

THE ROCKEFELLER UNIVERSITY

INSTITUTE FOR LONG-TERM THINKING AND NOVEL DISCOVERY

The Rockefeller University, located in New York City, is a world-renowned center for research and graduate education, with 75 laboratories working in the biomedical sciences and chemistry, as well as physics and mathematics as applied to biological questions. Founded in 1901, it was the first institution in the United States devoted solely to research in the life sciences. Today, as funding for basic science is increasingly under threat, The Rockefeller University is seeking to create an Institute for Long-Term Thinking and Novel Discovery, to preserve and enhance the University's **core founding principles**:

- **Hire the boldest and most creative scientists**
- **Give them the freedom to conduct high-risk basic science**
- **Back them and their ideas with long-term financial support**

Over the years, 24 Rockefeller scientists have received the Nobel Prize. Currently, 33 members of Rockefeller's senior faculty—nearly half—have been elected to membership in the National Academy of Sciences. In 2014, Rockefeller placed first in the CWTS Leiden Ranking, which measures citation impact and scientific collaboration. Rockefeller has the highest percentage of frequently cited science publications among 750 top universities worldwide.

Why an Institute for Long-Term Thinking and Novel Discovery?

The Rockefeller University was established to advance the scientific understanding of life for the benefit of humanity. The institution's founders recognized that practical outcomes would flow from investing in curiosity-driven science. History has proven them to be correct, and the University has never altered its course. As President Marc Tessier-Lavigne has said, you cannot apply what you don't know—and knowledge comes from fundamental investigations conducted by brilliant, original thinkers. Rockefeller's proposed **Institute for Long-Term Thinking and Novel Discovery** was conceived in January 2013 to ensure that there would never be a shortage of funds to make long-term bets on outstanding scientists with visionary ideas. The Institute will safeguard the core mission of the University.

The Institute will function like a funding agency within the University, directing resources and support to imaginative, high-risk studies that challenge conventional wisdom. Such studies are rarely funded by federal grants or other traditional sources. Most of these studies will need a long-term horizon, such as five to ten years. But the investigations will be of the kind that break open new fields and lead to novel discovery.

What Will the Institute Fund?

- Grants to individual scientists for **long-term research projects**.
- **Seed grants** to scientists to conduct high-risk, novel research.
- **Recruitment of young investigators**, at the Independent Fellow or Tenure-Track level, who want to undertake ambitious projects with a **five to seven year time frame**.

- Support for the University's **theorists, mathematicians, and physicists** who have big questions and ideas related to biological discovery, and need long-term funding to explore them.
- Support for scientists within the University or recruited externally who want to explore a **new approach or field**. A good example is Rod MacKinnon, who came to Rockefeller to solve the molecular structure of the potassium ion channel—and succeeded. Seven years after joining the University's faculty, he received the Nobel Prize in Chemistry for that work.
- The **acquisition of new equipment or technology** for investigators who need it to move their science forward. A good current example of this is **cryo-electron microscopy**, which is destined to revolutionize the life sciences by making it possible to image macromolecules at atomic resolution.

What Kind of Grants Will Be Awarded?

I. Institution-Focused Grants

1. Acquisition of technology, tools, and instrumentation specific to basic science discoveries
2. Support for theorists and experimentalists in math and physics working on biological problems
3. New faculty start-up costs that are not covered by conventional funding sources

II. Internally-Competitive Peer Reviewed Awards

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| 1. One-year pilot/seed grants | \$25,000 to \$100,000 |
| 2. Multi-year commitments for novel research projects (3 to 5 years) | \$200,000 to \$1,000,000 |
| 3. Interdisciplinary collaborations involving several laboratory teams | \$1,000,000 and up |

Naming opportunities will be available for all of the Institute's grant programs. In addition, The Rockefeller University is seeking a \$100 million gift in a combination of endowment and expendable funds to name the Institute itself.

While the Institute's funding ability will be modest in comparison to Rockefeller's \$300+ million overall yearly budget, its grants will have **enormous leverage**. Providing seed money to scientists asking unconventional, unorthodox questions will enable the scientists to develop their projects to the point where the NIH and other agencies will be willing to invest in them.

How Will the Projects and Scientists Be Selected?

Applications will be solicited through an internal competitive program, and assessed with a combination of internal and independent external review panels. Awards will be monitored by

the University's **Committee on Scientific Affairs, a Board of Trustees committee composed of external scientists with responsibility for reviewing academic and research affairs.**

The Institute will require only brief applications and, if modifications are needed, will request only limited revisions. While most funding agencies—government and foundation—take many months to make a decision on an application, the Institute will respond in four to six weeks.

Rockefeller Partners with Benefactors Who Contribute to Basic Science

The Rockefeller University will be a full and active partner with any and all benefactors to the Institute for Long-Term Thinking and Novel Discovery. There is a critical ingredient that has made Rockefeller a remarkable incubator of ideas—*private philanthropy*. **The ability to conduct high-risk, high-reward research requires private support**, and Rockefeller has consistently dedicated a percentage of its budget for “venture capital” support of its world-class scientists. The University backs its investigators with time, freedom, and a degree of unrestricted support that has enabled it to attract and retain the best and the brightest people working in science.

Rockefeller is unique in that it pays the full salary of its faculty members who head laboratories.

At many biomedical research institutions, professors are asked to seek external grants to cover their salaries. **Over and above covering faculty salaries, Rockefeller also provides an annual “core grant” to every lab head.** These grants are precious because they enable Rockefeller investigators to launch and sustain high-risk projects. The core grant is a kind of “institutional venture capital” that gives each Rockefeller laboratory head the opportunity to try something bold and ambitious.

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Despite the generous measure of unrestricted funding that The Rockefeller University provides to its tenured and tenure-track scientists, its core basic science mission is threatened and under siege today. Medical research is enormously expensive, and NIH has lost 25% of its purchasing power since its peak in 2003. Moreover, most private funders and industry partners today are interested in supporting *translational* research, and the scientific culture overall has become more focused on a short-term, bottom line horizon. Rockefeller's scientists are struggling to find sources of support for their imaginative ideas.

The creation of the **Institute for Long-Term Thinking and Novel Discovery** is an ambitious effort to respond to these challenges. The Institute will fuel great science during what is without a doubt the most promising time in history for biomedical research. It is impossible to predict where the next big discoveries and breakthroughs will come from, and thus it is important to invest broadly in curiosity-driven science.

For more information about The Rockefeller University, visit the following links:

- [About The Rockefeller University](#)
- [Top Placement in 2014 CWTS Leiden Ranking](#)