

What's New at the Petroleum Research Fund?

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The Petroleum Research Fund was founded in 1944 to support “advanced scientific education and fundamental research in the “petroleum field””. The work may include “any field of pure science which ... may afford a basis for subsequent research directly connected with the petroleum field.” The “petroleum field” as defined by the fund includes: (1) exploration for, and the production, transportation and refining of, petroleum, petroleum products and natural gas, and (2) the production and refining of substitutes for petroleum and petroleum products from natural gas, coal, shale, tar sands and like materials.

The fund was started as trust which was to receive the income of United Oil Products (UOP) in 1944. Unfortunately, UOP had no income in the early years of its association with the Fund and as a result, no funds were available to fund research until 1954, 10 years after the creation of the Fund. By 1956, it was clear that the company, UOP could not be a viable operation without access to its own income and in 1959, the original trust document was changed to allow the sale of UOP and the conversion of the company to a diversified portfolio of securities. The value of the Fund at this point in time was \$72.5 million. These were held in trust by the Guaranty Trust Company, later Morgan Guaranty. In the late 1990s, the question was raised as to whether or not 5% of the corpus of the fund could be used instead of being restricted to the income from the trust. The Attorney General of the State of New York decided at the time that the trust could not be changed but could be dissolved under its own terms and reconstituted in Washington, DC. As a result, in 2001 the Fund was transferred to the American Chemical Society.

The Fund has committed over \$500 million to the community in support of research over its lifetime. Known primarily for support of new faculty and undergraduate institutions, the Fund commits between \$23 and \$25 million per year in support of its mandated mission. The majority of the money goes to established investigators at research institutions.

Over 19,000 articles in ACS journals have been published acknowledging PRF support. The Fund is well represented in other publications as well. Twenty four grantees have received Nobel prizes; several of these had PRF grants prior to receiving their prize which had titles similar to their Nobel Prize citation. Many grantees have gone on to become members of the National Academies and each year the majority of the award winners at the ACS meeting have at one time or another been funded by PRF.

In 2005 the current Director of the Fund, reviewed the history, the programs and the governance structure responsible for guiding the fund. It was clear at that time that the Fund was not aligned with norms in the philanthropic community. In particular, the Fund had limited strategic oversight. The Fund fell under the auspices of the Board of Directors of the American Chemical Society which delegated oversight to the Board

Standing Committee on Grants & Awards. While certainly serious in exerting their responsibility to govern the Fund and its programs, the committee was not able to devote sufficient time to developing a comprehensive strategic plan for the Fund. Secondly, evaluation plans and practices were missing. Modern philanthropic practice requires clear definition of programs in terms of the goals the program is attempting to achieve and clear measurements of success. The Fund had in place an absolutely first rate process for selecting grantees from the pool of applicants, however there was no mechanism in place for determining the efficacy of the programs or for evaluating whether some pilot programs which had been created should be continued or terminated. Certainly there was no process for understanding whether or not the Fund was supporting the “right” or ‘best’ activities through its programs.

In early 2006, the Petroleum Research Fund Advisory Board and the Board Standing Committee on Grants & Awards were asked to authorize a comprehensive review of the Fund. A consultant with considerable experience in strategic planning and change management for philanthropic organizations was brought in to work with the Director and the PRF staff to determine the operational baseline, the aspirational goals of the fund and to help develop a path to a strategic plan which would be focused on those goals.

The Board of Directors and the selected Advisory Board members were interviewed in addition, several community stakeholders and representatives of counterpart funding agencies were interviewed as well. It soon became very clear that the community had three clear goals for the Fund:

- Support of young faculty members at research and undergraduate institutions.
- Support for undergraduate institutions through the engagement of undergraduate students in scientific research.
- Grants to research institutions should have a clear and significant research impact.

A Steering Committee consisting of members of the Grants & Awards Committee and the PRF Advisory Board was assembled to guide the programs of the Fund toward a direction consistent with the above three goals and to develop a governance structure appropriate for such a large research fund.

The Steering Committee developed a vision statement for the Fund which was later modified in cooperation with the Planning Committee of the PRF Advisory Board. That statement is:

The ACS Petroleum Research Fund will support innovative fundamental research, advanced scientific education, and the careers of scientists, to aid in significantly increasing the world’s energy options.

In order to determine the community’s response to the change, a workshop was held seeking community input. The starting point for this work was the already develop goals listed above and the vision statement. The External Review Workshop was held on January. The workshop reinforced the goals as outlined and in addition, added some

ideas which were not anticipated. In particular, it was suggested that multidisciplinary, multi-investigator grants be created, a portion of the fund should be set aside to fund high risk, high impact research and that the visibility of the fund should be enhanced through the creation of a “signature” event. In terms of staff operations, it was suggested that a fund be set aside for the Director to use at his discretion, that PRF Program Staff be granted more decision making authority and that *ad hoc* panels be used for proposal review to relieve pressure on the reviewer community.

The information from the goals, the development of the vision and the feedback from the workshop provided a basis for a revised program proposal for the fund. The revised set of programs for the Fund was developed by the Steering Committee. These were fleshed out and refined by staff and presented first to the Advisory Board and with their recommendation to the Board Standing Committee on Grants & Awards for approval and authorization.

The resulting programs are as follows:

- New Investigator Grants

For scientists and engineers who are within the first three years of their first academic appointment. One program is for new investigators at Ph.D. granting institutions, a second is for new investigators at primarily undergraduate institutions.

- New Directions Grants

For scientists and engineers who have very limited or even no preliminary results for a new research project they wish to pursue, especially in an area that they have not worked in before. It is expected that the PRF funded preliminary results would be used to seek continuation funding from other agencies.

- Undergraduate Research Grants

For scientists and engineers with established programs of research at primarily undergraduate institutions.

The Steering Committee sought and received approval of these programs from the Committee on Grants & Awards, however the committee also wanted to address the issues of high impact and multidisciplinary research. As a result, the committee established working groups for three additional programs. The groups studied and developed additional programs which were presented for recommendation to the Advisory Board and subsequently for approval to the Committee on Grants & Awards.

These programs are as follows:

- Exceptional Innovation Grants

To stimulate exceptionally innovative fundamental research in the petroleum and energy and related fields; to provide “seed” funding for potentially high reward research; to provide a venue for testing novel concepts and/or addressing key energy related science gaps; to populate the front end of the innovation pipeline with new technical concepts and leads.

- Strategic and Multidisciplinary Research Grants

Designed to address key technology barriers that, if overcome, would have a high impact; use of a fundamental research approach which may be higher risk, require longer term solutions and be both novel and non-incremental; specifically address those barriers that require a multi-disciplinary approach.

- Fellowships for Increasing Representation of Underrepresented Minority or Women Scientists and Engineers in Academia.

Fellowships or other support directly to potential faculty aimed at increasing the representation of underrepresented minority or women faculty in academia. The grants are aimed at empowering and educating these communities as the transition is made from graduate school to post-doctoral research to first academic appointment.