failure Association. A special thanks to Dr. Johannes Backs for the efforts.</td>
</tr>
<tr>
<td>Kimberly Ferrero</td>
<td>Thank you, Dr. Sadayappan! Looking forward to several great talks in this session.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks Carter!! Great start!!</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Good morning very one</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Reverse C- and n-terminal designation...</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks Rebekah for charing this session!!</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Hi Sakthivel! My pleasure! Thanks for joining us today! It will be a fabulous session!</td>
</tr>
<tr>
<td>Elizabeth McNally</td>
<td>If there is C protein, Sakthivel is happy!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Ha ha</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Some people are sooo easy!</td>
</tr>
<tr>
<td>Brett Colson</td>
<td>Lol!</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
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</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Sakthivel</td>
<td>Brett, what are you doing here?</td>
</tr>
<tr>
<td>Sadayappan</td>
<td>Maria Kontaridis: Hi John, nice to see you again! Great talk so far!</td>
</tr>
<tr>
<td></td>
<td>John Ralphe: Hi Maria! Good to 'see' you! Thanks!</td>
</tr>
<tr>
<td>Sakthivel</td>
<td>How much replacement of these mutant proteins?</td>
</tr>
<tr>
<td>Sadayappan</td>
<td>Randy Faustino: Hi Carter! Great to (virtually) see you again, enjoying your talk :)</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>This is complete replacement on the KO background, total cpro levels reach wild type control levels</td>
</tr>
<tr>
<td>Venkatesh</td>
<td>Sundararajan: @ Great work!!! on an important protein, cMyBP-C</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk John and great to &quot;see&quot; you!</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>@John Ralphe - Can you comment on the ease at which your hPSC-CM engineering method can be implemented? If someone has a lot of experience with generating hPSC-CM, but not yet gone on to implement such 3D/force models, can you advise on the level of difficulty encountered when trying to get it up and running?</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Thanks Joe!</td>
</tr>
<tr>
<td>Brett Colson</td>
<td>Sakhthi, here to expand my horizons to learn about this C protein I've been hearing about. Hi John! Great talk!</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>Nice Work!</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Carter, any comment on the change in Hill coefficient you observed?</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Students master the technical manipulations easily over 1-2 months generally. The equipment investment is approx 50K, and we use things off the shelf with minimal customization.</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Excellent talk. Are these predicted structural changes?</td>
</tr>
<tr>
<td></td>
<td>John Ralphe: The Hill coefficient (and sensitivity shift) did not reach significance. This is also a measure of extracellular sensitivity so one more step removed form 'true' calcium sensitivity....</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Oh - I thought I saw a star there - gotcha.</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>nope- no real or implied star there :)</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Hesham- no predicted structural changes based on modeling we found completed by Zhang et. al.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk again, thanks John!</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>great, thank you</td>
</tr>
<tr>
<td>Ying Ge</td>
<td>Good job Carter!</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>Nice study, thank you for sharing. Looking forward to seeing more in the future.</td>
</tr>
<tr>
<td>Renzhi Han</td>
<td>Nice work. Thanks for sharing</td>
</tr>
<tr>
<td>Jonathan Kirk</td>
<td>Great talk, Carter! Really interesting stuff.</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
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<td>-------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>I particularly loved the successful implementation of Mass Spectrometry to find new proteins of interest! (hearteyes)</td>
</tr>
<tr>
<td>David Barefield</td>
<td>Hi Carter, great work, how many other missense mutations in that region might affect that binding pocket? It looks like most cardiomyopathy missense mutations are going to have different mechanisms of pathophysiology</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Thanks very much for the feedback! And I am also looking forward to seeing more :)</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Great talk!</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>Great talk John! Really learned a lot!</td>
</tr>
<tr>
<td>Darshini Desai</td>
<td>Great talk, Dr. Carter! which is the better model to study the mechanism of hypertrophy 3D or 2D HiPSC-CMs</td>
</tr>
<tr>
<td>Prabhat Ranjan</td>
<td>Really interesting session</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Katherine: Did you look at intermediate time-points? say p7?</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Anyone else having interruptions in the streaming of this talk? or just my wifi....</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>@Rebekah - ok for me so far</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>David-- this is one of our principle theories- these mutations exert different effects on protein function depending on their location. How and why all roads then get to Rome (HCM) is an interesting question...</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>@shyam Its coming up later...</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>(angelic)</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>anyone else enjoying this format more than live lectures?</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>@Katherine - I'm expecting a valve growing out of the myocardium any minute..</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>(wave)</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>me(thumbsup)</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>I enjoy this format very much</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>@ Dr. Sadek. I love it.</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Darshinni-- I think 2D and 3D offer different opportunities and can in the end be quite complimentary. For iPS cells it comes down to having enough consistency and awareness of developmental status to be able to draw relevant conclusions.</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>Heshem et al., please think about ways we can combine best of both worlds for future meetings !</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Will do</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>@ Dr. Koch (thumbsup)</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>@ Prof. Sadek. Yes. But live are always best.... I agree with Prof. Koch.</td>
</tr>
<tr>
<td>Sudarsan Rajan</td>
<td>A copy of chat along with the transcript and notes, available in future will be worth it</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maria Kontaridis</td>
<td>Hi Katherine-beautiful work. What happens/role of early activated fbs if not to convert to myofibroblasts? Is this what defines physiological vs pathological response?</td>
</tr>
<tr>
<td>Nicole Purcell</td>
<td>Great talk Katherine! Good to see you.</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>Sudarsan, I saw that Jil Tardiff mentioned the Chat transcript should be available within 24 hrs of the talk.</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>@Hesham and Wally - I would love to have both live stream and in person available in future meetings so I can still network with colleagues in person yet not having to rush from one room to the next</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>@ Sean agree...</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Sudarsan: yes, all the chat conversations will be available to you!!</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>We think that the postn cells are active to make collagen, but maybe not the full pathology of an SMA myofibroblast. Postn and SMA may be different types of fibroblasts</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>I echo Sean Wu’s request. I’d love to have live watch parties of pre-recorded talks - so time can be spent networking (not last minute talk edits) or rushing room to room.</td>
</tr>
<tr>
<td>Sudarsan Rajan</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>and I really like the instant feedback from speaker on questions as you go along in the talk. And - I suspect that more questions are asked in a chat room format b/c it provides less intimidating format for asking questions - which might encourage some attendees who might be less likely to step up to a microphone in a big room</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Great talk Katherine! Do you think that this temporal pattern of proliferation fits with recent studies by Bin Zhou and Eldad Tzahor showing that fibroblast senescence is required for myocyte proliferation during neonatal heart regeneration?</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>@Rebekkah Gundry-- When Ying Ge is your next door lab neighbor the potential to apply mass spec seems limitless!</td>
</tr>
<tr>
<td>David Wolfson</td>
<td>Dr. Yutzey, do you think the Postn and SMA fibroblasts originate from different populations or there are different transcriptional landscapes that prevent these Postn cells from transition to myofibroblasts</td>
</tr>
<tr>
<td>Michelle Tallquist</td>
<td>Are any of the periostin cells vsmcs? In the constitutive cres there are vsmcs lineage graced.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Hesham, I do think that the fibroblasts could be involved in the loss of regenerative potential, but have not checked yet.</td>
</tr>
</tbody>
</table>
| Rebekah Gundry     | @John Ralphe - yes! Ying Ge rocks! And you also have a few other fabulous MS-neighbors so there is practically no limit to what you can to where you are!}
<table>
<thead>
<tr>
<th>Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Orourke</td>
<td>Why only 50% reduction?</td>
</tr>
</tbody>
</table>
| Joy Lincoln           | @Katherine. Do you get more ECM when you ablate the Postn+ cells?  
<pre><code>                    | David, we have not seen SMA+ cells come from the Tcf21 or Postn+ in the developing heart. I am not sure if this is the same with injury. |
</code></pre>
<p>| Katherine Yutzey      | Hi Joy, we did not see a change in the ECM overall, could be the we did not ablate enough cells...                                         |
| Katherine Yutzey      | Katherine, outstanding talk and a beautiful body of work on cardiac fibroblasts.                                                         |
| Katherine Yutzey      | Hi Brian, I think the TAM/DTA system has some accessibility/variability issues which could be why not all the cells died.                |
| Eric CordeiroSpinetti| Is there any functional advantage to express immature protein isoforms?                                                                  |
| Walter Koch           | Katherine - excellent data and talk!                                                                                                    |
| Taejeong Song         | Great talk Katherine!                                                                                                                     |
| Detlef Obal           | great talk                                                                                                                                  |
| Shyam Bansal          | Interesting work, Katherine! Congratulations.                                                                                             |
| Joy Lincoln           | Hi Katherine! Great talk and beautiful work as always! Any idea if the fibroblasts are secreting anything to regulate the CM?            |
| John Ralphe           | Beautiful work- great talk!                                                                                                                |
| Madhumita Basu        | Great talk, Katherine!                                                                                                                     |
| Adam Wende            | Nice talk, thank you for reminding us that CM do not work in isolation.                                                                     |
| Ajit Magadum          | Nice work Dr. Yutzey.                                                                                                                       |
| Taejeong Song         | #Katherine: Do you think the immature phenotype of the ablation heart is resistant to cardiac remodeling after injury?                    |
| Catherine Makarewich  | Great talk Katherine!                                                                                                                      |
| Kohta Ikegami         | @Katherine, are Postn+ CFs distributed fairly uniformly across the heart?                                                                  |
| Suresh Verma          | Excellent work Katherine.                                                                                                                  |
| Mingfu Wu             | Hi Katherine, beautiful work! Congratulations!                                                                                             |
| Liming Pei            | Excellent talk Katherine!                                                                                                                 |
| Michelle Tallquist    | Nice talk, Katherine!                                                                                                                      |
| Katherine Yutzey      | Hi Eric, I am not sure if there is advantage of the immature, but as the myocytes mature, the later is-forms are needed for increased cardiac output in adults. Could be related to the ability to divide. |
| Sean Wu               | Wonderful talk Katherine! Any data you have on whether fibroblast paracrine effects vs direct cell-contact effects are involved in CM maturation? |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Hi Dr. Yutzey. Very interesting talk. Have you looked at vessel formation. NGF is produced primarily in coronary smooth muscle cells to regulate innervation. Also have you looked at heart size at P14 vs earlier time points?</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>Thanks Katherine! Great talk!</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Nice talk, Katherine!</td>
</tr>
<tr>
<td>sini sunny</td>
<td>Hi Katherine, Whether there is persisting cardiac hypertrophy in all the developmental stage and how it is regulated?</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Have you checked about paracrine mechanisms between FB-CM? May be via exosomes or extracellular vesicles</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Taejeong, We have not checked cardiac injury in the postnatal ablated hearts, but Onur Kanicak in Jeff's lab sees that post-ablation in adults is protective (Nat Comm paper)</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>When CMs are smaller while the heart size is about the same in the mutant mice at P14, do you expect more CMs in those?</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Kohta, the Postn+ cells are throughout the myocardium and also in the annulus and valves.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>those mutant mice?</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Sean, We are looking at potential paracrine effects now, there are some interesting candidate in the seq datasets.</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Is there any known correlation with perioperative volume changes (atrial dilation) and development of post-op AF?</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Increased atrial size predisposes to AF. However, in our population atrial size was comparable in both groups</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Emmanouil, It did not look like vascular development or overall heart size were affected.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Sini, We did not look beyond P30, but the ablated hearts showed some recovery at that point and there were not significant differences in heart weight/body weigh ratios.</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>@Dr. Yutzey: very interesting talk. Any idea if periostin positive cells have any role in cardiac conduction? (independent of potential interaction with TH+ neurons)</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Suresh, We have not looked at exosomes or extracellular vesicles, but we are very interested in figuring out the potential paracrine mechanisms going forward.</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Excellent talk Niels!</td>
</tr>
<tr>
<td>David Barefield</td>
<td>Hello Niels, were the kinetics in the time to peak strain measured regionally across the atria? Do these hearts have heterogenous depolarization/contraction across the atria? Thank you Hesham.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>@David: We only analyzed global strain in the atrial. However, heterogeneity may be disturbed due to alternans. See next slide...</td>
</tr>
<tr>
<td>Name</td>
<td>Text</td>
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<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Guo, We were also puzzled about the discordance between the heart weights/ CM cell numbers and what we saw at the individual cell assays. Could be something else contributing to the heart weights that we have not figured out yet or the weight is not sufficiently sensitive to detect subtle differences. We are still trying to figure that out.</td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>Exciting talk, what was the tissue you use for western are they patients' source who developed PoAF?</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thank you, Katherine. Very intriguing! Look forward to more discoveries following this line.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Oscar, While the conduction looked almost normal by EKG. We did not look at any more specific conduction markers.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>@ Farhan: Yes, all samples are right atrial samples obtained from patients undergoing open heart surgery. Patients had no documented AF episode before. We performed experiments blind and followed patients for 6 days after surgery.</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you Dr. Yutzey. Very interesting. Happy to talk to your post-doc about postnatal cardiac innervation if interested.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Niels, very interesting topic on atrial cardiomyopathies.</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Niels, Have you looked at sarcoplin levels in poAF, which is more abundant regulator in atria.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Dear Jo, Thank you!</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>Nils, great talk</td>
</tr>
<tr>
<td>Adrian Arrieta</td>
<td>@Dr. Yutzey: Hi Dr. Yutzey, excellent talk! Given the connection between myocyte hypertrophy and fibroblast activation and the presence of a stiffer substrate to which they attach, is there perhaps a way to measure the overall stiffness of hearts with fibroblast ablation as compared to control? (I hope that makes sense.)</td>
</tr>
<tr>
<td>Thomas Gillette</td>
<td>Great talk Niels</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Gopal: Unfortunately there was no SLN antibody available. Any suggestion? mRNA expression was comparable.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Emmanouil, Thanks. He is very interested in the neural maturation angle these days.</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Wow! What an outstanding set of presentations! We have time for a few more questions.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Thank you, Thomas!</td>
</tr>
<tr>
<td>Mebratu Gebrie</td>
<td>Great talk. Thank you.</td>
</tr>
<tr>
<td>Yunhui Xu</td>
<td>great talks. thanks</td>
</tr>
<tr>
<td>Jun Feng</td>
<td>Great talk Niel, Did you check any ion channel activity?</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Happy to talk to him. It is an exciting field</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Yunhui Xu</td>
<td>very clear!</td>
</tr>
<tr>
<td>Thomas Gillette</td>
<td>Is it surprising that such a mild change in steady state levels of SERCA have that impact?</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Detlef, thank you!</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi Adrian, Would definitely be interesting to look at tissue stiffness with the ablation. Eldad Tzahor has been working in that area with interesting results.</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Niels, mRNA levels sometime don’t match with protein.. we have an antibody..happy to help.</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Neils, Gute Arbeit !!!</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>Excellent talk, Niels! Wonder if the &quot;outcome&quot; of surgery impact on poAF development.</td>
</tr>
<tr>
<td>Adrian Arrieta</td>
<td>Thank you Dr. Yutzey!</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>@ Thomas, We were surprised by this as well but modelling data seem to follow represent our experimental work as well.</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>Venkatesh, Danke!</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Katherine-- the 3D microtissues arte made with added fibroblasts...might be a good model to in which investigate stiffness?</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Hi John,</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>I agree, some of this could be modeled in vitro.</td>
</tr>
<tr>
<td>Rebekah Gundry</td>
<td>Thank you to all the speakers for the fantastic presentations and to the attendees for the engaging discussions. Please be sure to check out the other oral and poster presentations coming up soon!!</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>@ Gabriele: Excellent point. Follow up for 6 days the outcome was comparable as well as operation time and time at the heart lung machine.</td>
</tr>
<tr>
<td>Yunhui Xu</td>
<td>Hi Niels, for your protein expression experiments, how many amounts of samples you got from your patient sample? Thanks</td>
</tr>
<tr>
<td>Niels Voigt</td>
<td>@ Yunhui: We receive about 300 mg and performed membrane fractionation. For each group we usually use 16 samples.</td>
</tr>
<tr>
<td>Yunhui Xu</td>
<td>thanks for your answer</td>
</tr>
<tr>
<td>Jared McLendon</td>
<td>Hi John Ralphe, what is the range of force (tenison) the 3d microtissue generate</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>They generate 5 - 20 mN/mm2</td>
</tr>
</tbody>
</table>
Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.

