

The background of the image is a vibrant space scene. On the left, a portion of the Earth is visible, showing the Americas and swirling white clouds. The rest of the background is filled with a colorful nebula in shades of orange, red, and purple, with numerous bright stars scattered throughout.

MIAC

USRA

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*



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*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
USAToday
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**

The background of the slide is a composite image of space. On the left, a large portion of the Earth is visible, showing blue oceans, white clouds, and green landmasses. To the right and in the upper portion, there are vibrant nebulae in shades of red, orange, and purple, set against a dark starry sky.

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



Mini-Magnetospheric
Plasma Propulsion
Robert Winglee



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**



Solid State Aircraft
Anthony Colozza



New Worlds Imager
Webster Cash



rays of star light →

Astronaut
Bio-Suit
System
Dava Newman



**Electromagnetic
Formation Flight**
David Miller & Ray Sedwick



Global Constellation
Of Stratospheric
Scientific Platforms
Kerry Nock

Lorentz-Actuated Orbits

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Electromagnetic
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Global Constellation
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Space
Elevator





NIAC

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.



NIAC CP 07-02

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?

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 - 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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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.



NASA Institute for Advanced Concepts



NIAC PHASE I FELLOWS MEETING

March 6-7, 2007

LOCATION:

Technology Square Research Building
85 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

- 8:00 AM -8:30 AM** Registration / Continental Breakfast
- 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 Magnetic Shield for Crew Exploration
John Slough, University of Washington
 - (40 minutes) Bio-electric Space Exploration
Matthew Silver, Intact Labs
- 10:20 AM -10:50 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-Guistina, 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 Spudis*
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

- 8:00AM - 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"
- 9:30 AM-10:30 AM** Panel on Funding Opportunities Beyond NIAC
Moderator: Bob Scaringe- AVG Communications
Panelists: George Petracek- Atrium Capital, Rahul Saxena- Seraph Group
Paul Eremenko- Booz Allen Hamilton
- 10:30 AM -11:00 AM** Break
- 11:00 AM-12:20 PM** NIAC Phase I Status Reports
- (40 minutes) Extreme eXPeditionary Architecture (EXPArch): Mobile, Adaptable Systems for Space and Earth Exploration
Guillermo Trotti, Trotti and Associates
 - (40 minutes) Self-Deployed Space or Planetary Habitats and Extremely Large Structures
Devon Crowe, PSI Corporation
- 12:20 PM-1:20 PM** Buffet Lunch
- 1:20PM-3:05 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 Ritter, University of Hawaii
- 3:05 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 Woida, University of Arizona
 - (40 minutes) Spacecraft Propulsion Utilizing Pondermotive 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

The logo for the NASA Institute for Advanced Concepts (NIAC) is displayed in a large, bold, white font. The letters 'N', 'I', 'A', and 'C' are stylized with a blue gradient at the bottom, suggesting a globe or a celestial body. The background of the entire image is a vibrant space scene featuring a colorful nebula in shades of orange, red, and purple, with numerous stars scattered throughout.

NIAC

NASA Institute for Advanced Concepts

*Creativity and Imagination
are necessities, not luxuries*

A detailed view of the Earth from space, showing the Western Hemisphere. The continents of North and South America are visible in green and brown, surrounded by blue oceans and white clouds. The Earth is positioned in the lower-left quadrant of the image, set against the backdrop of the colorful nebula and starry space.