



## **Program Announcement**

### **2011 Travel Fellowship and Follow-On Grants Program (TFP)**

**National Foundation of Science and Advanced Technology (NFSAT)**  
**U.S. Civilian Research & Development Foundation (CRDF Global)**

#### **I. Introduction**

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Under the 2011 Armenian Travel Fellowship and Follow-on Grants Program (TFP), the National Foundation for Science & Advanced Technology (NFSAT) and the U.S. Civilian Research & Development Foundation (CRDF Global) will sponsor, on a competitive basis, research visits to the United States for young Armenian scientists and engineers thirty-five years old and younger.

The goals of this program are to provide opportunities for young scientists and engineers to

- identify and develop new contacts, which will promote further collaboration between Armenian and U.S. scientists;
- explore their research ideas using the facilities of modern and well-equipped U.S. laboratories;
- receive training on modern scientific equipment; and
- advance their research activities and increase their visibility in the international research community.

Applicants may plan a visit of up to **three months** in duration and request up to **\$8,000** to cover transportation costs, living allowances, visa fees, health insurance, and other travel-related expenses. Upon return to Armenia the NFSAT grantees will be eligible to apply for follow-on awards of **\$5,000** each for a period of up to one year to continue developing collaboration with their U.S. partners.

NFSAT and CRDF Global will support up to 10 (ten) Travel Fellowship grantees. Travel may be planned to begin and end within the period from 15 January 2012 to 15 June 2012. Applicants may propose to work on existing research or start new projects during the research visit to the United States.

**Proposals are due to the NFSAT and CRDF Global no later than 6:00 pm Yerevan time on Friday, September 16, 2011.**

**The competition results will be announced no later than December 15, 2011.**

## II. Program Guidelines

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### A. General

NFSAT and CRDF Global plan to award up to ten travel grants of up to **\$8,000** each. Each application must include a letter of invitation from a U.S. university, nonprofit institution, or industrial research facility to carry out the proposed research project in the fields of basic and applied sciences (Appendix 2). **The travel may be planned to begin and end within the period from 15 January 2012 to 15 June 2012.**

Successful applicants under the Travel Fellowship Program will be eligible to apply for follow-on grants of up to **\$5,000** after returning to Armenia. These grants will be awarded on the basis of merit as determined by grantee monthly reports and letters of support from the U.S. and Armenian host institutions (including a commitment of 15% cost-sharing from the Armenian institution. The Follow-on grants are designed to help the Travel Fellows maintain scientific communications with their newly established U.S. collaborators and to bring new methods and knowledge to their Armenian laboratories.

Further information about the Follow-on grants will be distributed to successful applicants.

### B. Funding Priorities

Among proposals of equal technical merit, NFSAT and CRDF Global will give special consideration to proposals that involves the following:

- 1) New research topics for Armenia, including new research methods;
- 2) Research topics with a high likelihood of resulting in a publication in a prominent international scientific journal;
- 3) Applicants who are first-time visitors to the United States;
- 4) Applicants who have received Ph.D. status at the time of proposal submission;
- 5) Proposed research requiring modern technical facilities absent in Armenia; and
- 6) Applicants who are currently employed full-time at an organization and/or laboratory formerly engaged in weapons research, or who have research skills in any of areas listed in Appendix 1. Please indicate any such experience, even if you have not participated in weapons-related research, in the space provided on Form A.

### C. Eligibility

Proposals must meet each of the following eligibility requirements:

- 1) The applicant must be 35 years of age or younger at the time his or her application is submitted.
- 2) The applicant must be an Armenian citizen currently residing and working in Armenia.
- 3) The applicant must have a proficient working knowledge of English, both written and spoken.
- 4) The applicant must be able to travel to the United States and conduct research for three consecutive months during the period of January 15, 2012 - June 15, 2012.
- 5) Armenian scientists who are Principal Investigators on active CRDF Global and/or NFSAT grants (including BGP, CGP, etc.) are **NOT** eligible for this program. However, all other Armenian team members on these grants are eligible.
- 6) The U.S. host scientist must be a U.S. citizen or permanent resident of the U.S. and must reside in the U.S during the course of the project.
- 7) **NOTE TO US HOSTS:** The U.S. host's institution must be able to issue the documents necessary for the Armenian applicant to obtain a U.S "J" visa. Please refer to the following link on the U.S. Department of State website for more information about U.S. visa requirements: [http://travel.state.gov/visa/temp/types/types\\_1286.html](http://travel.state.gov/visa/temp/types/types_1286.html)