Joe Trusso
Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.

Alicia Mattiazzi
I cannot see the video. Have you started?

Meenakshi Madhur
I do not hear music

Qutuba Karwi
same here

Jil Tardiff
Hi Alicia - it will start exactly at noon

Rongxue Wu
I can hear

Xuejun Wang
I hear it now.

Joan Heller Brown
Hi Alicia.. I think it has not started yet.. soon! How are you???

Farid Moussaviharami
I hear the music.

Guo Huang
I can hear.

Claudia Preston
music just started on my end

Alicia Mattiazzi
Fine Joan! Thank you. Good to contact you. How are you?

Alicia Mattiazzi
I can hear also. Thanks

Rongxue Wu
I am looking forward to listening to the session

Ronglih Liao
good morning/afternoon to all

Rongxue Wu
good morning Rongli

Wenbin Liang
Hello everyone! thanks for this great event!

Sakthivel Sadayappan
Welcome everyone!!

Jiang Chang
Good morning everyone

Rong Tian
Really appreciate Circ Res to sponsor this session

Farid Moussaviharami
This is such an important topic.

Jennifer Below
Hi all!

Jil Tardiff
It will benefit everyone

Joseph Wu
Thank you Jane for moderating this important topic on statistical rigor.

Jeffrey Hsu
Very excited for this session!

Jil Tardiff
Hi Piper! Thanks again for doing this!

Jennifer Below
I'm the senior statistical editor for Circ Res, here to help answer your questions!

Venkatesh Sundararajan
One of the most awaited session!!

Jiang Chang
Really appreciate Cir Res to have this topic. Thanks Jane

Alicia Mattiazzi
Hi Jennifer!

Jennifer Below
Happy to be here Jil :)

Jane Freedman
Thank you Eric, Piper and Heather for wonderful talks!!!

Qutuba Karwi
Thanks to Circ Res for hosting this wonderful session
<table>
<thead>
<tr>
<th>Jennifer Below</th>
<th>my covid office is a linen closet, in case that's not obvious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Freedman</td>
<td>You're welcome. Let us know if you have questions, in general or specific to the journal.</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>It's all about incorporating statistical analyses as part of the design of your studies. Not as an add-on.</td>
</tr>
<tr>
<td>Ying Ge</td>
<td>A timely session! Thank you Jane and all the statistical editors at Circ Res for the important info!</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>This is a crucial topic in science. Thank you for putting together this session. My question is: how to deal with (sometime requested) &quot;power analysis&quot; to estimate sample size for animals/cells experiments?</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Well said Jil</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>this is a great question!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Want to add that the chat transcripts will be made available after the sessions (usually by the next day).</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>I beleive this the first to have such a wonderful sessin/topic. Truly, appreciate the BCVS chairs and Co-chairs! Thank you so much!</td>
</tr>
<tr>
<td>DanielleJinkwang Kim</td>
<td>what are your thoughts on 'p=0.06' or something close to being significant and the authors say 'appears to be different' or 'trending towards ...'?</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>power can usually be determined for a given sample size, an effect size, and a significance threshold</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>interesting Jil - I will keep it clean!!</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>What are criteria for exclusion of samples or animals?</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Gabriele, I have the same question, but power analysis is more challenging when comes to a new study or experiment</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Whew, Wally ;-). Nice to see yo</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>indeed- because often you have to rely on estimates of effect size from other literature</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Well said, Jiill: RE: incorporating statistical analyses as part of the design of your studies. Not as an add-on.</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>you too and congrats on this week !</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Great session, thanks for putting it together, and to the presenters and moderators!</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>which is why it's so important for authors to present effect sizes in addition to significance</td>
</tr>
<tr>
<td>Liming Pei</td>
<td>This is a great session. Thanks to BCVS to organize this.</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>how do you deal with multiple comparison correction when you do something like RNA seq and you have 100s-100s of comparisons that you are making?</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Jiang Chang, The exclusion criteria used are particular to a study, but need to be clearly stated. e.g. if some animals were</td>
</tr>
</tbody>
</table>
excluded due to dying, or too small to do the procedure etc. These just need to be stated.

<table>
<thead>
<tr>
<th>Meenakshi Madhur</th>
<th>100s-1000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiang Chang</td>
<td>@Heather thanks</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@meenakshi if there is an assumption of independence between tests, bonferroni is usually best</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Meenakshi something like and FDR can be used and in the case of very small sample sizes it can be made clear this is hypothesis generating and many false positives are expected. That this is a very limited sample size must be clear.</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>I totally agree. in biology, we are usually far away to make assumption of normality. How do you consider your sample size being appropriate (is 10 mice better than 5 and 20 better than 10)?</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>in some cases false discovery rate can work well too</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Thanks Heather</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Great question, Gabriele - this one comes up all the time...</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Which calculation do you recommend to verify the outliers?</td>
</tr>
<tr>
<td>DaoFu Dai</td>
<td>Hi Heather. Thanks for nice talk. Is conventional boxplot still acceptable for skewed data?</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@DanielleJinkwang Kim, present the p-values as they are. Use soft language and make statements acknowledging limited power due to the sample size.</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@DaoFu no. Box plots without superimposed points should be avoided.</td>
</tr>
<tr>
<td>Frank Li</td>
<td>is there any rule of thumb for using SD vs SEM? people (myself included) often fall into the trap that SEM makes things 'look prettier'</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>Great section, thanks Jane and Circ Resfor organizing this section!(thumbsup)</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>What I trying to say is that sometimes reviewers ask for &quot;please increase your n=number&quot; just because probably they &quot;feel&quot; that more numbers will corroborate the data even in presence of the right statistical test</td>
</tr>
<tr>
<td>DaoFu Dai</td>
<td>Heather, can stata do superimposed points?</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@Frank, either can be used- I'm actually more concerned when authors should be showing IQR</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Gabriele Schiattarella, the limitations of statistical methods should be considered in the justification of animal sample size. Your power calculation should consider that if you only have a small number of animals per group, you will likely need to use nonparametric methods.</td>
</tr>
<tr>
<td>DanielleJinkwang Kim</td>
<td>Thank you, Heather!</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
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<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>As an early career author, reviewer, and mentor, I often find my (and my trainee’s education) is not sufficient in this area. I would very much appreciate if CircRes/AHA could develop some annotated examples of good and bad use of common statistics.</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@DaoFu Dai I haven’t used stata for years so I am not sure how, but if it cannot I would suggest asking the company for support and adding this feature.</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>I think that we should always use non-parametric methods for experiments...</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@charles, I hope that the forthcoming paper we are publishing that will outline our expectations for authors should help</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Charles, you are in luck, these 3 outstanding stats reviewers are putting together a review for Circ Res</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>It will be linked with the AHAs broader guidelines</td>
</tr>
<tr>
<td>DanielleJinkwang Kim</td>
<td>Frank, excellent question. I always have issue with SD vs SEM. I thought studies with small sample size (&lt;20) should use SEM as SEM accounts for the sample size, but was also told by one reviewer that I should use SD no matter what..</td>
</tr>
<tr>
<td>DanielleJinkwang Kim</td>
<td>waiting to hear what the panelists says..</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Gabriele Schiattarella, Even minor difference makes significant if numbers are increased, but that is not the right way, I guess. Wondering if one need to do a pilot experiment, use the results for power analysis to define appropriate N number</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>I agree with @Charles. Additionally, and even as a PhD Student, I too often find myself lacking the resources to expand my statistical rigor--any advise for those of us with limited resources/access to biostatistician expertise?</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@gabriele, while they have their place- there are also times when normality is well established, and in these cases it’s appropriate to use parametric tests</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Does CircRes/AHA have a preference between supplemental data (code, raw data, analytical outputs, etc) in journal submissions or those posted at doi-linked data archive websites?</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>SEM vs. SD becomes less concerning when all data points are shown.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Frank - Re: SD vs. SEM, SEM is standard error of the means, so if the data points you are feeding in are themselves means (e.g. daily averages) then SEM is OK. If each data point is individual (say biological replicate) and not a mean of technical replicates, then SD should be used.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>At least that's how it was taught to me (probably wrong!)</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Charles, as long as the data is readily available, we don't typically have a preference.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>If you want to describe the spread and variability of the data, then you want SD. If you want to show the precision of the means or compare or test differences between means then you might choose SEM. But I agree with Heather, as long as you show all data points in addition to the mean and measure of variance, I'm happy.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Some of the journals like JBC asks to provide a table for One-way and two-way ANOVA main factors and interactions!!</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@sakthivel, a table can be a clearer way to show the results of an ANOVA, we have not required this, but do require p-values are included somehow.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@lindsey, I feel your pain, I wonder if there are resources at your university? I am always happy to help when someone reaches out to me with questions.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks Heather and when @heather says &quot;p-values&quot; she means precise p-values.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>we often see p&lt;0.05 or p&lt;0.0001, which is not sufficient information for estimating effect sizes (which is essential for power calculations as we previously mentioned) or reproducing the work.</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Great session!</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Thank you Eric, Heather and Piper!</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>thank you all for coming today!</td>
</tr>
<tr>
<td>Danielle Jinkwang Kim</td>
<td>Thank you!</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>@Jennifer- tried that--- it proved WORSE because they couldn't understand some of the biological concept critical to understanding the study design (e.g. LVEF %) Normally it shouldn't necessarily matter (in principle, but the statistical design suggested made absolutely ZERO sense.</td>
</tr>
<tr>
<td>Willard Sharp</td>
<td>thanks for a great session</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@ Jennifer, What the data says when p values is very close to significance but not</td>
</tr>
<tr>
<td>Amadeus Zhu</td>
<td>This was such an important session! Thanks for organizing it</td>
</tr>
<tr>
<td>SIKTA CHATTOPADHYAYA</td>
<td>Very informative, Thank you</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Thank you Circ Res and BCVS for a great session</td>
</tr>
<tr>
<td>Supriya Hota</td>
<td>Very helpful session! Thank-you Eric, Heather, and Piper!</td>
</tr>
<tr>
<td>Rachelle Crosbie</td>
<td>thank you-very helpful session.</td>
</tr>
<tr>
<td>Luay Boulahouache</td>
<td>Thank you, It was very informational!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>great section, I learned a lot!</td>
</tr>
<tr>
<td>Viswanathan Rajagopalan</td>
<td>Thanks for such an important session.</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>Thank you all for your great questions we will be on for a bit longer to answer remaining questions</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>please do reach out if we can help</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Thank you. One more question- Does CircRes have guidance on other requirements, e.g. does it suggest including F-values/df-values when reporting ANOVA p-values?</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Regarding multiple corrections for OMICs data, can the speakers recommend any specific online tools, beyond the standard &quot;go do a Bonferroni&quot;?</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Take advantage of this assembled expertise everyone! And thanks again to the Circ Res team</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>very import and useful informations! Thanks!</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>ha great question @paul</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@charles, more information and transparency is always preferred!</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>Thank you to all the organizers and presenters and support staff!!! I would LOVE to see more of these sessions includes in future conferences! Or even an &quot;Ask a statistician&quot; lunch!</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>often we don't even adjust p-values in OMICS, but rather, we adjust the alpha (p-value threshold needed to reach significance)</td>
</tr>
<tr>
<td>Martin VilaPetroff</td>
<td>Great Session, my conclusion is that every lab should have a statistician to advise on each project.</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Oh, great point, Piper</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>Is it meaningful to distinguish p&lt;0.01 vs. p&lt;0.001? If so, under what circumstances?</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>I second that suggestion for more sessions and &quot;ask statistician&quot; sessions! Thank you all for this session, helpful.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@martin, I hope not! most of what we see are t-tests, anova, Mann-Whitney, etc</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Rong, this is important for lit-review meta-analyses and if a reader wishes to further adjust for multiple testing.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>which are pretty straightforward</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>Thanks Jen = and therein lies the problem. Say nominal p 0.05, 1000 genes tested (1000 hypotheses), so adjusted p value is 0.05/1000 = 0.00005 and now nothing reaches that new threshold. It’s not a very useful modification to make, if it results in no usable conclusions. Surely there has to be something better than Bonferroni.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>but if you are doing more complex systems, yes, making a friend who is a statistician can be really helpful</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>Daniel VelezRamirez</td>
<td>Is Dunnett's test always the best option when comparing treatment(s) with a control?</td>
</tr>
<tr>
<td>Martin VilaPetroff</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@Paul when tests are not independent, bonferroni can be too conservative</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Now I need to add a budget for a statistician in future R01</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>and FDR can be more appropriate</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Agree 100%</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Paul this is when an FDR can be useful. You can say here are our top results we know 20% are likely false positives but it gives us direction for more focused future work.</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Jennifer, I like the answer-making statistician as a friend, make life more easier.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Thanks to all the speakers - more of this sort of thing at future meetings please!</td>
</tr>
<tr>
<td>Heather Highland</td>
<td>@Jiang also ask the statistician to help with design instead of saying here is the data make this work.</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>but, speaking from my world of computational human genetics, seeing manhattan plots that look more like Akron, Ohio plots is something I really understand &lt;3</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>That is an excellent point by Heather! Like they said - make it part of design</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>Will there be any shift with incentivizing budgeting a statistician in on grants? Given that the overall rigor/expectations are evolving/refining so much?</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>Will Circ Res develop a stats checklist for study design?</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>on the study sections that I sit, I see a lot of positive feedback when statisticians or bioinformaticians are included in budgets, yes</td>
</tr>
<tr>
<td>Jennifer Below</td>
<td>@rong, yes, an updated author checklist will be part of our upcoming paper, and will be posted on the circ res website</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Echo Jil</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Great session! Taking notes for planning next year's BCVS and include your suggestions!</td>
</tr>
<tr>
<td>Nicole Purcell</td>
<td>This has been great and love the idea of luncheon with statisticians or another workshop</td>
</tr>
<tr>
<td>Lindsey Fitzsimons</td>
<td>Thank you @Pilar! Very much looking forward to following this programming specifically!</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>@jennifer, that is fantastic! Perhaps to persuade all CV journals for a similar checklist</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Thanks to all the speakers in this session. Very helpful for PIs and trainees alike.</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Jijun Huang</td>
<td>Great session! Thanks for the organizers and all speakers! One suggestion: could Circ Res publish an Editorial to summarize common mistakes in submitted manuscripts?</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>Its a great session. Thank you all</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Jijun, we are doing that. It will come out in early 2021 to synch with the larger AHA statement on stats</td>
</tr>
<tr>
<td>Jijun Huang</td>
<td>That's great! Thanks Jane!</td>
</tr>
</tbody>
</table>
## Session 9A: Outstanding Early Career Investigator Award Competition

