Early Career Research Awards for Young Faculty

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WPI Research Solutions Institute

Grantwriting for Impact Workshop Series

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Early Career Research Awards: What Are They and Why Do They Exist?

- Generally: Competitive grant funding to give an early career boost to talented young faculty with great ideas and great potential.
- From sponsor point of view, they can also help to:
  - Maintain a pipeline of top academic talent capable of working with the sponsor over a continued period.
  - Level the playing field somewhat with regard to scarcity of funds for early-stage researchers.
  - Encourage bold new research directions in given fields.
  - Support early leadership development in the research community.

Why Would You Want to Pursue One?

- Establish an independent research program.
- Sufficient funding to be able to do something significant.
- Good for your tenure case.
- Marks you as a recognized high-potential scientist, which may lead to additional opportunities.
- Can bring you into close contact with agency program managers and other persons of influence in your research world.
- Psychologically very satisfying.

Program Types

- Dedicated Programs for Early Career Researchers
  - Programs open to all topics
  - Programs focusing on certain fields only
  - Programs using a defined topic list
- Special Policies/Funding for Early-Career Applicants
- Preferential Opportunities Within Particular Programs

Program Limitations May Include:

- Eligibility based on date of PhD, academic appointment, etc.
- Institution “accepted” by sponsor (some foundations)
- Research restricted to certain fields/disciplines
- Various other limitations peculiar to sponsor preferences

Summary of Federal Programs

- National Science Foundation
  - CAREER, plus a few isolated program-specific opportunities
- National Institutes of Health
  - Early-Stage Investigator opportunities
- Department of Defense
  - Separate programs at Army, Navy, Air Force, DARPA
- Department of Energy
  - Early Career Research Program
- National Aeronautics and Space Administration
  - Separate programs at major NASA Directorates
- Cross-Federal Recognition
  - PECASE

NSF Faculty Early Career Development Program (CAREER)

- URL: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214
- Fields of Research: All fields supported by NSF
- Applicant Eligibility: Tenure-track Asst. Prof.; can apply only 3 times
- Award Amount: $400K min./5 years ($500K/min for BIO, ENG)
- Data on Awards: $222M awarded to 450 faculty (FY2018 estimate)
- Next Application Deadline: June 18-20, 2018 (directorate-dependent)
- Notes: CAREER is a premier award "in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization." Applicants need to show both research and education plans, and how they are integrated. 4% of CAREER awardees are nominated for national PECASE awards.
- **Must-read additional info from NSF:** https://nsfgrantsconferences.com/wp-content/uploads/2017/11/CAREER_fall17.pdf

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NSF CISE Research Initiation Initiative (CRII)

- URL: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504952
- Fields of Research: Computer/Information S&E, or computational or data science normally submitting to CISE
- Applicant Eligibility: 5 yrs. since PhD, within first 3 yrs. of academic appointment, no previous funding as PI (postdocs, visiting prof.: OK)
- Award Amount: $175K maximum, for up to 24 months
- Data on Awards: $10M for 55-60 awards (current competition)
- Next Application Deadline: August 8, 2018
- Notes: CRII "provides the opportunity for early-career researchers to recruit and mentor their first graduate students, which is one critical step in a career pathway that is expected to lead to research independence and a subsequent stream of projects, discoveries, students and publications."

