

LNRC: Microgravity & Aerospace Medicine Research- Meeting Minutes

12Sep2024 (8:00 AM), Microsoft Teams

Host: Michal Masternak, PhD, Chair (michal.masternak@ucf.edu)

Attendance:

M. Masternak (UCF)	E. Ross (UCF)	J. Brisset (UCF)	B. Hoffman (UCF)
A. Silverton (LNRI)	E. Martin (UCF)	L. Brattain (UCF)	M. Giulianotti (Sierra Space)
K. Daly (UCF)	M. Urquieta (UCF)	K. Sugaya (UCF)	D. Penoyer (Orlando Health)
B. Wray (UCF)	E. Hill (UCF)	L. Coffee (UCF)	

Agenda:

None Set, Open Discussion

Updates:

The Microgravity Research Workgroup website has been developed. It will go live soon. IT is helping, but Dr. Masternak is managing majority at the moment and plans to look for students to assist. The website will be presented at the next LNRC meeting.

We have received some headshot photos and short biographies that have been included. We will also include website hyperlinks that guide viewers to important resources (NASA, Trish, etc.) i.

Note that the Lake Nona Research Council (LNRC) is also launching a microgravity research website. The LNRC website is in addition to the COM website. The two will be separate entities.

Action Items:

- Please email to E. Martin (erica.martin@ucf.edu)
 - Headshot Photos and Short Bios for the website, if you have not previously done-so.
 - Please visit the following link and choose your favorite “gaps in space research topics” that can be shared in the next meeting
 - <https://humanresearchroadmap.nasa.gov/Gaps/>
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Discussion:

M. Masternak (michal.masternak@ucf.edu)

- **Polaris Dawn**
 - After months of anticipation, the Polaris was launched and is currently circulating in orbit as we speak. UCF, as a site, helped with collecting samples from the astronauts.

- Through this collaboration, we are developing particles and submitting papers that share general information about space travel and the future of research biobanking and commercial space travel.
- **Dr. Masternak's Mice Study**
 - Discussed how his lab participated in the research concerning deep space's treatment on mice. After the mice were exposed to radiation and microgravity, high quality data was collected and research papers were completed.
 - The NASA conference in Galveston, TX last year, was what provided the samples currently being used in this mice study.

K. Sugaya (ksugaya@ucf.edu)

- **LNRC Website Suggestions**
 - Discussion Board Idea
 - Expressed that it would be a good idea if the LNRC website could have a discussion board tab added so researchers, and people interested, could openly share new information, progress, and news.
 - Starting out, it can be LNRC members only, but eventually thinks letting the general public post as well would be a good idea.
 - Publication Sharing
 - Expressed sharing publications publicly on the website would be a good idea as well and **Dr. Masternak** added in publications within 2 years would be a good addition.

K. Daly (katherine.daly@ucf.edu)

- **LNRC Website Suggestions**
 - Publications
 - Expressed instead of 2-year cut-off, publications that range up to 5 years should be included instead.
- **LNRC Meeting Suggestions**
 - Requested that LNRC members with less established research / less experience start to meet separately from team members who have more long-term experience.
- **Mice Study Findings**
 - Requested the findings from the mice study, in regards to behavioral health, **M. Masternak** explained there weren't any significant changes in synapses due to the mice not actually being in space. The radiation period was too short for significant changes to occur in MRNA synapses. In the future, he plans to have mice undergo longer exposure.

M. Masternak (michal.masternak@ucf.edu)

- **LNRC Funding**
 - **M. Masternak** raised the concern that more money will help boost collaboration work between LNRC members and other entities. He expressed that less money is

needed for collection of data, but more money will be necessary if biological testing from outside collaborators is requested.

- **K. Daly** suggested the idea of adding a donation option to the LNRC website and funds collected can be directly shared to specific areas of space research.
- **E. Ross** expressed donations and funding resources have been discussed previously, and is funding this work is challenging. **E. Ross** suggested reaching out to federal agencies who can provide better contacts/resources for this.
- **M. Masternak** stated a concrete plan should be decided upon so extra funding can be allocated correctly.

D. Penoyer (elizabeth.penoyer@orlandohealth.com)

- **UCF and Orlando Health**

- **D. Penoyer** updated that an agreement is still in negotiation between Orlando Health and UCF. It is anticipated an agreement will be reached within the next month. It was also requested that more broadcasting be done concerning the collaboration so the word can be spread about the organization.

- **Space Residency Program**

- **D. Penoyer** updated that Orlando Health and **M. Urquieta** have been collaborating on a new aerospace medicine residency program. Medicine concerning intracranial pressure (ICP), toxicology exposure, and non-invasive research are all being discussed.

A. Silverton (asilverton@tavistock.com)

- **Government Funding**

- **A. Silverton** shared that she will do some research into finding specific government funding resources and present her findings at the next meeting.
- **M. Masternak** asked **E. Ross** to share information on a good starting point for this process. **E. Ross** expressed that there used to be funds readily available, and stated they have since gone “missing”. **E. Ross** likes the idea of donations being sent to UCF / COM instead of a specific research group / person.
- **K. Daly** expressed that clinical sciences faculty members are allowed up to \$10,000 in seed funding. K. Daly asked if research departments can collaborate and combine funding. **E. Ross** expressed the importance of every party participating having stake in the outcome. One department cannot take precedence over another; in-house collaborations will be easier than external collaborations. **E. Ross** closed by stating we need to have research projects in hand before requesting more funds.
- **K. Daly** suggested that the finance team be invited to the next meeting.

M. Urquieta (manny@ucf.edu)

- **M. Urquieta** recommended defining 2-3 aerospace studies the the LNRC Microgravity Research Workgroup wants to pursue. Stated that funding is limited, and more focus should

be placed on studies that maximize funding based on preliminary data. Once these are collected, federal grants are typically awarded to more mature projects.

- **M. Urquieta** cautioned that many of the research projects being discussed are applicable to space flight (not aerospace medicine) or have already been studied before.
- **M. Urquieta** suggested that the main group should find studies everyone agrees upon, separate the group into smaller groups, and then have funding awarded.

L. Coffee (rlc@ucf.edu)

- L. Coffee agrees that finding gaps in research first and then requesting funding is the better option, as opposed to requesting funding and then deciding what to research thereafter.
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