- 8) The project must be oriented toward non-defense and non-military objectives and must be carried out in a civilian research environment.
- 9) The applicant and U.S. host must work full-time in a civilian research environment.
- 10) The U.S. host institution may be a university, U.S. government laboratory, or for-profit company.
- 11) NFSAT and CRDF Global comply with all U.S. laws and regulations pertaining to export control and the participation of foreign nationals or institutions in its activities. It is the policy of CRDF Global and NFSAT not to conduct any transactions with U.S.-restricted entities without appropriate authorization from the U.S. government. CRDF Global and NFSAT reserve the right to restrict the participation of any individual or institution in its programs.
- 12) NFSAT and CRDF Global comply with all U.S. laws and regulations pertaining to the treatment of human subjects in scientific research and development. **All applicants who have projects that involve the use of human subjects must contact CRDF Global staff at [Armenia@crdf.org](mailto:Armenia@crdf.org) for further instructions.**

#### **D. Application Guidelines**

Program applicants must submit the following application materials:

1. **Cover Sheet** (Form A)
2. **Budget** (Form B):

#### **The maximum award amount is US\$8,000**

The budget must detail all estimated expenses, including round-trip airfare between Yerevan and the designated research location in the United States, visa fees, living expenses (including meals and lodging), health insurance, and ground transportation. This page must contain the original signature of the applicant and the original signature and seal of the Institution Director.

- 2.1. Air travel must comply with the provisions of the Fly America Act. Specifically, transoceanic air tickets must be purchased from a U.S. carrier. For more information on this regulation, contact the NFSAT or CRDF Global offices. Air ticket price should reflect the lowest-cost applicable airfare offered by a U.S. carrier for an economy class, round-trip ticket between Yerevan and the designated research location in the U.S. Flight itineraries must be approved by NFSAT prior to ticket purchase.
- 2.2. Living allowances may not exceed \$2,000 per month or the prorated equivalent. For information regarding U.S. Government per-diem rates for cities throughout the U.S., applicants should refer to the following website:  
<http://www.gsa.gov/portal/category/21287>
- 2.3. Health insurance is mandatory for all travelers and must be purchased by the grantee. Applicants may contact the NFSAT office for further guidance.
3. **Curriculum Vitae** (maximum one page) for the applicant that includes the full name, date and place of birth, contact address, information on the applicant's education, prior and current employment, honors received, and research interests.
4. **Publications.** A statement indicating the applicant's total number of publications and full citations for up to five publications most relevant to the proposed research topic.
5. **Information on English Language Ability**, including the number of years of English language study and experience (either personal or professional) with native English speakers.

6. **Information on prior professional visits abroad**, including information on doctoral or postdoctoral training abroad and attendance of international conferences, including papers presented at international meetings.
7. **Description of scientific research to be undertaken during the grant period** (five pages). The following elements must be included:
  - 7.1. A brief summary of the **relevant** prior research in the field and presentation of the scientific question(s) to be answered in the proposed project (one page maximum);
  - 7.2. The specific research plan that will be followed, including analytical methods and equipment to be used (when relevant);
  - 7.3. Expected outcomes of the research;
  - 7.4. Relevance of the research to the applicant's past/current research experience and future research goals; and
  - 7.5. Description of past/current research collaboration with a U.S. host (if any)
8. **Detailed timetable and working plan** (one page) proposed for the visit. The schedule of project activities should be presented in the form of a monthly Gantt chart showing major project tasks (more information about Gantt Chart can be found in the following link: [http://en.wikipedia.org/wiki/Gantt\\_chart](http://en.wikipedia.org/wiki/Gantt_chart))
9. **Invitation letter from a U.S. scientific host**. This document must be no more than two pages and should include the following:
  - How the U.S. host will help Armenian scientist coordinate the research project and organize the visit.
  - How the proposed visit may benefit the U.S. host's lab group.
  - The facilities and equipment that will be available to the Armenian scientists during the visit to the U.S. institute.
  - An indication of whether the U.S. host will be present at the host institution throughout the duration of the visit.
  - Whether the Armenian applicant would be in a primarily English-speaking environment, or will it be predominantly Russian or Armenian speaking.
  - An explanation of how familiar the U.S. host is with applicant and his or her current research and whether this is a new or already established collaboration.
  - A description of any future plans for collaboration with the Armenian scientist after his or her return to Armenia.
10. **Two signed letters of reference** One letter must come from the applicant's current supervisor, the other letter should come from a person with whom the applicant has worked in his/her major field, such as a thesis advisor, professor, or employer. Reference letters should include comments on the applicant's:
  - Mastery of fundamental knowledge in the applicant's field;
  - Potential within his/her field
  - Design of the proposed research project
  - Laboratory skills and technique (if applicable)
  - Adaptability; creativity, originality, self-reliance, and language abilities
11. If applicable: Proof of any additional financial or in-kind support from the U.S. host or other sources (not individuals) besides use of laboratory equipment, supplies, and facilities.

### **III. Proposal Submission**

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Any proposal that is not submitted to NFSAT and CRDF Global in the manner described below may be deemed ineligible.

- 1) **Deadline: Completed applications must be submitted to NFSAT and CRDF Global no later than 6:00 pm Yerevan time on 16 September 2011.**

2) Submission to NFSAT

Applicants must submit to NFSAT a) one hardcopy in Armenian, b) one hardcopy in English, or c) one electronic copy in Armenian, and d) one electronic copy in English. The submission to NFSAT should be sent or hand delivered to NFSAT at the address below, assuring that it arrives no later than 6:00 PM Yerevan time **16 September 2011**.

National Foundation of Science and Advanced Technologies (NFSAT)  
26, Azatutyan Ave., Yerevan, 375014  
Republic of Armenia  
Tel: 28-81-92  
Email: info@nfsat.am

3) Submission to CRDF Global

One copy of the completed application in English must be submitted electronically to CRDF Global **no later than 6:00 pm Yerevan time 16 September 2011**. Submissions must be sent via e-mail to [Armenia@crdf.org](mailto:Armenia@crdf.org)

4) Proposals should be submitted only ONE time by the applicant on the project. A hardcopy of the proposal is not required to be submitted to CRDF Global at any time.

5) Important Notes on Submissions

- All proposals must be complete when submitted to NFSAT and CRDF Global. Any proposal not containing all required elements as indicated in this program announcement may be ruled ineligible.
- No modifications may be made to any proposal once it has been received by NFSAT and CRDF Global.
- If circumstances have changed so significantly since the time of proposal submission that the project can no longer be carried out as proposed, the applicant must notify NFSAT and CRDF Global in writing and indicate that they are withdrawing the proposal from the competition. If NFSAT or CRDF Global learn of such significant changes in circumstances, they may, based on their mutual agreement, declare a proposal ineligible.
- Both NFSAT and CRDF Global reserve the right to request additional information from applicants if necessary.
- All applicants will be notified by e-mail or phone of the proposal-screening outcome within one month of the application submission deadline. Applicants will be notified that their proposal is eligible for technical review.

#### **IV. Review of Proposals**

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NFSAT and CRDF Global will screen each proposal received for eligibility and completeness. NFSAT and CRDF Global will submit all eligible proposals to expert peer review in the U.S. and Armenia according to the criteria listed below. A select number of applicants will be interviewed in Yerevan to assess English Language proficiency.

## **A. Evaluation criteria:**

1. **Personnel Capacity:** The expertise of the applicant and U.S. hosts in carrying out the proposed research collaboration. The strength of recommendations for the Armenian applicant and the strength of support and commitment demonstrated by the U.S. host.
2. **Research Plan:** The technical soundness of the proposed approach, the adequacy of technical resources available to accomplish the work, the soundness of the plan to manage and coordinate the project within the time allotted.
3. **Research Merit and Impact:** The likelihood that the project will advance knowledge in one or more fields of science or engineering; the likelihood that the proposed research will have a substantive, positive benefit to society in general and to Armenia in particular and the nature of such benefit.
4. **Professional Benefit:** Relevance of the proposed work to the applicant's career goals and areas of specialization and interest. Potential for proposed work to facilitate the applicant's career goals and development. The likelihood that the collaboration supported by this project can be sustained and developed in the future.
5. **English Language Proficiency:** How well the applicant writes, understands, and speaks English.

Following the receipt of written reviews, panels of scientists in Armenia and the United States will rank the proposals according to merit, and NFSAT and CRDF Global will make a funding decision based on these rankings. All funding decisions are final.

## **IV. Other Guidelines and Instructions**

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### **A. Intellectual Property**

NFSAT and CRDF Global make no claim to intellectual property developed under any award. NFSAT and CRDF Global's primary interest is that intellectual property rights be equitably allocated. Both the U.S. and Armenian parties should be familiar with and abide by the laws regarding intellectual property in their respective countries and by the regulations regarding grants for research projects.

### **B. Confidentiality**

NFSAT and CRDF Global will treat all proposals as confidential material and will require all panelists and reviewers to respect the confidentiality of proposals. For more information visit the awardees section on this website under *Policies and Procedures*: <http://www.crdf.org/policies/>

### **C. Special Instructions for Proposals Involving Human Subjects Research**

NFSAT and CRDF Global comply with all U.S. laws and regulations pertaining to the treatment of human subjects in scientific research and development. For information about proposals involving human subjects please visit: [http://www.crdf.org/policies/policies\\_show.htm?doc\\_id=305889](http://www.crdf.org/policies/policies_show.htm?doc_id=305889)

### **D. Special Instructions for Proposals Involving Recombinant DNA molecules.**

All research involving Recombinant DNA molecules must comply with the provisions of the U.S. National Institutes of Health Guidelines. Please refer to the following website for more information: <http://www.crdf.org/policies/>

## **V. Background**

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Chartered by the U.S. government in 1995, CRDF Global is an independent nonprofit organization that promotes international scientific and technical collaboration through grants, technical resources, and training. More information about CRDF Global can be found at <http://www.crdg.org>. CRDF Global receives funding for this program from the U.S. Department of State.

NFSAT is a private, non-profit (non-commercial) organization. It neither engages in nor financially supports entrepreneurial activity. NFSAT is a voluntary, non-governmental, humanitarian organization and performs its activity on the basis of the Armenian Constitution, the Armenian Civil Code, other legal acts, the NFSAT Charter, and international legislation. Further information on NFSAT may be found on-line at <http://www.nfsat.am>

## **VI. Contact Information**

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For questions about the proposal submission process, or for further information about this program, please contact NFSAT or CRDF Global offices:

**NFSAT contact person:**

Anna Baghramyan, Deputy Director  
Tel: 28-81-92  
[info@nfsat.am](mailto:info@nfsat.am)

**CRDF Global contact person:**

Meaza Demissie, Associate Program Manager  
Tel: +1 703-526-6777  
[Armenia@crdf.org](mailto:Armenia@crdf.org)

## ARMENIAN TRAVEL FELLOWSHIP PROGRAM APPLICATION FORM A

### GENERAL PROJECT INFORMATION

Total Funding Amount Requested	US\$	Dates of Proposed Visit	
Topic of investigation to be carried out by applicant (up to 25 words):			

### INFORMATION ON THE ARMENIAN APPLICANT

Full Name (Last, First, Patronymic)			
Position/Title			
Institution Name and Complete Mailing Address			
Name of Institution Director		Institution Director Email	
Applicant Date of Birth (Month/Day/Year)		Citizenship and Passport Number	
Sex (Male or Female)		Highest Degree Earned	
Field of Degree		Year Awarded	
Telephone #		Fax #	
E-Mail			
Are you a previous CRDF Global or NFSAT grantee?		YES	NO
<i>If "Yes," please list program and grant number</i>			
Do you have experience in weapons-related subjects?		YES	NO
<i>If "Yes," please provide the appropriate defense code from <b>Appendix 1</b> describing your experience in the box to the right and provide a brief description of the defense-related experience in the box below.</i>			
Have you visited the U.S. before?		YES	NO
<i>If "YES," provide dates and a brief description of the reason for your previous visit:</i>			

### INFORMATION ON THE U.S. HOST

Full Name (Last, First, Middle)			
Position/Title			
Institution Name and Complete Mailing Address			
Citizenship/residence status		Sex (Male or Female)	
Highest Degree Earned and year awarded		Field of Degree	
Telephone #		E-Mail	
Web Page Address			
Previous CRDF Global or NFSAT grantee?		YES	NO
<i>If "Yes," please indicate program and grant number</i>			
Name of U.S. Institutional Representative <sup>1</sup>		Email for U.S. Institutional Rep.	
Does the U.S. host Institution have the authority to issue the necessary documents required for the Armenian applicant to obtain a U.S "J" visa?		YES	NO

<sup>1</sup> Must be an individual, other than the U.S. host scientist, who can authorize support for visiting foreign researchers at the U.S. host institution.



**ARMENIAN TRAVEL FELLOWSHIP PROGRAM APPLICATION  
FORM B**

**Budget requested from NFSAT and CRDF Global for U.S. visit**

<b>Category</b>	<b>Amount Requested from NFSAT and CRDF Global</b>	<b>Support from other sources</b>
International Transportation <sup>1</sup>		
Visa Fees		
Per Diem (Including Lodging) <sup>2</sup>		
Health Insurance <sup>3</sup>		
Ground Transportation <sup>4</sup>		
<b>Total Amount</b> <sup>5</sup>		

<sup>1</sup> Air ticket price should reflect the lowest-cost applicable airfare offered by a U.S. carrier for an economy class, round-trip ticket between Yerevan and the designated research location in the **U.S. Flight itineraries must be approved by NFSAT prior to ticket purchase.**

<sup>2</sup> Per diem may not exceed \$2,000 per month or the prorated equivalent.

<sup>3</sup> Health insurance is mandatory for all travelers.

<sup>4</sup> Reimbursement up to US\$150 upon presentation of receipts.

<sup>5</sup> Not to exceed US\$8,000

**SIGNATURES**

*By signing this application, I certify that I meet all the eligibility requirements in this announcement and that I will honor all conditions of the program*

Applicant		Date	
Applicant's Institution Director		Date	

**APPENDIX 1**  
**FORMER FSU DEFENSE RESEARCHER CODE LIST**

Former Defense Researcher – defined as project participants who are were formerly actively engaged in research at a current or former defense laboratory or institution. Five categories of former defense researchers are provided below (Categories B, C, and D are classified as Weapons of Mass Destruction researchers):

<b>CATEGORY A: MISSILE TECHNOLOGY EXPERTS</b>	
<b>CODE</b>	<b>DESCRIPTION</b>
<b>A1</b>	Design, construction and performance of air, space, surface and underwater - launched missiles. Materials and technologies for these missiles. Production of engines, fuels, composites, integrated elements, radio-electronic equipment, different testing devices for missiles.
<b>A2</b>	Techniques for guidance and control of missiles from launching to impact. Includes optical guidance, television guidance, wire guidance, present and terminal guidance, internal guidance, command guidance, and homing guidance.
<b>A3</b>	Missile handling and launching, including transportation, storage, and preparation for launching. Air, space, surface and underwater launching and support equipment and technologies; Checkout equipment and procedures. Guided missile ranges.
<b>A4</b>	Techniques and systems for tracking missiles as defensive measures. Can be from surface installations or air and space-borne platforms.
<b>CATEGORY B: CHEMICAL WEAPONS EXPERTS</b>	
<b>B1</b>	Design and performance of missile warheads and rockets for delivery of chemical weapons.
<b>B2</b>	Materials, facilities and performance processes needed for the production of chemical weapon agents and their key precursors.
<b>B3</b>	Dissemination of chemical weapon agents.
<b>B4</b>	Basic knowledge on CW design and their effect on human system.
<b>CATEGORY C: BIOLOGICAL WEAPONS EXPERTS</b>	
<b>C1</b>	Design and performance of missile warheads and rockets for delivery of biological weapons.
<b>C2</b>	Biopolymer production related to biological warhead capabilities.
<b>C3</b>	Dissemination of biological weapon agents.
<b>C4</b>	Basic knowledge on BW design and their effect on human system.
<b>CATEGORY D: NUCLEAR WEAPONS EXPERTS</b>	
<b>D1</b>	Basic knowledge of Nuclear Weapons design, construction, characteristics and the effect on human system,
<b>D2</b>	Design, construction and performance of missile warheads for delivery of nuclear weapons.
<b>D3</b>	Design, construction and performance of the equipment and Components for Uranium and Plutonium separation.
<b>D4</b>	Design, construction and performance of the equipment connected with Heavy Water Production.
<b>D5</b>	Design, construction and performance of the equipment for Development of Detonators.
<b>D6</b>	Design, construction and performance of Explosive Substances and Related Equipment.
<b>D7</b>	Design, construction and performance of the equipment and Components for Nuclear Testing.
<b>D8</b>	Design, construction, performance and operation of production-type nuclear reactors for fissile and tritium-content materials production (breeding).
<b>D9</b>	Design, construction, performance of nuclear reactors and units for submarine and for military space program.
<b>CATEGORY E: OTHER</b>	
<b>E1</b>	Design, construction, and performance of powerful laser facilities for military applications.
<b>E2</b>	Design, construction and performance of accelerator facilities for military applications in space programs
<b>E3</b>	Others

