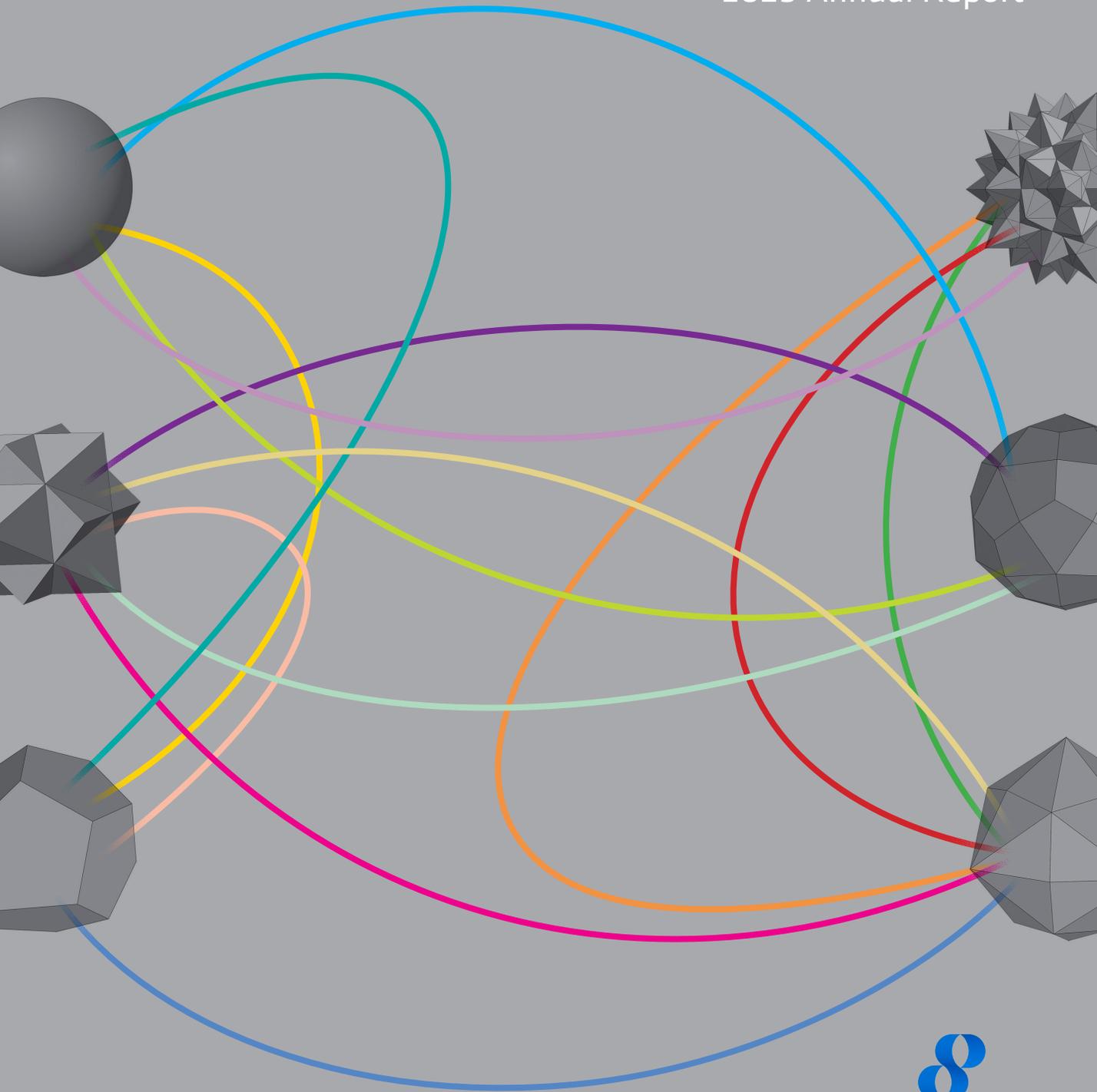


Collaborating for Science

2013 Annual Report



RESEARCH CORPORATION 
for SCIENCE ADVANCEMENT
A foundation dedicated to science since 1912.

