U.S. DEPARTMENT OF ENERGY | Office of Science

DOE Office of Science
Early Career Research Program

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Senior Technical Advisor
Office of the Deputy Director for Science Programs

Advanced Scientific Computing Research
Advisory Committee (ASCAC)
September 20, 2016
Washington, DC

Early Career Research Program: Purpose

- **To support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the disciplines supported by the DOE Office of Science.**

- **Proposals are invited in the following program areas:**
  - Advanced Scientific Computing Research (ASCR)
  - Biological and Environmental Research (BER)
  - Basic Energy Sciences (BES)
  - Fusion Energy Sciences (FES)
  - High Energy Physics (HEP)
  - Nuclear Physics (NP)

Early Career Research Program: Overview

- **Universities and national labs eligible**
  - University grants at least $150,000 per year for 5 years for summer salary & expenses.
  - Lab awards at least $500,000 per year for 5 years for full annual salary & expenses
- **Plan is for about 300 active awards in steady state**
  - 200 university awards & 100 lab awards
- **Roughly $80M in funding for new and ongoing awards each year**
  - About 60 new awards (40 university & 20 lab) per year in steady state

- **Management Principles**
  - One common solicitation for Office of Science
  - Decisions based on peer review with common review criteria
  - Reviewed, awarded, and managed locally in the programs
  - Program rules governed by the Office of the Deputy Director for Science Programs with advice from a six-member (ASCR, BER, BES, FES, HEP, and NP) coordinating committee

Early Career Research Program: Eligibility

- **No more than ten (10) years can have passed between the year the Principal Investigator's Ph.D. was awarded and the year of the deadline for the proposal.**
- **DOE National Laboratories**
  - full-time, permanent, non-postdoctoral employee.
- **U.S. Academic Institutions**
  - untenured Assistant Professor or Associate Professor on the tenure track.
- **An employee with a joint appointment between a university and a DOE national laboratory must apply through the institution that pays his or her salary and provides his or her benefits; the eligibility criteria above must also be met.**

Early Career Research Program: Merit Review Criteria

1. **Scientific and/or technical merit of the project.**
2. **Appropriateness of the proposed method or approach.**
3. **Competency of applicant's personnel and adequacy of proposed resources.**
4. **Reasonableness and appropriateness of the proposed budget.**
5. **Relevance to the mission of the specific program (e.g., ASCR, BER, BES, FES, HEP, or NP) to which the proposal is submitted.**
6. **Potential for leadership within the scientific community.**

Strongly Encourage Funding (5-6); Encourage Funding (3-4); or Discourage Funding (1-2).

Early Career Research Program: Special Rules

General Rules:

- **Preproposals are required.**
- **A full proposal is not allowed if the work proposed in the preproposal is not responsive to the research topics identified in the solicitation.**
- **No co-PIs.**
- **A PI can submit one proposal per competition.**
- **A PI cannot participate more than three times.**
- **No letters of recommendation.**
- **Optional letters of collaboration, if included, must use a template.**
- **For DOE National Laboratories**
  - A letter from the lab director confirming that the proposed research idea fits within the scope of Office of Science-funded programs at the lab is required.
  - Lab scientists must charge at least 50% of their time to the award.
  - Execution of funding is at the PI's discretion according to the approved budget.
  - Employing lab addresses funding transition issues when the award ends.

Early Career Research Program: This Year's Solicitations DE-FOA-0001625 and LAB 16-1625

Step	Date	Time	Notes
Issue Solicitation:	Jul 28, 2016		mid-summer
Due date for Preproposals:	Sep 8, 2016	5 PM Eastern	6 weeks for PIs to write preproposals
Encourage / Discourage Decisions:	Oct 6, 2016	5 PM Eastern	4 weeks for DOE to decide
Due date for Proposals:	Nov 14, 2016	5 PM Eastern	8 weeks for PIs to write proposals
Target Award Start Date:	Jul 15, 2017		

The schedule above is fairly typical of the Early Career Research Program

Department of Energy
Office of Science
Washington, DC 20585

http://science.energy.gov/~/media/grants/pdf/FullFundingMemo.pdf

January 29, 2014

MEMORANDUM FOR OFFICE OF SCIENCE GRANT AND COOPERATIVE AGREEMENT APPLICANTS AND RECIPIENTS

FROM: PATRICIA M. DEHMER
ACTING DIRECTOR, OFFICE OF SCIENCE

SUBJECT: FULL FUNDING FINANCIAL ASSISTANCE AWARDS UNDER $1 MILLION

On Friday, January 17, 2014, President Obama signed the Consolidated Appropriations Act, 2014, funding the Federal Government through September 30, 2014.

Section 310 of Division D of the act states

> Notwithstanding section 301(c) of this Act, none of the funds made available under the heading 'Department of Energy—Energy Programs—Science' may be used for a multiyear contract, grant, cooperative agreement, or Other Transaction Agreement of $1,000,000 or less unless the contract, grant, cooperative agreement, or Other Transaction Agreement is funded for the full period of performance as anticipated at the time of award.

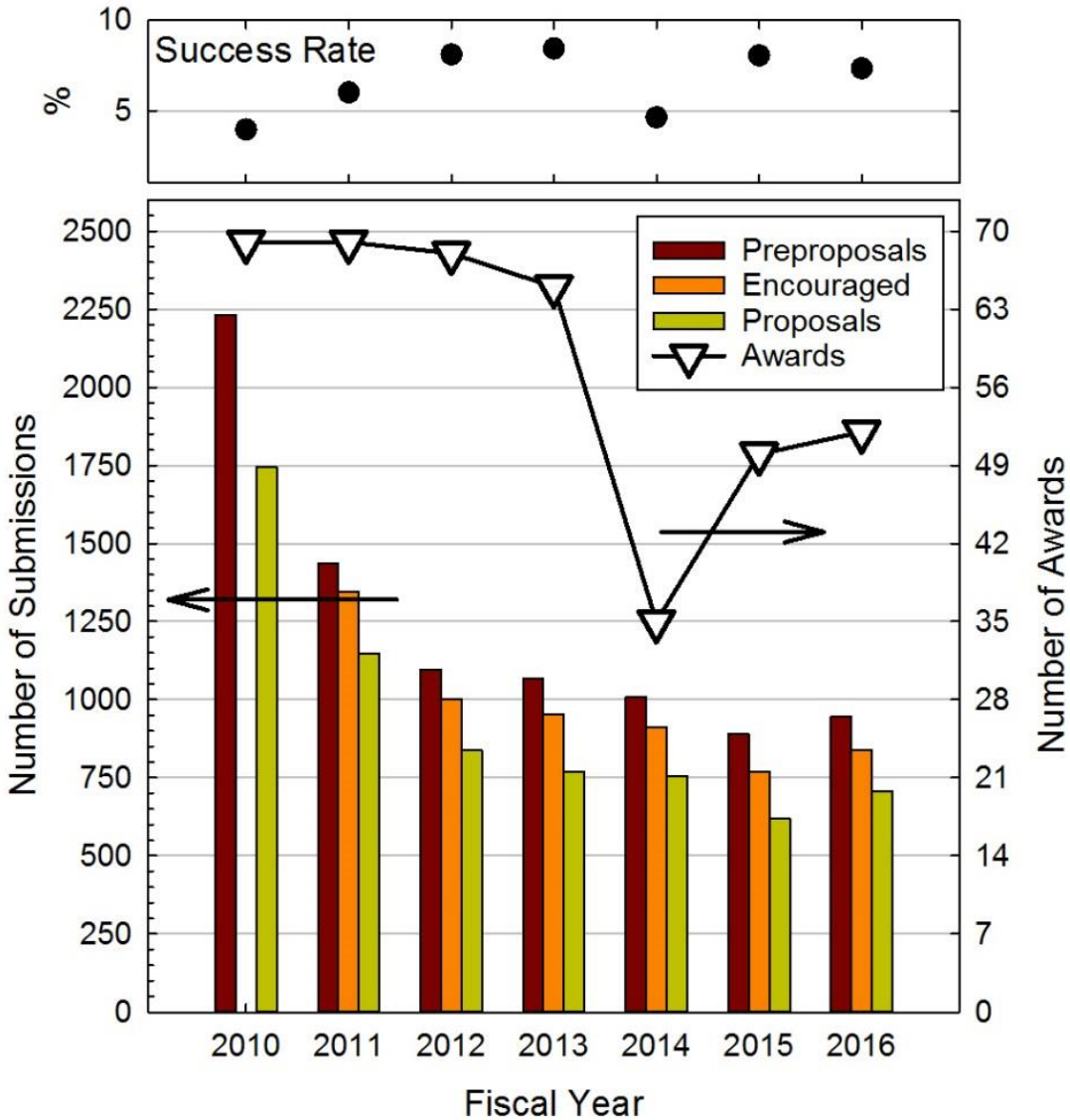
The Office of Science's financial assistance awards have historically been made for three- to five-year project periods with funding provided annually in discrete budget periods. We will no longer fund awards with a project period total cost of $1,000,000 or less in this way. Any new or renewal financial assistance award with a project period total cost of $1,000,000 or less will be funded in full.

Early Career Research Program: Results

- **Since 2010, the programs have made 411 awards.**
  - 270 university and 141 laboratory
- **Overall success rate = about six percent.**
- **42 states represented.**
- **15 separate labs and 109 separate universities.**
- **105 women and 306 men = 25 % women**

- **Since 2010, ASCR has made 37 awards.**
  - 21 university and 16 laboratory
- **4 women and 33 men = 11 % women**

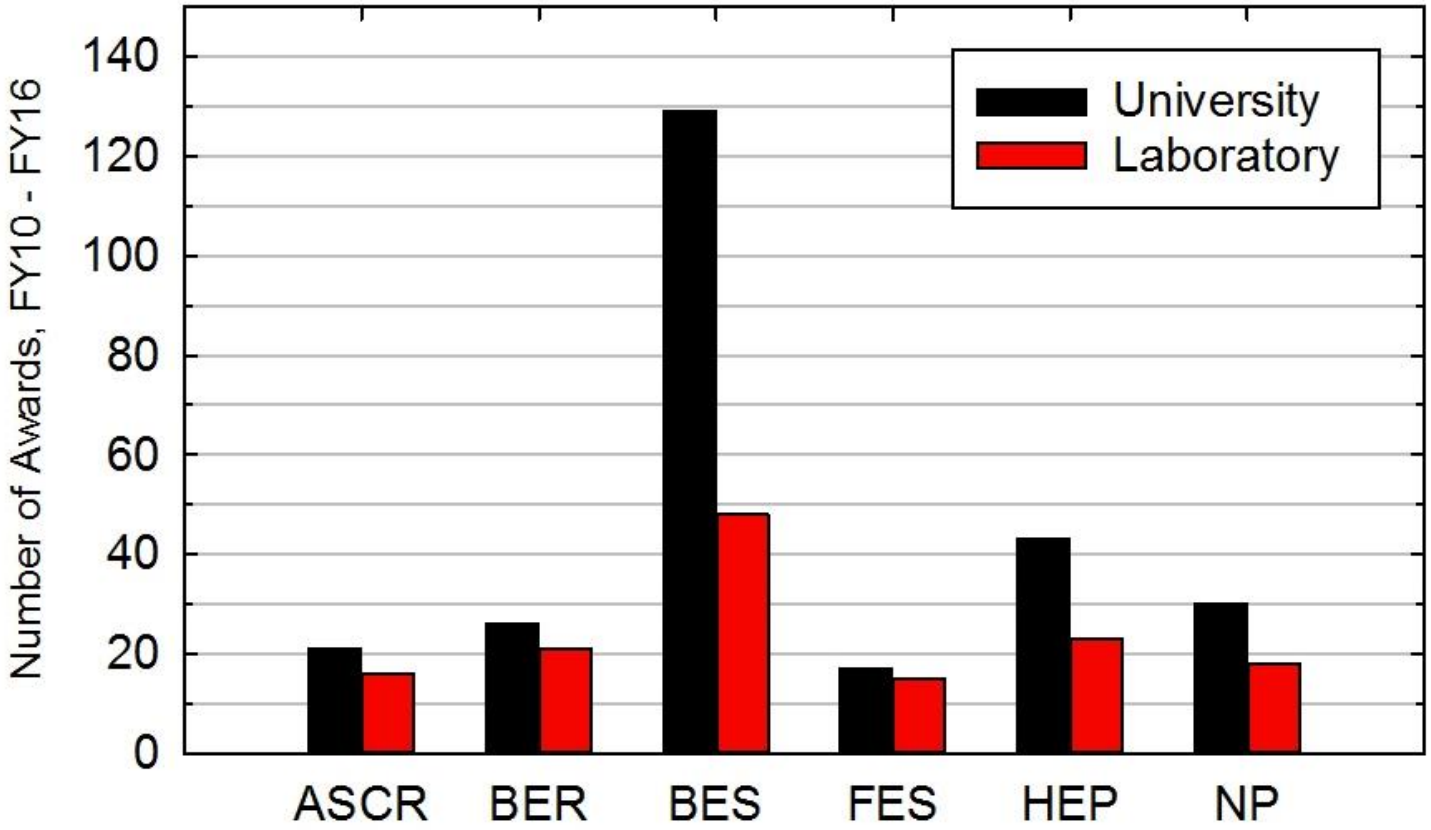
Demand is high for the Early Career Research Program.