<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vincent Nelson</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Hello everyone and welcome to this session. I am your moderator, Hesham Sadek from UT Southwestern Medical Center. We have three excellent talks this session. If you have any questions, please post them in the chat. Enjoy the Session!</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Hi Hesham, thank you for moderating this session</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Hello Shyam. Congratulations on your selection as a finalist for the Early Career Award! Looking forward to the presentation!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you, Dr. Prabhu!</td>
</tr>
<tr>
<td>Konstantinos Drosatos</td>
<td>Looking forward to watching the talks!</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Hi Shyam, looking forward to your presentation</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>good luck to all presenters</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Congratulations Shyam. Looking forward for your talk.</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you for moderating this session, Hesham!</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>good luck Shyam</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Congratulations to all for selection as a finalist for the Early Career Award!</td>
</tr>
<tr>
<td>Namakkal Soorappan</td>
<td>Hi Shyam Good luck with your presentation and Q&amp;A as well!</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Hello Konstantinios</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Shyam—Very best for the presentation and competition</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Good luck to all finalists!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thanks, Suresh and Raj</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Best of luck for all Finalists</td>
</tr>
<tr>
<td>Namakkal Soorappan</td>
<td>Congratulations Shyam,</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Congratulations to the finalists!</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Congratulations to all finalists</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Good luck to all finalists!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>All the best and good luck to our early careers!!</td>
</tr>
<tr>
<td>Maradumane Mohan</td>
<td>Congrats Sham</td>
</tr>
<tr>
<td>Carolina Gonzalez</td>
<td>Good luck to all the finalists!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you everybody</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Congrats to all finalists! Thanks for moderating Hesham :-)*</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>Congratulations to the finalists. Looking forward to hearing about their work.</td>
</tr>
<tr>
<td>Loren Wold</td>
<td>Best of luck to all of the finalists!!!!!!!!</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>Congrats to the three finalists</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Best of luck to the presenters</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you all</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Congrats and good luck all</td>
</tr>
<tr>
<td>Nicolas Christoforou</td>
<td>Congratulations to all finalists. Good luck!</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>excited to hear from all finalists!</td>
</tr>
<tr>
<td>Sadia Mohsin</td>
<td>Good Luck to all finalist. Looking forward to your talks!!</td>
</tr>
<tr>
<td>David Paik</td>
<td>Thank you Dr. Sadek for moderating. Looking forward to the talks</td>
</tr>
<tr>
<td>Ameen Ismahil</td>
<td>Hi Shyam, Congratulation !!!</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>Congrats and good luck to all finalists !</td>
</tr>
<tr>
<td>Mohsin Khan</td>
<td>Congrats to the finalists. Looking forward to the talks</td>
</tr>
<tr>
<td>Maria Kontaridis</td>
<td>Congratulations, Shyam!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thanks, Maria</td>
</tr>
<tr>
<td>Maria Kontaridis</td>
<td>Excited to hear the talks from all the finalists! congratulations to all!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Congratulations, Shyam!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>The OSU!!</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Great work and talk!!! Shyam, nice to see you</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thanks Sakthi and Venkatesh</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Did you use male or female mice for the initial sequencing and ingenuity pathway analysis?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Male mice</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>All studies were done using male mice except where specified</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>Shyam: did these Mi studies also include estradiol supplementation?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>No... we did not include this group. But we are including that also as a control now</td>
</tr>
<tr>
<td>Sathyadev Unudurthi</td>
<td>Hi Shyam, does this drug reduce proinflammatory cytokine secretion only by inhibiting proliferation or can this inhibit proinflammatory secretion independent of proliferation?</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>great story</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>Hi Shyam, great work! Did you check to see pharmacokinetics to see how long the drug stays in the mice and how well are the target of the drug engaged over time after dosing?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>This drug did not inhibit proinf cytokines after PMA/Iono activation</td>
</tr>
<tr>
<td>Speaker</td>
<td>Comment/Question</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Great presentation Shyam, on congrats on being a finalist. Did the drug had any systemic effect on T cell death in the heart or elsewhere?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Yes, this drug has almost 18-20 hr half-life and the dosing was done everyday</td>
</tr>
<tr>
<td>Eric CordeiroSpinetti</td>
<td>Is there any difference between male/female mice treated with the drug?</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Shyam: are you planning to study other injury models like I/R or TAC with this drug?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>In-vitro assays showed no effect on T-cell death at this dose</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Hi Shyam, great talk, did you get chance to check half life?</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>what would be the best half-life for these drug?</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Very interesting results, Shyam! the differential effect of the drug early versus late post-MI suggests change in T-cell phenotype. Can you comment on this</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>thanks Shyam</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Did you look at IL-17A/Th17 cells?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>We did not do HF studies using female mice. But we did find similar inhibition of T cells isolated from female mice</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>is there any toxicity level invivo or ivitro</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Yes, I plan to study it with TAC also..</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>What was the dose that you used?</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>Also again how did you guys come up with the structure of these drug again?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Yes, half-life is 18-20 hrs</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>Like how did you come up with the modifications and design?</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Thanks Sham</td>
</tr>
<tr>
<td>Adrian Arrieta</td>
<td>Excellent talk Dr. Bansal. Does your drug affect regulatory T-cell proliferation?</td>
</tr>
<tr>
<td>Dhanendra Tomar</td>
<td>Great work Shyam, congratulations!!</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Is it possible the drug induces T cells anergy?</td>
</tr>
<tr>
<td>Sathyadev Unudurthi</td>
<td>Did you notice lower cardiac fibrosis in drug treated animals Shyam?</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Nice talk Shyam - congratulations!</td>
</tr>
<tr>
<td>Prabhat Ranjan</td>
<td>Nice talk. Congratulations..!!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@ Dr. Prabhu: Yes, I think there are significant phenotype differences in T-cells between the early and late stages.</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Beautiful work Shyam, congratulations!!</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Excellent work. Congratulations!!!</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>Great work. Glad to see your transition to The OSU is going well.</td>
</tr>
<tr>
<td>Loren Wold</td>
<td>Great job to my academic office neighbor, Shyam!</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Wonderful presentation Shyam. Novel work!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Meena: Th17 cells were also reduced. This drug inhibited polarization of all T-cell subsets</td>
</tr>
<tr>
<td>GRACIOUS ROSS</td>
<td>Nice Work! Shyam(thumbsup)</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Outstanding work. Congrats</td>
</tr>
<tr>
<td>Naresh Kumar</td>
<td>Very nice talk, Dr. Bansal!!</td>
</tr>
<tr>
<td>Farah Sheikh</td>
<td>Nice presentation and findings, Shyam!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@ Rajarajan: No apparent toxicity was observed</td>
</tr>
<tr>
<td>Ameen Ismahil</td>
<td>Great work Shyam!!!</td>
</tr>
<tr>
<td>Zhongjian Cheng</td>
<td>Great job Shyam! Congratulations!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@ Poonam: 60 mg/kg/d; gavage</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Outstanding presentation, Shyam.</td>
</tr>
<tr>
<td>Yike Zhu</td>
<td>Dr Shyam, have you tried drug treatment before MI? Would that protect cardiac function?</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>congrats! strong work!</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Nice! Keep up the great work Shyam</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>@ Hesham, you are doing a great moderation!! Thank you!!</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Great work!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Khanh: DDI here at the OSU has been working on this structure from several years. A paper is coming-out soon</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>Thank you</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>Nice work – are there any sex associated differences? differences</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>was that structural diverssity based?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Adrian: Yes, it reduced Treg levels also but increased Foxp3 expression in Tregs</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Thanks Sakthi!</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>Any effect on CD8 T cells?</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Pilar: We have not looked into that yet. But its a great question</td>
</tr>
<tr>
<td>Adrian Arrieta</td>
<td>Very cool! Thank you Dr. Bansal.</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>EC50 (&gt;3 µM) is suboptimal for clinical translation. Any idea how to optimize PK/PD?</td>
</tr>
<tr>
<td>Pilar Alcaide</td>
<td>Thank you Shyam. Your TCR data may point in that direction. Congratulations on an outstanding presentation and beautiful work!</td>
</tr>
<tr>
<td>Madhumita Basu</td>
<td>Great work, Shyam! Congratulations again.</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>Great work.</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>No we did not try before MI time-point. We believe T-cell activation early after MI is required for adequate healing. That also explains increased mortality at 7d post-MI treatment</td>
</tr>
<tr>
<td>Sathyadev Unudurthi</td>
<td>That's interesting Shyam....so you see the same levels of increased fibrosis in hearts in drug treated mice, as seen in controls, but we see that the EF is preserved in drug treated mice?</td>
</tr>
<tr>
<td>Yike Zhu</td>
<td>Thanks Dr Shyam</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Great work, nice presentation and questions well handled, Shyam! Congrats!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Wolfram: Could you please elaborate your question? Do you mean in T-cell biology?</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>Did you find an initial decrease in EF after MI?</td>
</tr>
<tr>
<td>Hee Cho</td>
<td>@Shyam, congratulations for your great story! Wonder if you can measure serum concentration of your drug over time and look at its metabolites for optimizing the drug candidate.</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Khanh: Yes, my collaborator is further optimizing this molecule to increase potency</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Emmanouil, Congratulations and all the best!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Meena: It decreased splenic T-cells numbers but no effect in circulating T-cell numbers or frequency...somewhat mixed effects</td>
</tr>
<tr>
<td>Sathyadev Unudurthi</td>
<td>Great work and great talk Shyam... Congrats</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Great to see you, Emmanouil! Enjoy your recent work on this cool direction, congrats on being a finalist!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Wolfram: Yes I agree. its sub-optimal. My collaborator is designing other molecules with increased potency.</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Sathy: yes, but this is preliminary and we need to add more numbers to confirm</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Poonam: Do you mean with Drug treatment? If so, we did not do echo at other time-point. Only 8 weeks time-point was tested</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>@Hee Cho: DDI here at OSU is doing detailed kinetics related to this drug</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you everybody.</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>pH3 and Ki67 data was quite similar - typically i67 is higher - please explain.</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Are these CMs still functionally competent (upon ablation of sympathetic innervation)?</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>We found that ki67 was higher. I only presented pH3 and Edu data</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>the FACS plot indicated Ki67 on the x-axis??</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>That was mislabeling which I omit to say</td>
</tr>
</tbody>
</table>
Emmanouil Tampakakis  My apologies Dr. Zimmermann for the confusion

Matthew Wolf  Do beta-adrenergic receptor antagonists recapitulate the effects of ablation of sympathetic innervation in neonatal hearts?

Katherine Yutzey  Nice work!! Do you see any effect on glial cells or fibroblasts?

Emmanouil Tampakakis  Hi Li. We have not analyze the function on neonatal CMs but I anticipate it will likely be affected given the down regulation of Calcium handling and Structural genes

Li Qian  Thanks, Emmanouil! Interesting work!

Emmanouil Tampakakis  Dr. Wolff. Bernard Kuhn showed similar data in b-adrenergic DKO mice

Matthew Wolf  thank you

Guo Huang  We do think that a-drenergic receptors mediate partly our phenotype

Emmanouil Tampakakis  Hi Guo. We did not see the same phenotype in the Het mice. They are redundant so you do need a DKO system to study them

Xinliang Ma  For Emmanouil: Does sympathetic innervation defect occur in human disease with heart development defect?

Emmanouil Tampakakis  Dr. Yutzey. We have not focused on fibroblasts of glial cells but I think they should be affected. Based on RNA-Seq data some of fibroblast specific genes were actually increased

Emmanouil Tampakakis  @Emmanouil, great work! What would happen if you overexpress Per1/Per2 genes in the context of inhibition of sympathetic inhibition in vivo?

Hee Cho  Emmanouil, cell cycle genes are notoriously decoupled from their protein abundances. Since the proteins are the ultimate effector molecules in cell cycle regulation, did you look at protein levels encoded by the cell cycle genes?

Ricardo Frausto  Emmanouil, cell cycle genes are notoriously decoupled from their protein abundances. Since the proteins are the ultimate effector molecules in cell cycle regulation, did you look at protein levels encoded by the cell cycle genes?

Chulan Kwon  Great job Emmanouil! Well done!

Loren Wold  Excellent talk Emmanouil!

Matthew Wolf  great talk!

Raj Kishore  Great job, Emmanouil

Jil Tardiff  Nice job!

Ronglih Liao  Great job! congrats!

Guo Huang  @Emmanouil, sorry, I meant Per1+/-;Per2+/- double het mutant mice because the expression of Per1 and Per2 would be more like that in your nerve-ablated mutant mice.

Suresh Verma  Outstanding Job Emmanouil!!

Guo Huang  Great talk, Emmanouil!