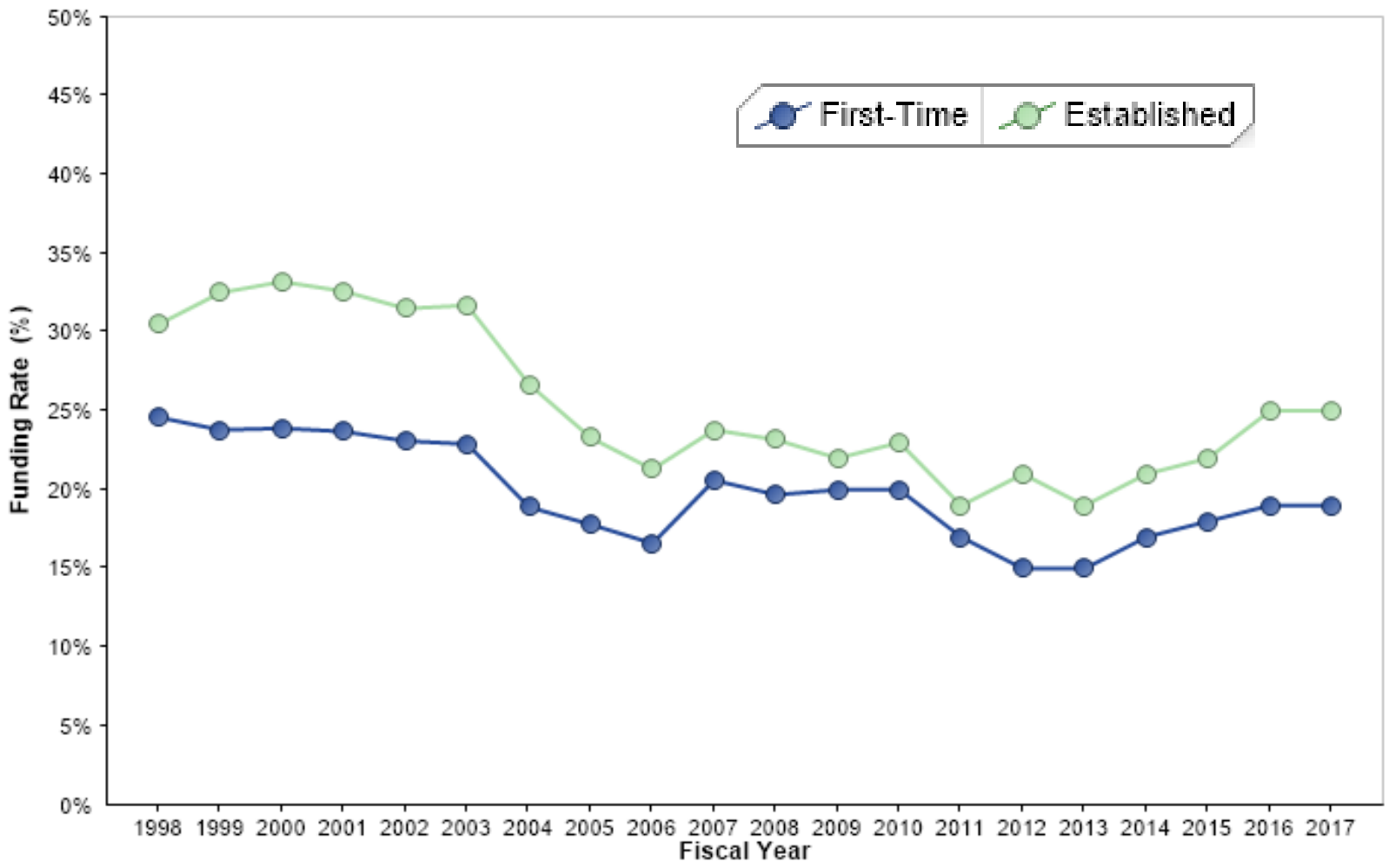
NSF Plant Genome Research Program Early Career Awards (ECA-PGR)

- URL: https://nsf.gov/funding/pgm_summ.jsp?pims_id=5338
- Fields of Research: Plant Genomics
- Applicant Eligibility: Hold tenure-track Asst. Prof. appt. within 6 months of submission; may submit for up to 4 yrs. from appt. start
- Award Amount: 3 recent ECA awards--from $1.5M to $2.7M/4 yrs.
- Data on Awards: $15M for 10-20 awards (current competition)
- Next Application Deadline: Full proposal accepted anytime
- Notes: ECA-PGR supports exceptional investigators seeking to build a career in plant genomics. Proposed research must focus on plants of economic importance and tackle questions of biological and societal importance, using genome-wide research questions and approaches. ECA investigators are strongly encouraged to contact a PGRP Program Director for further guidance.

