

**FORM A**

**SOLICITED PROPOSAL APPLICATION FOR SPACE LIFE SCIENCES**

IN RESPONSE TO ANNOUNCEMENT # \_\_\_\_\_

PLEASE FOLLOW INSTRUCTIONS CAREFULLY

LEAVE BLANK

NUMBER

REVIEW GROUP

DATE RECEIVED

1. COMPLETE TITLE OF PROJECT

2. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR *(First, middle, and last name; degrees; position title)*

3. COMPLETE MAILING ADDRESS

4. TELEPHONE NUMBER  
*(area code, number, extension)*  
FAX NUMBER  
E-MAIL ADDRESS

5. CONGRESSIONAL DISTRICT (U.S. ONLY)

6. SOCIAL SECURITY # (U.S. ONLY)

7. IS THIS PROPOSAL  NEW  RENEWAL  REVISED

8. HAS THIS PROPOSAL (OR SIMILAR REQUEST) BEEN SUBMITTED TO ANY OTHER AGENCY?  
 No  Yes IF YES, SPECIFY AGENCY AND YEAR SUBMITTED:

9. CO-INVESTIGATORS *(First, middle, and last name; degrees)*

10. CO-INVESTIGATOR'S ORGANIZATION

11. DATES OF ENTIRE PROPOSED PROJECT PERIOD

12. COSTS REQUESTED FOR FIRST 12-MONTH BUDGET PERIOD

13. ~~PROPOSED BUDGET PERIOD~~ PROPOSED BUDGET PERIOD

From:  
Through:

12a. Direct Costs  
\$

12b. Total Costs  
\$

13a. Direct Costs  
\$

13b. Total Costs  
\$

14. APPLICANT ORGANIZATION *(Organization Name)*

15. TYPE OF ORGANIZATION (U.S. ONLY)

Non Profit  For Profit *(General)*  For Profit *(Small Business)*  Public, Specify:  Federal  State  Local

16. ~~ORGANIZATION OFFICIAL TO BE NOTIFIED IF AN AWARD~~ ORGANIZATION OFFICIAL TO BE NOTIFIED IF AN AWARD

17. ~~OFFICIAL SIGNING FOR APPLICANT ORGANIZATION~~ OFFICIAL SIGNING FOR APPLICANT ORGANIZATION

18. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR ASSURANCE:

SIGNATURE OF PERSON NAMED IN 2  
*(In ink "Per" signature not acceptable.)*

DATE

19. CERTIFICATION AND ACCEPTANCE:

SIGNATURE OF PERSON NAMED IN 17  
*(In ink "Per" signature not acceptable.)*

DATE

**FORM B**

**PROPOSAL ABSTRACT**

**Principal Investigator:** \_\_\_\_\_

**Proposal Title:** \_\_\_\_\_  
\_\_\_\_\_

**Abstract**

{Prepare a brief description of the application stating the broad, long-term objectives and specific aims of the proposed work. Describe concisely the research design and methods for achieving these objectives and aims. This abstract is meant to serve as a succinct and accurate description of the proposed work when separated from this application. Limit abstract to 300 words or fewer.}

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**Key Words:**

{Assign numbers (1- highest relevance, 3-moderate relevance) to the areas that best describe your proposed research. Choose a maximum of three areas}

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Neuroscience                   | <input type="checkbox"/> Spacecraft Systems and Hardware | <input type="checkbox"/> Developmental Biology   |
| <input type="checkbox"/> Regulatory Physiology          | <input type="checkbox"/> Space Suit Design               | <input type="checkbox"/> Genetics                |
| <input type="checkbox"/> Behavior                       | <input type="checkbox"/> EVA/IVA Physiology              | <input type="checkbox"/> Plant Biology           |
| <input type="checkbox"/> Human Factors Studies          | <input type="checkbox"/> Radiation Biology               | <input type="checkbox"/> Molecular Biology       |
| <input type="checkbox"/> Skeletal System                | <input type="checkbox"/> Cell Biology                    | <input type="checkbox"/> Reproductive Physiology |
| <input type="checkbox"/> Muscle Physiology              | <input type="checkbox"/> Radiation Physics               | <input type="checkbox"/> Immunology              |
| <input type="checkbox"/> Air/Food/Water<br>Regeneration | <input type="checkbox"/> Cardiopulmonary Physiology      | <input type="checkbox"/> Other _____             |

**FORM C**  
**SPACE FLIGHT EXPERIMENT SUPPLEMENTARY APPLICATION FORM**

The following form should be completed by all investigators proposing flight experiments. This form should be inserted into the Project Description section of the proposal. (Provide responses on additional sheets, as necessary.)

