

January 2022

TUMORS, ORGANOIDS AND SPHEROIDS IN SPACE - MICROGRAVITY FOR PERSONALIZED MEDICINE (M4PM) COMMUNITY

1. PURPOSE OF THE COMMUNITY

The *Tumors, Organoids and Spheroids in Space - Microgravity for Personalized Medicine (M4PM)* community is focused on bringing together thought leaders in industry and academia to solve problems and advance personalized medicine, disease modeling and drug testing through innovations in microgravity. This innovation in drug discovery in space and in personalized medicine will be done for the benefit of life on Earth. The M4PM Community will in parallel engage in activities that foster and enable the continued development of its members' R&D activities that directly benefit respective company business unit goals. Marketing, advertising, and public good that underpin members' contributions will be promoted.

The specific purposes of the Community include the following:

- Feature key thought-leaders contribution to the central topic of Microgravity for Personalized Medicine by bringing tumors, organoids, spheroids to space.
- Develop and promote broad programs around *3D cell cultures / tumors / organoids / spheroids for drug testing and discovery and for the development of personalized medicine*. The community will initially focus on personalized cancer treatments for various types of cancer and on additional disease areas of research that benefit from organoids.

We believe that this work will be done in a research and very early-stage preclinical arena where large companies will not be in competition. We expect all Community Members will focus on common interests that benefit the group and their individual corporate goals.

- Create programs focused on common goals of all Community members while still enabling individual members to “pull through” relevant discoveries to support respective business unit goals where applicable.
- Promote the activities of members to leverage good will and support marketing and advertising goals.

2. COMMUNITY OVERVIEW

A. The M4PM Community

The Community is set up as part of a project by Blue Horizon and Space Applications Services and co-financed by the European Space Agency. Space Applications Services will act as the Community Manager.



Community Members

The Community will be comprised of *Member* companies and academics that currently utilize tumors, organoids, spheroids in pursuit of (personalized) medicine terrestrially. Members will participate in pre-competitive sharing of learnings from the community projects and can also “pull-through” individual IP based on funding discrete projects or competitions.

Community partners share common goals associated with personalized medicine and 3D cell cultures / tumors / organoids / spheroids for drug testing and discovery and will act as ambassadors, provide in-kind services, and act as subject matter experts.

All members and Partners can also be funders of discrete in-space organoid program work and open innovation competitions.

The Community will be comprised of the following:

- Small, Medium and Large commercial companies
- Academics
- University Labs
- Research Institutes
- NGO's
- Foundations
- Non-Profits
- Industry Associations
- Clusters (health)
- Contract Research Organizations
- Technological / biological suppliers
- VC's/Private Equity/Capital
- Other Thought Leaders

3. JUSTIFICATION: THE NEED FOR A COMMUNITY

Communities are highly effective and allow members to combine resources and become more powerful than when acting alone, thus allowing the group to achieve common goals more quickly and with a greater impact. The community approach focused on microgravity for personalized medicine will leverage common interests in non-competitive areas while in parallel allowing category members to isolate and capitalize on findings relevant to their own business unit priorities.

Using space to solve problems related to (personalized) medicine testing and discovery can be very effective not only with developing personalized (cancer) treatments, but also in increasing the rate of drug approval (currently around 5% for new cancer medications) by using more relevant and



realistic models than 2D cell culture models that are used in the lead phase and animal models used in the pre-clinical phase.

4. SCOPE

The Community members will identify key areas related to personalized medicine with an initial focus on using tumors, organoids, and spheroids that could benefit from research and development demonstrations in Low Earth Orbit (LEO). Members will agree upon the theme and scope for open innovation competition(s) and programs that utilize Low Earth Orbit platforms to solve these issues.

Community members that agree to participate in, and benefit from, a personalized medicine challenge will have the opportunity to fund a program.

5. MEMBERSHIP

A. Benefits of Membership

Membership in the Community is voluntary, initially without dues or contractual obligation. Association provides a means for members to:

- Listen to and network with other thought leaders in the personalized medicine space
- Build relationships and network with other Community members
- Share best practices related to other members' personalized medicine efforts
- Gain exposure to new ideas on using space to improve personalized medicine

B. Composition

The Community shall consist of:

- Community Manager – Space Applications Services
- Project Prime – Blue Horizon
- Initial Community Members
- Community Members – Organizations working in a non-competitive pre-clinical space for personalized medicine
- Community Partner – Organizations focused on personalized medicine without individual business unit goals

C. Term of Membership

A term of membership shall last for two years. If a member chooses to resign his/her position prior to term completion, it is expected that the member's respective organization will appoint another representative to complete the departing member's term. Individual



members may serve consecutive terms at the discretion of the appointing Community member.

D. Roles and Responsibilities

Members of the Community are responsible for advising the Community on issues of strategic importance and providing thought leadership to non-community members interested in personalized medicine. To fulfill this role, members will be responsible for the following:

- Thought Leadership – Presenting to the Community about their area of expertise within *3D cell cultures / tumors / organoids / spheroids for drug testing and discovery and for the development of personalized medicine*
- Strategic Guidance – provide strategic advice, feedback and recommendations for personalized medicine objectives and specific programs (such as personalized medicine for cancer treatment) and innovation competitions
- Innovation Competitions – assist the Community with identifying funding for competitions and other initiatives using the International Space Station (ISS) or other Low Earth Orbit assets
- Attend and participate in events/functions (as scheduled by the Community).

6. OPERATING GUIDELINES

A. Convening of Meetings

Space Applications Services will oversee the administration of the Community, including calling, organizing, facilitating, and adjourning Community events or meetings, until such time that the Community creates bylaws and funding structures to support administration independently.

B. Conduct of Community

The Community shall initially meet via conference call ~bi-monthly, with possibly smaller presentations and webinars occurring between full Community gatherings. Going forward, we hope to have one in-person workshop annually as well as in-person evaluation sessions related to open innovation competitions.

The Community shall use a platform for the exchange of ideas and networking initially. As the community grows the offerings from the Community can grow to include newsletters, online events using the community platform or additional platforms. We expect Community members to be active participants in discussions and events.

C. Recruitment and/or Acceptance of New Members

As the demand for usage of space Platforms for medicine-related research increases, it is anticipated that the Community will grow. Current members of the Community are expected to help create awareness and recruit new prospects for membership consideration.



D. Confidentiality

Community members are expected and encouraged to be open and candid in meeting discussions. Therefore, Community members will commit to maintaining confidentiality by not disclosing information or views expressed by individuals.

7. ADDITIONAL TERMS AND CONDITIONS OF MEMBERSHIP

- A. This charter and membership document is neither a fiscal nor a funds obligation document. Any endeavor or transfer of anything of value involving reimbursement of funds between members of the Community is not permitted.
- B. No Community member shall use the name, emblem, logo, trademark or any other elements of corporate identity to which another Community member holds the intellectual property rights or any abbreviation thereof, without the express prior written consent of that Community member, which consent shall not be unreasonably withheld. In no event will the use of the Community member's name, emblem, logo, trademark or any other element of corporate identity be granted for commercial purposes.
- C. This charter and membership document may be amended by mutual written agreement of the Community members, by issuance of a written modification, signed and dated by all Community members, prior to any changes being performed. Unless otherwise agreed, amendments may apply to any activities which have not yet been implemented.



Yes, I would like to become member of the *Tumors, Organoids and Spheroids in Space - Microgravity for Personalized Medicine (M4PM)* community.

Name	
Function	
e-mail	
Mail Address	

Signature:

Place:

Date: