



**NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE & NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO**

**SPACE RESEARCH FELLOWSHIP PROGRAM
FELLOWSHIP PACKAGE**

<u>APPLICATION #</u>	<u>FELLOWSHIP APPLICATION PACKAGE:</u>
NMSGC-ISNPS/UNM- 1	FELLOWSHIP ANNOUNCEMENT AND REQUIREMENTS
NMSGC-ISNPS/UNM-2	SELECTION AND FOLLOW UP PROCEDURES
NMSGC-ISNPS/UNM-3	LIST OF PARTICIPATING UNM FACULTY AND DEPARTMENTS
NMSGC-ISNPS/UNM-4	FELLOWSHIP RESEARCH AWARD ADVISORY BOARD (RAAB) MEMBERS LIST
NMSGC-ISNPS/UNM-5	GRADUATE APPLICATION
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NMSGC-ISNPS/UNM-7	GUIDELINES FOR FACULTY ADVISOR REFERENCE LETTER

CHECKLIST TO BE RETURNED TO THE APPLICABLE DEPARTMENT CONTACT:

- COMPLETE APPLICATION (Form NMSGC-ISNPS/UNM-5 or -6)
- LETTER OF INTENT BY THE APPLICANT
- RESEARCH PROPOSAL (5 PAGE LIMIT)
- ENDORSEMENT BY THE FACULTY RESEARCH ADVISOR (NMSGC-ISNPS/UNM-7)
- TWO ADDITIONAL LETTERS OF RECOMMENDATION BY UNM FACULTY
- RECENT COPY OF TRANSCRIPTS AND CURRENT CLASS ENROLLMENT





**NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE AND NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO
FARRIS ENGINEERING CENTER, ROOM 239, isnps@unm.edu**

Space Research Fellowship Program Announcement and Requirements

August 15, 2003 – May 15, 2004

APPLICATION DEADLINE: May 23, 2003 (For Academic Year 2003-2004)

A number of space research fellowships are awarded annually by the New Mexico Space Grant Consortium to eligible undergraduate and graduate students to further their study objectives in space science and engineering and aerospace related fields at the University of New Mexico (UNM). The award period is for one academic year, and continuation from one semester to the next is based on the fellow's performance. Undergraduate awards are for one academic year (two semesters). Graduate awards for a M.S. degree and for a Ph.D degree are for two semesters. Ph.D awards may be extended for a maximum of 4 consecutive semesters (excluding summer semesters). Fellows requesting continuation must submit a new fellowship application package each academic year. The applications are examined by the Institute's Research Award Advisory Board (RAAB), with members from aerospace industry, Sandia National Laboratories, Los Alamos National Laboratory, and the Air Force Research Laboratory.

Undergraduate awards are \$350 per month for nine months, Masters awards are \$600 per month for nine months, Ph.D awards are \$750 per month for nine months, to be paid on a monthly basis. Awards are contingent on receipt of funds from NASA.

REQUIREMENTS

1. Applicants must be enrolled full-time during the duration of the award (a minimum of 12 hrs. for undergraduate and 9 hrs. for graduate students per semester). Applicants expected graduation date must be May 2004 or later.
2. Applicants must be full-time students enrolled in an academic program at UNM and carry out their proposed research for at least 40 hours per month for undergraduates and no less than 80 hours per month for graduate students.
3. The research conducted by graduate students must be part of their Masters thesis or Ph.D dissertation at UNM.
4. Masters students should have already started their thesis research, and Ph.D students should have successfully passed the Ph.D qualifying exam.
5. Applicants must be U.S. citizens with at least a 2.5 GPA for undergraduate and a 3.0 GPA for graduate students. Two letters of recommendation by UNM faculty members, plus a letter of endorsement from the faculty academic advisor are necessary.
6. The faculty research advisor should not require the fellow to perform any non-research related tasks.

SUBMISSIONS

1. Recent copy of the student's transcript, and Fall 2003 class enrollment.
2. Research proposal, not to exceed 5 double-spaced pages, describing the research project to be accomplished by the fellow. The proposal should detail the specific objectives, and the resources required to perform the work, and a statement as to whether the resources are on campus or locally available. The proposed research should be in or related to space science, engineering, technology or aerospace.
3. A letter of intent by the fellow detailing career objectives and interest in space science and technology, expected date of graduation, and progress made to date in research.
4. Unofficial transcripts and letter from the department stating their current academic status.