NIH Next Generation Researchers Initiative: Prioritizing Early-Stage Investigators (ESI)

- URL: https://grants.nih.gov/ngri.htm
- Fields of Research: All NIH-supported Institutes/Centers
- Applicant Eligibility: PhD within past 10 yrs. (per eRA Commons profile), no "substantial" independent NIH funding
- Award Amount: N.A.
- Next Application Deadline: N.A.
- Notes: "Under the Next Generation Researchers policy, meritorious R01-equivalent applications with ESI PD/PIs will be prioritized for funding. The goal for FY 2017 will be to fund approximately 200 more ESI awards than in FY 2016." If multiple PD/PIs, prioritization will occur only if all have ESI status.

R01-Equivalent Investigators, New (Type 1) Funding Rates, by Career Stage of Investigator



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NIH Director's New Innovator Award (DP2)

- URL: https://commonfund.nih.gov/newinnovator
- Fields of Research: Any area of NIH-relevant biomedical research
- Applicant Eligibility: Must have ESI status
- Award Amount: $1.5M direct costs, disbursed in Year 1 of a 5-year effort. 33 awards anticipated in most recent competition.
- Timetable: FY2018 RFA closed Sept. 8, 2017; expect new RFA soon
- Notes: The program seeks to identify scientists with high-impact ideas that may be risky or at a stage too early to fare well in the traditional peer review process. DP2 mechanism used; single PI only; no preliminary data required; minimum of 25% research effort. Apply via a 10-page essay describing: (1) the significance of the problem challenge being addressed; (2) the general approach to be taken to address the problem challenge; (3) why the project is unusually innovative; and (4) the qualities and experiences of the investigator that make him/her especially well-suited to pursue such research.

DoD Army Young Investigator Program (YIP)

- URL: https://www.arl.army.mil/www/pages/8/W911NF-17-S-0002.pdf
- Fields of Research: Chemical Sciences, Physics, Life Sciences, Mechanical Sciences, Electronics, Materials Sciences, Earth Sciences, Computing Sciences, Mathematical Sciences, Network Sciences
- Applicant Eligibility: US persons and Permanent Residents only; must hold tenure-track position; PhD awarded <5 years prior to applying.
- Award Amount: $120K/yr. for 3 years
- Timetable: Proposals may be submitted at any time
- Notes: YIP is described under the ARO's 5-year BAA. The program goal is to attract young faculty to work on future ARO research. Pitch initial concept with Technical Point of Contact (TPOC) for the program your research is in. Essential to commit "strong university support" in the supporting letter (i.e., academic salary, release time, equipment, RA support, IC waiver, department cost sharing, start-up funding, etc.). Post-YIP, awardees can apply for continued ARO funding. YIPs are eligible for PECASE awards.

DoD Navy Young Investigator Program (YIP)

- URL: https://www.onr.navy.mil/Science-Technology/Directorates/office-research-discovery-invention/Sponsored-Research/YIP.aspx
- Fields of Research: See current ONR BAA for areas of interest/TPOCs: https://www.onr.navy.mil/-/media/Files/Funding-Announcements/BAA/2018/N00014-18-S-B001.ashx
- Applicant Eligibility: US persons and Permanent Residents only; must hold tenure-track position; for (now closed) FY2018 competition: must have begun first full-time appointment by 12/31/2012
- Award Amount: $170K/yr. for 3 years; plus equipment funds (if needed)
- Timetable: Last competition closed 9/29/2017
- Notes: The program goal is to attract faculty to work on future Navy research. Should initially discuss with appropriate Program Director. Use current ONR BAA to apply. YIPs are eligible for PECASE awards.

