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From:	Dr. ing. Jack J.W.A. van Loon Dutch Experiment Support Center (DESC)
Our ref:	F020468 100 NASA ISS Petition-2
Date:	July 9, 2002
# pages:	6 (including cover)
Subject:	ISS Petition – NASA ReMAP

Dear Administrator,

It has come to our attention that the future microgravity and other space-related science research opportunities linked to the International Space Station (ISS) might become severely limited due to possible budget limitations to the ISS program. This issue is currently being evaluated within NASA by the Research Maximization and Prioritization (ReMAP) Task Force.

Microgravity and other space-related science research opportunities linked to the International Space Station is in serious jeopardy, and the worldwide space research establishment is deeply concerned about it.

For us as user community of the ISS the availability of this infrastructure is paramount. We are very much concerned about the current situation and in order to channel our concerns we set up an open, non-moderated, web petition page which scientists and others involved in this field of research were able to sign. You find the full text of this petition on page 6. The internet / web address of the petition is: http://www.desc.med.vu.nl/ISS

The petition was open to international ISS partner communities and others scientists concerned about this, since any ReMAP decision is certainly not limited to only US scientists.

This petition voicing our concern had over 500 distinguished researchers from 31 different countries supporting it.

The total number of persons who responded during the about two weeks we opened the site was 535. Seen the number of respondees, for practical reasons the full list of subscribers will be send to you by e-mail.

The fact that such a high percentage of the researchers added their names in such a short time testifies to the strength of their conviction that important changes need to be made.

The national background of the persons who subscribed the petition was from all mayor partners within the ISS program: 38.9% form the USA, 10.3% from Japan, 45.1% from Europe, 1.1% from Canada and 1.3% from Russia. The remaining persons originated from other countries.

Each person was asked to provide her of his name and affiliation but there was also a possibility for additional personal comments. Please find some of these comments below (in alphabetical order):

Dr. Roberta Bondar: *"Space flight is the only opportunity to study humans with Earth abnormal physiology that affects all systems. …… A single perturbation, microgravity affects all organ systems in all astronauts to varying degrees. Space can provide us with answers to key questions and help us to overcome stumbling blocks in understanding how physiologic systems, once deranged, can revert to normal coordinated function."*

Prof.dr. Sjoerd Bonting: *"Having worked as a scientific consultant of NASA 1985-1993 on preparation for biological research on ISS I feel very strongly about this matter. With all that has been invested by the participating nations it would be a shame to curtail the usefulness of ISS in an unacceptable degree."*

Dr. Augusto Cogoli: *"The ISS is evolving more and more in an expensive and useless cathedral in the desert."*

Prof.dr. Manning Correia: *"It is critical that the scientific infrastructure of ISS not be diluted. The maintenance of goodwill of life scientists who can consult on the health of astronauts and cosmonauts is at stake."*

Prof.dr Jonathan Dantzig: *"NASA microgravity program has contributed a great deal to the research community. It would be a great loss to shut down funding for it just as the new, unique laboratory is coming on line."*

Prof.dr. Willem DeGrip: *"ISS represents the only option to study long-range effects of microgravity. Potential beneficial effects in material and life sciences can only be documented and evaluated by frequent access to ISS, including on-site experimental manipulation and top-rate analytical evaluation."*

Dr. Pasquale Dell'Aversana: *"Flight opportunities are really a concern to us: should they become too scarce space-based research would be seriously compromised and even the few opportunities left could easily be considered as a waste of money. Conversely, above a certain threshold, a self-sustaining process would start, with positive outcomes in many other fields. So far we have lived somehow in the middle of these two critical thresholds: we should overcome the upper one to show that a real progress for mankind can be achieved by means of space activities. "*

Dr. Michael Delp: *"I no longer encourage doctoral students to pursue microgravity research because of the lack of funding and opportunities to perform actual microgravity experiments. It is an appalling situation when individuals cannot ethically encourage their students to pursue an area in which they have been trained. I believe we are losing our best future scientists in the area because of the dearth of funding and flight opportunities."*

Dr. J. David Dickman: *"……Without flight availability on ISS, the future or all scientific research leading to significant information regarding the effects of space exposure on development, maturation, and normal long-term adaptation are in jeopardy. It is essential that the ISS be made available to science immediately, so that established research programs can continue and fundamental knowledge be gained."*

Dr. Robert Duncan: *"There are physics questions at the most fundamental level that we will never be able to answer unless you permit our fundamental physics community to access the weightless environment of low-orbit routinely. We train excellent students at all levels in this program, and we drive technology development in many ways. Would you give up all of these societal advantages just to keep a few aerospace contractors, NASA flight centers, and their associated special interest groups happy?"*

Dr. Cesar Fermin: *……, the amount of money that is spent in procuring, packing, storing, archiving, tracking and mailing body parts that are often not used, would probably be better spent in real science. While accountability and check and balance makes the US system best, some of the Russian common sense to problem solving should probably be adopted."*

Dr. Edward Gibson: *"Dear Administrator O'Keefe: At this point, merely keeping a space station alive and running canned experiments by the numbers are not worthy objectives. These objectives were exceeded 27 years ago on Skylab, out nation's first space station. I know, I was there as the Science Pilot on Skylab III. ……"*

Prof.dr. John Hegseth: *"Cutting a budget always demonstrates the real priorities of an organization. It is very sad that NASA and the US congress believe that science has such a low priority. I can only hope that it is not too late to change this mistake."*

Prof.dr. Helmut G. Hinghofer-Szalkay: *"ISS is more than a unique lab: it's an historical commitment to peaceful international cooperation and a stepping stone for human interplanetary research. Let's not miss that chance."*

Dr. J. Milburn Jessup: *"As Chair of the SSUAS, I strongly urge the leadership of NASA to consider this letter in all of its ramifications. NASA must decide whether the science metric is a credible metric for the ISS and if it is give some evidence of support. …… As the ReMAP comes to closure, the process by which the panel was chosen, the process by which they deliberated as well as their conclusions should be matters of public debate. Sincerely yours, J. Milburn Jessup, M.D. Chairman, Space Station Utilization Advisory Subcommittee (SSUAS)."*

Ms. J. Killebrew: *"There was once a grease factory whose only product was grease. Of*

course, the machines of this grease factory needed grease to perform, so the company decided to use its own grease to lubricate its machines. The problem was that the company's total grease output was just enough to keep its own machines running ...".