STUDENTS WHO PLAN TO APPLY FOR THIS FELLOWSHIP: PLEASE STOP BY OR CALL THE INSTITUTE OFFICE AT 277-0446 FOR AN APPLICATION PACKET. APPLICATION CAN ALSO BE OBTAINED AT THE INSTITUTE WEBSITE AT [HTTP://WWW.UNM.EDU/~ISNPS](http://www.unm.edu/~isnps), UNDER THE "OPPORTUNITIES" LINK.

Institute for Space and Nuclear Power Studies

UNIVERSITY OF NEW MEXICO





RESEARCH PROPOSAL

Each applicant, in consultation with one or more of the participating faculty members in the program with their academic faculty advisor, needs to prepare and submit a research proposal in one of the areas of space science, space engineering and technology, or aerospace. **The proposal length should be limited to five double-spaced pages.** The proposal must clearly state the research objectives and potential application of results/learning to space science and engineering fields, the expected educational benefits to the student and expected impact on student's career. The graduate proposals must be a part of the MS thesis or the Ph.D dissertation: Graduate and undergraduate proposals must indicate: faculty advisor and other faculty members involved in the research. The research must be performed at a University facility, and may use available resources at a NASA Center, DOD Laboratory, or DOE Laboratory.

The submitted proposals will be evaluated according to the following criteria:

- 1) The explicitly stated objectives of the proposed research.
- 2) Is the proposed research effort related to Space?
- 3) What is the present state of knowledge in the research area being proposed?
- 4) Will the proposed research expand the state of the art knowledge.
- 5) Are the research objectives stated in such a way that the performance against the objectives can be measured?
- 6) Are the objectives stated in such a way that it can be determined if the objectives were met at the completion of the effort?
- 7) What is the planned technical approach to meeting the research objective?
- 8) If experiments are proposed, what is the planned approach to incorporate the data into models, and/or analyses, that will be the end result of the research?
- 9) The proposal should include a milestone chart of the proposed tasks and expected date of completion of each task.

APPLICATION DEADLINES

Applicants for academic year 2003/2004 awards must submit complete application packets (see Form NMSGC-ISNPS/UNM-3) to their department faculty representative and to the ISNPS office for initial screening by or before May 23, 2003. Each department may submit up to four applications for review, however, only two awards per department are expected to be funded in any given year. Additional awards may be funded for departments, if funding is available and the applicant was recommended for funding by the reviewers.

AWARD SELECTION

Selection for the award will be made by the Research Award Advisory Board (RAAB), which consists of members of the local scientific and technical communities. The RAAB (see Form NMSGC-ISNPS/UNM-4) will make final recommendations to Prof. Mohamed S. El-Genk, Grant Director.

Continuation of awards for the spring semester will be granted based on a 20-minute oral presentation by the fellow at the end of the fall semester. Oral presentations will be scheduled during the third week of November. Fellows will be notified of the decision for award continuation within one week following their oral presentations. At the end of the academic year, the fellow must submit a technical report, not to exceed 10 full pages, including figures, tables, and references, which is due to the ISNPS office, before the end of April 2004. In addition, each fellow is required to submit a one-page monthly report to ISNPS, summarizing progress made, problems encountered, and continuing plans. The monthly report must be reviewed and initialed by the faculty advisor and is due by the 15th of each month.

Address the complete application packet to:

Regents' Professor Mohamed S. El-Genk
Institute for Space & Nuclear Power Studies
University of New Mexico, FEC 239
Phone: (505) 277-0446, Fax: (505) 277-2814
Email: mgenk@unm.edu



**NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE & NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO**

***Space Research Fellowship Selection and
Follow-up Procedures
Year 2002 Awards***

1. The complete application packet must be screened by the department faculty representative before submitting it to the ISNPS office by the deadline of **May 23, 2003**.
2. The Research Award Advisory Board (RAAB) will review the submitted applications and research proposals. The RAAB will make recommendations by the end of June, based on the following criteria:
 - (a) the applicant meets all fellowship requirements,
 - (b) the fellow letter of intent and faculty references are provided,
 - (c) the proposed research is of high quality and is expected to further the student's study objectives in one of the areas of space science, space engineering, or aerospace, and impact his/her career, number of awards does not exceed two per department, unless there are sufficient funds
 - (d) award requests of less than one academic year will not be considered.

Recipients of the award will be notified of the results of the review by or before the end of July 2003

OPTION TO TERMINATE THE AWARD IS EXERCISED IF THE FOLLOWING REQUIREMENTS ARE NOT MET.

1. Fellows submit a one-page monthly progress report to the ISNPS office, approved and signed by the faculty advisor (due the 15th of each month).
2. Fellows give oral presentations to the Research Award Advisory Board (RAAB) for continuation at the end of the Fall 2003 semester.
3. Fellows submit a written final report of their research by the end of April 2004 to the ISNPS office.





**NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE & NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO**

Space Research Faculty Committee Members

Professor Neb Duric

Physics & Astronomy Department
800 Yale Blvd., NE
(505) 277-5238 duric@deneb.phys.unm.edu
Dept. Chair: R. Marcus Price

Professor Horton Newsom

Institute of Meteoritics
Earth & Planetary Sciences Department
Northrup Hall, Rm. 306D
(505) 277-0375 newsom@unm.edu
Dept. Chair: Dr. Leslie D. McFadden

Professor Mohamed S. El-Genk

Chemical and Nuclear Engineering Department
Institute for Space & Nuclear Power Studies
(505) 277-5442 mgenk@unm.edu
Dept. Chair: Dr. Julia E. Fulghum

Professor Arup Maji

Civil Engineering Department
Tapy Hall, Rm 110
(505) 277-1757 amaji@unm.edu
Dept. Chair: Dr. Timothy J. Ward

Professor George Luger

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FEC, Rm. 325
(505) 277-3204 luger@cs.unm.edu
Dept. Chair: Dr. Deepak Kapur

Professor Arsalan Razani

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(505) 277-6251 razani@unm.edu
Dept. Chair: Dr. Marc S. Ingber

Professor Christos Christodoulou

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Dept. Chair: Dr. Christos Christodoulou

Revised 04/2003





**NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE AND NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO**

RESEARCH AWARD ADVISORY BOARD MEMBERS ADDRESS LIST

Mr. Michael W. Bartlett

390 Ashley Lane
Corrales, NM 87048
(505) 898-7747, Fax (505) 898-0537
michaelbartlett1@msn.com

Dr. J. William Dettmer

New Mexico Space Commission
1509 Tejana Mesa, NE
Albuquerque, NM 87112
(505) 294-0564, Fax: 294-0564
dettmer_jw@compuserve.com

Dr. Mohamed S. El-Genk *

Director, NMSGC-UNM
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mgenk@unm.edu

Mr. Clay Mayberry

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AFRL/VSDV
3550 Aberdeen Ave., SE
Kirtland AFB, NM 87117-5776
(505) 846-0499, Fax: 846-0320
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Mr. Hal Shelton

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(505) 281-4358; Fax: 281-4358
sholtis@aol.com

Timothy R. Beauchene*

Fellowship Administrative Staff
Institute for Space & Nuclear Power Studies
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(505) 277-0446, Fax: 277-2814
isnps@unm.edu

* Non-voting member

Revised 04/2002





NEW MEXICO SPACE GRANT CONSORTIUM
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UNIVERSITY OF NEW MEXICO

**Space Research Fellowship Graduate
Application**
(type or print clearly)

Name _____ SSN _____

U. S. Citizen _____ Yes _____ No _____ Date _____

Local Address _____ Phone (____) _____

City _____ State _____ Zip _____

Permanent Address _____ Phone (____) _____

City _____ State _____ Zip _____

UNM Work # _____ Email Address _____
(if applicable) (if applicable)

Anticipated Status (Fall 2003 and Spring 2004 Semesters):
(Applicant should be enrolled full time at UNM during the entire duration of the award.)

_____ M.S. Student _____ Ph.D. Candidate _____ Yes _____ No Matching Funds Provided

_____ Expected Graduation Date

Academic Major _____ Cumulative GPA _____

Degree _____ Overall _____

Academic Minor/Related Area/Option _____

Enrollment Status (choose one):

_____ a. Currently enrolled in an academic department at UNM and carrying a full course load (minimum 9 hours).

_____ b. Currently enrolled part time in an academic department at UNM but planning to carry a full course load if I receive the fellowship award.

_____ c. Enrolled in an academic department at UNM and planning to carry a full course load during the duration of the fellowship award.

Specification of enrollment or admittance at UNM: Date Admitted: _____

Department Name: _____





1. In which of the following fields do you classify your proposal?

- _____ a. Space Engineering
- _____ b. Space Science
- _____ c. Aeronautics
- _____ d. Astronautics
- _____ e. Aerospace Related
- _____ f. Other (specify) _____

2. Participating Faculty Member/Advisor: _____

3. The proposal is part of:

- _____ a. Ph.D. Dissertation Research
- _____ b. M.S. Thesis Research
- _____ c. Other (specify) _____

4. Did you include a letter of intent with your application? _____ Yes _____ No

5. Did you include acceptance letter into a graduate program with your application? _____ Yes _____ No

The letter, to be submitted with your application packet, should:

- (a) Summarize your career interests in space science and engineering or aerospace related fields,
- (b) Describe any relative work,
- (c) List any academic honors or awards and past or present financial aid (scholarship, grants, loans, etc.),
- (d) Your plans after graduation (continuing graduate school-which field, seek job in industry, etc.), and
- (e) The expected impact of the award on your current study objectives and future employment in space science and engineering and aerospace related fields.

5. Names of faculty references: _____

The above statements are true and correct and I give my consent to the verification of all information given and to the release of such information to NASA. If awarded, I will notify the New Mexico Space Grant Consortium if I fail to maintain eligibility during the semester(s) in which I am an award recipient. I will also maintain annual contact with the New Mexico Space Grant Consortium from award until initial employment after graduation.

(Applicant Signature)

(Date)

(Participating Faculty Member Signature)

(Date)

(Department Faculty Representative)

(Date)





FIELD OF STUDY

If Applicable: _____

Secondary: _____

Tertiary: _____

Please indicate current status:

- M.S.
- Ph.D.

Does student currently hold a degree? _____

If yes, which degree? _____

Number of degrees? _____

EDUCATION GOALS

Highest degree sought?

- Masters
- 2nd Masters
- Ph.D.

Probable field of this degree? _____

CAREER GOALS

After completing studies, student plans to work:

- | | |
|---|--|
| <input type="checkbox"/> Consulting | <input type="checkbox"/> Non-NASA Federal Agency |
| <input type="checkbox"/> Higher Education | <input type="checkbox"/> Non-Profit Organization |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Private Industry |
| <input type="checkbox"/> Faculty | <input type="checkbox"/> State/Local Government |
| <input type="checkbox"/> Other (Please specify) | <input type="checkbox"/> Teaching (K-12) |
| | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Military | |
| <input type="checkbox"/> NASA | |





(NMSGC-ISNPS/UNM-5)

The following information has been requested by NASA but should be considered voluntary. This information will be used for statistical purposes only.

Sex: _____ Male _____ Female

Race/Ethnic Background

_____ Black/African American _____ Asian/Pacific Islander

_____ Native American _____ Hispanic

_____ White _____ Other (specify)

Description of your current research interest / project activities (use additional sheets of necessary):





NEW MEXICO SPACE GRANT CONSORTIUM
INSTITUTE FOR SPACE & NUCLEAR POWER STUDIES
UNIVERSITY OF NEW MEXICO

Space Research Fellowship Undergraduate
Application
(type or print clearly)

Name _____ SSN _____

U. S. Citizen _____ Yes _____ No
Date _____

Local Address _____ Phone (____) _____

City _____ State _____ Zip _____

Permanent Address _____ Phone (____) _____

City _____ State _____ Zip _____

UNM Work # _____ UNM Email Address _____
(if applicable) (if applicable)

Anticipated Status (Fall 2003 and Spring 2004 Semesters):
(Applicant should be enrolled full time at UNM during the entire duration of the award.)