DoD Air Force Young Investigator Research Program (YIP)

- URL: https://www.frames.gov/files/3014/9193/0372/BAA-AFRL-AFOSR-2017-0002_FY18_YIP_v1.3.pdf
- Fields of Research: See current BAA: BAA-AFRL-AFOSR-2016-0007
- Applicant Eligibility: US persons and Permanent Residents; for (now closed) FY2018 competition: must have received PhD degree 4/01/2012 or later, or received PhD degree between 4/01/2010 and 4/01/2012 and been a tenure-track faculty member for no more than two years prior to 4/01/2017.
- Award Amount: $150K/yr. for 3 years (some awards higher/longer). Previous competition estimated 36 awards would be made.
- Timetable: Last competition closed 6/01/2017
- Notes: The program goal is to attract faculty to work on future Air Force research. Should initially discuss with appropriate Program Director. Use current ONR BAA to apply. YIPs are eligible for PECASE.

DoD DARPA Young Faculty Award (YFA)

- URL: https://www.darpa.mil/work-with-us/for-universities/young-faculty-award
- Fields of Research: The annual solicitation provides specific topics.
- Applicant Eligibility: US citizens, Permanent Residents, *and foreign nationals*; current tenure-track Assistant *or Associate* Professor; tenure must have been awarded less than 3 years prior to applying.
- Award Amount: $500K max (2 yrs.) plus $500K option period (1 yr.)
- Timetable: The last YFA competition was posted 9/7/2017 and closed 12/04/2017
- Notes: YFA is a great gateway to DoD and DARPA contacts and follow-on research. Proposers are *strongly encouraged* to first submit an executive summary to DARPA. The proposed research must "enable revolutionary advances" and cannot have been already funded by another source.

DOE Early Career Research Program

- URL: https://science.energy.gov/early-career/
- Fields of Research: Topics defined in each annual solicitation--see https://science.energy.gov/~/media/grants/pdf/foas/2017/SC_FOA_0001761.pdf for most recent solicitation.
- Applicant Eligibility: Must be untenured Asst. or Assoc. Prof., earning PhD <10 years before FOA was issued. No citizenship restrictions. Limit of three attempts.
- Award Amount: 80% of awards are for $750K over 5 years. Current competition forecasts 30-40 awards from $30M funding.
- Timetable: The last competition was posted 12/18/2017 and closes 4/04/2018
- Notes: Two-step process: pre-application, then “encourage” full application. No institutional letters of support/recommendation are allowed.

NASA Space Technology Directorate: Early Career Faculty (ECF) Program

- This is one of four NASA programs for young faculty.
- Appendix No.: 80HQTR18NOA01-18ECF-B1
- Fields of Research: Topics are defined in each annual solicitation. Four topics were posted for the current FY2018 solicitation.
- Applicant Eligibility: US persons and Permanent Residents only; must be untenured Assistant Professor at the time of award.
- Award Amount: $200K/year for 3 years. In FY2018, 6-8 awards are forecast to be made.
- Timetable: The last competition was posted 2/7/2018 and closes 3/28/2018.
- Notes: University university support, such as release time or co-funding of graduate students, should be discussed in the Department Letter accompanying the proposal.

NASA Planetary Sciences Division: Early Career Fellowship (ECF) Program

- This is one of four divisional NASA programs for young faculty. Program Element C.23 “New Early Career Fellowship Program,” which is an application to be an “Early Career Fellow,” was not solicited in FY2017, but should appear in ROSES-2018. Once awarded Early Career Fellow status, one may apply for Start-up Funds via Program Element C.16 (Early Career Start-Up Program for Named Fellows).
- Fields of Research: Relevancy to the Planetary Sciences Division.
- Applicant Eligibility: US citizen or Permanent Resident only; must be an untenured faculty at the time of, and have earned a PhD less than ten years prior to, applying for start-up funds.
- Award Amount: $100K in start-up funds.
- Data on Awards: 1-3 awards per Planetary research program element.
- Contact: Mary Voytek, mvoytek@hq.nasa.gov

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NASA Earth Sciences Division: New (Early Career) Investigator Program (NIP)