Dr. Howard Levine: *"We at KSC have seen PIs "deselected" after years of payload development (and funding) due to the lack of flight opportunities. This becomes extremely frustrating to them and to those of us who have worked to support their experiments."*

Dr. Alexander McPherson: *"This is exactly on the money - The ISS is a science and education platform. What possible good is it if there are no facilities and instruments for research."*

Prof.dr. Robert Naumann: *"We have been followings this problem and are deeply concerned that the Space Station with all of it potential and promise will become nothing more than three men in a can whirling about Earth for God knows why!"*

Dr. George Pantalos: *"….. I am also concerned that limited access to space for research is also going to result in diminished interest and support for space exploration in general. Space exploration certainly captured my attention as a youth and has nurtured my current research interests, but I suspect that fewer youth of today will consider space-based endeavors as something that would interest them in the future."*

Dr. Barry Pyle: *"It is critical for our future exploration of space, such as missions to Mars and extraterrestrial habitation, that essential experiments on the effects of long term space travel and microgravity on all classes of organisms can be performed as soon as possible."*

Russell L. Schweickart M.Sc.: *"As an early astronaut with a science background from MIT, I am very aware of the difficulty of conducting good science when the crew's primary responsibility is the wellbeing of the spacecraft. ….. This type of conflict, seriously restricting ISS science return, should not be allowed. The public will further lose confidence in manned flight if this extremely expensive space station accomplishes nothing other than to preserve its own being."*

Prof.dr. Robert Sekerka: *"ISS will be a tremendous waste of time and money unless funds are provided to conduct the planned space experiments for which it was engineered and built. Moreover, the intent of the congress and the promise to the scientific community, who have worked so hard to try to insure the success of ISS, will have been breached."*

Dr. Karim Vermaelen: " *…. It is absolutely vital not to cripple the credibility of the whole ISS concept vis-a-vis the broader scientific community as well as the tax-payers. Given the symbolic nature of ISS, one should realize that the reputation of NASA and the whole international space program are at stake in the decisions which are about to be taken now."*

Dr. Kerry Walton: *"As I recall justification for the ISS was that it would provide a research*

platform. If this is still the case, please provide the funds needed to conduct such research."

Dr. Michael L. Wiederhold: *"We have spent years developing a cadre of scientists and a viable body of knowledge in gravitational biology, with many mature experiments ready to fly. With the long delays expected before there are facilities for long-term experiments on the ISS, this community will have no facilities in which to accomplish their goals. This will cause a loss of the scientific community interested in fully using the ISS."*

As a scientific user community we very much hope that our past efforts and investments made in preparation for ISS utilization as well as the interest of young scientists and investigators will not have been in vain.

We fully understand that you are at a point to make very demanding and difficult decisions about NASA priorities and we sincerely hope that this petition will contribute positively to your decision. If we can help in anyway, please let us know.

Sincerely yours,

ISS Science Community Petition Participants.

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ISS Petition Main Text

Dear Administrator,

We have learned from various sources that the scientific utilization of the International Space Station (ISS) as well as related microgravity facilities that might be used for the international microgravity scientists are under threat of loss mainly due to budget limitations.
We, the space science community, want to express our serious concern about this issue. Since ISS was built as a science and application research platform under international partnerships we would like NASA to focus on its scientific priorities and goals.

- Of particular concern is the lack of crew time to conduct the science due to the downsizing of the crew from 7 to 3 astronauts / cosmonauts. This seriously limits the majority of hours needed for scientific study.
- Another concern is the loss of critical scientific equipment and operational laboratory modules.
- An added concern is the peer-reviewed experiments slated to fly on the Shuttle middeck and free flyers. Flight opportunities for NASA, ESA, CSA and NASDA peer-reviewed science have become rare, routinely taking a backseat to commercial/NASA center priorities.

Microgravity offers a unique opportunity to study human physiological, biological, physical changes in the absence of gravity. Understanding and using this environment for material sciences, fluid sciences, crystallization, combustion and other technological sciences will help us in understanding basic principles of impact of weight onto these systems. Continued scientific studies in microgravity will facilitate our understanding of mechanisms controlling signal transduction and gene induction of cells, or the impact of Earth's gravity on the human body and its role in developing life.
The studies of astrobiology will show us the importance of gravity in all phases of terrestrial and non-terrestrial life. Since all terrestrial organisms evolved in a 1-g environment, understanding the effect of Earth's gravity on human physiology and biological sciences will give us insight to fundamental biological laws and principals of medicine underlying gravity based life. Applications to Earth based medicine will be an immediate reward.

Besides these microgravity related sciences there is also a great interest of using ISS for Earth observation and cosmic radiation studies as well as a testbed and stepping stone for future missions to Mars or other destinations.
We have yet to realize the full potential of an operational space station not only for the current scientific advances but also to inspire both young and old in learning more about the sciences and gravity based processes in biology and physics. These opportunities are very near, the major investment has been made, it is now only for all of us to focus our priorities to achieve the scientific and social return on this investment.

The ISS Science Community