President's Message



Robert N. Shelton

The Collaborative Era in science is proceeding apace, accelerated by previous successes and the resulting revelation that Nature grows ever more complex as our bench work focuses increasingly on the nanoscale and our theoretical horizons expand to include the possibility of a multiverse.

Although one could have easily made the same statement at the dawn of the 20th century, today is an exciting time to assume the presidency of Research Corporation for Science Advancement (RCSA). It is a privilege for which I am deeply grateful.

For more than a century, RCSA has empowered early career researchers to pioneer achievements along the cutting edges of the physical sciences. Its commitment to innovation remains as strong today as it was in 1912, when UC Berkeley physical chemist Frederick G. Cottrell, a true and passionate progressive in an era of hope and accelerating change, founded what was then America's second philanthropic foundation (after the Carnegie Corporation).

During the ensuing decades RCSA has consistently assisted young researchers to achieve countless scientific victories—from modern rocketry, to atomic energy, electronic computing, radio astronomy and creating the very first Bose-Einstein condensate, to name a mere handful of advances.

But with every advance, with every leap in understanding, the challenges we face on this finite planet seem to multiply along with our burgeoning population. Meanwhile, as the complexity of our science has deepened, we in the United States have experienced a decline in the government funding of basic research so essential to building a sustainable future.

These are some of the reasons why, in 2013, my distinguished predecessor as RCSA president, Jack Pladziewicz, an accomplished inorganic chemist, committed this organization to work closely with five other foundations to form the Science Philanthropy Alliance (SPA). His compelling report on those efforts is featured prominently in this annual report and on RCSA's website (www.rescorp.org).

SPA is a prime example of the increasing levels of collaboration in science. As the former president of a leading R1 institution, the University of Arizona, I can assure you that collaboration is key to the progress humankind requires to prosper in the coming decades. We must improve and intensify our collaborations not only on the complex frontiers of the physical sciences, but also when it comes to improving the quality and diversity of the next generation of scientists; that is, in science education.

RCSA has a powerful tradition of convening scientists from many disciplines to encourage vital collaborations in research and education, as the brief articles in this document will attest. In the year just past, thanks to Dr. Pladziewicz's efforts, the foundation has taken the principle of collaboration to the next level in the realm of science philanthropy.

However, America's generous and forward-looking science philanthropies are no substitute for federal funding and the active collaboration of politicians and government officials who understand the necessity and vital strategic importance of basic research in the 21st century.

We at RCSA understand these issues, and we will passionately continue to champion the art—and science—of collaboration in the years to come.

Robert N. Shelton
President and CEO
Research Corporation for Science Advancement

“I can assure you that collaboration is key to the progress humankind requires to prosper in the coming decades”

Programs Overview for 2013



Science + Dialog

A Research Process Aimed at Accelerating Breakthroughs

Scialog funds network building among early career scientists, encouraging them to conduct discovery research. The hypothesis is that small, but well targeted grants to highly innovative cross-disciplinary teams with high-risk, untested ideas can be highly impactful—especially when these scientists are brought together in a unique environment and challenged to form collaborations based on ideas that emerge from multidisciplinary dialog. Scialog is intended to incentivize collaborative idea generation across disciplines among carefully chosen cohorts. The goal is rapid progress in the face of important global challenges.

Cottrell Scholar Awards

Creating a Community of Scientist-Educators

The Cottrell Scholar Award Program (CSA) funds early career faculty in the physical sciences and related fields who are committed to excellence in both undergraduate teaching and research at U.S. research universities. The premise is that the right combination of high-caliber research, integrated with modern, interactive educational tools, creates the perfect environment for scientific breakthroughs and outstanding learning outcomes for the next generation of U.S. scientists.

