NIAC’s Process

Inspire the imagination, reinforce a passion for knowledge and energize the creative spirit

Provide a pathway for revolutionary discoveries by innovators with the ability for non-linear, orthogonal creativity
Publicity

Stimulates Inspiration for Revolutionary Breakthroughs and Vigorous Scientific Review

See handout
Publicity
Stimulates Inspiration for Revolutionary Breakthroughs and Vigorous Scientific Review

Publicity – October 2006 – February 2007

- Masursky Award for Gentry Lee
- Dragon Moon Press
- LA Times
- Arizona Daily
- New Scientist
- SpaceRef
- The Future of Things
- ScienceNow
- Engadget
- Zdnet
- Physorg
- Ybanet
- DigitalSilence
- GSFC Engineering Colloquium
- MRT
- AIAA Aerospace America
- Space News
- Space Talk Show
- NOVA
- Futures Channel
- Discovery Channel
- TechLINKS Exchange
- CNN
- USA Today
- Astronaut Hall of Fame for Jeff Hoffman
- Outlook Series
Publicity

Stimulates Inspiration for Revolutionary Breakthroughs and Vigorous Scientific Review

“NASA 360” DVD being shown during lunch
Successful transition of NIAC concepts into NASA, DARPA, NRO and Private Industry (Examples)

- Additional funding received
- Included in long range plans
- Intellectually accepted – subject of internal studies

Vision and creativity, plus a passion for what you do, can make a difference
Lorentz-Actuated Orbits

Mason Peck
Optics for the Study of Extrasolar Terrestrial Planets
Neville Woolf
Tailored Force Fields
Narayanan Komerath
Moon & Mars Orbiting Spinning Tether Transport
Robert Hoyt
Global Environmental Micro Sensors
John Manobianco
Planetary Exploration
Using Biomimetics
Anthony Colozza
Astronaut
Bio-Suit
System
Dava Newman
Electromagnetic Formation Flight
David Miller & Ray Sedwick
Global Constellation Of Stratospheric Scientific Platforms

Kerry Nock
NIAC Student Fellows Prize  (Funded by USRA)

NASA Institute for Advanced Concepts
STUDENT FELLOWS PRIZE

Call For Proposals

The NASA Institute for Advanced Concepts (NIAC) seeks to identify creative and innovative students who possess an extraordinary potential for developing advanced concepts in the fields of aeronautics, space and the sciences.

Each Student Fellow will receive a total of $9,000 for the Academic year 2007-2008.

NIAC intends for these awards to benefit talented individuals who have shown extraordinary originality and dedication in their academic pursuits and a marked capacity for self-direction. We seek exceptional creativity, and the promise for important future advances based on a track record of significant accomplishment, and potential for the fellowship to facilitate subsequent creative work.

Eligibility

- Applicant must be in a U.S. institute of higher education
- Applicant must be eligible to work in the United States
- Applicant must apply no later than their junior year of college

For more details on the NIAC Student Fellows Prize and how to apply, go to www.niac.usra.edu/students/call.html.

Due Date: April 16, 2007

Minority, female and disadvantaged students are encouraged to respond to this Call For Proposals.
CALL FOR PROPOSALS

PHASE II ADVANCED AERONAUTICAL / SPACE CONCEPT STUDIES

Proposals Due: May 6, 2007
H. Evaluation Criteria

1. The principle elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA’s and the NIAC’s objectives, intrinsic merit, cost realism and successful performance of work under the Phase I contract. Specific aspects of these elements are as follows:

   a. How does the proposal continue the development of a revolutionary architecture or system in the context of a future NASA mission? Is the concept likely to have a significant impact on future aerospace missions or programs? Is the proposed work likely to provide a sound basis for NASA to consider the concept for a future mission or program?
H. **Evaluation Criteria**

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   a. How does the proposal continue the development of a revolutionary architecture or system in the context of a future NASA mission? Is the concept likely to have a significant impact on future aerospace missions or programs? Is the proposed work likely to provide a sound basis for NASA to consider the concept for a future mission or program?

   b. Is the concept substantiated with a description of applicable scientific and technical disciplines necessary for development? Are the team qualifications appropriate for further development of the concept?
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   c. Does the work plan adequately describe a thorough process for identifying enabling technologies and the critical steps for further development of the concept?
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c. Does the work plan adequately describe a thorough process for identifying enabling technologies and the critical steps for further development of the concept?

d. Does the work plan effectively identify the process to define the relationship between the concept’s cost, benefits and performance?
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   c. Does the work plan adequately describe a thorough process for identifying enabling technologies and the critical steps for further development of the concept?

   d. Does the work plan effectively identify the process to define the relationship between the concept’s cost, benefits and performance?

2. Evaluation of the cost of a proposed effort may include the realism and reasonableness of the proposed cost and available funds.

