Research Funding Opportunities for Early-Career Physics Faculty

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Mission Statement

The Mission of Research Corporation for Science Advancement is to advance early-stage, high-potential, basic scientific research.
RCSA Vision

RCSA provides catalytic funding for grants, conferences and advocacy to support:

• Early career faculty  
• Innovative ideas for transformative research  
• Integration of research and science teaching  
• Collaborative & multidisciplinary research  
• Building tomorrow’s academic cultures
Established 1912
by Frederick Gardner Cottrell
106 Years

Operates with private endowment

Funds research projects primarily from Chemistry, Physics & Astronomy
A History of Supporting Great Scientists

- Supported over 18,000 scientists
- Many important discoveries
- 40 Nobel Laureates including
  - Earnest Lawrence
  - I.I. Rabi
  - Percy Bridgeman
  - Felix Bloch
  - Edward Percell
  - Robert Hofstadter
  - Joseph Taylor
  - Frederick Reines
  - Robert Richardson
  - Carl Wieman
Focus

RCSA *partners* with Universities & Colleges to provide resources for early-career teacher-scholars to establish successful ongoing programs integrating cutting edge research & education.
Cottrell Scholar Award

– Support innovative/transformative research
– Develop early career faculty committed to outstanding research & teaching
– Build/sustain a community of teacher-scholars – the Cottrell Scholars Collaborative
– Promote a culture of excellence in academic science research, education & leadership

Teacher/Scholar Model
Scialog (Science & Dialog)

• Holds annual workshops on important interdisciplinary areas of research
• Builds networks of researchers across disciplines
• Seeds new collaborative teams to pursue highly innovative “blue sky” projects

Selection as a Scialog Fellow is by invitation
Interdisciplinary Scialog Topics

• Solar Energy Conversion
  ➢ chemistry/engineering/materials

• Molecules Come to Life
  ➢ physics/biology

• Time Domain Astrophysics
  ➢ astrophysics/astronomy/data science

• Advanced Energy Storage
  ➢ chemistry/engineering/materials

• Chemical Machinery of the Cell
  ➢ chemistry/biology
Resources

◊ Startup Package
◊ Reduced Loads
◊ Grant Matching
◊ Travel Support
◊ Equipment Funds
◊ Student stipends
◊ Pre-tenure Sabbatical

Expectations

◊ 2 or more proposals yr 1
◊ Set up research yr 1
◊ Involve students yr 1
◊ Revise proposals yr 2
◊ Present results yr 2 & on
◊ Publish results yr 2 & on
◊ Renew grants yr 3 & on
◊ Great teaching yr 1 & on
◊ Service yr 1 or 2 & on
◊ Fly over tenure bar yr 6
Big Picture Expectation

Establish & maintain a productive, exciting, well-funded research program that involves students & flourishes for decades while simultaneously being a great teacher!

Hint:
Integrate research & teaching to succeed
3 Most Important Things to Do before Writing a Proposal

• Read the guidelines & FAQ

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Then Talk with a Program Officer

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Core Idea

How do you select an idea to build a research proposal?
Successful Grant Writing

- Significance
- Originality
- Feasibility
- Address your audience
Statement of the Problem & Scientific Significance

- Put your science in context
- Show knowledge of the field with complete up-to-date references
- Include a clearly stated hypothesis or key idea
- Make a compelling case for significance and originality
Plan of Procedure

- Be specific! Provide details!
- Address feasibility issues and include alternative routes
- Quantitatively estimate expected improvement compared to previous work
- Show long-term goals and sustainability
- Make the case your research program will attract future funding
- Show how your research program involves students
Writing Successful Science Proposals: Third Edition
by Andrew J. Friedland and Carol L. Folt and Jennifer L. Mercer

What Our Readers Are Saying
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