John Ralphe  Very nice work! Great job!
<table>
<thead>
<tr>
<th>Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yike Zhu</td>
<td>Interesting topic Dr Emmanouil! Have you looked at the metabolic changes in CMs with defected sympathetic innervation as there is known circadian control of CM metabolism?</td>
</tr>
<tr>
<td>Mohsin Khan</td>
<td>Great Work Emmanouil.. interesting data foe Wee1</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Ma, HLH patients appear to have impaired b-adrenergic signaling. Prematurely born babies have reduced innervation. The same for babies undergoing neonatal surgery</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>What is your view about CM proliferation in reference to day vs night as per1/2 alters their expression with light cycle.</td>
</tr>
<tr>
<td>Jennifer VanEyk</td>
<td>Have you looked to see if glycosylation of NGF is intact and or important to these effects?</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Excellent!</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Cho we have not done this. Interesting question.</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Frausto, very interesting point. We are in the process of testing protein expression. Had to slowed down due to COVID-19</td>
</tr>
<tr>
<td>Beverly Rothermel</td>
<td>Have you looked at multiple time points to see what the effect on amplitude of gene cycling is? If one looks across a 24 hour period is amplitude of all circadian genes dampened?</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Guo, I have not tested the het mice.</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Emmanouli, I may have missed this, but, is there any increase in immune cell population in NGF depleted mice?</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Hi Emmanouil, Great work. Have you checked if Glucocorticoid signaling is intact in these mice. We know that GR activation induces Per expression</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Yang Zhou, Congratulations and all the best!!! Congratulations to your mentor, Dr. Jianyi Zhang!!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Yang, congrats on this beautiful new work at UAB! We are all very proud of you. Lab folks say hi and remotely cheer for you!</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Congrats @ Yang Zhou...UAB</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Verma, this is an interesting question. Circadian genes, in the heart follow their own independent cycle irrespective of the CNS circadian cycle mediated by the hypothalamus. Also mouse pups do not have their own day-night cycle. So I am not sure there will be an effect of day-night light in neonatal heart regeneration. In oncology there is a school of thought about treating patients with chemotherapy at night time because cancer cells are more prone and less proliferative.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Congratulate Yang Zhou and mentor Jay!</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>Thank you, Li! Great to 'see' you here. Say hi to the lab!</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Congrats to Dr. Jay Zhang for these great studies..</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Romethel I agree. We are in the process of doing this now. We believe that there is likely dampening of circadian cycle in CMs and potentially prolongation</td>
</tr>
<tr>
<td>----------------------</td>
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</tr>
<tr>
<td>Rong Tian</td>
<td>@Li, @Yang congratulations! Very happy to see Yang's achievement!</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Thanks Emmanouil. I agree. Good Luck.</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Cimini, we have not looked but I think there is an effect as RNA-Seq data is very suggestive of that. We would like to test this as well</td>
</tr>
<tr>
<td>Li Qian</td>
<td>@ Yang We all miss you so much already.:-) But thrilled to see your recent achievement so quickly!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>@ Rong Thanks!</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Dr. Sayed, very good question. We have not tested GR signaling but I do not think that at these early time points can potentially mediate the Per1/Per2 induction but it is an interesting question</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>Any evidence for contractility in the TBX20 expressing human iCM</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you all for your questions and comments. Very exciting session</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>great session - congrats to all speakers!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you, Dr. Koch!</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>RyR1 would be more indicative for skeletal muscle diff - any RyR2 changes</td>
</tr>
<tr>
<td>Kimberly Ferrero</td>
<td>What a great session; thanks everyone!</td>
</tr>
<tr>
<td>Wolfram Zimmermann</td>
<td>Congratulations to all three speakers - well done and well deserved to be selected as finalists</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>Dr. Zimmermann. Not yet, we are trying to do electrical stimulation. The RyR2 also changes, but lower fold change.</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you, Dr. Zimmermann!</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>@Li @Yang Great work! Congratulations!</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you Dr. Zimmermann. Excited to be part of this</td>
</tr>
<tr>
<td>Rose Belfer</td>
<td>Thanks Dr. Zimmerman!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>@ Mingfu Thanks! It's all Yang's independent work at UAB as AP (without me). Very proud of her.</td>
</tr>
<tr>
<td>Jennifer VanEyk</td>
<td>Very nice work. What will be your approach to determine the direct downstream targets of TBX20 and also how TBx20 is regulated</td>
</tr>
<tr>
<td>Zhaoning Wang</td>
<td>Hi Yang, very cool discovery! Does TBX20 accelerate the reprogramming process? (Can you detect beating iCMs in a earlier timepoint than control?)</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Nice work, Yang. Congratulations!</td>
</tr>
<tr>
<td>Chulan Kwon</td>
<td>Great work, Yang!</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
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</tr>
<tr>
<td>Miao Cui</td>
<td>Nice presentation, Dr. Zhou. Do you think the function of TBX20 function is context dependent? I recall Dr. Yutzey group showed that TBX20 overexpression increases adult cardiomyocyte proliferation. This effect was not observed in the reprogramming setting.</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>I will do the Cut&amp;Run for TBX20 and identify the direct target. @Dr. VanEyk</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>Congrats to all three finalists! great job!</td>
</tr>
<tr>
<td>JoanHeller Brown</td>
<td>Wonderful talk Yang, congratulations on this work !</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>wonderful talks</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>Congrats to all 3 finalists. Wonderful job by all</td>
</tr>
<tr>
<td>JoanHeller Brown</td>
<td>Indeed, all were really impressive !</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>@ Miao Cui. Yes, it is context dependent. We actually see the reduced proliferation in reprogramming setting.</td>
</tr>
<tr>
<td>Hee Cho</td>
<td>@Yang, wonderful work and congratulations! Do you think Tbx20 is working as mostly a transcriptional activator in your experimental setting? Hesham's recorded question appears to be on the same topic of activator vs. repressor roles of Tbx20.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great presentation by all 3 finalists, very impressive data!</td>
</tr>
<tr>
<td>Jijun Huang</td>
<td>Congratulations, Yang! Wonderful work!</td>
</tr>
<tr>
<td>Danish Sayed</td>
<td>Great talks from all three presenters</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>@ Zhaonign Wang. Yes, it's kind of acceleration. We haven't see any beating so far, but we see earlier upregulation of cardiac genes during this process.</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Great work Yang.</td>
</tr>
<tr>
<td>Li Qian</td>
<td>@ Hesham, great job in moderating too!</td>
</tr>
<tr>
<td>Chulan Kwon</td>
<td>ditto</td>
</tr>
<tr>
<td>Jennifer VanEyk</td>
<td>well done everyone!</td>
</tr>
<tr>
<td>Venkata Garikipati</td>
<td>Awesome talks! Congratulations to all the three presenters</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Congratulations!!! all speakers</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Thank you Dr. Sadek.</td>
</tr>
<tr>
<td>Hesham Sadek</td>
<td>Three excellent presentations. Congratulations Shyam, Emmanouil, and Yang</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Great session Hesham. All are excellent talks</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Thank you, Dr. Sadek and the audience for great questions/comments and support</td>
</tr>
</tbody>
</table>
### Session 9B: Metabolism and Redox Mechanisms in Heart Failure

<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vincent Nelson</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>AHA needs to up their music game! Give us some Weird Al or something less likely to send us into a post-prandial stupor</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Hi Paul, we must have some dance to go with the music..</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Hi Raj - Looking forward to your talk.</td>
</tr>
<tr>
<td>Ivor Benjamin</td>
<td>Hi Raj, I'm looking forward, too. IJB</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Paul</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thank you Sir (Dr. Benjamin)</td>
</tr>
<tr>
<td>Sakthivel Sadyayappan</td>
<td>Excellent start, Raj!</td>
</tr>
<tr>
<td>Rajarajan</td>
<td>Raj-looking forward your talk</td>
</tr>
<tr>
<td>AmirthalingamThanda</td>
<td>Hi Dr. Raj- can't wait to hear your talk!</td>
</tr>
<tr>
<td>Snekha Rajasekaran</td>
<td>Raj, look forward to your story</td>
</tr>
<tr>
<td>Huabo Su</td>
<td>Raj, look forward to your story</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Su</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Great to see you Dr. Raj, one of my favorite topics!!! metabolism and Redox.</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Venkat</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>Raj, excellent background info!</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Cheng</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Good job, Raja</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Rosy..</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Great going Raj !!</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Nice to see you Hind</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>Hello Dr. Raj, Is decreasing age of heart failure related to changes in reductive stress signaling?</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Kumari</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Sakthi</td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>Excellent talk Raj</td>
</tr>
<tr>
<td>User</td>
<td>Message</td>
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</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Raj, is this whole cell redox status right, not cytosol or mitochondria?</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>It is restricted to cardiomyocytes - the transgene is driven by alpha-MHC promoter</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Yes, Sini We recently found that about 15% of the HF patients seems to have a hyper-reductive state!</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>It is restricted to cardiomyocytes - the transgene is driven by alpha-MHC promoter</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Yes, Sini We recently found that about 15% of the HF patients seems to have a hyper-reductive state!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Raj, i have the similar question with sini sunny.... is it shown in heat failure patients, or any other chronic disease?</td>
</tr>
<tr>
<td>Joseph Goldman</td>
<td>Hello Dr. Raj,</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>This group of HF patients had an EF of below 30 and down to 15%, they do not have any other major co-morbidities such as diabetes or cancer etc.</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Raj, thank you</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>The concept will be a very useful marker in clinical aspect as a routine blood marker for 'reductive stress'</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Thanks Rizvi</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Thanks Dr. Wu</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Rajan</td>
</tr>
<tr>
<td>Zhaokang Cheng</td>
<td>Interesting data! Does overexpression of NRF2 induce myocyte hypertrophy, increase contractility in vitro?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Thanks Dr. Wu</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Yes, initially hyper-contractility and over time there is a diastolic issues</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Dr. Wu</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Yes, initially hyper-contractility and over time there is a diastolic issues</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>DMPO -adduct would be much realiable than any other techniques using the DCFDA or DHE etc.</td>
</tr>
<tr>
<td>@ Rajarajan. MitoB is one you can use to measure in vivo ROS as well</td>
<td></td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>did you seen the level ros scavengers enzymes?</td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>in blood of HF</td>
</tr>
<tr>
<td>Helen Collins</td>
<td>Good job Raj. Hope all is well at UAB</td>
</tr>
<tr>
<td>Daniel Turner</td>
<td>Never considered reductive stress, thank you for your talk!</td>
</tr>
</tbody>
</table>
| Asa Gustafsson            | Great talk Raj!
<table>
<thead>
<tr>
<th>Name</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yajing Wang</td>
<td>very interesting conclusion! nice work!</td>
</tr>
<tr>
<td>Luke Potter</td>
<td>great talk, thank you</td>
</tr>
<tr>
<td>Rajarajan</td>
<td>Thanks Raj and Venkatesh</td>
</tr>
<tr>
<td>AmirthalingamThanda</td>
<td></td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Thanks Luke</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Nice presentation Raj</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td></td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td>Thanks Daniel</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Raj - Do the global mice have any renal problems (given importance of GSH redox system in the kidney)&gt;</td>
</tr>
<tr>
<td>Dennis Wang</td>
<td>Dear Raj. Do you think the HFiEF animals may ultimately develop into HFReF?</td>
</tr>
<tr>
<td>Ivor Benjamin</td>
<td>Delighted to learn about this innovative line of investigations, Raj. Congratulations</td>
</tr>
<tr>
<td>Arul Veerappan</td>
<td>Raj, excellent work and great talk, Congrats!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Dr. Mahesh Gupta, Thank you moderating this session!</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td></td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td>Rizvi, we measured in our animal models.</td>
</tr>
<tr>
<td>Bradley Morgan</td>
<td>Great talk. do patients with high redox scores have hyper contractility?</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>Great Talk Dr. Raj!</td>
</tr>
<tr>
<td>Snekha Rajasekaran</td>
<td>Dr. Raj, nicely done!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Sruti, Greta start!! Thank you for your presentation!</td>
</tr>
<tr>
<td>Venkatesh</td>
<td></td>
</tr>
<tr>
<td>Sundararajan</td>
<td>Excellent, New avenue of work, Dr. Raj</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Currently we are measuring in blood plasma of the patients as well.</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Thanks Asa</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Suresh Palaniyandi</td>
<td>Nice line of work Rajasekar</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Thanks Wang</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>great to be here!</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Thanks Helen for joining</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>@Raj will catch you later for some discussion</td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Thanks Babu, I enjoyed your DMD story - very impressive!</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Rajasekaran</td>
<td>Paul you’re hittin the nail on the head- FYI- we did not look at in the Kidney, but in the brain there is a clear impact in the brain??</td>
</tr>
<tr>
<td>NamakkalSoorappan</td>
<td></td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Morgan - in patients our findings are very limited and now began looking at the details of systolic vs. diastolic functions. Hopefully, some answers anticipated in the near future</td>
</tr>
<tr>
<td>Sherin Saheera</td>
<td>Great talk, Dr. Raj!</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Suresh</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Sure, Rizvi, happy to talk with you sometime soon</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thanks Sherin..</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Dr. Arul nice to see you! Thank you for helping us with the Right Ventricle measurements</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Sruti. Very interesting topic. I guess Mb was transcriptionally induced during proliferation. After cardiac injury the decreased expression was transcriptional or translational?</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Surti - dose and number of injections of Tamoxifen</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>Appears to be predominantly transcriptionally regulated after injury</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Hind - 3 injections of tamoxifen, 1mg/ml</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Thanks</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Thinking about this in the context of Hossein Ardehali's talk this morning, how much of the effect do you think is simply because w/o Mb there's more free iron (and that's working via JmJC HDMs)?</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Dennis - A good question, yes, there is a progressive diastolic issue and we are trying to understand whether this could lead to reduced EF over time.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>cool data, Sruti</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Did you measure fatty acid oxidation in beating heart, ex vivo?</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>Hi Paul, that's a great question and something we're wondering too. Haven't done free iron measurements yet (or looked at JmJC) but hoping to measure it soon.</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Does knocking down myoglobin increase glycogen levels?</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>Thanks Rong!</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Santosh, no we haven't measured FAO in beating heart yet</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Nice to see you Sruti</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Sruti, thanks! was decreased Mb dependents on type of injury whether Ischemia, IR or drug induced. wondering what is the mechanism for the decrease in expression.</td>
</tr>
<tr>
<td>Rachel RothFlach</td>
<td>Hippo/yap are often considered mechanosensing pathways - does myoglobin affect cellular stiffness?</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>We have not seen changes in glycogen levels acutely, but have not looked closely longer term yet</td>
</tr>
<tr>
<td>Mei Methawasin</td>
<td>@Raj, I have a naive naive question. Are the mitochondria in different organs (heart, brain, liver) different?</td>
</tr>
<tr>
<td>Sherin Saheera</td>
<td>Did you see any change in valve morphology in the knockout?</td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>How aging affect Mb expression?</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>Nice talk Sruti! I was wondering, at what stage myoglobin expression appears during embryo development, and what is the hypothesis for lack of action in proliferation at early stages?</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Venkatesh - the data I showed was aortic banding and pulmonary banding of wildtype animals. Those are the only two models we have data on right now. So not sure yet if it occurs in other models.</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Nice talk Sruti, Congratulations</td>
</tr>
<tr>
<td>Asa Gustafsson</td>
<td>Sruti- great talk. Hope all is well.</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Rachel, we haven't looked at cellular stiffness yet, but a good question</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Excellent work @ Sruti</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Sruti. Thank you!!</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Sherin, we have not seen any change in valve morphology.</td>
</tr>
<tr>
<td>Mei Methawasin</td>
<td>@Sruti how does the myoglobin affect cardiomyocyte proliferation in patients with blood disease such as hemoglobinopathy or Thalassemia?</td>
</tr>
<tr>
<td>Sherin Saheera</td>
<td>@Sruti. Thank you! Nice talk!</td>
</tr>
<tr>
<td>Sruti Shiva</td>
<td>@Farhan, it hasn't been extensively studied. We have looked at wildtype mice and there's no change in expression at 36 weeks. We're looking at much older now, but don't have results yet</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Sruti, I guess another &quot;low hanging fruit&quot; issue is how much of the total protein content of a myocyte is made of myoglobin? (PeiPei Ping would probably know)... in other words, is this just an effect of knocking out the most (or one of the most) abundant protein in the cell, so it's affecting all kinds of things like autophagy, amino acid availability etc?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Sruti, thanks for presenting!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thanks to Patrick Hsieh, who is presenting from Taiwan.</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>Thanks. My pleasure and honor.</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorapan</td>
<td>@Mei, I have a naive naive question. Are the mitochondria in different organs (heart, brain, liver) different?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thank you also for joining with us!!</td>
</tr>
</tbody>
</table>
Sruti Shiva

Yes, that's a good thought Paul. It doesn't seem to be a "non-specific" generalized effect. The cardiomyocytes look good under the microscope and there's no change in basal rate of respiration or in apoptosis. But it is a good question. We have also made a point mutation mouse that has the protein, but lacks functional heme. So we will compare to that soon.

Sruti Shiva

Thank you all for the questions and feedback!

Paul Brookes

Super-interesting data Patrick, because the tetracycline antibiotics (doxycycline etc) are actually cardioprotective, whereas here you see detrimental effects with other antibiotics.

Rajasekaran NamakkalSoorappan

@Mei - regarding mito in different organs - I am pretty sure that the redox status in the mito of different organs is different! But, I am not sure about the structure? May be there could be some size variations!!

Helen Collins

@dr hsieh what do you think underlies the sex differences in the MI survival? differences in gut microbiota? estrogenic effects?

Guo Huang

Very intriguing findings, Patrick! Congratulations!