**Principal Investigator** \_\_\_\_\_

**Proposal Title** \_\_\_\_\_

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**Type of Flight Experiment:** \_\_\_ **Short Duration** \_\_\_ **Long Duration** \_\_\_ **Pre/Post-Flight**

- (1) If humans are required as subjects for the proposed investigation, please list
  - a) number of subjects
  - b) special subject restrictions, such as specific dietary regimens or fluid intake regulation
  - c) special experiment protocols, such as specific work/rest cycles or exercise
  - d) physiological variables to be measured.
- (2) If non-humans are required for the proposed investigation, please list
  - a) scientific name of species and common name
  - b) gender, strain, age, stage, and weight (if applicable)
  - c) minimum number required, desired number, and a rationale for both
  - d) special requirements for maintenance or manipulation of the specimens.
- (3) List major hardware items required in this investigation. Hardware items are listed in the document titled "*Standard Companion Document for Space Life Sciences, 1996*".
- (4) Estimate access time
  - a) Is late access needed and when (i.e., do you need to load the experiment and/or species within a certain time period before a launch)?
  - b) Is early removal needed and when (i.e., do you need to remove the experiment and/or species within a certain time period after landing? If so, please specify requirement.)?
- (5) Identify potentially hazardous materials, including biowaste.
- (6) Are there any specific conditions requested, such as air composition, humidity, temperature control, or illumination?
- (7) For Space Station experiments, estimate the maximum and minimum number of days of microgravity exposure required.
- (8) Estimate the total set of operations required to carry out the experiment in space (e.g., the number of sessions of crew activity and the time required for each session).
- (9) Estimate amount of time for crew participation with experiment before, during and after flight (e.g., data collection, crew training, etc.)

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**Responses (continue on additional sheets):**

# FORM D

## CHECKLIST FOR PROPOSERS

The following Checklist should be enclosed with the transmittal letter and annotated to indicate that the stated items have been included in the proposal package.

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Principal Investigator/Program Director \_\_\_\_\_

<input type="checkbox"/> Form A: Solicited Proposal Application*	<input type="checkbox"/> Facilities and Equipment
<input type="checkbox"/> Form B: Proposal Summary	<input type="checkbox"/> Supporting Budgetary Information (include current support: list of other funded projects)
<input type="checkbox"/> Form US-2: Detailed 12 month Budget (First year of support)	<input type="checkbox"/> IRB or ACUC letter/ form regarding protocol approval, if applicable*
<input type="checkbox"/> Form US-3: Summary Budget Form	<input type="checkbox"/> Form US-4: Certification Regarding Drug-Free Workplace*
<input type="checkbox"/> Title Page	<input type="checkbox"/> Form US-5: Certification Regarding Debarment, Suspension, and Other Responsibility Matters*
<input type="checkbox"/> Project Description	<input type="checkbox"/> Form US-6: Certification Regarding Lobbying*
<input type="checkbox"/> Form C: Space-Flight Exp. Supplementary Information, if applicable	<input type="checkbox"/> Appendices, if any
<input type="checkbox"/> Management Approach	<input type="checkbox"/> 20 copies of all material listed above
<input type="checkbox"/> Personnel, CVs; Biographical Summaries	<input type="checkbox"/> 3.5 inch computer diskette

\*One signed original form required.

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Only one copy of the following materials needs to be submitted:

<input type="checkbox"/> Transmittal Letter
<input type="checkbox"/> Form D: This checklist indicates all items have been enclosed

FORM E  
MULTINATIONAL SPACE STATION  
HUMAN RESEARCH INFORMED CONSENT\*

1. I, the undersigned, do voluntarily give my informed consent for my participation as a test subject in the following research study, test, or investigation:

NAME OF INVESTIGATION \_\_\_\_\_

MISSION TO WHICH ASSIGNED \_\_\_\_\_

PRINCIPAL INVESTIGATOR \_\_\_\_\_

RESPONSIBLE PROJECT SCIENTIST \_\_\_\_\_

I understand or acknowledge that:

- (a) This procedure is part of an investigation approved by participating agencies.
- (b) I am performing these duties as part of my employment with \_\_\_\_\_.
- (c) This research study has been reviewed and approved by the Multinational Review Board (MRB) which has also determined that the investigation involves \_\_\_\_\_ risk to the subject.  
(minimal or reasonable)
- (d) Definitions:  
“Minimal risk” means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.  
  
