

# Research Funding Opportunities for Early-Career Physics & Astronomy Faculty

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RESEARCH CORPORATION  
for SCIENCE ADVANCEMENT

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# Mission and Vision

‘Bet on the youngsters. They are long shots but some of them pay off.’

[Frederick Gardner Cottrell](#)

## Mission Statement

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

## Vision

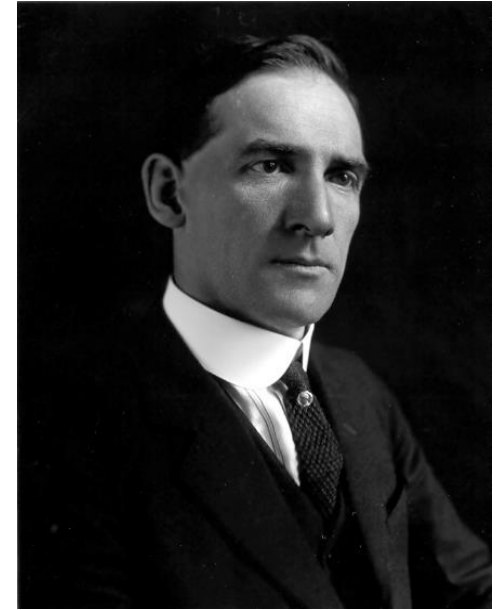
RCSA provides catalytic funding for research and sponsors conferences to support:

- Early career faculty
- Innovative ideas for basic research
- Integration of research and science teaching
- Interdisciplinary research
- Building the academic leadership of the future

Established 1912  
by Frederick Gardner Cottrell  
**110 Years**

Operates with private  
endowment

Funds research projects  
primarily from Chemistry,  
Physics & Astronomy





100<sup>th</sup> Anniversary Party at the Smithsonian

# RCSA has an Amazing History

- Supported nearly 20,000 scientists

- 42 Nobel Laureates including

Earnest Lawrence

Robert Hofstadter

I.I. Rabi

Joseph Taylor

Percy Bridgeman

Frederick Reines

Felix Bloch

Robert Richardson

Edward Percell

Carl Wieman

Donna Strickland (CS 2000)

David MacMillan (CS 2001)

# Two Flagship Programs

(both focus on early career faculty)

- SCIALOG



- Cottrell Scholar



# 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 (self-nominations accepted)
- Many participants are Cottrell Scholars



# Current Interdisciplinary Scialog Themes

- Signatures of Life in the Universe (SLU)
  - Astrobiology, Astrophysics, Planetary Science
- Microbiome, Neurobiology, and Disease (MND)
  - Physiology, Neurobiology, Bacteriology, Microbiology
- Advancing Bio-Imaging (ABI)
  - Biology, Chemistry, Physics, Imaging Science
- Mitigating Zoonotic Threats (MZT)
  - Immunology, Virology, Epidemiology, Animal Science
- Negative Emissions Science (NES)
  - Chemistry, Chemical Engineering, Materials Science



# Cottrell Scholar Award

- 24 outstanding young scientists join the ranks each year (approximately 16 RU + 8 PUI)
- 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 diverse, equitable, inclusive culture of excellence in academic science research, education & leadership

Teacher/Scholar Model

# Your Institution has Invested in You

## 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 Expectations

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

## Strategy:

Integrate research & teaching to succeed

Exactly what the Cottrell Scholar program is looking for

# How do you select a core idea to build a research proposal around ?

- It should move the field forward
- It should be something that excites you

# Reviewers Look For:

- Significance
- Originality
- Feasibility

Ask Yourself This:

What would the reaction of the best people in the field be to your idea ?

# 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
- Have a realistic scope & timeline.

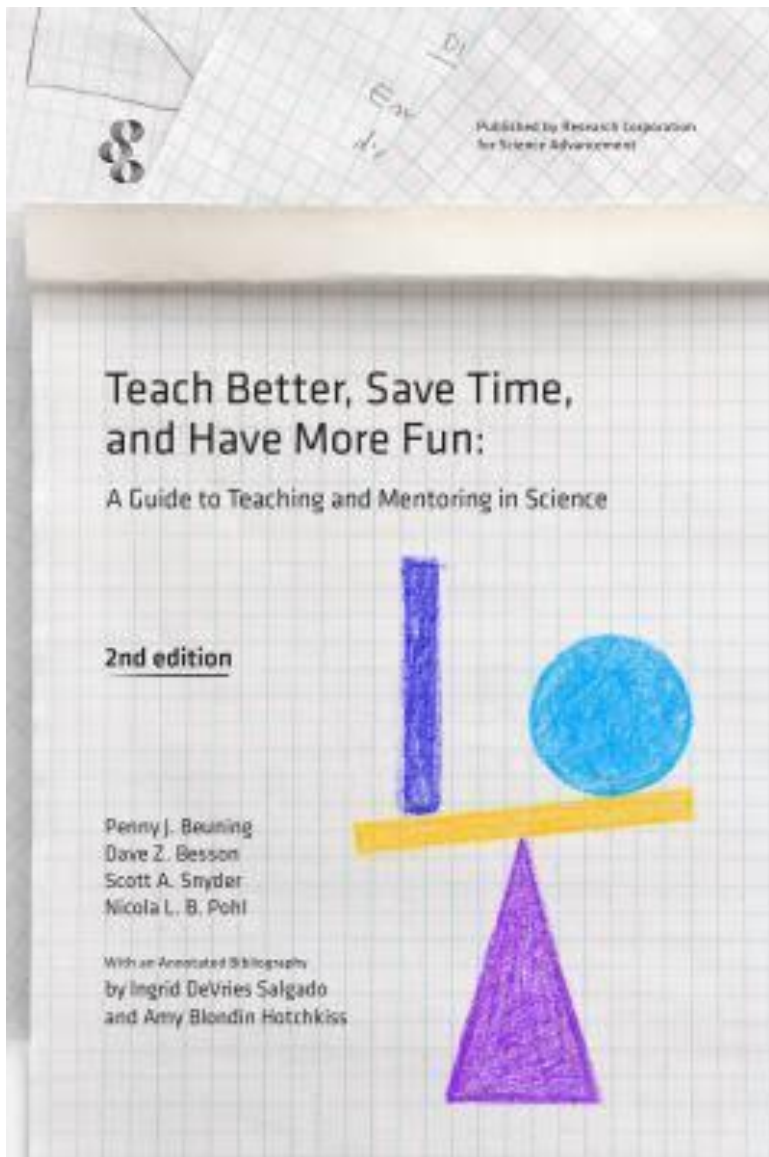
# Richard's “3 Most Important Things to do before Writing a Proposal”

- Read the guidelines & FAQ
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Then Talk with a Program Director

[www.rescorp.org](http://www.rescorp.org)





# WRITING SUCCESSFUL SCIENCE PROPOSALS

THIRD EDITION

ANDREW J. FRIEDLAND  
CAROL L. FOLT  
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