- This is one of four NASA divisional programs for young faculty.
- Refer to Program Element A.36.
- Fields of Research: Carbon Cycle and Ecosystems, Climate Variability and Change, Water and Energy Cycle, Atmospheric Composition, Weather, and Earth Surface and Interior.
- Applicant Eligibility: US citizen or Permanent Resident only; must be an untenured faculty at the time of, and have earned a PhD less than five years prior to, applying for start-up funds.
- Award Amount: $80-90K/year for 3 years. In FY2017, 12 awards were forecast to be made.
- Timetable: This program is going to a 3-year cycle and will not be competed again until FY2020.
- Contact: Lin Chambers, lin.h.chambers@nasa.gov

NASA Nancy Grace Roman Technology Fellowship in Astrophysics (RTF)

- This is one of four NASA divisional programs for young faculty.
- Two-step process: (1) 1-page proposal to be Roman Technology Fellow, and (2) Named Fellow may propose up to $300K in Fellowship Funds for lab start-up.
- Fields of Research: Astrophysics. RTF awardees are expected to eventually lead astrophysics flight instrument development projects, including suborbital investigations.
- Applicant Eligibility: US citizen or Permanent Resident only; must be an untenured faculty or postdoc at the time of, and have earned a PhD less than eight years prior to, applying for start-up funds.
- Award Amount: $300K max for start-up of an astrophysics research lab effort. In FY2017, 1-3 new awards were forecast to be made.
- Contact: Nasser Barghouty, nasser.barghouty@nasa.gov.

Presidential Early Career Award for Scientists and Engineers (PECASE)

- Highest US government honor for outstanding young scientists and engineers, conferred annually at the White House on recommendations from participating agencies.
- Winners get agency funding for up to five years for research.
- Participating Agencies:
  - Department of Agriculture
  - Department of Commerce
  - Department of Defense **(YIPs and YFA)**
  - Department of Energy **(ECRP)**
  - Department of Education
  - National Institutes of Health **(Program Recommendations)**
  - Department of Veterans Affairs
  - National Aeronautics and Space Administration **(ECF, NIP, RTF)**
  - National Science Foundation **(CAREER)**

Summary of Selected Foundation Programs

- Major Scientific-Oriented Foundations
  - Beckman, Blavatnik, Searle, Packard, Sloan, etc.

    [Note: some of the above restrict applications to certain universities, of which WPI is not (yet) one]
- Discipline-Specific
  - Cottrell Scholars
  - AMS, ACS, etc.
  - Various medical-oriented foundations (generally in medicine)
- Smaller-Scale Opportunities
  - Russell Sage Foundation, etc.
  - Professional society recognition/small awards

American Mathematical Society: AMS Centennial Fellowship Program

- URL: http://www.ams.org/programs/ams-fellowships/centennial-fellow/emp-centflyer
- Fields of Research: Mathematics.
- Applicant Eligibility: Tenure-track professor or postdoc; PhD must have been awarded between 3-12 years from inception of the award; no concurrent funding from any other major young researcher award.
- Award Amount: $93K stipend plus $9,300 expense allowance.
- Data on Awards: Few awards are made; at least 1 award will be made in the 2019-2020 cycle.
- Timetable: Applications accepted between 10/1/2018 and 12/1/2018.
- Notes: Awardees are expected to continue their research, including travel to at least one other institution.

Beckman Young Investigators Program (BYI)

- URL: http://www.beckman-foundation.org/programs/beckman-young-investigators-program-information
- Fields of Research: Chemical and Life Sciences.
- Applicant Eligibility: US citizens or Permanent Residents only. Must be in the first three years of a tenure-track appointment; cannot apply more than two times; cannot have yet received a major award/funding (>$225K in any year) from another organization.
- Award Amount: $600K for 4 years (contingent on progress). No indirect costs are allowed on these grants.
- Data on Awards: Program generally makes 8 awards per year.
- Timetable: Applications accepted between June and September.
- Notes: Sponsor is the Arnold and Mabel Beckman Foundation. Projects proposed for the BYI program should be truly innovative, high-risk, and show promise for contributing to significant advances in chemistry and the life sciences. They should represent a departure from current research directions rather than an extension or expansion of existing programs.