NOTE: Proposer’s program plan should maintain a budgetary balance between their proposed basic period of performance (10 months) and that which is proposed for the option period (6 to 12 months). A shortened or front-loaded performance period will be evaluated as unrealistic for NIAC’s purposes.
NIAC PHASE I FELLOWS MEETING

March 6-7, 2007

LOCATION:
Technology Square Research Building
65 5th Street NW, Atlanta, GA

NIAC CONTACT:
Mr. Dale Little, (404) 347-9633
dkl@niac.usra.edu
### NIAC Phase I Fellows Meeting Agenda
#### Tuesday, March 6, 2007

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:00 AM - 8:30 AM</td>
<td>Registration / Continental Breakfast</td>
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</table>
| 8:30 AM - 9:00 AM | Welcome and Status of NIAC Activities
|                | Robert A. Cassanova, NIAC Director                                      |
| 9:00 AM - 10:20 AM | NIAC Phase I Status Reports                                             |
| (40 minutes)   | Plasma Magnetot Shield for Crew Exploration                             |
|                | John Slough, University of Washington                                   |
| (40 minutes)   | Bio-electric Space Exploration                                           |
|                | Matthew Silver, Intact Labs                                            |
| 10:20 AM - 10:30 AM | Break                                                                 |
| 10:50 AM - 12:20 PM | NIAC Phase I and Student Status Reports (continued)                    |
| (25 minutes)   | The Martian Bus Schedule: An Innovative Technique for Protecting Humans |
|                | on a Journey to Mars                                                    |
|                | Daniella Della-Questina, University of Arizona                          |
| (40 minutes)   | Development of a Single-Fluid Consumable Infrastructure for Life        |
|                | Support, Power, Propulsion, and thermal Control                         |
|                | David Akin, University of Maryland                                      |
| (25 minutes)   | Evolution of a Scalable, Hovering Flapping Robot                        |
|                | Floris van Breugel, Cornell University                                 |
| 12:20 PM - 1:30 PM | Buffet Lunch                                                            |
| 1:30 PM - 2:30 PM | Keynote Speaker: Dr. Paul Spadis                                        |
|                | Johns Hopkins University Applied Physics Laboratory                     |
| 2:30 PM - 3:10 PM | NIAC Phase I and Status Reports (continued)                             |
| (40 minutes)   |  Reduction of Trapped Energetic Particle Fluxes in Earth and Jovian     |
|                | Radiation Belts                                                         |
|                | Robert Hoyt, Tethers Unlimited                                          |
| 3:10 PM - 3:40 PM | Break                                                                  |
| 3:40 PM - 4:45 PM | NIAC Phase I and Student Status Reports (continued)                    |
| (25 minutes)   | START: Utilizing Near-Earth Asteroids with Tether Technologies          |
|                | Jonathan Sharma, Georgia Institute of Technology                        |
| (40 minutes)   | In-Orbit Assembly of Modular Space Systems with Non-Contacting, Flux- |
|                | Pinned Interfaces            , Mason Peck, Cornell University            |
| 4:45 PM - 5:30 PM | Discussion                                                              |
| 6:00 PM - 7:30 PM | Reception to honor Robert Cassanova on his retirement                  |
|                | at the Georgia Tech Hotel & Conference Center.                         |
NIAC Phase I Fellows Meeting Agenda
Wednesday, March 7, 2007

8:30AM - 8:30 AM  Registration / Continental Breakfast
Welcome - Robert Cassanova, NIAC Director

8:30AM - 9:30AM  Keynote Speaker: Dr. Ronald Turner
"Grand Challenges in Space Radiation Protection"

9:30AM - 10:30AM  Panel on Funding Opportunities Beyond NIAC
Moderator: Bob Scaringe - AVG Communications
Panelists: George Petracek - Azimuth Capital, Rahul Saxena - Seraph Group
Paul Bremenxo - Booz Allen Hamilton

10:30 AM - 11:00 AM  Break

11:00 AM - 12:20 PM  NIAC Phase I Status Reports

(40 minutes)  Extreme eXPeditionally Architecture (EXPArch): Mobile, Adaptable Systems
for Space and Earth Exploration
Guillermo Trott, Trott and Associates

(40 minutes)  Self-Deployed Space or Planetary Habitats and Extremely Large Structures
Devon Crowe, PDI Corporation

12:20 PM - 1:20 PM  Buffet Lunch

1:20PM - 3:30 PM  NIAC Phase I Status Reports

(40 minutes)  Primary Objective Grating Astronomical Telescope
Tom Ditto, DeWitt Brothers Tool Company

(25 minutes)  Advanced Grazing Incidence Neutron Imaging System
J. Michael Burgess, University of Alabama, Huntsville

(40 minutes)  Large Ultra-Lightweight Photonic Muscle Telescope
Joe Hirtle, University of Hawaii

3:35 PM - 3:35 PM  Break

3:35 PM - 5:20 PM  NIAC Phase I and Student Status Reports

(40 minutes)  Practicality of a Solar Shield in Space to Counter Global Warming
Roger Angel, University of Arizona

(25 minutes)  The Road to Mars
Rigel Woita, University of Arizona

(40 minutes)  Spacecraft Propulsion Utilizing Ponderomotive Forces
George Williams, Ohio Aerospace Institute

5:20 PM - 5:30 PM  Open Discussion

5:30 PM  Adjourn
Keynote Speakers

Dr. Paul Spudis
Johns Hopkins Applied Physics Lab
Tuesday, March 6
1:30PM

Dr. Ronald Turner
ANSER, Analytic Services, Inc.
Wednesday, March 7
8:30PM
Creativity and Imagination are necessities, not luxuries