- The process of encouraging proposal submission based on preproposal fit began in FY2011.
- Proposal submission is encouraged for 85-90% of preproposals.
- Proposals are received from about 80% of those encouraged to submit.
- The number of awards was low during FY2014 - FY2016 because of the transition to full funding, which is expected to take two more years (FY2017 and FY2018).

Program Offices make awards according to the sizes of their budgets

Number of awards made in the seven-year period from FY2010 to FY2016



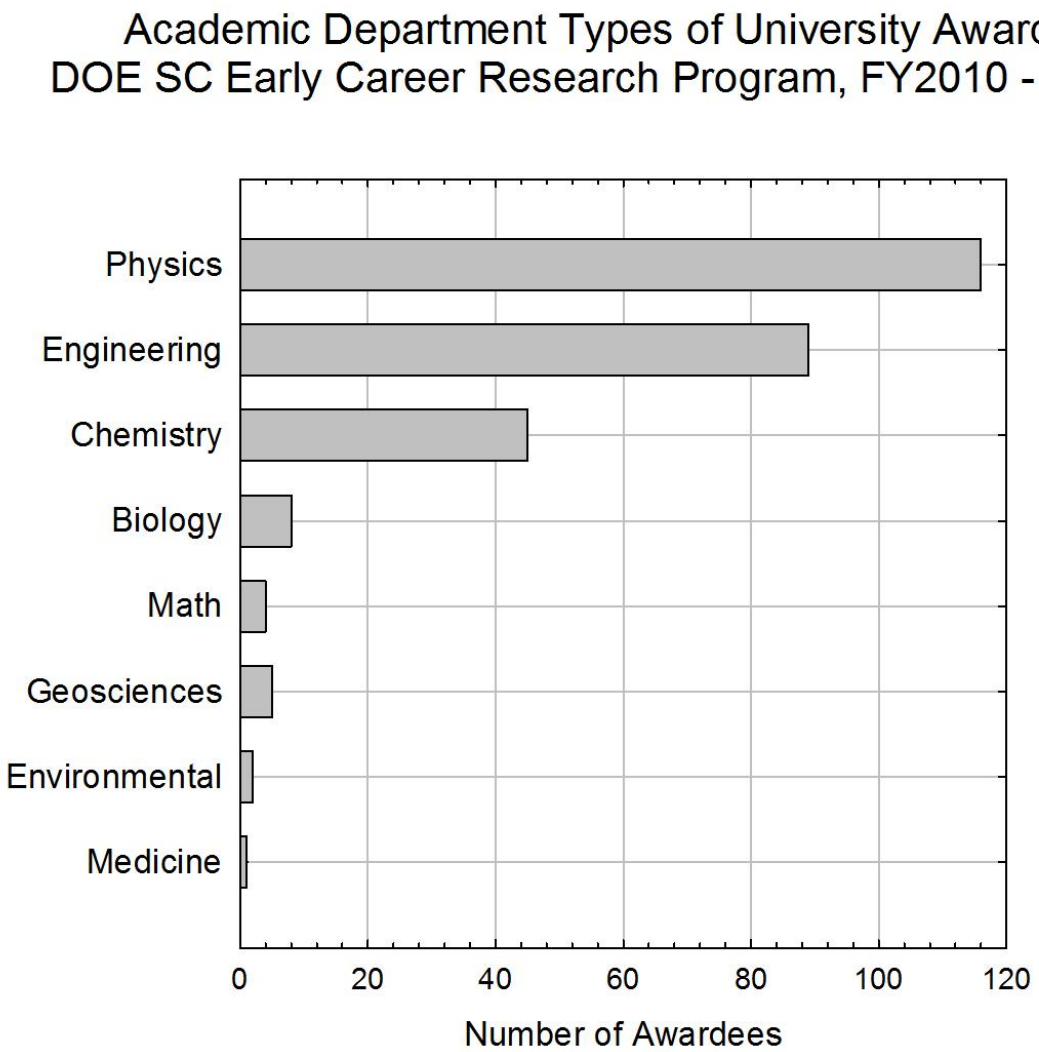
Awards by Program Office and Institution Type