Burroughs Wellcome Fund
Career Awards at the Scientific Interface

- URL: https://www.bwfund.org/grant-programs/interfaces-science/career-awards-scientific-interface
- Fields of Research: Young researchers *transitioning* from work in the physical/mathematical/computational sciences or engineering into *postdoctoral* work in the biological sciences.
- Applicant Eligibility: US citizens or temporary residents with valid visas may apply. Cannot have accepted a tenure-track appointment; cannot apply more than two times; Must have completed at least 12 but not more than 60 months of postdoctoral research by application date.
- Award Amount: $500K over 5 years. Indirect costs are not allowed.
- Data on Awards: Program generally makes 11-13 awards per year.
- Timetable: Recent competition: Pre-app 11/14/17, full app: 1/10/18.
- Notes: Award is portable; serves as a bridge from postdoc to faculty.

Cottrell Scholar Award

- URL: http://rescorp.org/cottrell-scholars/cottrell-scholar-award
- Fields of Research: Chemistry, physics or astronomy.
- Applicant Eligibility: For 2018 proposals, eligible faculty members must have started their first tenure-track appointment anytime in calendar year 2015. Also, must complete an online eligibility quiz.
- Award Amount: $100K over 3 years. Indirect costs are not allowed.
- Data on Awards: In 2017, awards went to 24 Cottrell Scholars.
- Timetable: Pre-proposal due 5/1/18; proposal due 7/20/18 if invited.
- Notes: The Cottrell Scholar Award develops outstanding teacher-scholars who are recognized by their scientific communities for the quality and innovation of their research programs and their academic leadership skills. The Award provides entry into a national community of outstanding scholar-educators who produce significant research and educational outcomes.

Human Frontier Science Program: Young Investigators Grants

- URL: http://www.hfsp.org/funding/research-grants
- Fields of Research: Multidisciplinary collaborations (e.g. chemistry, physics, computer science, engineering) to focus on problems in the life sciences, involving teams of 2-4 previously non-collaborating scientists from 2 or more countries (preferably intercontinental teams).
- Applicant Eligibility: All team members must be in the first 5 years of a faculty position, and have obtained a PhD <10 years prior to applying.
- Award Amount: $250K for team of 2, $350K for team of 3, $450K for team of 4, divided among the whole team, each year for 3 years.
- Timetable: Initiate application by 3/19/18; letter of intent by 3/28/18; full application (if invited) by mid-September 2018.
- Notes: HFSP is a niche program that supports innovative *basic* research into *fundamental* biological problems.
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Kauffman Junior Faculty Fellowship in Entrepreneurship Research

- URL: https://www.kauffman.org/microsites/kjff
- Field of Research: Entrepreneurship (theoretical or practical)
- Applicant Eligibility: Tenure-track junior faculty who have received a PhD during the past four years.
- Award Amount: $35K over 3 years (not for salaries or indirect costs).
- Data on Awards: 7 Junior Faculty Fellowships are awarded per year.
- Timetable: Nominations open in November and are due mid-January; the nominee's application is due mid-March.
- Notes: Someone must nominate you; self-nomination is not allowed. Your application package must include two papers (preferably sole-authored): either a working paper or one accepted for publication. Awarded to junior faculty with the potential to make significant contributions to the body of research in the field of entrepreneurship.