Cottrell College Science Awards

Catalyzing Early Career Scientists to Begin Their Research Careers

The Cottrell College Science Award Program (CCSA) supports the start of high-quality research programs conducted by early career faculty and their students at primarily undergraduate institutions. By funding cutting-edge science, the CCSA program helps initiate long-lived thriving research environments that make solid contributions to science while inspiring tomorrow's scientists

Partners in Science

Improving Science Education in Grades 9-12

This program provides summer research opportunities for science high-school teachers in partnership with faculty members at the University of Arizona. AZPART seeks to improve grades 9-12 science education, decrease teacher attrition, and increase the number of students who choose to pursue science careers.

Scialog fellows explore ideas for breakthrough research.



Accelerating Progress Through Collaboration



Jack Pladziewicz

“The key has been to stay focused on mission and strategically seek opportunities that organically grow from our strengths and those of our partners in a compelling and complementary way”

What can foundations learn from the successes of the most productive scientists they fund?

A primary lesson in today's research milieu is that progress is accelerated by collaboration and partnerships among those with complementary knowledge and skills.

Although RCSA's primary focus has been on its own programs funding early career scientists doing basic research, during the past few years the foundation has made a concerted effort to form partnerships that leverage its resources and amplify its impact.

An example is the recent addition of CS Collaborative Awards to RCSA's Cottrell Scholars program. This program funds teams of Scholars focused on improving STEM teaching.

One of these CS Collaborative Awards recently led to the development of the Chemistry New Faculty Workshops aimed at sharing the knowledge and successful approaches of experienced teacher-scholars with new faculty. These workshops are conducted in partnership with the American Chemical Society (ACS) and held in their offices in Washington, D.C.

Another CS Collaborative Award has matched the common interest of the Association of American Universities (AAU) and a group of Cottrell Scholars in the measurement and definition of effective STEM teaching in universities. AAU has its greatest influence with university leaders—presidents, provosts and deans; while RCSA's CS cohort (currently ~250 Scholars nationwide) brings a faculty perspective, experience and credibility to the project.

While the majority of potential partnerships simply do not match RCSA's mission, strengths and resources, some do. The key has been to stay focused on mission and strategically seek opportunities that organically grow from our strengths and those of our partners in a compelling and complementary way.

In 2013, RCSA took a major step in partnering with five other philanthropies—Alfred P. Sloan Foundation, Gordon and Betty Moore Foundation, Howard Hughes Medical Institutes, Kavli Foundation and the Simons Foundation—to form the Science Philanthropy Alliance. The Alliance is working to address the emerging crisis caused by underfunding basic research by government and industry: by harvesting the technological and economic benefits of past scientific discovery without re-investing in ongoing discovery the U.S. is eating the seed corn from which it would grow its future prosperity. The Alliance's goal is to bring attention to the risk of underfunding basic research and increase philanthropic support for it by private philanthropy by \$1B within five years.

Also in 2013, RCSA joined five other foundations with support from the White House Office of Science and Technology Policy to offer an “ideation competition” seeking original, highly creative ideas on what the next highest-impact platform technology might be (e.g., STM, MRI, CCD, Fourier transform).

In addition, RCSA and the Gordon and Betty Moore Foundation began planning for a new Scialog® at the intersection of computational and theoretical physics with biology. This area is prime for significant advancement in understanding how the molecules found within cells aggregate to form catalytic surfaces and functioning organelles, how they signal and network and, ultimately, how molecules come to life.

As with all of these collaborations, we anticipate bringing you news of innovative results in 2014 and beyond.

Jack Pladziewicz

Former President and CEO

Research Corporation for Science Advancement

Awards and Highlights for 2013

Mission Statement:
RCSA is a foundation for the advancement of science that provides catalytic and opportunistic funding for innovative scientific research and the development of academic scientists, which will have a lasting impact on science and society.

Cottrell Scholar Jairo Sinova

Physics, Texas A&M University

received an Alexander von Humboldt Professorship—one of the most eminent and highly endowed research posts in Germany—in recognition of outstanding achievements in spintronics. The work will be done at the Johannes Gutenberg University, Mainz.