Program Office	Total Number of Awards						
	FY10	FY11	FY12	FY13	FY14	FY15	FY16
ASCR	7	5	6	5	5	5	4
BER	8	7	9	7	4	5	7
BES	26	31	29	31	16	25	22
FES	6	6	4	4	3	4	6
HEP	14	13	12	9	6	5	7
NP	8	7	8	9	4	6	6
Total	69	69	68	65	38	50	52

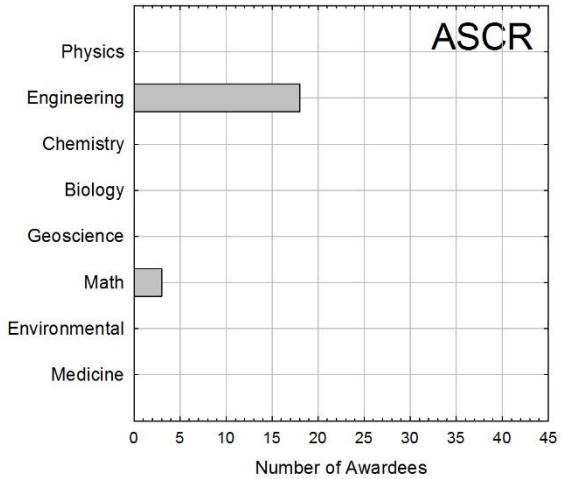
Program Office	Number of University Awards						
	FY10	FY11	FY12	FY13	FY14	FY15	FY16
ASCR	5	3	3	3	3	2	2
BER	5	4	6	4	1	4	2
BES	18	24	21	26	10	17	16
FES	4	4	1	2	1	2	4
HEP	10	8	8	7	3	4	3
NP	5	4	5	6	3	4	3
Total	47	47	44	48	21	33	30

Program Office	Number of Laboratory Awards						
	FY10	FY11	FY12	FY13	FY14	FY15	FY16
ASCR	2	2	3	2	2	3	2
BER	3	3	3	3	3	1	5
BES	8	7	8	5	6	8	6
FES	2	2	3	2	2	2	2
HEP	4	5	4	2	3	1	4
NP	3	3	3	3	1	2	3
Total	22	22	24	17	17	17	22

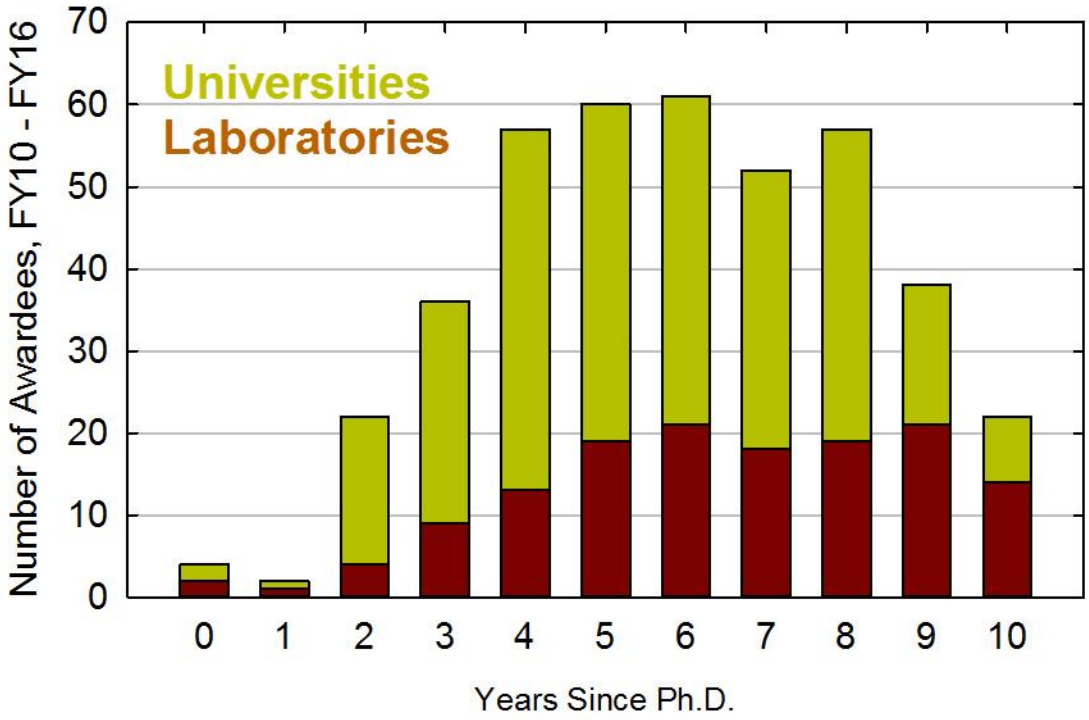
Our academic awardees come from a few department types.