## APPENDIX 2

### LIST OF ELIGIBLE SCIENTIFIC AREAS AND SUB-DISCIPLINES

#### **Biological & Biomedical Sciences & Engineering**

Agriculture & Agronomy  
 Bacteriology  
 Behavioral Biology  
 Biochemistry  
 Biophysics  
 Biotechnology  
 Botany (Plant Biology)  
 Cardiology  
 Cell Biology  
 Conservation Biology  
 Developmental Biology  
 Entomology  
 Environmental Health  
 Epidemiology  
 Genetics  
 Hematology  
 Immunology  
 Marine Biology  
 Medicine  
 Molecular Biology  
 Molecular Medicine  
 Mycology  
 Neurology  
 Oncology  
 Ophthalmology  
 Physiology  
 Population Biology  
 Radiology  
 Toxicology  
 Microbiology  
 Virology  
 Zoology

#### **Chemical Sciences and Engineering**

Analytical & Surface Chemistry  
 Biochemistry  
 Catalysis  
 Chemical Engineering  
 Inorganic Chemistry  
 Organic Chemistry  
 Physical Chemistry: General  
 Physical Chemistry: Kinetics  
 Physical Chemistry: Physical  
 Organic  
 Physical Chemistry: Theory & Dynamics  
 Polymer Chemistry

#### **Electrical and Materials Manufacturing**

Aero/Astro Engineering  
 Ceramics  
 Composite Materials  
 Electrical Engineering  
 Electronic Materials  
 Instrumentation  
 Lasers  
 Magnetic Materials  
 Manufacturing  
 Materials Science  
 Mechanical Engineering  
 Metallurgy  
 Nuclear Engineering  
 Optical Material  
 Polymers  
 Power Engineering  
 Superconducting Materials

#### **Geological Sciences and Engineering**

Atmospheric Science  
 Civil and Mechanical Engineering  
 Environmental Science  
 Geochemistry  
 Geological Engineering  
 Geology  
 Geophysics  
 Hydrology  
 Meteorology  
 Mineralogy  
 Oceanography  
 Paleoclimate  
 Petroleum Geology  
 Radioactivity  
 Remote Sensing  
 Seismology  
 Soil Science  
 Volcanology

#### **Mathematical Sciences**

Abstract Algebra  
 Applied Mathematics (non-physics)  
 Complex Systems & Chaos  
 Computer Science  
 Geometry & Topology  
 Mathematical Physics  
 Mathematical Logic & Number Theory  
 Modern Analysis  
 Numerical Methods

#### **Physical Sciences**

Acoustics  
 Astronomy/Astrophysics  
 Atomic and Molecular Physics  
 Beams  
 Condensed Matter: General  
 Condensed Matter: Magnetic Properties  
 Condensed Matter: Structure  
 Condensed Matter: Superconductivity  
 Condensed Matter: Theory and Transport/Semiconductors  
 Electronics  
 Hydrodynamics  
 Lasers  
 Mechanics  
 Medical Physics  
 Nuclear Physics  
 Optics and Spectroscopy:  
 Nonlinear optics and Quantum Statistics  
 Optics and Spectroscopy: Lasers  
 Particles and Fields  
 Plasma Physics: Fluids  
 Space  
 Theoretical Physics  
 Thermodynamics  
 Quantum Computing and Cryptography