_____ Junior _____ Senior

_____ Yes _____ No Matching Funds Provided

_____ Expected Graduation Date

Academic Major _____ Cumulative GPA _____

Degree _____ Overall _____

Academic Minor/Related Area/Option _____

Enrollment Status (choose one):

_____ a. Currently enrolled in an academic department at UNM and carrying a full course load
(minimum 12 hours).

_____ b. Currently enrolled part time in an academic department at UNM but planning to carry
a full course load.

_____ c. Enrolled in an academic department at UNM and planning to carry a full course load
in the Fall 2003 and Spring 2004.

Specification of enrollment or admittance at UNM: Date Admitted: _____

Department Name: _____





1. In which of the following fields do you classify your proposal?

- _____ a. Space Engineering
- _____ b. Space Science
- _____ c. Aeronautics
- _____ d. Astronautics
- _____ e. Aerospace Related
- _____ f. Other (specify) _____

2. Participating Faculty Member/Advisor: _____

3. Did you include a **letter of intent** with your application? _____ Yes _____ No

The letter, to be submitted with your application packet, should:

- (a) Summarize your career interests in **space science and engineering or aerospace** related fields,
- (b) Describe any relative work,
- (c) List any academic honors or awards and past or present financial aid (scholarship, grants, loans, etc.),
- (d) Your plans after graduation (continuing graduate school-which field, seek job in industry, etc.), and
- (e) The expected impact of the award on your current study objectives and future employment in space science and engineering and aerospace related fields.

4. Names of faculty references: _____

The above statements are true and correct and I give my consent to the verification of all information given and to the release of such information to NASA. If awarded, I will notify the New Mexico Space Grant Consortium if I fail to maintain eligibility during the semester(s) in which I am an award recipient. I will also maintain annual contact with the New Mexico Space Grant Consortium from award until initial employment after graduation.

(Applicant Signature)

(Date)

(Participating Faculty Member Signature)

(Date)

(Department Faculty Representative)

(Date)





FIELD OF STUDY

If Applicable: _____

Secondary: _____

Tertiary: _____

Please indicate current status:

- Freshman
- Sophomore
- Junior
- Senior

Does student currently hold a degree? _____

If yes, which degree? _____

Number of degrees? _____

EDUCATION GOALS

Highest degree sought?

- Bachelor's
- Masters
- Ph.D.

Probable field of this degree? _____

CAREER GOALS

After completing studies, student plans to work:

- | | |
|---|--|
| <input type="checkbox"/> Consulting | <input type="checkbox"/> Non-NASA Federal Agency |
| <input type="checkbox"/> Higher Education | <input type="checkbox"/> Non-Profit Organization |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Private Industry |
| <input type="checkbox"/> Faculty | <input type="checkbox"/> State/Local Government |
| <input type="checkbox"/> Other (Please specify) | <input type="checkbox"/> Teaching (K-12) |
| | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Military | |
| <input type="checkbox"/> NASA | |





The following information has been requested by NASA but should be considered voluntary. This information will be used for statistical purposes only.

Sex: _____ Male _____ Female

Race/Ethnic Background

_____ Black/African American _____ Asian/Pacific Islander

_____ Native American _____ Hispanic

_____ White _____ Other (specify)

Description of your current research interest / project activities (use additional sheets of necessary):





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UNIVERSITY OF NEW MEXICO**

Space Research Fellowship Program

Guidelines for Faculty Reference Letter

Information provided by the faculty reference letter will be used by the Research Award Advisory Board (RAAB) to judge the qualifications of the candidate to determine if he/she should be awarded a grant. The letter of reference should address all of the following items for which the faculty member has knowledge:

REFERENCES

- How does the student compare to his/her peers with regard to:
 - academics
 - ability to work independently
 - ability to follow through on a project
 - generation of original ideas and/or ability to solve problems
 - ability to conduct research (graduate students)

ADVISOR

- What, if any, laboratories or computing facilities will be available and are committed to the student for accomplishing the objectives of the fellowship?
- Can the scope in the submitted proposal be completed in one year? If not, what adjustments could be made to limit the scope to a one-year project while still obtaining meaningful results?