Paul Brookes

Sruti - now that's gonna be an interesting mouse to see! Thanks for great talk - lots to think about.

Patrick Hsieh

@Paul. Good point. No, we only use combination of antibiotics.

Guo Huang

@ Guo. Thanks.

Rajasekaran NamakkalSoorappan

Interesting observations Patrick

Joseph Wu

Patrick, good to see these new data on microbiota and cardiac repair. Hope you're doing well in Taiwan.

Patrick Hsieh

Thanks Joe and Raj.

Rajesh Kumari

great talk Dr. Patrick. which bacterial species are involved in cardio protection?

Patrick Hsieh

@ Rajesh, will be shown soon.

Rajesh Kumari

got it , thank you.

Rajasekaran NamakkalSoorappan

Eat more home-made YOGURT-lactobacilli

Zoltan Arany

These are striking and impressive data

Andrew Carley

Was the SCFA effect restricted to the gut or do you think there were any direct effects on the heart?

Adam Wende

Wow, exciting new findings.

Patrick Hsieh

@ Andrew. Likely some direct effects on the heart.

Rajarajan AmirthalingamThanda

Great talk, any specific method to measure the SCFA and did you get chance measure in the plasma

Zoltan Arany

so do probiotics, or SCFAs, improve post-MI outcomes in a naive (no abs, full germs) mouse?
<table>
<thead>
<tr>
<th>User</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sean Wu</td>
<td>Great talk Patrick!</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Raj, by HPLC.</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>Thanks Sean.</td>
</tr>
<tr>
<td>Andrew Carley</td>
<td>How did you administer the SCFA?</td>
</tr>
<tr>
<td>Rajarajan AmirthalingamThanda</td>
<td>Thanks</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Interesting to see the difference between even and odd chain fatty acids (propionate). Any explanation? Anaplerosis?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Zoltan, yes.</td>
</tr>
<tr>
<td>Farhan Rizvi</td>
<td>Some time earlier a study showed the children born to c-section deprive some microbes of gut biota affect lungs physiology whether any heart related study in this context?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Andrea, iv injection.</td>
</tr>
<tr>
<td>Gabriele Schiattarella</td>
<td>Great data. Not sure if I missed. What is the &quot;heart bacterial load&quot; you measured? Did I see the same scale bar for the feces bacterial load?</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>have you tried time course to determine when, postMI, is the key period that needs germs/SCFA?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Dr. Taegtmeyer, not sure.</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Very nice talk Patrick! I am wondering if the same protection can be seen in aged mice?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Farhan, not to my knowledge.</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>Great Talk Dr. Patrick, I have another question, gut microbiome vaires geographically. Are there studies which show difference in gut microbiome vs occurrence of heart failure?</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Just an idea to test. Great work. Impressive.</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>great Work!</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Gabriele, no. Much low bacterial load in the heart. We are confirming it wit more experiments now.</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>Hi, Patrick, Great talk and really enjoy it. My question is how do we know the SCFA in circulation are directly produced by gutBiota not through other tissues such as liver and fat tissues?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Zoltan again, no time course studies yet, but it's likely the case.</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>Really beautiful story -- congratulations!</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>And do we know the mechanism why these SCFA have immune modulatory function?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Qutuba, not sure, but interesting point. We are working on germ-free old mice now. Initial results show similar.</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>@ Yibin woudl be really interesting to do BMTs with GPR kos for example</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>Yes</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Rajesh, yes, similar observation to ours.</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Very exciting findings! Congrats and waiting to see these data in a nice paper soon!</td>
</tr>
<tr>
<td>Rajesh Kumari</td>
<td>Thank you Dr. Patrick</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>@ Yibin. We did not measure all the sources of SCFAs. But our results suggest at least the gut is a major one.</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>Congratulations, Patrick, for such as an exciting story.</td>
</tr>
<tr>
<td>name</td>
<td>message</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Corey Dubois</td>
<td>Welcome! Thank you for joining us. You should be hearing music play as we wait for the session to begin. If you do not, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>For some reason I am seeing Session 9A here.</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Yes, also seeing the other session here.</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>I am in the wrong seen too.</td>
</tr>
<tr>
<td>Gopal Babu</td>
<td>Wrong session</td>
</tr>
<tr>
<td>Pamel Burrage</td>
<td>Once the other session has ended this session will be available to view.</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Welcome to the ACS ACRE session. . I am your moderator, Faqian Li from the University of Minnesota Medical Center. We have three exciting and interesting talks in this session. If you have any questions, please type them in the chat and they will be answered by the speakers. If they are not answered during the session we will have time at the end for questions. Enjoy these excellent talks!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Thanks for moderating this session Faqian!</td>
</tr>
<tr>
<td>Pamel Burrage</td>
<td>Just as a note the previous session is running a little over in time. The ACS ACRE session will begin after that session.</td>
</tr>
<tr>
<td>Xuejun Wang</td>
<td>Looking forward to this exciting ACS/ACRE session!</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Looking forward to listening to the talks. Thank you for moderating the session Faqian!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Faqian for getting the ACS ACRE session ready.</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thank you for your support, Dr. Young</td>
</tr>
<tr>
<td>Xuejun Wang</td>
<td>Nice to &quot;see&quot; you here, Faqian.</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you for moderating, Faqian. Looking forward to any discussion during or after the talks.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Go for ACS ACRE. Thanks Martin, Sean and John for supporting this program. Thanks Faqian for monitoring the section</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to an exciting ACS ACRE session!</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Hello Martin:</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thank you for your contribution, Harry!</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Greatly appreciate your support! Looking forward to hearing from you.</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Xinliang</td>
</tr>
<tr>
<td>Yibin Wang</td>
<td>Looking forward to a great session!</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Hello Martin, Looking forward for your talk!!!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Congratulations ACRE.. you rock!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Thanks Suresh</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
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<td>----------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Paul Brookes</td>
<td>Wrong session! I'm not seeing Martin here but the 11A one instead???</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>my favorite society(stareyed)</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>wrong session</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Wrong session</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>yes</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Wrong session again!</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Need attention</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Yes, where is the ACS session</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>I think it is mixed up with session 33.</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Wrong session....</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>I think that it plays wrong. Everything is controlled centrally, sorry.</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>It is not the right session</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Martin talk ??</td>
</tr>
<tr>
<td>Xuejun Wang</td>
<td>looks like wrong session is playing</td>
</tr>
<tr>
<td>Asa Gustafsson</td>
<td>definitely the wrong session</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>hopefully it's an error swap and we can come back in 2 hours</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Anyone can check it. Wrong session...</td>
</tr>
<tr>
<td>Li Qian</td>
<td>They mixed up with concurrent session 11A....</td>
</tr>
<tr>
<td>Wenbin Liang</td>
<td>This is session 33</td>
</tr>
<tr>
<td>Wenbin Liang</td>
<td>sorry; this is 33 - Concurrent Session 11A</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Maybe my talk was not interesting enough :)</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>I am chatting with support agent</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Viola in AHA is talking to the vendor</td>
</tr>
<tr>
<td>Jeremy Little</td>
<td>We are aware of the issue and are currently working to fix it!</td>
</tr>
<tr>
<td></td>
<td>Thanks you for your patience!</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>they are aware and working on</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Faqian, can you contact the organizer and IT support to change the program?</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>I can see your PDF slides Martin but no talk.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>i have reported</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>@ Martin..I am sure thats not the case..</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thank you, @Jeremy.</td>
</tr>
<tr>
<td>Pamel Burrage</td>
<td>We are looking into this item. Thank you for your patience.</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Yeah, back to the right one!</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>welcome come back</td>
</tr>
<tr>
<td>Wenbin Liang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>I agree, technical glitch, looking forward to your martin Martin</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Here you are Martin...</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Great! We’re back.</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>John Harry Caufield</td>
<td>There we are! Looks right now.</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Pamela Burrage</td>
<td>Thank you all for your patience.</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>here we go !!</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Finally!! Dr. Young is here...</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Welcome, Martin. Look forward to your talk!</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Pamela Burrage</td>
<td>The correct session is now playing.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Xuejun Wang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Pamel Burrage</td>
<td>Thank you all for your patience.</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>Dr. Young, nice talk. Would be the ECs the main target cells of your NPs in the in vivo model?</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>it all good now thanks</td>
</tr>
<tr>
<td>Laihua Xie</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Adam Wende</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Great concepts!!!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Oscar, certainly, in vivo, multiple cell types will play a role in nutrient utilization. Not just the cardiomyocytes, but also EC. We've mainly used CM-specific genetic manipulation models. Would be great to manipulate EC too!</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Hi Dr. Taegtmeyer, thank you for coming this section. Really enjoy your keynote talk yesterday</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>Martin at what time of day do you do the cardiac studies? these are Langendorffs i presume? what time of day are animals harvested, and does that time of day harvest matter?</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>very interesting study, well done</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>@Martin HFD includes high carbons?</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Zolt, we perform ex vivo heart perfusions at multiple times of the day.</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thanks for very interesting and exciting data, Martin. We need to modify our eating habit.</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>all else equal, do you think doing heart perfusion in AM vs PM would change RPP? have you ever looked?</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Jiang, the high fat diet does have an increased caloric density compared to control diets. So there is also a difference in caloric intake.</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Any change in body fat distribution</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Faqian, Yes! Its better to consume calories in the morning. Not so good in the evening.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>@Martin so it is not so called &quot;Western diet&quot;</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Zolt, great question. When we challenge hearts with an increased workload, they do better during the active phase ex vivo. But during baseline conditions, RPP is equal between day and night perfused hearts.</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>that is very interesting...</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>@Martin, any idea on fasting, whether intermittent or not, on cardiac function?</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Faqian, Yes, the ad lib high fat fed mice exhibit increased adiposity. However, the 2 weeks of active phase restricted feeding did not reverse this.</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Interesting data Martin!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Jiang, Yes, this is more like a Western diet..</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Seems like we should select the dinner menu very carefully!!</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thanks very interesting. It will be great to have a human population study</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Dr. Young: Great work as always! Did you check if BCAA diet had any effect on systemic/cardiac inflammatory state?</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Interesting Martin. Since mice are nocturnal animals, activity-wise, should the timing of experiment be adjusted accordingly?</td>
</tr>
<tr>
<td>Gobinath Shanmugam</td>
<td>Very interesting Study Dr. Martin.</td>
</tr>
<tr>
<td>Margaret Chandler</td>
<td>Hi Martin! Glad they managed to get your talk up and running!! Excellent as always!!</td>
</tr>
<tr>
<td>Liming Pei</td>
<td>Nice work and nice talk, Martin!</td>
</tr>
<tr>
<td>Sumanth Prabhu</td>
<td>Outstanding talk, Martin!</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Unfortunately, we always have big, fat dinner...</td>
</tr>
<tr>
<td>Helen Collins</td>
<td>Very nice work, Martin. Hope all is well at UAB</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>70% increase in CM size is incredible! but that means the heart weight itself should also increase by 70% since CMs make up most of the heart -- does it?</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Thanks for sharing this interesting work, Martin!</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Hello Sean: Nice to see you!!</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>Hi Sean, looking forward to your talk</td>
</tr>
<tr>
<td>dongwook choe</td>
<td>Wonder what happens to VO2 and other factors.</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Sean, Yes, we were feeding mice only during the dark period, which is the mouse's active period.</td>
</tr>
<tr>
<td>Dominic DelRe</td>
<td>Martin, very interesting talk!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Nice to &quot;see&quot; you Xinliang</td>
</tr>
<tr>
<td>Ajit Magadum</td>
<td>Exciting work Dr. Young.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>That's a crazy increase of CM size, Martin. Nice work!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Great thanks Martin!</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>@Martin, I am wondering if all BCAA are equal when it comes to triggering mTOR activity?</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>John Harry Caufield</td>
<td>Great talk with substantial implications for diet!</td>
</tr>
<tr>
<td>Prabhat Ranjan</td>
<td>Excellent talk (thumbsup)</td>
</tr>
<tr>
<td>Gangjian Qin</td>
<td>Martin, So exciting data! Congrats on the wonderful talk as always!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Dongwook, We placed the mice in metabolic cages, and found that the time of day at which lipid and BCAAs are consumed does affect oxygen consumption and RER.</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>Great talk Dr. Martin, as always.</td>
</tr>
<tr>
<td>Tariq Altamimi</td>
<td>A great presentation by Dr. Young. I enjoyed it. Thanks</td>
</tr>
<tr>
<td>dongwook choe</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thanks Sean for the great talk!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Faqian!</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Great work and presentation Dr. Young. Always fascinated by the circadian heart cycle</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Great data Martin...</td>
</tr>
<tr>
<td>Shyam Bansal</td>
<td>Great Talk, Dr. Young!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Zolt, I didn't have time to show the data, but we also have heart weight, dry heart weight, and protein synthesis data. Heart weight increases by approx 15-20% in 4-hrs. Protein synthesis also increases dramatically - but only when BCAAs are consumed at the end of the active period.</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Can these treatments be continued after patching or grafting</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Martin!</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>fascinating... beautiful story, Martin!</td>
</tr>
<tr>
<td>dongwook choe</td>
<td>Does this mean other muscle structures increase in size other than the heart given late BCAA consumption?</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Thanks to everyone for the positive feedback :)</td>
</tr>
<tr>
<td>Guochang Fan</td>
<td>Great work, Dr. Young. Congrats!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Dongwook, Wonderful question! This is something that Mary Latimer, an excellent postdoc in the lab, wishes to find out.</td>
</tr>
<tr>
<td>dongwook choe</td>
<td>Thank you!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Shyam,</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>great story Martin. Greetings</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Shyam, Thanks for asking about inflammation and systemic effects. So far, we don't know if the timing of BCAA intake affects inflammation. Great idea!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Hi Venkatesh, Intermittent fasting is certainly a hot topic. This strategy of eating does indeed have cardiovascular benefits. One thing we would like to know is whether the timing of breaking the fasting period should be considered. Is it better to break the fast early or late in the day?</td>
</tr>
<tr>
<td>Li Qian</td>
<td>&quot;Development-neering&quot; Cool idea, Sean! Congrats on the work!</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Li!</td>
</tr>
<tr>
<td>Xiongwen Chen</td>
<td>Hi Sean: in your cultured cell study, except for the direct contact, were there any paracrine or autocrine factors playing roles?</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Exciting work Sean, and kudos on the CSC paper!</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>Sean, wonderful talk and study.</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>beautiful work, Sean. Congrats</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Great talk. Sean.</td>
</tr>
<tr>
<td>David Paik</td>
<td>Great talk Sean</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Sean excellent work and presentation as usual.</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Does the Wnt pathway intersect with hippo signaling in cell-cell contact effects on proliferation?</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Great talk!</td>
</tr>
<tr>
<td>Brian Orourke</td>
<td>Sean, Wonderful talk. How do you separate out effects due to Wnt versus other pathways affected by GSK3B inhibition?</td>
</tr>
<tr>
<td>Carolina Gonzalez</td>
<td>Wonderful talk, amazing work. Thank you</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Fascinating work Sean! Congrats (thumbsup)</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>Sean, great work!</td>
</tr>
<tr>
<td>DaoFu Dai</td>
<td>Great talk Martin and Sean</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Exciting work! Thank you Sean!</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Great talk!</td>
</tr>
<tr>
<td>Venkatesh Sundarararajan</td>
<td>@Martin, Thanks!!! Excellent work and it is readily translational. Thank you for presenting.!!</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Great work, Sean! Sarcomere dis-organization promotes adult CM proliferation, can I interpret this way? Thanks</td>
</tr>
<tr>
<td>Gangjian Qin</td>
<td>Sean, congrats on the beautiful Cell Stem Cell paper. Fascinating story!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>@Xiongwen: We did a conditioned media study but did not see any effect from the media alone. Thanks for asking</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>Thanks, Harry. Great power of bioinformatics.</td>
</tr>
<tr>
<td>Martin Young</td>
<td>Great talk Sean!</td>
</tr>
<tr>
<td>Chulan Kwon</td>
<td>Excellent talk, Sean!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Rene, Patrick, Raj, Yi, David, Emmanouil</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you, Faqian</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Great work Sean. Congratulations for your upcoming Cell paper...</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>@katherine - good question. We showed that when Wnt is fully activated, the hippo effect is no longer active. When we inhibit Yap nuclear translocation, there was no decrease in proliferation</td>
</tr>
<tr>
<td>Ying Ge</td>
<td>Excellent talk Sean! Congrats!</td>
</tr>
<tr>
<td>Zoltan Arany</td>