Sloan Research Fellowships

- URL: https://sloan.org/fellowships/
- Field of Research: Chemistry, computational or evolutionary molecular biology, computer science, economics, mathematics, neuroscience, ocean sciences, physics, or a related field.
- Applicant Eligibility: Tenure-track faculty with PhD awarded <5 yrs. ago.
- Award Amount: $65K over 2 yrs. made in a lump sum (IC not allowed).
- Data on Awards: 126 Sloan Research Fellowships are awarded per year.
- Timetable: Nominations open summer 2018; due mid-September.
- Notes: Your application package is a "nomination," and must include two representative articles, three letters of support, and a nomination letter from a senior researcher. Selection is on the basis of independent research accomplishments, creativity, and potential to become leaders in the scientific community through their contributions to their field.

ACS Petroleum Research Fund Doctoral New Investigator Grants (DNI)

- URL: https://www.acs.org/content/acs/en/funding-and-awards/grants/prf/programs/dni.html
- Field of Research: Fundamental research in the petroleum field.
- Applicant Eligibility: Faculty within first 3 years of first academic appt.
- Award Amount: $110K over a 2 year period. Limit of three tries.
- Data on Awards: ~75 DNI grants are awarded per year.
- Timetable: Applications for the 2018 DNI program were due 3/16/18.
- Notes: This program is sponsored by the ACS Petroleum Research Fund; applicants should become familiar with this ACS unit and its interests. 60% of the budget must be spent to support the education and training of students (undergraduates, graduate stipends and tuition remission, and/or postdoctoral fellows).

PhRMA Foundation Research Starter Grants

- URL: http://www.phrmafoundation.org/2018-awards/research-starter-grants/
- Field of Research: For WPI faculty, generally limited to the program's *Informatics* and the *Translational Medicine and Therapeutics* tracks.
- Applicant Eligibility: US citizens or Permanent Residents; tenure track faculty; must have little prior funding.
- Award Amount: $100K for one year; no funds for grantee salary; no IC.
- Timetable: Informatics track applications due 9/1/18. Translational Medicine and Therapeutics applications were due 2/1/18.
- Notes: Research Starter Grants offer financial support to individuals beginning independent research careers at the faculty level. If you are doing any research related to pharmaceuticals, even if not in the two areas above, it may be worth checking this program out.

