

# Research Funding Opportunities for Early-Career Physics Faculty

Richard Wiener  
Senior Program Director  
Research Corporation for Science Advancement  
Tucson, Arizona

[rw Wiener@rescorp.org](mailto:rw Wiener@rescorp.org)  
[www.rescorp.org](http://www.rescorp.org)

# Mission Statement

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

# RCSA Vision

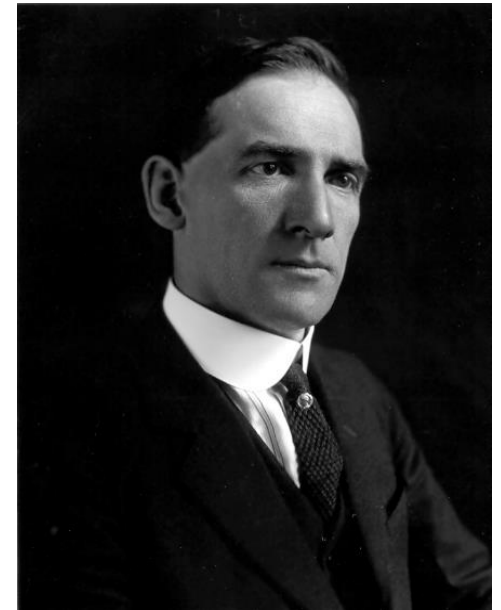
RCSA provides catalytic funding for grants, conferences and advocacy to support:

- 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/transformational 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







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Senior Program Directors:

Silvia Ronco

[sronco@rescorp.org](mailto:sronco@rescorp.org)

Richard Wiener

[rwiener@rescorp.org](mailto:rwiener@rescorp.org)