

Global Hackerspaces Consortium and the 100 YEAR STARSHIP™ Study

Reaching for the Stars Together

Introduction

This is a response to the “[Request For Information: 100 YEAR STARSHIP™ STUDY](#)”

What are Hackerspaces?

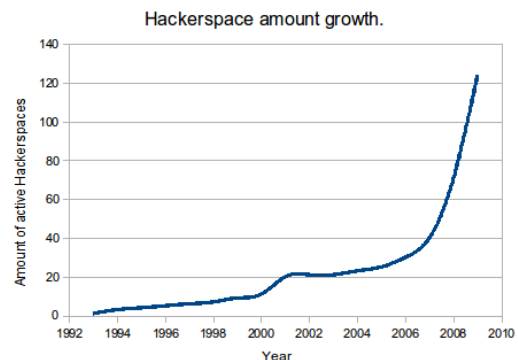
Hackerspaces are community-operated physical places, where people can meet and work on their projects. They are over 400 Hackerspaces registered on <http://hackerspaces.org> from all around the world working on a large diversity of projects from 3D printers to automated flying machines.

Due to the exponential growth in the number of Hackerspaces, we believe a worldwide Hackerspaces community network is the perfect host to an entire suite of projects that will solve the challenges of interstellar travel.

Benefits

Hackerspaces generate a tremendous amount of learning opportunities that differ from educational institutions. In the next few years, Hackerspaces will expose hundreds of thousands of children, adults, and seniors to rapid manufacturing, electronics, biotechnology and other highly secularized technologies. This organization will open up the entire world to start innovating in the goal of sending mankind into the stars through a grassroots approach.

Throughout these developments, there is a direct benefit to humanity as everything developed will be released as Open Hardware and Open Source. Instead of research being hidden away in private labs or a universities, our consortium will be open to all contributors in a neutral, patent-free environment available 24/7 online. The consortium will be inclusive of both individuals, companies, and university researchers through their participation in their local hackerspace or. Our goal is open and visible development of the technologies for interstellar travel. Project themes will develop over a number of years or decades - each little project fitting in the larger goal of interstellar travel.



Organizational Structure

The **Global Hackerspaces Consortium** will take the lead in addressing the challenges of the interstellar travel. It will manage memberships, receive and distribute funds from DARPA and other participating organizations, organize international contests, and promote the goals of the individual Hackerspaces.



As for individual contributors on the local hackerspace level, we expect most individuals to join to be students, interns, researchers, professional engineers on sabbaticals and hobbyists. Each local space will then choose which contests they wish to participate in on the basis of members passion and interests.

A global yearly event will be organized to demo the progress so far, hold design discussions, set objectives and key results for the following year and hear research talks from scientists and technical talks by engineers. This event will be modeled and/or participate in the annual [Maker Faire](#).

Governance mechanism

One Hackerspace = One vote: while each hackerspace maintains its own individual bylaws and organizational structure, The **Global Hackerspaces Consortium's** organization, designs, directions, and bylaws are decided by a majority vote of all participating hackerspaces. New hackerspaces join by being voted in by majority. Voting, discussion and communication will occur via web based social networking software dedicated to Consortium governance.

Investment strategy and criteria

The **Global Hackerspaces Consortium** will seek to foster and nurture relationships with commercial and government partners to provide money and/or surplus equipment for hackerspace prizes. Participation provides sponsors with advertising, product market development, and pride.

Projects are selected on the basis of continuous competitions on specific themes. Limited seed funding competitions would be provided for prototyping, similar to the [Great Global Hackerspace Challenge](#). Successful entries are then provided with additional funding to be distributed to sustain small, full-time teams at each physical space with very specific goals and deliverables in a

short time-frame of 3 to 6 months. Each individual hackerspace project builds on previous prototypes designs of the entire organization via an OpenSource and OpenHardware community approach. Progress is reported to the global community with online access to technical documents, blogs and video reports; continued funding is predicated on these reports being produced.



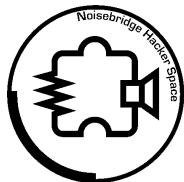
**THE GREAT GLOBAL
HACKERSPACE
CHALLENGE**

Business model for long-term self-sustainment

As we address the challenges of interstellar travel, many of these projects will be useful and interesting immediately on Earth. Hackerspaces will collectively build and sell books, kits (and products eventually), organize paid-for workshops and find private and public sponsors to finance further developments.

