



Pacific International
Space Center for
Exploration Systems

PISCES Board of Directors Meeting Minutes

12 March 2013

2:00 p.m. Hawaii Standard Time

I. Call to Order:

It was determined that a quorum was present, and the meeting was subsequently called to order by PISCES Board Chairman, the Honorable George Ariyoshi.

Other Members in attendance included:

Henk Rogers, Vice Chair

Lewis Peach, Board Secretary

Hoyt Davidson

Mary Alice Evans (representing the Director of DBEDT)

Jim Keravala

Donald Straney (representing the President of the University of Hawaii)

Rob Kelso

Daniel Rasky

Also in attendance:

Jim Crisafulli, Hawaii Office of Aerospace Development

Christian Andersen, John Hamilton and Polly Roth, PISCES staff

II. Approval of the meeting minutes:

14 December 2012

Ms. Evans had circulated "Proposed Amended Meeting Minutes – PISCES BoD (12-14-12).pdf" prior to the meeting. Mr. Davidson noted that Mark McGuffie from Enterprise Honolulu should be added to the "Also in attendance" list for the meeting. Mr. Davidson moved that the 12-14-12 minutes be accepted as amended, Mr. Peach seconded the motion, and it passed unanimously.

III. Executive Session:

To discuss personnel matters related to proposed compensation for the Executive Director for the period prior to his 2/25/2013 start date. Follow-up from last Board discussion. Submitted to Board for action.

III. Action: Proposal for Compensation for Executive Director prior to RCUH Start Date of February 25, 2013.



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Following the executive session discussion, the following motion was seconded and approved: Executive Director Robert M. Kelso shall be paid a supplement to his regular salary for one year (12 months). The supplement will be \$2,800 per month for twelve (12) months.

IV. Action on MOUs:

Five MOUs were introduced by PISCES staff. Each MOU represents a formal joint statement between PISCES and another organization that indicates that the organizations want to work together on future initiatives. The effective date of each agreement is the date that both signatures are on the document. Monetary consideration and time period for the agreement are not established. Any future agreements that include monetary consideration, services rendered, equipment transfers or other formal agreements will take a different form.

IV Action 1: The Board asks Mr. Kelso to document the NASA MOU process for the Board's understanding.

IV Action 2: The MOUs presented and the Board actions for each are:

- A. MOU between PISCES and Dr. Lutz Richter – Board approved this MOU.
- B. MOU between PISCES and Russ Ogi – Board approved this MOU.
- C. MOU between PISCES and Hawaii TechWorks – Board approved this MOU.
- D. MOU between PISCES and CRAFT – Board approved this MOU.
- E. MOU between PISCES and Universal Space Network, Inc – Board asked that there be a legal review of the document prior to approval of the MOU. Ms. Evans submitted the document to legal review.

V. FY13 Hiring update/introduction:

Four PISCES staff members have been hired and were presented in introduction to the Board.
Executive Director, Rob Kelso, start date 02/25/2013
Operations Manager, Christian Andersen, start date 02/20/2013
Test Logistics Manager, John Hamilton, start date 02/20/2013
Administrator, Polly Roth, start date 03/01/2013

Mr. Kelso also noted that the Cultural Advisory Committee had been convened on 02/23/2013 and were introduced to the PISCES strategic framework. PISCES is seeking feedback from the Cultural Advisory Committee on areas where cultural issues most need to be addressed. The initial area where PISCES is seeking their assistance is in formulating a manual/curriculum to provide to test teams to educate them about the culture and to provide instruction in how to work in Hawaii in a culturally sensitive manner. Governor Ariyoshi commends PISCES efforts to make sure that we understand and support the local culture. Mr. Peach seconded this commendation and noted that the PISCES approach is similar to the NASA International Course in its intent. Mr. Peach also said he was willing to propose a guest slot for one PISCES staff person to attend the NASA course.



VI. Update on FY14 legislation bills for PISCES:

There are three PISCES measures introduced this legislative session. Two measures are for funding of PISCES, one introduced in the Senate (SB1256) and one introduced from the House (HB1419). These two bills are essentially duplicates of each other. The bill was introduced in both houses to help ensure passage. At the end of the session one of these two bills will be eliminated as superfluous. The third bill is the Lunar/Basaltic Concrete Initiative (SB930) which allocates matching funds for this project. All three measures are still viable over halfway through the process. There are hearings still to come and testimony is still critical for passage of the bills.

VII. PISCES technical proposal/CAN update:

- A. Regolith characterization/manipulation – PISCES' Christian Andersen is the lead PI for a proposal to NASA for a \$6M, 5-year effort in assessing regolith manipulation for fabrication and construction. The proposal includes participants from UH-Manoa, Notre Dame and U.S Corps of Engineers.
- B. Lunar pits – PISCES has joined with Astrobotics and some Japanese interests in a 5-year research proposal to NASA for work on robotic technology for scientific exploration of lunar pits, skylights and caves. From a technical point of view, so much is known about traditional roving, but little is known about descent, traverse of bouldered floors, or autonomy for caving. From a scientific point of view, many questions can be investigated by landing and roving around and into these pits. There are four proposal thrusts; science, exploration, analogs and missions. PISCES' John Hamilton is a Co-PI on this proposal, and PISCES is the lead for the analog portion of the proposal.
- C. Education – Every initiative on a technical level has a companion piece on an educational level. This is an important strategic component for building community support. Examples of current/ recent educational initiatives include PISCES participation in Ellison Onizuka Day, Journey through the Universe, hosting Google XBot Hungarian winners (accompanied by Lego Denmark) in Hilo. Examples of future initiatives are an International Lunabotics Final Competition, First Responders Robotics Course, and Summer Intern Program for College Students.