W. T. Grant Foundation Scholar Awards

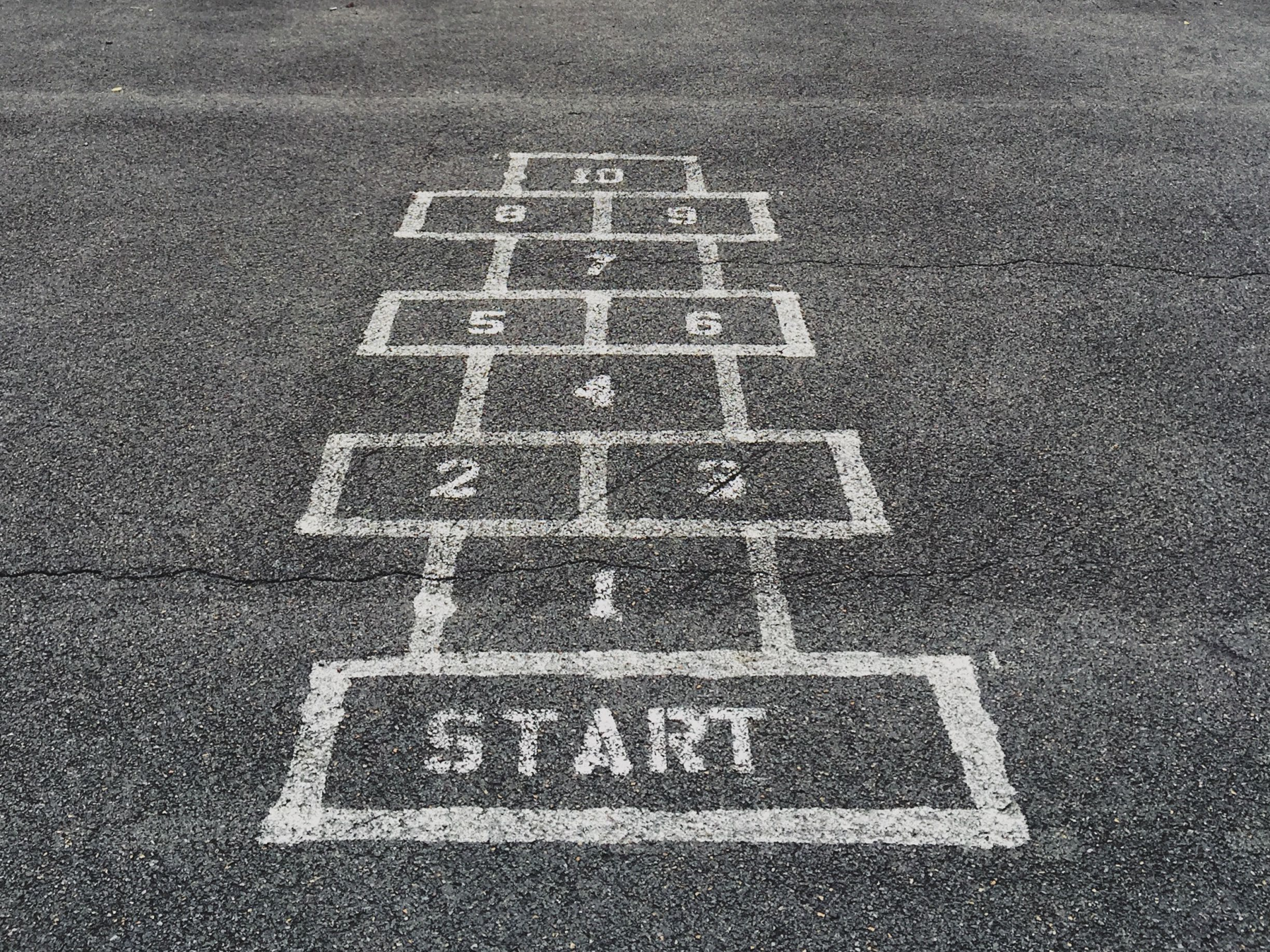
- URL: http://wtgrantfoundation.org/grants/william-t-grant-scholars-program
- Focus area: Social science: programs, policies, and practices that reduce inequality in *youth* outcomes, and strategies to improve the use of research evidence in ways that benefit youth.
- Applicant Eligibility: PhD awarded <7 years from time of application.
- Award Amount: $350K over 5 years.
- Data on Awards: 4-6 Scholar Awards are awarded per year.
- Timetable: Applications open 4/23/18; due 7/05/18.
- Notes: Applications include a mentoring plan, and letters from mentors are required. An annual retreat is held to support Scholars' professional development. In years one through three of their awards, Scholars may apply for additional awards to mentor junior researchers of color.

Russell Sage Foundation
Improving Education and Reducing Inequality

- URL: https://www.russellsage.org/funding/improving-education-and-reducing-inequality-united-states
- Field of Research: Educational data mining for insights on the effects of policy on inequality or achievement gaps in education/society.
- Applicant Eligibility: doctoral students, postdoctoral fellows or non-tenured faculty who received their Ph.D. on or after August 31, 2010.
- Award Amount: $20K over a 1 year period; no indirect costs.
- Data on Awards: 5-7 grants expected to be awarded this year.
- Timetable: Applications were due 3/01/18.
- Notes: Applicants should explore the available data at http://seda.stanford.edu to be specific about which data from the project they plan to use and any other data that will be required.

Advice to Applicants

- Carefully read all program materials before applying.
- Do your best to absorb what the ideal proposal includes.
- Keep an eye on your eligibility clock, and look for career interruptions provisions that you may take advantage of.
- Skillfully line up any needed letters of recommendation.
- Choose the best problem to solve, using the best approach.
- Consider using the Need-Approach-Benefits-Competition (NABC) proposal development method.
- Contact campus offices for help:
  - Research Solutions Institute (RSI)
  - Foundation & Corporate Philanthropy (F&CP)
  - Office of Sponsored Programs (OSP)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