Founding Participants

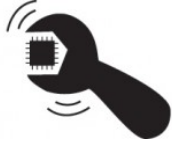
Note: this is a sample only of the hackerspaces from a call to join within 24 hours of the deadline



Noisebridge, San Francisco, USA (<http://www.noisebridge.net>)

Lead hackerspace (Mitch Altman, mitch@cornfieldelectronics.com)
2169 Mission St, San Francisco

Noisebridge is a space for sharing, creation, collaboration, research, development, mentoring, and of course, learning. Noisebridge is also more than a physical space, it's a community with roots extending around the world. The hackerspace 5,600 square-foot space contains an electronics lab, machine shop, sewing/crafting supplies, two classrooms, conference area, library, darkroom, and kitchen. Everyone is welcome to use our many resources.



XinCheJian, Shanghai, China (<http://xinchejian.com>)

Interstellar Farming (Ricky Ng-Adam, rngadam@xinchejian.com)

XinCheJian is the first Chinese hackerspace with initial space of 100 m². The hackerspace interest is in exploring how to grow food in self-contained environments with a variety of applications in modern urban farming. Our urban farming projects are in partnership with Susan Evans, a Tongji University M.A course Sustainable Design lecturer and founder of kplunk (<http://kplunk.com>), an organization committed to a sustainable future by creating demand and markets for sustainable living. Future projects include automated environmental monitoring and growing meat.



Alpha One Labs, Brooklyn, USA (<http://alphaonelabs.com>)

Interstellar Propulsion (psytek@alphaonelabs.com)

Alpha One Labs hackerspace was founded in July 2009. Promoting radical inclusivity, Alpha One Labs aims to provide a fun, tool rich space for users of all ages and interests to work on projects together. We meet every Tuesday from 7-10pm and it is open to all. Alpha One Labs is exploring a vehicle that utilizes a new mode of propulsion for space exploration, travel and exploration within the atmosphere of other planets.



MauiMakers.com

Maui Makers, Hawaii, USA (<http://mauimakers.com>)

Extraterrestrial Habitats/Industrial Systems (Cole Keaoulu Santos, cksantos85@gmail.com)

Current and future projects include: atmospheric water farming (chillbox), pressurized and gas optimized grow chambers, SCADA environmental control systems for habitats, low cost wifi weather stations, one man closed cycle habitat, Biogas systems for LOX/Methane rockets, co2 agriculture enrichment and hydrogen sulfide ore leaching.



Connected Community Hackerspace (CCHS), Melbourne, Australia (<http://hackmelbourne.org>)

(Main contacts: [Andy Gelme](#), Luke Weston, Secondary contact: [Paul Szymkowiak](#))

CCHS has been undertaking space-related projects over the last couple of years as part of structured efforts such as the <http://lunarnumbat.org> build team and the Australian Space Research Institute (ASRI), and also working on less-structured amateur projects. Projects include: Lunar Numbat is a partner of WhiteLabelSpace who are competing in the Google Lunar X-Prize; Working on ASRI AusRoc 2.5 rocket engine control; and Amateur hobbyist rocket avionics, e.g. MobSenDat, for Linux Conference Australasia (LCA2011).

Lunar Numbat is a partner of WhiteLabelSpace who are competing in the Google Lunar X-Prize:

- <http://www.whitelabelspace.com/2009/01/partners.html>
- <https://github.com/lukeweston/LunarNumbat/raw/master/lunarnumbat.pdf>
- <http://lunarnumbat.org/>

ASRI Rocket Control: Working on ASRI AusRoc 2.5 rocket engine control valve:

- <http://www.asri.org.au/>
- <https://github.com/lukeweston/ASRIThrottleControl>
- <https://github.com/lukeweston/ASRIMotorControllerTest>

Amateur hobbyist rocket avionics, e.g. MobSenDat, for Linux Conference Australasia (LCA2011) & ARTEMIS:

- <http://www.freetronics.com/products/mobsendat>
- <http://conf.linux.org.au/wiki/Miniconfs/ArduinoMiniconf>
(which was used in this high-altitude balloon launch):
- http://projecthorus.org/?page_id=1773
- <https://github.com/lukeweston/Artemis2>