VII Action: The Board requested a brief summary of PISCES activities. (This summary was circulated to the Board on March 16, 2013 and is included as an appendix to these minutes.)

VIII. Assessment of PISCES building/research park:

There was \$1.84M identified in the State of Hawaii CIP budget, good through June 2014, designated for use by DBEDT for the plans, design and construction of a PISCES facility. DBEDT engaged the State of Hawaii Department of Accounting and General Services (DAGS) in assessing possible sites for the PISCES building and research park. \$275K was transferred from DBEDT to DAGS to fund a contract with Ferraro Choi and Associates for the site selection work. Their



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report is due in July 2013, and will provide a list of potential sites. Funds remaining after sight selection will be used for architectural work and the remainder applied to construction costs. Initial estimates anticipate that construction costs will be in the neighborhood of \$5M. PISCES will approach the legislature for additional construction funds when the time comes.

PISCES will be opening an office facility at the Hilo Lagoon Business Center in April. This is a temporary solution. PISCES is investigating the possibility of leasing or purchasing the CSO building. CSO is ceasing operation of their telescope in 2016 and has a very small staff using their base facility at this time. PISCES will approach CSO to determine their willingness to lease or sell the building. The UHH Chancellor also must approve the use of the CSO building by PISCES as well.

IX. Information - PISCES/NASA SAA update:

The current Space Act Agreement between NASA-Ames and the State of Hawaii expires on April 13, 2013. The parties would like to continue the arrangement. Dr. Rasky recommended that we work with the NASA's Office of the Chief Technologist (OCT). Diana Hoyt is the contact for MOUs in that office. Dr. Rasky recommends: 1) That the renewed SAA continue to be between NASA and the State of Hawaii, which would include PISCES; 2) That the new SAA with the OCT continue to put a new ground-based facility in Hawaii for the laser communications technology demonstration (LCDT) and that PISCES would be able to use this in some way; 3) That it include the Rob Mueller group out of the Kennedy Space Center working on sustainable concrete, perhaps to do on-site 3-D printing construction in Hawaii. It would be helpful for Board members to show interest in a new SAA and to contact people they know to endorse the ideas.

X. Update on local/state collaboration discussions:

This update was covered in Section VII, and is summarized on the last page of the appendix to the Board minutes.

XI. Options for funding pass-thru for projects:

In the future, PISCES will need to diversify its funding, and will therefore need a way to accept and use money that will come to PISCES from non-DBEDT sources (e. g. payments for services, grants, contributions, sponsorships). PISCES currently does not have a ready conduit for these funds, and is trying to identify an appropriate entity or entities that can receive these funds, and from which the program can draw the funds. Three basic options are being researched. Funds would come from the source through DBEDT, the University, or a not-for-profit organization, and either be distributed to the PISCES program directly or through RCUH. The program will continue to investigate the options.

XII. Space Frontier Lecture Series:

PISCES is exploring ways to sponsor a Space Frontier Lecture Series for the community. The lectures could address various topics, for example space politics, medicine, and technology. We



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are talking to 'Imiloa with the idea that they could provide the venue or, perhaps, even co-sponsor the events. George Abbey, a former director of the Johnson Space Center and Fellow in Space Policy at the Baker Institute of Rice University is willing to be the first speaker for the series.

XIII. PISCES 2013 conference options/themes:

Mr. Kelso asked Board members for thoughts, suggestions and ideas relating to the PISCES 2013 conference. He noted that NASA participation in the conference is unlikely because they have been cracking down on travel in response to federal budget restrictions. Basic questions were entertained and discussed regarding location (Hilo versus Kona), topics (e.g. robotics, robotics training, space politics), timing, and whether to hold the conference or not. Mr. Kelso noted that PISCES is considering co-sponsoring a conference on volcanology in November. Mr. Crisafulli suggested synergizing with the Hawaii Business Roundtable.

XIII Action: Please submit comments and suggestions regarding the PISCES 2013 conference to Polly (proth@hawaii.edu).

XIV. Summary of Board Subcommittee discussion on corporate sponsorship/funding:

XIV Action: The Subcommittee members are asked to review the draft minutes and revise as needed. The amended minutes will be reviewed at the next Board of Directors meeting.

XV. Schedule next Board meeting and Adjourn:

After a brief discussion, the Board determined that they would meet quarterly. The date for the next meeting will be determined by email poll prior to the meeting.

The Board Meeting was then adjourned.

Respectfully submitted,
Lewis Peach, Secretary,
PISCES Board of Directors