“Reasonable risk” means that the probability and magnitude of harm or discomfort anticipated in the research are greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests, but that the risks of harm or discomfort are considered to be acceptable when weighed against the anticipated benefits and the importance of the knowledge to be gained from the research.
- (e) The research procedures were explained to me prior to the execution of this form. I was afforded an opportunity to ask questions, and all questions asked were answered to my satisfaction. A layman’s description was provided to me.\*\*
- (f) I consider myself physically and mentally qualified to participate in the investigation.
- (g) I know that I can refuse to participate in the tests at any stage of their performance, and my refusal will be honored, except in those cases when, in the opinion of the responsible physician, termination of the tests could have detrimental consequences for my health and/or the health of the other subjects. However, understanding the significance of the investigations (tests), I will give every effort to perform the full scope of the program.
- (h) In the event of injury resulting from this study, I understand that I will receive medical attention and necessary treatment. I also understand that I will be compensated for any injuries to the extent permitted under current \_(TBD)\_ and the provisions of the contract between \_(TBD)\_. My agreement to participate shall not be construed as a release of \_(TBD)\_ or any third party from any future liability which may arise from, or in connection with, the above procedures.

- (i) Consistent with statutory and Agency-approved routine uses under the \_(TBD)\_, the confidentiality of any data obtained as a result of my participation as a research subject in this study shall be maintained, so that no data may be linked with me as an individual. However, if a “life-threatening” abnormality is detected, the investigator will notify me and the \_(TBD)\_. Such information may be used to determine the need for care or medical follow-up, which, in certain circumstances, could affect my professional (flight) status.

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Test Subject

Date

2. I, the undersigned, the Principal Investigator of the investigation designated above, certify that:

- (a) I have accurately described the procedure and related risk(s) to the test subject.
- (b) The test setup involves \_\_\_\_\_ risk to the test subject as determined by the MRB.  
(minimal or reasonable)
- (c) All equipment to be used has been inspected and certified for safe and proper operation.
- (d) The test subject is qualified to participate in my experiment protocol.
- (e) The test protocol has not been changed from that originally approved by the MRB.

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Principal Investigator

Date

Concurrence:

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Project Scientist

Date

Notes:

\* This form is valid for the period including preflight, in-flight, and postflight data collection sessions for the mission. Before the first baseline data collection, the Principal Investigator will repeat the briefing concerning risks involved in the investigation. A signed, dated copy of this form with attachments must be forwarded to Chair, Multinational Review Board.

\*\* A detailed description of the investigation will be attached to this consent form. The Principal Investigator is responsible for formulating this document, which should be in layman’s terms such that the subject clearly understands what procedures will be required and the risks associated therewith. The detailed description of the research procedures must specifically list the risks associated with the procedures to be employed, the possible adverse reactions of all medications to be administered, and the risks/hazards resulting from exposure to ionizing radiation. Further, the investigator must clearly specify all forms of subject behavior interdicted by the research protocol (exercise, diet, medications, etc.).

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PROGRAM APPLICABILITY

Principal Investigator: \_\_\_\_\_

Co- Investigators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Proposal Title: \_\_\_\_\_  
\_\_\_\_\_

Proposal Type:

SCIENTIFIC PROPOSAL \_\_\_\_\_  
OR  
TECHNICAL PROPOSAL \_\_\_\_\_

GROUND-BASED RESEARCH \_\_\_\_\_  
OR  
SPACE FLIGHT EXPERIMENT \_\_\_\_\_

{Place a single check in the "Primary Area" column next to the program that is most closely aligned with your proposal. Optional: Place a check in the "Secondary Area" column if your proposal has a dual-program emphasis}

	<u>Primary Area</u>	<u>Secondary Area</u>
GRAVITATIONAL BIOLOGY	_____	_____
SPACE PHYSIOLOGY	_____	_____
ENVIRONMENTAL HEALTH	_____	_____
SPACE RADIATION HEALTH	_____	_____
BEHAVIOR & PERFORMANCE	_____	_____
ADVANCED TECHNOLOGY DEVELOPMENT	_____	_____
SPACE HUMAN FACTORS ENGINEERING	_____	_____
ADVANCED LIFE SUPPORT	_____	_____
ADVANCED ENV. MONITORING & CONTROL	_____	_____