<td>beautiful stuff, Sean!</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>Very interesting data Dr. Wu. Did you see cardiomyocyte trans-differentiation upon Wnt stimulation in any condition?</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Matt, Brian, Carolina</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Great talk, Sean. I like your idea and the golden gate bridge image. Again, congrats on your recent Cell Stem Cell paper!</td>
</tr>
<tr>
<td>Katherine Yutzey</td>
<td>Sean, nice work. Congrats on the paper!</td>
</tr>
<tr>
<td>@Brian</td>
<td>@Brian - excellent point. In the paper we show that GSK3b inhibition activated two separate effects - one directed at LEF/TCF which regulated maturation, the other is AKT phosphorylation. These two effects were separable with small molecule inhibitors</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Qutuba, Detlef, DaoFu, JC, JohnHarry.</td>
</tr>
<tr>
<td>Madhumita Basu</td>
<td>Great talk, Dr. Wu! Congratulations on the paper as well.</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Incredible work!! Dr. Wu. Congratulations!!!!</td>
</tr>
<tr>
<td>@Mingfu</td>
<td>@Mingfu - thanks! We are exploring specifically whether inducing sarcomer dis-organization able to induce hiPSC-CM proliferation. Not sure if adult CMs can also be induced to proliferate this way but possible, I think.</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks GQ!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Martin, Chulan, Suresh!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Ying, Zolt! Can't to be able catch up in person.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Sean!!</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>Harry, very nice tool</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you, Detlef</td>
</tr>
<tr>
<td>Yun Huang</td>
<td>Excellent talk, Dr. Wu! Have you tried pressure stress or mechanic stress on hiPSC-CM proliferation?</td>
</tr>
<tr>
<td>@oscar</td>
<td>@oscar : we did not see a trans-differentiation effect away from cardiomyocytes. In fact, we actually saw some enrichment of CMs over fibroblasts from iPSC differentiated cells due to selective proliferation of CMs.</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Guo, Katherine, Madhumita!</td>
</tr>
<tr>
<td>Mohsin Khan</td>
<td>Development-neering..cool term..Congrats Sean</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Joe, Yun! We have not tried pressure/mechanical stress but my guess is they are likely to reduce proliferation.</td>
</tr>
<tr>
<td>HeeCheol Cho</td>
<td>Great story, Sean! Wonderful to see how you advanced your previous work by combining cell signaling and concepts of cell–cell contact!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Thanks Mohsin, Hee Cheol!</td>
</tr>
<tr>
<td>Ying Ge</td>
<td>Great work Harry (and Peipei)! An excellent session! Congrats to all the speakers, Martin, Sean and Harry!</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you very much Ying!</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Great presentation Harry!</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Harry!</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you Sean</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td>Gangjian Qin</td>
<td>A great talk, Harry (and Peipei)! Congrats!!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Great talk, and useful tool, Harry!</td>
</tr>
<tr>
<td>Martin Young</td>
<td>I really enjoyed your presentation Harry. Great work!</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Thank you Gangjian, Li and Martin!</td>
</tr>
<tr>
<td>Ricardo Frausto</td>
<td>Harry, how do your literature tools exclude retracted studies, if at all?</td>
</tr>
<tr>
<td>Gangjian Qin</td>
<td>Thank you for creating these valuable tools for the science community!</td>
</tr>
<tr>
<td>Xuejun Wang</td>
<td>Thank you all three speakers, I enjoyed all of them!</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>It will be interesting to use informatics compare and correlate basic research with clinical data. What a great tool you have, Harry!</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>That’s an excellent question, Ricardo - I’ve been looking into how to use the Retraction Watch database to filter those out.</td>
</tr>
<tr>
<td>Gangjian Qin</td>
<td>Such an exciting session!! Congrats, Martin, Sean, and Harry!!</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Great talks!</td>
</tr>
<tr>
<td>Faqian Li</td>
<td>We thank Martin, Sean and Harry for sharing their new exciting research findings.</td>
</tr>
<tr>
<td>JohnHarry Caufield</td>
<td>Yes, thank you Faqian - we’re hoping to assemble all of this into tools the community can use without much need for bioinformatics experience.</td>
</tr>
<tr>
<td>Sean Wu</td>
<td>Yes, an open source tool for the biomedical community would be really great. Thanks Harry for working on this!</td>
</tr>
<tr>
<td>name</td>
<td>message</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kohta Ikegami</td>
<td>anybody here?</td>
</tr>
<tr>
<td>He Wang</td>
<td>☹ ☹</td>
</tr>
<tr>
<td>Michelle Tallquist</td>
<td>Yes</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Hi everyone and welcome to this session. I am your moderator, Li Qian from University of North Carolina at Chapel Hill. We have three excellent talks lined up for you. If you have any question, please post them in the chat and if they are not answered during the session, we will have time at the end for questions. Enjoy the Session!</td>
</tr>
<tr>
<td>Rajasekaran Namakkal Soorappan</td>
<td>Hi</td>
</tr>
<tr>
<td>Claudia Preston</td>
<td>I'm here</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Yes :)</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>I am here</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>yes</td>
</tr>
<tr>
<td>Jiayi Yao</td>
<td>hi</td>
</tr>
<tr>
<td>Qutuba Karwi</td>
<td>Hi</td>
</tr>
<tr>
<td>Michael Czubryt</td>
<td>Here</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Good...</td>
</tr>
<tr>
<td>Guochang Fan</td>
<td>Hi, Li, greetings to all</td>
</tr>
<tr>
<td>Amadeus Zhu</td>
<td>The system was down for a few minutes but it looks like we're back</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>It works</td>
</tr>
<tr>
<td>Yun Huang</td>
<td>Hello Li!</td>
</tr>
<tr>
<td>Claudia Preston</td>
<td>Thank you!</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>yeah there is some sign in problem. hope all fixed now</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Hello everyone! Welcome to this session!</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to talks by Wuqiang, Karen, and Guo!</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Liming Pei</td>
<td>Thanks for moderating, Li.</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Nice to &quot;see&quot; you all here. Thanks for joining the session!</td>
</tr>
<tr>
<td>Raj Kishore</td>
<td>good work, Wuqiang</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Thanks for your moderating ,Dr. Li. Great session</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you, Raj.</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Wuqiang, how and when did you inject the NPs?</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Dr. Zhu, what is the dose of nanoparticles?</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Karen, nice to see you here.</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Hi Yi!</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Wuqiang, same question as Karen</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Karen, We injected nanoparticles 45 min after MI induction.</td>
</tr>
<tr>
<td>Guochang Fan</td>
<td>IV injection? wuqiang.</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you Karen and Yi!</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Wuqiang, inject into the infarction area or vein?</td>
</tr>
<tr>
<td>Dominic DelRe</td>
<td>Wuqiang, beautiful work. Maybe I missed this, are the NPs engineered to confer any cell type specificity?</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Nice work Wuqiang. Pig study rocks...</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Guochang, it was intramyocardial injection</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>same answer to Yi</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>thanks. Wuqiang</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Dominic, Excellent question. The nanoparticles promote cell cycle in hiPSC-CMs, but not adult mouse and pig cardiomyocytes</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>the nanoparticles promote angiogenesis in adult hearts</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thanks, Ke.</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Wuqiang, interesting, and novel findings. Can the nanoparticle be delivered on tissue-specifically to CM</td>
</tr>
<tr>
<td>Aijun Qiao</td>
<td>Beautiful work! Wuk.(thumbsup)</td>
</tr>
<tr>
<td>Eric Olson</td>
<td>Do a lot of nanoparticles end up in the liver? If so, what happens to the liver?</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Not myocyte specific. The nanoparticles were taken up by endothelial cells and other cell types</td>
</tr>
<tr>
<td>Khanh Ha</td>
<td>Can you design the NPs in a way it selectively go to myocyte?</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Dr. Olson, Thank you for asking. In this study, we didn't check the liver. We will check it in our ongoing studies. Thank you for nice suggestions.</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>Can it go through BBB?</td>
</tr>
<tr>
<td>Eric Olson</td>
<td>Thanks. Very nice work.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Wuqiang!</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Khan, We are collaborating with chemical engineers for cell type specific delivery. Thank you</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Rosie, I am sorry we didn't check the brain. Very good suggestion. Thank you!</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Great job, Wuqiang!</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you, Dr. Wu! We used your luciferase construct.</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Do you observe an increase in arrhythmia in the model?</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Nice work and great talk, Wuqiang!</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>It works well</td>
</tr>
<tr>
<td>Guochang Fan</td>
<td>Great work, Congrats. Wuk.</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Timothy Aballo</td>
<td>Nice talk, thanks Wuk.</td>
</tr>
<tr>
<td>Rebecca Levit</td>
<td>Hi Wuqiang - impressive mature morphology. Can you tell if they electrically couple with the native heart?</td>
</tr>
<tr>
<td>Elaheh Karbassi</td>
<td>Dr. Zhu, very interesting. Is the maturation state of the hiPSC-CMs affected with respect to function (contractility)?</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>wuqiang, nice work, what is nano particles half life?</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Matthew, Thank you for asking. Two pigs died after nanoparticle injection due to arrhythmia. We are not sure if it because of acute MI or nanoparticles. Will do more pig study to investigate this. No arrhythmias in mice</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thanks, Li</td>
</tr>
<tr>
<td>Yun Huang</td>
<td>Dr. Zhu, great talk! Have you observed toxicity of nanoparitcles?</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you, Tim and Guochang.</td>
</tr>
<tr>
<td>Matthew Wolf</td>
<td>Thank you. Great talk!</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>excellent work, Wuqiang!</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(wave)</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Nice talk, Wuqiang!</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Rebecca, In our recent JMCC paper, the CCND2 expressing hiPSC-CMs electrically coupled with host mouse heart six months after implantation. Thank you!</td>
</tr>
<tr>
<td>Jianyi Zhang</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Hi Yun, We didn't observe an increased cell death or fibrosis in the nanoparticle without chemicals in vitro and in vivo. Thank you for asking</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Wuqiang, thank you!</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you, Rong for publishing our data.</td>
</tr>
<tr>
<td>Wuqiang Zhu</td>
<td>Thank you to ALL! please feel free to email me if you have further questions (<a href="mailto:Zhu.Wuqiang@mayo.edu">Zhu.Wuqiang@mayo.edu</a>). Many thanks to Jay for support!</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Karen!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Karen, it is exciting to see Phase I Trial! I wonder if you guys have followed long-term beneficial effects and/or potential side effects in animal models.</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>Dr. Christman, what did the immune profiles look like with the hydrogels?</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Thanks Joe</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>In the pigs, we went out to 3 months, but that's the longest.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>Great talk Wuqiang!</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>We see pro remodeling immune cell polarization (M2, Th2, and also a proremodeling mast cells phenotype)</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>Nice talk Dr Christman! Did you have a chance to test the effect of the hydrogels in the local stiffness of the heart?</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Thanks for the answer, Karen. Great talk and beautiful work!</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>That's amazing! congratulations! and thank you for your answer</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Dr. Christman, can you load the gel with monoclonal Abs?</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>The hydrogels are very weak (only ~10Pa G') so we don't anticipate them to increase local stiffness. We haven’t directly testing post tissue injection though.</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Can load the gel with many types of therapeutics. We've done small molecules, growth factors, miRNAs, exosomes, and showed increased retention and delivery. Haven't tried Abs though but wouldn't anticipate any issues.</td>
</tr>
<tr>
<td>Maria Cimini</td>
<td>Awesome! Thank you!</td>
</tr>
<tr>
<td>Amadeus Zhu</td>
<td>Dr. Christman - very exciting results! Do you anticipate significant barriers to commercialization (regulatory, IP, etc.) for your Ventrix product due to the fact that it's a naturally-derived decellularized ECM product?</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Nice talk, Karen. Great progresses on ECM material</td>
</tr>
<tr>
<td>Jason Gardner</td>
<td>Great talk</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Nice talk, Karen.</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Great talk Karen! Impressive data from the clinical trial. Wondering whether IC-delivered SolMM only stay in the lumen to have the effects or do they eventually go to the myo?</td>
</tr>
<tr>
<td>Patrick Hsieh</td>
<td>Hi Karen, great talk. Congrats.</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>Excellent talk Dr. Christman!</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Amadeus, No issues related to being naturally derived. FDA is used to seeing a lot of naturally derived materials. So they had no issues.</td>
</tr>
<tr>
<td>Amadeus Zhu</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Ke, so far we've only seen it in the blood vessels/gaps between endothelium. We checked multiple timepoints and didn’t see it gelling in the infarct. But likely as it degrades, some degradation products will go in. (thumbsup)</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Thanks all. Glad you could join the session.</td>
</tr>
<tr>
<td>Guochang Fan</td>
<td>Thanks Karen for sharing us such great work. Congrats.</td>
</tr>
<tr>
<td>Fuli Xiang</td>
<td>Excellent work, Karen! Thanks a lot.</td>
</tr>
<tr>
<td>Ronald Vagnozzi</td>
<td>Hi Karen, really exciting data, thank you for sharing! Do you think having the hydrogel lining the vasculature might be</td>
</tr>
<tr>
<td>Speaker</td>
<td>Comment</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>preventing influx of certain immune cells (inflammatory monocytes, ie.) and changing the immune milieu that way?</td>
</tr>
<tr>
<td>David Paik</td>
<td>Yes, we are looking at that now.</td>
</tr>
<tr>
<td>Eric Olson</td>
<td>Hi Guo. Fascinating work. I assume people with hypothyroidism can't regenerate their hearts post MI. If not, why not?</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thanks, David.</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>It is very interesting findings, Dr. Guo</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Eric, we think the hypothyroidism has to start from birth. When we treat adult mice with drugs to cause hypothyroidism, the heart can not regenerate.</td>
</tr>
<tr>
<td>Yun Huang</td>
<td>Dr. Huang, interesting talk! The thyroid hormone regulation are gender specific. Its level is also changed during aging. Have you observed the gender difference and age effect in your experiment setting?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk and beautiful work Guo.</td>
</tr>
<tr>
<td>Eric Olson</td>
<td>Do bats regenerate their hearts. Be careful with those bats!</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Eric There are two people with dominant negative mutations in Thra. I suspect that they retain significant cardiac regenerative potential.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thank you, Yun and Joe.</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Guo, very interesting work.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Eric, we actually tried to study bat regeneration. (thumbsup)</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>Dr. Huang, could this have to with immune systems/environment? Generally aquatic animals don't have a well developed adaptive immune system due to their low exposure to pathogens with the constant movement of water. Additionally, wound healing is improved in aquatic environments (even with people!) resulting in smaller scars, although it takes longer</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Eric ...together with the group which published this paper &quot;Cardiac adaptation in prolonged inverted bats (Eidolon helvum)&quot; in which there was a sign of CM proliferation after inversion-induced cardiac injury. He did experiments but could not ship the bat hearts out of Nigeria.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thank you, Yi.</td>
</tr>
<tr>
<td>Tianfang Yang</td>
<td>Hi Guo, do you think the loss of regenerative potential and endothermal acquisition is a historical coincidence, or a functional limitation of relevant molecular machinaries?</td>
</tr>
<tr>
<td>Tamer Mohamed</td>
<td>Great talk Guo! How do you think thyroid hormone influence cardiomyocyte proliferation mechanistically? does it shift the metabolism or are there other possibilities</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>Great talk Guo! Super interesting. Good to see you again!</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Jamie, a good question. This is one of the topic that many labs have been exploring.</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Impressive work, Guo! Particularly enjoy your unique views and angles to explore loss or gain of heart regenerative capacity. Look forward to the next piece of your exciting work!</td>
</tr>
<tr>
<td>Eric Olson</td>
<td>alpha and beta myosin are two of the most thyroid hormone sensitive genes in the heart. Are they involved?</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Guo, an curios question. Does the ECM component affect such regeneration?</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Guo, great work! Congratulations on the paper in Science!</td>
</tr>
<tr>
<td>Chuanxi Cai</td>
<td>Very nice work!</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>fascinating work!</td>
</tr>
<tr>
<td>Jamie Francisco</td>
<td>Thank you Dr. Huang! excellent talk! I know this is of particular interest with amphibians, as they go from aquatic to land based environments and have shifts in their immune systems</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Applause to all speakers, thanks for delivering such a wonderful session!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Also big thanks to all participants, for listening, supporting and active discussion!</td>
</tr>
<tr>
<td>Ying Ge</td>
<td>A great session with three exciting talks! Congrats to Wuk, Karen and Guo for the fascinating work and stimulating presentations! Thanks Li for moderating! Hope to meet you in person next year :)</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>thanks. Li</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Nice work Guo. I had the same question as Yi.</td>
</tr>
<tr>
<td>Jiang Chang</td>
<td>@Guo fantastic discovery! a question: how could some organs like liver can keep regenerate capacity? because lack of TR?</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>a terrific session, thx to Li for chairing</td>
</tr>
<tr>
<td>Hanqing Zhao</td>
<td>Nice work!</td>
</tr>
<tr>
<td>Li Qian</td>
<td>Hope to see you all in person in the near future!</td>
</tr>
<tr>
<td>Keith Jones</td>
<td>Dr. Huang, have you looked at non coding RNAs that might target relevant genes are TH regulated in this system?</td>
</tr>
<tr>
<td>Dominic DelRe</td>
<td>Incredible session! Thanks to speakers and Li for moderating!</td>
</tr>
<tr>
<td>Emmanouil Tampakakis</td>
<td>Great work Guo. I really enjoyed this</td>
</tr>
<tr>
<td>Keith Jones</td>
<td>nice session everyone!</td>
</tr>
<tr>
<td>Liming Pei</td>
<td>@Guo, very nice work! Any insights into the specific thyroid hormone receptor (alpha or beta) or isoforms that mediate the regeneration effect</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Tianfang, this is exactly what we try to find out. It seems that becoming endothermy requires the increase of cardiac output by ~10 fold, which seems to substantially change the heart design. Now we are actively looking for the exact molecular link and causality.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Jijun Huang</td>
<td>Great story, @Guo! As thyroid hormone was supposed to regulate CM maturation, does that means a species differences in CM maturation status or timing?</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>Thank you, Tamer and Jie. @Tamer, we found one of the thyroid hormone target genes Cpt partially contribute to the phenotype. It is in our supplemental figures. Cpt encoding the rate limiting step for fatty acid import into the mitochondria. So in this sense, metabolism may be involved. We are testing the functions of many target genes right now.</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>@guo, do you see a correlation between cardiac work and regeneration capacity?</td>
</tr>
<tr>
<td>Jie Xu</td>
<td>@Guo, follow up on @tianfang’s question, does the 10x more work for the heart reflected in a drastic increase in mechanical load? In other words does more mechanical load decrease regeneration ability?</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Eric, Yes, both are excellent targets. We are using Crispr to test their functional contributions. Stay tuned.</td>
</tr>
<tr>
<td>Guo Huang</td>
<td>@Yi, we did notice expressional changes of many ECM proteins. Now we are testing some of them.</td>
</tr>
</tbody>
</table>
Concurrent Session 11B: Diastolic and Contractile Dysfunction in Heart Failure