Cottrell Scholar Jennifer Ross

Physics, University of Massachusetts, Amherst

received the Biophysical Society's Margaret Oakley Dayhoff Award. Ross was honored for her innovative and productive research in the field of molecular motors. She is noted for using model systems to define how motors are regulated in the complex environment of the cell.

A team of undergraduates working under Nicholas Robertson

at Northland College in Ashland, Wisconsin

developed a promising new way to “unzip” waste plastics for purification and use in the manufacture of high-quality recycled polymers. Their work was covered in a lead article in Chemistry World. Robertson is supported by a Cottrell College Science Award (CCSA).

Cottrell Scholar Gordana Dukovic

Chemistry and biochemistry, University of Colorado, Boulder

was named a Beckman Young Investigator by the Arnold and Mabel Beckman Foundation, one of only seven early career faculty in the chemical and life sciences to receive the honor in 2013.

Cottrell Scholar Albert Bolatto

was the lead author of “Suppression of star formation in the galaxy NGC 253 by a starburst-driven molecular wind,” published in Nature, 25 July 2013.

Cottrell Scholar Melanie Sanford

University of Michigan

won the IPATIEFF prize. It recognizes outstanding chemical experimental work in the field of catalysis or high pressure, carried out by an individual 40 or younger.

Cottrell Scholar Mats Selen

Physics, University of Illinois, Urbana-Champaign

and two of his colleagues received the 2013 Excellence in Physics Education Award from The American Physical Society.

Former CCSA Awardee Sean Decatur

was designated president of Kenyon College in 2013. RCSA funded Decatur in 1996 while he was an assistant professor at Mount Holyoke College. Before moving to Kenyon, Decatur served as dean of faculty at Oberlin College. Tim Elgren, another CCSA recipient, will replace Decatur at Oberlin.

Mario Affatigato

Coe College, Cedar Rapids, Iowa

received the RCSA-sponsored American Physical Society Prize for Research at an Undergraduate Institution.

Nancy S. Mills

Trinity University, San Antonio, Texas

Received the RCSA sponsored American Chemical Society Award for Research at an Undergraduate Institution.

Cottrell Scholars Collaborative

forty-three newly minted professors from 35 universities across the U.S. attended the second-annual Cottrell Scholars Collaborative New Faculty Workshop for beginning chemistry faculty July 25-27, 2013, in Washington, D.C. The workshop, open to new hires in chemistry departments at major research universities, was sponsored by RCSA and hosted by the American Chemical Society.

Cottrell Scholar Andrew Feig

Chemistry, Wayne State University

spoke on behalf of the Cottrell Scholars Collaborative at a July congressional briefing before members of the U.S. House STEM Education Caucus. The event, "The Landscape of Undergraduate STEM Education Reform: A Snapshot of Current National Initiatives," was hosted by the Association of American Universities, the Association of Public and Land-grant Universities, the Business of Higher Education Forum and RCSA and took place at the Rayburn House Office Building in Washington, D.C. It was held on the eve of the CSC New Faculty Workshop.

Scialog Fellow Teri Odom, Northwestern University, discusses light-trapping nanostructures at the 2013 Scialog Conference.



2013 Financial Summary

The financial activities of Research Corporation for Science Advancement were audited by Keegan, Linscott & Kenon, PC. For the complete audited financial statement, please visit our website at rescorp.org.

