

1. Project Title

**PSWARM:**

***Printed Spacecraft with Autonomous Roving Mission***

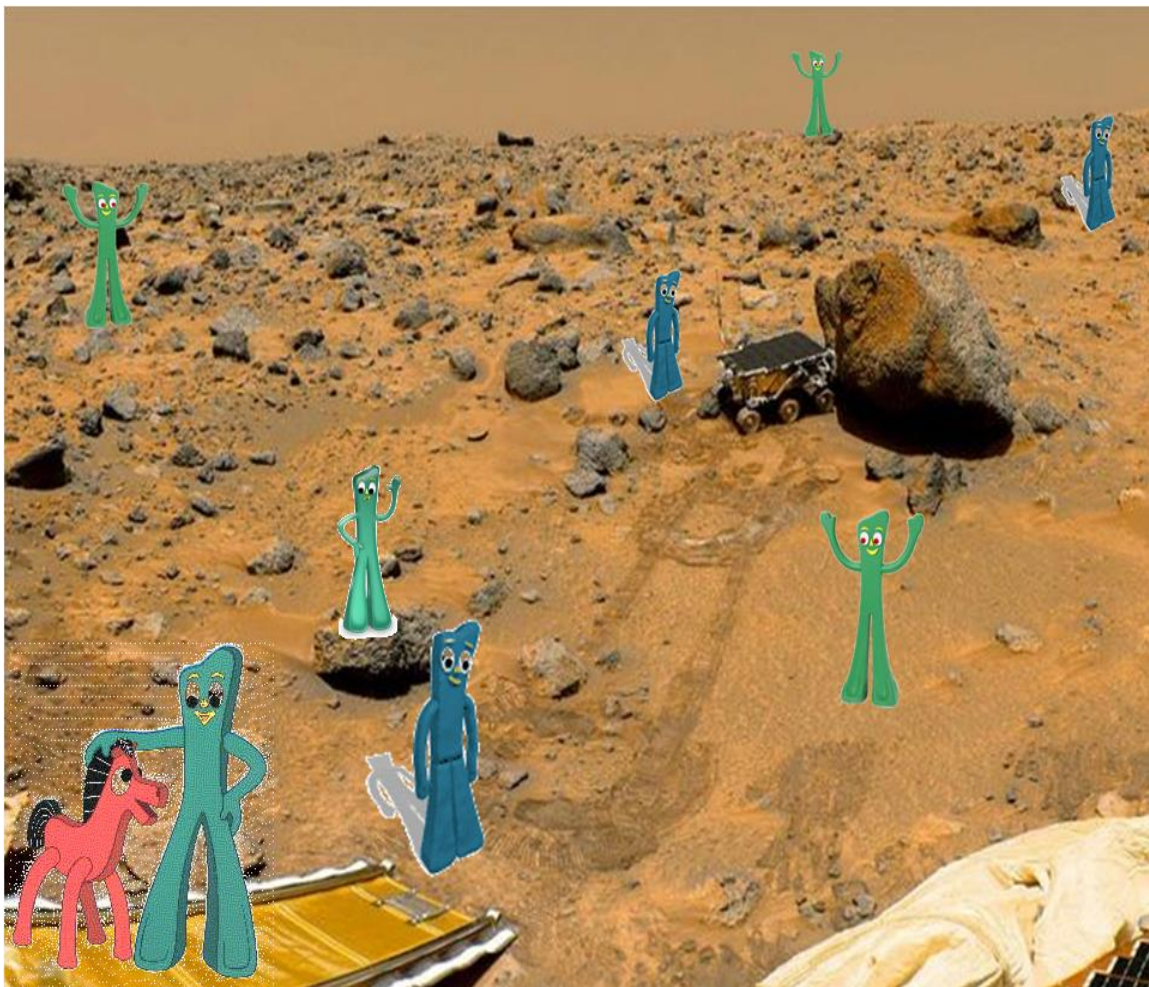
2. Primary Contact

Joseph Ritter Ph.D 3271 Waileia Pl. Kihei HI 96753

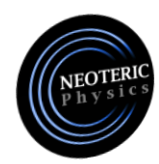
[JoeRitter3@yahoo.com](mailto:JoeRitter3@yahoo.com), Skype Joe-Ritter, cell 808-268-2622

3. Project Summary

Our team proposes **printing the first vacuum compatible planetary rover thinbot components**. **Enabling** a leap towards the next generation of Asteroid and planetary exploration rovers, our triad maker/academic/private sector team will work to develop novel open source technology needed to make future mobile ultra-lightweight printable paper thin rovers (“thinbots”), and will develop a SWARM distributed architecture mission concept ideal for Asteroid and Planetary Exploration by swarms of mass *printed rovers*.



Figures: Ritter’s Prototype Pokeybot SWARM concept.



# Printed Spacecraft with Autonomous Roving Mission



## 4. Current financial report

Preliminary expenditure report PSWARM project follows:

This report is an accounting estimate of funds used to date and is subject to change/account reconciliation at final report as materials shift categories.

This information is provided as proprietary information to Maui Makers, not for distribution.

### Amount

#### Hardware and Materials

|             |                            |
|-------------|----------------------------|
| \$ 2,488.00 | Optics                     |
| \$ 3,012.94 | Laser cutter and PC        |
| \$ 63.58    | 2 amazon 3d printing books |

**subtotal \$ 8,205.22**

#### Labor

|             |               |
|-------------|---------------|
| \$ 2,639.70 | Ph.D. Chemist |
| \$ 3,800.00 | Maker labor   |
| \$ 1,950.00 | Maker labor   |
| \$ 3,000.00 | Student 1     |
| \$ 1,572.74 | Student 2     |
| subtotal    | \$ 12,962.44  |

**Spent to date \$ 18,527.96 as of 3/23/14**

#### Estimated additional expenses:

|             |              |               |
|-------------|--------------|---------------|
| \$ 8,500.00 | Azo Polymer  | to be donated |
| \$ 3,000.00 | Maker labor  |               |
| \$ 4,300.00 | Vacuum oven  |               |
| \$ 300.00   | Nafeon       |               |
| subtotal    | \$ 16,100.00 |               |

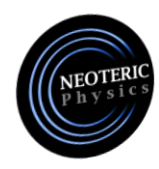
**Total estimated cost \$ 34,627.96**

#### Invoices

|           |              |   |
|-----------|--------------|---|
| Invoice 1 | \$ 1,000.00  | paid to Neoteric by SpaceGambit /MMLLC                  |
| Invoice 2 | \$ 18,000.00 | paid to Neoteric by SpaceGambit /MMLLC<br>Pending final |
| Invoice 3 | \$ 1,000.00  | report  |

**Received to date \$ 19,000.00**





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*Joe Ritter Ph.D.*

This has been submitted in PDF format via email to [projects@spacegambit.org](mailto:projects@spacegambit.org)