<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kohta Ikegami</td>
<td>anybody?</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSooorappan</td>
<td>Hi</td>
</tr>
<tr>
<td>Alicia Mattiazi</td>
<td>yes, waiting</td>
</tr>
<tr>
<td>Snekha Rajasekaran</td>
<td>Hi :)</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>It is working</td>
</tr>
<tr>
<td>Willem DeLange</td>
<td>seems like there were technical problems!</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>yes, it is working now</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Was unable to log on earlier - getting an error (service unavailable) message...</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Welcome everyone! Sorry for delay- technical issues it seems? I'm the session moderator- Carter Ralphe, from the University of Wisconsin. Please dont hesitate to post questions on the chat line...if we are able to hear the talks, that is!</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Are we late?</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Just started!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Thank you John for moderating this another exciting session!!</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Looking forward to an exciting session by Drs. Kloner, Stelzer, and Westfall!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Yes!</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Kloner, Did you check the shorter time of occlusion, like 5-10 minutes? Great talk! Thank you</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>we did not, but others have shown stunning after only 5-10 min of ischemia</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>@ Dr. Kloner, Thank you for presenting at #BCVS20</td>
</tr>
<tr>
<td>Mei Methawasin</td>
<td>@DR Kloner, what is the mechanism that explains the slower recovery of diastolic function compare to systolic function?</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>Not entirely clear. Possibly related to alterations in calcium flux?</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSooorappan</td>
<td>Very interesting observation Dr. Kloner! Spasm...</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>Certainly coronary spasm, if it occurs for more than 5 minutes or so could result in stunning.</td>
</tr>
<tr>
<td>Willard Sharp</td>
<td>Do you think cardiac dysfunction following short sudden cardiac arrest also represents stunned myocardium?</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Kloner, what do you think about an animal model of repetitive ischemia model with 5 minutes of occlusion and</td>
</tr>
</tbody>
</table>
repeat 4 times a day? The myocardium stunned, recovery, stunned, recovery? Thank you

Robert Kloner

Yes, most likely.

Venkatesh Sundararajan

Dr. Kloner, can hibernating myocardium be viable and restored fully functional upon reperfusion similar to non-hibernating one?

Robert Kloner

Repetitive episodes of ischemia and reperfusion can cause stunning that may take longer to recover; but paradoxically can precondition the myocardium against necrosis due to a longer more severe episode of ischemia.

Robert Kloner

Hibernating myocardium can recover function after revascularization, but it can take a long time to rebuild up the de-differentiated tissue.

Willard Sharp

Do you think molecular changes occurring in my-filaments in stunning contribute to eventual necrosis when ischemia continued

Robert Kloner

Ischemia refers to ongoing decrease in blood flow. In stunning the blood flow is restored so it is no longer ischemic. By definition, stunned myocardium is not dead tissue, but viable.

Nicole Purcell

Great talk Dr. Kloner..good to see you!

Liya Yin

@Dr. Kloner, thank you. The precondition model will stimulations revascularization, but myocardium might be injured?

Margaret Westfall

Appreciate your integration of stunning and associated dysfunction Dr Kloner! Thanks to the organizers for this session & John Ralphe for moderating.

John Ralphe

Dr. Kloner- excellent talk! I greatly admire your work and all the contributions you have made to the field. Thank you!

Willard Sharp

Thank you Dr. Kloner!

Joseph Wu

That was a great talk Dr. Kloner! Joe

Jil Tardiff

Julian! Looking forward to this!

Sakthivel Sadayappan

Hello Professor Stelzer!!!

Christopher Solis

Great talk Dr. Kloner

John Ralphe

Hi Julian-- thanks for presenting! And good- a cpro talk!

Venkatesh Sundararajan

@ Dr. Kloner, thanks! that is interesting. I believe hibernating does not occur in all patients and it depends on the duration and severity of the coronary blockage, if I am right.

Dr. Kloner, thank you for this talk. The de-differentiation is interesting. Is there any quantification of the time course of protein expression/post-translational modifications? (especially if there are differences between stunned and takasobu)

Charles Chung


<table>
<thead>
<tr>
<th>Robert Kloner</th>
<th>Most preconditioning protocols do not cause irreversible damage to the myocardium.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liya Yin</td>
<td>Thank you very much. Great talks!</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>Thank you for the memories, Bob. Still a lot to be learned about reverse remodeling after revascularisation of hibernating heart muscle.</td>
</tr>
<tr>
<td>Heinrich Taegtmeyer</td>
<td>heart muscle.</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>Dr. Chung, you ask a good question. We have not looked at the issue of protein expression in hibernating. Dr. John Canty at U of Buffalo may have looked at this. He has a terrific model of hibernating myocardium.</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Thank you, Dr. Kloner!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Dr. Kloner beautifully discussed a subject that &quot;torments&quot; fellows to this day.</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>Thank you. Also in answer to one of the questions above, hibernating myocardium does not occur in all patients with coronary narrowings. It may be dependent on a number of factors including the amount of collateral flow available.</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Thank you Dr. Kloner!! great information</td>
</tr>
<tr>
<td>Hind Lal</td>
<td>What was the route of AAVs injection</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Dr. Kloner, if the microvascular dysfunction is part of the cause for Takasobu , the stunned /hypernating myocardium is caused by microischemia? Does the stunned or hibernating myocardium happen INOCA? Thank you</td>
</tr>
<tr>
<td>Christopher Solis</td>
<td>Dr. Kloner, would increased caspase activity during the ischemic event (which leads to reduced myofibrillar sensitivity to Ca2+) be of significance in the context of patients experiencing myocardial stunning?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>What was the half of C0-C2 protein in the cardiomyocytes, compared to FL cMyBP-C?</td>
</tr>
<tr>
<td>Robert Kloner</td>
<td>Good question,. We have not looked at caspase activity in our models. Open emoticons window</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>half life</td>
</tr>
<tr>
<td>Walter Koch</td>
<td>this is really nice</td>
</tr>
<tr>
<td>Willem DeLange</td>
<td>Great Talk Julian - Did you try this same experiments at a later time-point?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk and beautiful work Julian.</td>
</tr>
<tr>
<td>Willem DeLange</td>
<td>I.e. at weaning or adult mice?</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Such a pleasure to see some xb kinetics - beautifully done.</td>
</tr>
<tr>
<td>Rene Packard</td>
<td>Dr. Stelzer - great lecture, thank you. 1. Have you looked at gene expression of other proteins involved in the contractile apparatus following AAV-9 delivery? 2. Have you assessed this approach in another CMP model?</td>
</tr>
<tr>
<td>Name</td>
<td>Comment</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Agree- this is beautiful work!</td>
</tr>
<tr>
<td>John Ralphe</td>
<td>Did you detect any undesired effects on the cells/hearts?</td>
</tr>
<tr>
<td>Darshini Desai</td>
<td>Interesting talk Dr Stelzer! Did you happen to look at the phosphorylation of SR proteins, calcium dynamics etc.</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Hi Julian, great talk. Did you guys look at calcium dynamics in isolated cardiomyocytes?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Hi Margaret, Excellent start! Thank you for your presentation!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>As I commented yesterday - cTnI is a bit of a devil in the thin filament. The questions she is addressing in this work have flummoxed us for years and are very translationally relevant.</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Pretty quick - interesting</td>
</tr>
<tr>
<td>Andrew Carley</td>
<td>Does this residue exist in ssTnI?</td>
</tr>
<tr>
<td>Margaret Westfall</td>
<td>There is an equivalent Thr and Ser but the amount of phosphorylation seems to be much less</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Beautiful work Dr. Westfall. Do you think there will be similar results if an inducible promoter is used to turn on the transgene in adulthood?</td>
</tr>
<tr>
<td>Margaret Westfall</td>
<td>Good question - would like to look at this but it will take longer to get this model up and going.</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>Are there changes in other phosphorylation sites or phosphorylation of other myofilament proteins?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>@MW, Did you use fibers to measure pCa-force of contraction and rate of force redevelopment (ktr)? I guess HE-SD myocytes have faster kinetics, leading to hypertrophy at later stage!</td>
</tr>
<tr>
<td>Margaret Westfall</td>
<td>Not yet but it is in the que!</td>
</tr>
<tr>
<td>Farid Moussaviharami</td>
<td>(thumbsup)</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Good to see you Margaret and thanks for a great talk! Joe</td>
</tr>
<tr>
<td>Margaret Westfall</td>
<td>Ditto!</td>
</tr>
<tr>
<td>Grace Muller</td>
<td>Dr. Westfall, fascinating! Have you noted any gender-specific differences?</td>
</tr>
<tr>
<td>Darshini Desai</td>
<td>excellent talk! Have you looked at the mitochondrial membrane potential?</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Dr. Westfall, interesting data. Does resting sarcomere length differ in the ME-SD or HE-SD mice?</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>I am curious to see myosin kinetics in the HE-SD myocytes!</td>
</tr>
<tr>
<td>Grace Muller</td>
<td>And could there be changes in mitochondrial morphology or the mPTP/mitochondrial membrane potential change?</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Margaret - what's your bet on the identity of this sarcomeric stress, it is, as you know, the 64K question</td>
</tr>
<tr>
<td>Margaret Westfall</td>
<td>We are in the process of looking at mitochondrial size &amp; number. Initial experiments in 3 mos old mice do show</td>
</tr>
</tbody>
</table>
reduced membrane potential but these studies were interrupted by COVID so hope to get back to this soon.