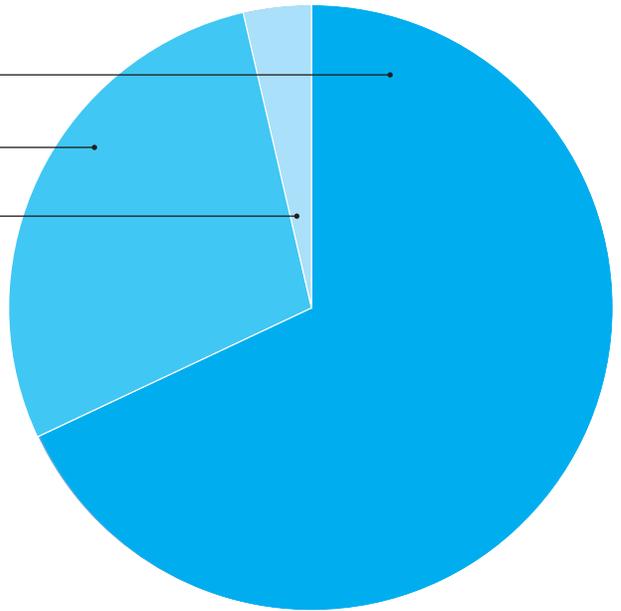
Where Our Money Goes

Total Expenses \$6,016,283

Program Expenses, Including Grants & Awards **68%**

General & Administrative Costs **28%**

Partnership Development & Fundraising **4%**



Grants and Awards \$2,583,254

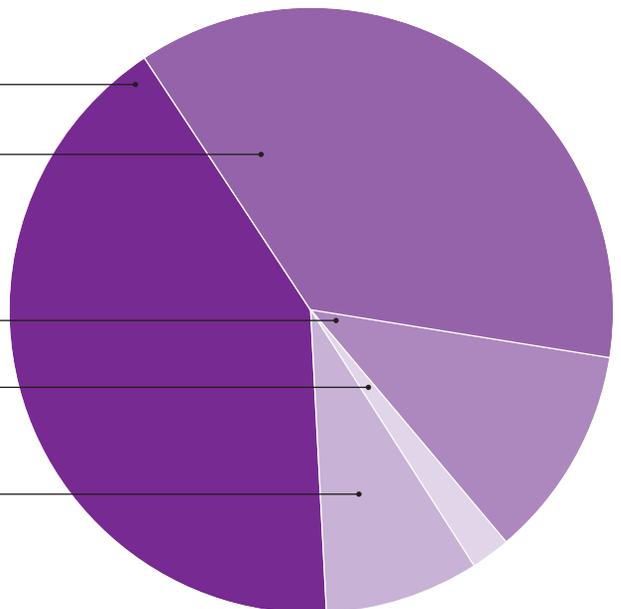
Scialog **41%**

Cottrell Scholar **37%**

Cottrell College Science **11%**

Arizona Partners in Science **2%**

Science in the Public Interest, Discretionary Grants & Special Initiatives **9%**



Net Assets at Beginning of Year \$141,324,688

Net Assets at End of Year \$157,372,926

RCSA 2013 Board of Directors

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
- Interdisciplinary research
- Building tomorrow's academic cultures

RCSA Values: Inclusiveness, respect, accountability, appreciation, trust. Founded in 1912 America's first foundation dedicated solely to science.

Patrick S. Osmer

Chair of the Board
Presidential Search Committee

Jack Pladziewicz

Interim President/CEO
Executive, Presidential Search committees

G. Scott Clemons

Treasurer
Finance (Chair), Executive, Strategic Partnerships, Presidential Search committees

Robert B. Hallock

Secretary
Science Advancement (Chair), Executive, Governance & Nominating, Strategic Partnerships, Presidential Search committees

Gayle P.W. Jackson

Strategic Partnerships (Chair), Executive, Finance, Governance & Nominating, Presidential Search committees

Brent L. Iverson

Governance & Nominating (Chair), Executive, Audit, Finance, Science Advancement, Presidential Search committees

David Wenner

Finance, Science Advancement committees

Jonathan Hook

Audit, Finance committees

Peter K. Dorhout

Audit (Chair), Presidential Search (Chair), Executive, Science Advancement committees

Elizabeth McCormack

Governance & Nominating, Science Advancement, Strategic Partnerships committees

Voted Emeritæ Status in 2013

Patricia Barron

Governance & Nominating, Strategic Partnerships committees

Suzanne Jaffe

Finance, Strategic Partnerships committees

Active Emeriti

Stuart Crampton

Finance, Science Advancement committees

Robert Holland, Jr.

Audit, Strategic Partnerships committees

John Schaefer

Finance Committee

Strategic Planning Task Force

Brent Iverson

G. Scott Clemons

Elizabeth McCormack

Dave Wenner

Jack Pladziewicz

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