**FORM US-2**

PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR: \_\_\_\_\_

DETAILED BUDGET FOR 12-MONTH BUDGET PERIOD DIRECT COSTS ONLY		FROM	THROUGH		
Duplicate this form for each year of grant support requested		DOLLAR AMOUNT REQUESTS <i>(Omit cents)</i>			
PERSONNEL <i>(Applicant Organization Only)</i>		EFFORT ON PROJECT	SALARY	FRINGE BENEFITS	TOTALS
NAME	ROLE IN PROJECT				
	Principal Investigator				
SUBTOTALS →					
CONSULTANT COSTS					
EQUIPMENT <i>(Itemize, use additional sheet if needed)</i>					
SUPPLIES <i>(Itemize by category, use additional sheet if needed)</i>					
TRAVEL	DOMESTIC				
	NON-DOMESTIC				
OTHER EXPENSES <i>(Itemize by category, use additional sheet if needed)</i>					
<b>TOTAL DIRECT COSTS FOR FIRST 12-MONTH BUDGET PERIOD</b> <i>(Item 12a, Form A)</i>				\$	
<b>INDIRECT COSTS FOR FIRST 12-MONTH BUDGET PERIOD</b>				\$	
<b>TOTAL COSTS FOR FIRST 12-MONTH BUDGET PERIOD</b> <i>(Item 12b, Form A)</i>				\$	

**FORM US-3**

PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR: \_\_\_\_\_

**BUDGET FOR ENTIRE PROJECT PERIOD DIRECT COSTS ONLY**

BUDGET CATEGORY TOTALS		1st BUDGET PERIOD	ADDITIONAL YEARS OF SUPPORT REQUESTED		
			2nd	3rd	4th
PERSONNEL ( Salary and Fringe Benefits ) ( Applicant organization only )					
CONSULTANT COSTS					
EQUIPMENT					
SUPPLIES					
TRAVEL	DOMESTIC				
	NON-DOMESTIC				
OTHER EXPENSES					
<b>TOTAL DIRECT COSTS FOR EACH BUDGET PERIOD</b>		\$	\$	\$	\$
<b>TOTAL INDIRECT COSTS FOR EACH BUDGET PERIOD</b>		\$	\$	\$	\$
<b>TOTAL DIRECT + INDIRECT COSTS FOR EACH BUDGET PERIOD</b>		\$	\$	\$	\$
<b>TOTAL DIRECT + INDIRECT COSTS FOR ENTIRE PROJECT</b>					\$

JUSTIFICATION FOR UNUSUAL EXPENSES (Detail Justification in Cost Section of Proposal)

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**CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS**

ertification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulatic  
hed in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace  
rtification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the gr  
certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or governm  
uspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

**ANTEES OTHER THAN INDIVIDUALS**

The grantee certifies that it will provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlle  
substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of suc  
prohibition;
- (b) Establishing a drug-free awareness program to inform employees about --
  - (1) The dangers of drug abuse in the workplace;
  - (2) The grantees policy of maintaining a drug-free workplace;
  - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
  - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required t  
paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee v
  - (1) Abide by the terms of the statement; and
  - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days afte  
such conviction;
- (e) Notifying the agency within ten days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actua  
notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d) (2), with respect to any employee wh  
so convicted --
  - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
  - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purp  
by a Federal, State, or Local health, Law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), a

The grantee shall insert in the space provided below the site(s) for the performance or work done in connection with the specific grant:  
of Performance (Street address, city, county, state, zip code)

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: \_\_\_\_ if there are workplaces on file that are not identified here.

**RANTEES WHO ARE INDIVIDUALS**

rantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession  
a controlled substance in conducting any activity with the grant.

ization Name

AO or NRA Number and Title

d Name and Title of Authorized Representative

ure

Date

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**CERTIFICATION REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS  
PRIMARY COVERED TRANSACTIONS**

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This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 28, 1988 Federal Register (pages 19160-19211). Copies of the regulations may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, D.C. 20202-4725, telephone (202) 732-2505.

A. The applicant certifies that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three-year period preceding this application been convicted or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph A.(b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

C. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lowered Tier Covered Transactions (Subgrants or Subcontracts)

- (a) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principles is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department of agency.
- (b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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Organization Name

AO or NRA Number and Title

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Printed Name and Title of Authorized Representative

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Signature

Date

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Printed Principal Investigator Name

Proposal Title

**FORM US-6**

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**CERTIFICATION REGARDING  
LOBBYING**

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As required by S 1352 Title 31 of the U.S. Code for persons entering into a grant or cooperative agreement over \$100,000, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, in connection with making of any Federal grant, the entering into of any cooperative, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting an officer or employee of any agency, Member of Congress, an or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts), and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by S1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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Organization Name  
and title

AO or NRA Number

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Printed Name and Title of Authorized Representative

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Signature

Date

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Printed Principal Investigator Name

Proposal Title