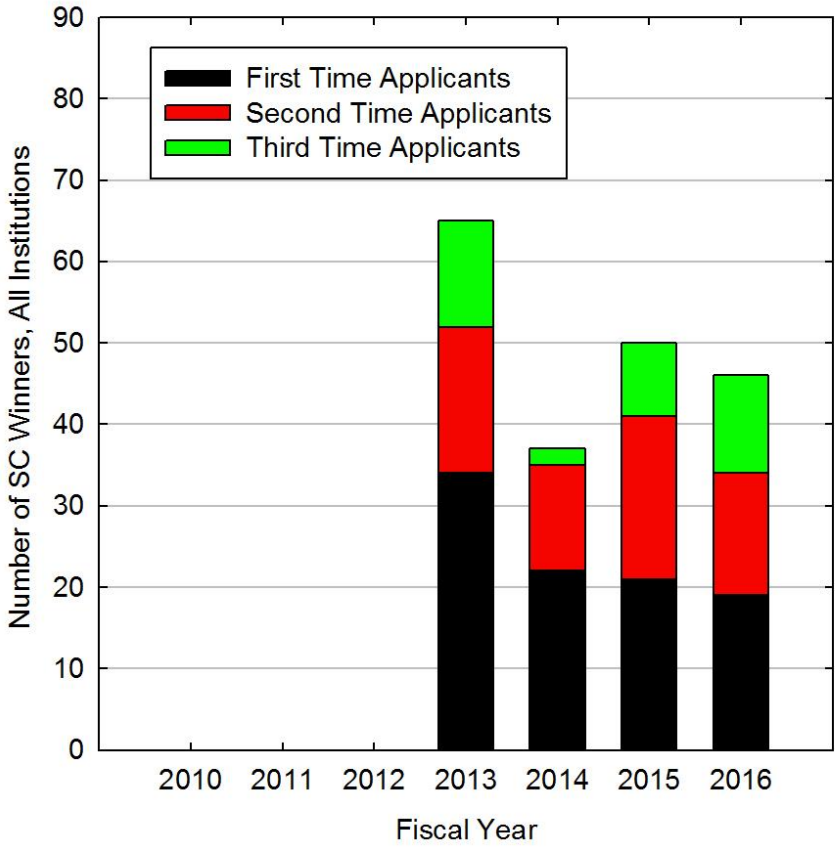
- Physics includes physics, astronomy, etc.
- Engineering includes all engineering plus computer science, materials science, engineering physics, etc.
- Biology includes biology, bacteriology, biological sciences
- Math includes math, statistics



Most of our winners got their Ph.Ds. 4 – 6 years before getting an award.



About half of our winners are first-time applicants.



Office of Science PECASE Process

- **PECASE = Presidential Early Career Award for Scientists and Engineers**
- **Candidate pool is that of the eligible winners of the Early Career Research Program**
- **External peer review is performed by a cross-disciplinary panel based on two broad criteria defined by the White House**
  - Innovative research at the frontiers of science and technology that is relevant to the mission of the sponsoring organization or agency.
  - Community service demonstrated through scientific leadership, education or community outreach.
- **Evaluated based on research proposal, expert reviews, and updated C.V.**
- **DOE selects nominees and advances them to the White House, which makes its selections and announces the awards.**
- **No additional financial award is provided beyond already lucrative five years of early career funding.**

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Questions about the Early Career Research Program?

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http://science.energy.gov/early-career/