<p>| Liya Yin | @Dr. Westfall, Great talk! Did you check the methylation of mitochondrial DNA? Thank you |</p>
<table>
<thead>
<tr>
<th>name</th>
<th>message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan Cheng</td>
<td>Welcome! Thank you for joining us. You should be seeing a chat prompt slide as we wait for the session to begin. If you do not see this, please submit a support ticket by clicking on the Request Support button located at the bottom left of the player.</td>
</tr>
<tr>
<td>Joe Trusso</td>
<td>Welcome everyone!!!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>We have a fantastic line-up of speakers and topics! please feel free to contribute thoughts and questions to the chat, and we can address them during the Q&amp;A... thank you!</td>
</tr>
<tr>
<td>Jinqi Fan</td>
<td>great talk, Dr. Cheng. Nice to see you Here</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>great to see you also!</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Thank you Susan for sharing. Great to see you Jinqi.</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Great talk Ke and a fantastic body of work. Joe</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Thank you Joe!</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Ke Great work!</td>
</tr>
<tr>
<td>Chuanxi Cai</td>
<td>Beautiful work!</td>
</tr>
<tr>
<td>Zhongjian Cheng</td>
<td>Fantastic work Ke!</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>great talks! Thanks for sharing!</td>
</tr>
<tr>
<td>Rongxue Wu</td>
<td>It is a powerful method and interesting findings, Dr. Cheng</td>
</tr>
<tr>
<td>Detlef Obal</td>
<td>Impressive work</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>Great work, Ke! I always have the question about how the patch sticks to the heart?</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>Ke, nice work, did you need to break epicardium when you did patch to the heart?</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>@Mingfu, for the STM paper work, we still need to use sutures</td>
</tr>
<tr>
<td>Mingfu Wu</td>
<td>OK. Thank you!</td>
</tr>
<tr>
<td>Yang Xiang</td>
<td>Ke, Beautiful work, are there specific cell surface markers can be used to stick patch on heart?</td>
</tr>
<tr>
<td>Karen Christman</td>
<td>Nice talk Ke.</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Ke Cheng, Thank you for your excellent presentation!!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Hello Megan!!</td>
</tr>
<tr>
<td>Yi Hong</td>
<td>Nice talk. Ke</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>@Yang, sorry we have not yet looked into this possibility. Good suggestion!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>Amazing work!</td>
</tr>
<tr>
<td>Fuli Xiang</td>
<td>Ke, very impressive work! Thank you:)</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Hi Sakthi!</td>
</tr>
<tr>
<td>User</td>
<td>Message</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>Thank you all for attending and commenting.</td>
</tr>
<tr>
<td>Zhongjian Cheng</td>
<td>@Ke, impressive! how long the cells can be stay/survival in the nanogel/patch? @Zhongjian, in the nano gel paper, we still see engraftment at 3 weeks</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>@Zhongjian, in the nano gel paper, we still see engraftment at 3 weeks</td>
</tr>
<tr>
<td>Yang Xiang</td>
<td>@Ke. I remember you have identified a marker for intracardiac delivery of particles. is it integrin?</td>
</tr>
<tr>
<td>Zhongjian Cheng</td>
<td>@Ke, cool! Thank you!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>the race/ethnicity predominance is intriguing</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>given the more diverse genetic architecture</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>@Yang, not by our lab, but YES one of my colleagues Dr. Yucai Xie published a nice Stem Cell paper indicating the beta 1 intern on cardiomyocytes is important</td>
</tr>
<tr>
<td>Ke Cheng</td>
<td>sorry for the typo, I mean integrin</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>We were also intrigued and careful to correct for the expected number of variants (greater in more diverse subjects).</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>nice</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>wondering if you saw any sex differences (if sex-stratified analysis were done)</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>It really speaks to how necessary careful VUS adjudication is going to be as we sequence more diverse cohorts.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>agree! We did not stratify by sex - but that would be very interesting to try!</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>cool... and btw, really love the longitudinal analysis approach -- very important!</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Thanks - a grad student in the lab, Tess Pottinger, spear-headed these studies. It really pulls ALL the data out and is useful for richly phenotyped, but small cohorts.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>nice and great approach to leverage data from smaller cohorts.. also accounts for potential effects of aging (and accumulation of other exposure effects over time)</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Indeed! This is critical for cardiovascular phenotypes!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>great talk!!!</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Thanks Susan.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>looking forward to watching out for more pubs to come out of your lab on all this!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Megan, Thank you for a beautiful and very informative presentation.</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Thanks - there are a few manuscripts in the pipeline!</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Thanks Sakthi!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>great ;)</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>the brown fat story has been really seminal...</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>All the best, Megan. Look forward to seeing those papers</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Susan, thanks for the comment!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>i didn’t know about the vegf connection or coag factor relations</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>Thanks! I’m looking forward to seeing your next genetics paper too!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Of course with your collaboration!!</td>
</tr>
<tr>
<td>Megan Puckelwartz</td>
<td>:)</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Our coagulation factor project is now in revision (reviewers comment really tough to answer,)</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>reviewers can be tough! feel free to reach out to any of us or bcv folks on circ res ed board for curbside on appraoches, if helpful... sometimes brainstorming from outside colleage can be helpful</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>so cool... love the video of thermoscaned mice</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Susan, thank you for your great suggestion! ^^</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Ippei, is the lower temp related to the low activity /less exercise /low metabolic rate? Thank you, interesting study</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Liya, that’s important point, but we have not analyzed activity yet. Let this be our homework. BAT implatation increase thermogenesis, and cardiac function improves, so we consider BAT has causal role for maintaining cardiac function.</td>
</tr>
<tr>
<td>Oscar Bartulos</td>
<td>Hi Dr Shimizu. I guess there is correlation between beat rate, age and body temperature, right?</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>This is very interesting work, thanks for presenting Ippei. Joe</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Joseph, great to have your comment! Thank you.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>love the aging theme</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>amazing work!</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Thank you Susan, I really enjoyed this session! cheers,</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>senocules is a very compelling theme and great way to tie it all together</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>@Ippei, is BAT is decreased in aged animals? Thank you</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>very in sync with network biology approaches</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>how does ANP play as a crosstalk molecule between heart and BAT in heart failure?</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Liya, BAT function declines with aging.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>very important, is this finding published?</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>given that fat vs lean muscle ratios change with aging...</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>I meant the fat distribution? Thank you</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Santosh, yes ANP is important for activation of BAT. Together with SNS, we speculated this would increase BAT function. But the result was opposite. Heart failure reduces BAT function in our LV pressure overload model.</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Interesting. Did you notice reduced UCP1 expression?</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Susan, now we are in revision (Nature), hope we can survive this. Again reviewer’s comments really tough,,,, wow! ok those reviewers will defn be tough... but will be worth it if you can get through...</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td></td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Liya; we have not checked fat distribution yet. We can analyze this with CT (let this be our homework), thanks for free to pull in your colleagues and collaborators to help... if substantial, they can be added to the manuscript (this has happened for other papers at nature and other journals as you probably know already)</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td></td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>sounds like this work really needs to get published!</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>thank you so much for sharing your work in this forum</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Santosh, as for UCP1, I remember this as comparable. because of two direction. Hyper activation of BAT, and cell death of BAT due to activation of SNS in BAT.</td>
</tr>
<tr>
<td>Susan Cheng</td>
<td>super exciting and will forward the field</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>Was there any sex specific change in BAT in heart failure model?</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>Hi Susan, thanks indeed for your helpful comments!</td>
</tr>
<tr>
<td>Ippei Shimizu</td>
<td>As for gender difference, we have not checked yet.</td>
</tr>
<tr>
<td>Santosh Maurya</td>
<td>i mean BAT function was different in male vs. female in heart failure model</td>
</tr>
<tr>
<td>Liya Yin</td>
<td>For HF patients, did you check the lipid level or obese parameter? Thank you</td>
</tr>
<tr>
<td>name</td>
<td>message</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>I believe not current session, please check</td>
</tr>
<tr>
<td>Pamell Burrage</td>
<td>The previous session is running a little over in time. Once that session has ended Workshop 2 will start.</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Got you, thank you!</td>
</tr>
<tr>
<td>Leslie Leinwand</td>
<td>Yes, thank you!</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Welcome everyone..</td>
</tr>
<tr>
<td>Chen Gao</td>
<td>Waiting for workshop 2!</td>
</tr>
<tr>
<td>Leslie Leinwand</td>
<td>Thank you! Where will questions show up, Sakthi?</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>They will show up in this chat sequence</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Good to &quot;see&quot; you Leslie and thanks for moderating! Joe</td>
</tr>
<tr>
<td>Leslie Leinwand</td>
<td>You too, Joe!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Hello Leslie! Thank you!!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Here only</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Participants will post questions here</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>What a terrible number</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>So true</td>
</tr>
<tr>
<td>Leslie Leinwand</td>
<td>Agreed</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Jane, thanks for this very important talk to all the PIs and trainees. Joe</td>
</tr>
<tr>
<td>Alicia Mattiazzi</td>
<td>Excellent talk Jane!</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Nicely done, Jane!!</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>As an early career investigator with a small lab, blinding would be difficult. I wonder if there is guidance anywhere on alternate methods for blinding or minimizing bias?</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>The need for blinding really depends on the study. If not done, just be open about this as a limitation.</td>
</tr>
<tr>
<td>Xinliang Ma</td>
<td>Hello Jane: Excellent talk! Great to see you here..</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Thanks!</td>
</tr>
<tr>
<td>Ronglih Liao</td>
<td>Thanks Jane! great talk!</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Thanks Ronglih!</td>
</tr>
<tr>
<td>Nicole Purcell</td>
<td>this is a great session and relevant to everyone. Nice talk Jane!</td>
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<tr>
<td>Rong Tian</td>
<td>Question for all: lots of misconduct investigation requires original records. How many years in general is there a consensus for many years the records should be kept?</td>
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<tr>
<td>Heinrich Taegtmeyer</td>
<td>The nuts and bolts we all need to know. Thank you, Jane. Thank you, Dr. Garfinkel. What a session!</td>
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<tr>
<td>Name</td>
<td>Comment</td>
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<tr>
<td>Joan Heller Brown</td>
<td>A faculty member had agents come in and confiscate their lab computers to look for possibly falsified data, without any prior notification from the university or NIH regarding any allegations. Is this standard operating procedure?</td>
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<tr>
<td>Susan Garfinkel</td>
<td>Most institutions have data retention policies, the NIH says keep data for 3 years after the close of a grant project. If a RM case occurred, data needs to be kept for 10+ years.</td>
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<tr>
<td>Jane Freedman</td>
<td>That's a great question. I always was told 10 years (some say 7) but I know we get claims of plagiarism from 20 year old papers. It is complicated, even for an editor trying to vet these issues.</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>We try to re-write methods for each of our manuscripts, however, it is difficult to make substantive changes. Any suggestions on whether self-plagiarism is acceptable (e.g. copying most of the methods from our previous papers without citing every paragraph?)</td>
</tr>
<tr>
<td>Susan Garfinkel</td>
<td>Usually methodology, if it is standard, can only be written in so many ways and this would not be included as an issue of self plagiarism.</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Thank you</td>
</tr>
<tr>
<td>Chengxue Qin</td>
<td>Thanks great talks</td>
</tr>
<tr>
<td>Joseph Wu</td>
<td>Thanks Joe for touching on this topic.</td>
</tr>
<tr>
<td>Joseph Hill</td>
<td>Thanks, Joe. We'll see how it goes!</td>
</tr>
<tr>
<td>Jane Freedman</td>
<td>Great question. But, as Susan said, we do not consider re-stating your own methods as plagiarism</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Thanks a million for participating, Susan - sobering and very important for all of us</td>
</tr>
<tr>
<td>Susan Garfinkel</td>
<td>Thank you!</td>
</tr>
<tr>
<td>Yajing Wang</td>
<td>thanks all chief editors for such informative talks</td>
</tr>
<tr>
<td>Sakthivel Sadayappan</td>
<td>Dr. Hill, Thank you for your presentation in this exciting session!!</td>
</tr>
<tr>
<td>Joseph Hill</td>
<td>my pleasure</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>Very Informative. Thank you Jane</td>
</tr>
<tr>
<td>Chen Gao</td>
<td>Great topic!</td>
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<tr>
<td>Xinliang Ma</td>
<td>Hello Joe: Great to &quot;see&quot; you here. Excellent topic!!!</td>
</tr>
<tr>
<td>Joseph Hill</td>
<td>Thanks to you both!</td>
</tr>
<tr>
<td>Ganesh Halade</td>
<td>Excellent session to improve cardiovascular research quality!!</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Very important to de-mystify this process.</td>
</tr>
<tr>
<td>David Paik</td>
<td>Very informative session, Dr. Hill. Thank you</td>
</tr>
<tr>
<td>Rong Tian</td>
<td>very important points, Joe. Thank you for bringing them up!</td>
</tr>
<tr>
<td>Chengxue Qin</td>
<td>Very important. I had to say those practice are &quot;eye opening&quot; sadly.....Thank you</td>
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Hi Joe, could you comments on some criteria used for not sending a paper out for review?

These are very impotant topics, thanks to both Jane and Joe for doing this. (thumbsup)

If a paper has any chance of achieving priority for publication at Circulation, or in one of our subspecialty journals, -- any chance -- then we send it out for review. That said, our acceptance rate is 6% and yet we review 50%.

I see lots of negative clinical trials get published in prominent journals but I feel like there is no good home for negative basic science studies. Yet I think it is important to publish negative basic studies so that other investigators know what doesn’t work and won’t waste time trying it again. What are good journals that will accept negative data?

nice to 'meet' you, Joe.

@Meenakshi- I agree this has to be discussed and find ways to publish the negative results! We struggle to convince about reductive stress with ton s of data as everyone believes that Oxidative Stress is driving the whole world!

Thank you so much Joe for bring this point! I personally know a victim hurt by these so called "knowledge"

Hi Yajing!

There’s a difference between negative results and those that refute previous data

Thanks for covering predatory journal Dr. Hill, surprisingly, some of these journals are on Pubmed

Thanks Dr. Hill, wonderful talk!

That’s a great point, Jane.

Thanks, all!

Agree Jane

Great talk!

Thank you to the speakers and the BCVS for another great session with important implications.

@Dr. Freedman. Yes there is a difference between negative results and those that refute previous data. I was referring more to the former - negative results. Do you think there is value in publishing that and where?

Very informative session, thanks to all speaker and the organizing committee.
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<tr>
<th>Name</th>
<th>Response</th>
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<tr>
<td>Jane Freedman</td>
<td>I do think there is value but agree that they are harder to publish (I've been there many times). Reviewers often say &quot;underpowered&quot; or cite methodological reasons why the study was negative.</td>
</tr>
<tr>
<td>Suresh Verma</td>
<td>Excellent piece of information. Thanks Joe, Jane and Susan.</td>
</tr>
<tr>
<td>Rajasekaran NamakkalSoorappan</td>
<td>Thats true Dr. Freedman</td>
</tr>
<tr>
<td>Venkatesh Sundararajan</td>
<td>Great session! and information</td>
</tr>
<tr>
<td>Meenakshi Madhur</td>
<td>@Dr. Freedman. Thanks. Agree.</td>
</tr>
<tr>
<td>Charles Chung</td>
<td>Thank you to all of the speakers. Great Points. I do think that “honest” mistakes are quite easy- transposing data in Excel, etc. (A year ago, I did not submit a manuscript revision when I found transposed data for an essential result). Any guidance from experienced mentors on keeping data organized, accessible, etc to ensure that data can be quickly checked for errors (honest or not)?</td>
</tr>
<tr>
<td>Hanqing Zhao</td>
<td>Nice talk. Thank you all.</td>
</tr>
<tr>
<td>Poonam Rao</td>
<td>Thanks to organiser committee for this important session and a big thanks to the speakers too for sharing there expertise</td>
</tr>
<tr>
<td>Leslie Leinwand</td>
<td>Thanks to everyone!</td>
</tr>
<tr>
<td>Jijun Huang</td>
<td>Great sessions! Thanks to the speakers! One question: any comments on Pubpeer's role from a journal Editor's perspective.</td>
</tr>
<tr>
<td>Michael Czubryt</td>
<td>Great session - thank you</td>
</tr>
<tr>
<td>Jil Tardiff</td>
<td>Thanks for moderating , Leslie!</td>
</tr>
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</table>