NSF PIRE and Fulbright programs: Participant’s and reviewer’s perspectives

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Environmental Science and Policy program
1) “The primary goal of PIRE is to support high quality projects in which advances in research and education could not occur without international collaboration.” ([http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12819](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12819))


3) Competitive: ~200 pre-proposals → ~20 full proposals → ~ 10 awards

4) Institutionally-limited

5) NSF review
   - ~ “Pass/fail” on research. More nuanced evaluation of the education model
   - Roughly two types of successful proposals: “unique opportunity” or “unique team”
   - PIRE is still an experimental program. No “best PIRE practices” manual yet. Looking for new models of doing research internationally and training students to be “global scientists and engineers”
Partnerships for International Research and Education (PIRE) program
Intro and Goals

About PCP PIRE

The Panama Canal is currently being expanded on a scale not seen since the original excavations one hundred years ago. During this current expansion, important new Neogene fossiliferous deposits are being uncovered. The mission of the PCP PIRE is to advance knowledge of the extinct faunas and floras of the ancient Neotropics based on the new fossil discoveries along the Canal. Consistent with NSF's PIRE program objectives, university students (undergraduate and graduate), postdocs, and faculty are engaging in PCP paleontological, geological, and biological research and Broader Impacts outreach. The ultimate outcome of the PCP PIRE will be to promote discovery and advance knowledge while training the next generation of scientists better able to engage in international experiences.
Suggestions for applicants (part 1)

• What is your “model” and what are your model’s key components?
  • NSF is looking for innovative ideas (and struggles with evaluation metrics)
  • Consider PIRE’s holistic goal of developing global citizens. More than simply competitive in jobs and technology markets.
• Most teams are highly interdisciplinary
• Outreach is increasingly emphasized
• Extra considerations when choosing partners
  • Think of the educational model, not just research needs
  • Have a contingency plan for the case of a no-go at the institutional selection stage
  • Consider being a partner Institution, not the lead.
• NSF is looking for disciplinary but also institutional impact
Strategic Partnership
Advanced Membrane Technologies for Sustainable Water Reuse

MSU-based activities include
- interdisciplinary research
- fundamental research
- translation research

- multiphase transport processes
- new functional membrane materials
- environmental microbiology and genomics

- new membrane-based processes enabling energy-efficient water reuse
  - Thrust I
  - Thrust II
  - Thrust III
  - hybrid oxidation-membrane separation processes
  - Nanostructured membranes for virus removal/detection
  - Affinity-based processes for ultrahigh flux and oil-water separations

building institutional capacity
- regional links
- education
- ADVANCE program

- HSHSP

research collaborations
- international
- with
- Istanbul Technical University, Turkey
- Nanyang Technological University, Singapore

applications in support of regional needs
- other
- Great Lakes invasive species control (ship ballast water)
- Shipboard water treatment
- Membrane bioreactors for agricultural applications

MSU Study Abroad
- Universite Paul Sabatier, France

Center for Engineering Education Research
- Lansing Community College
Water and Commerce: Technologies to enable environmental sustainability in global markets

Industrial partners
- GE Power & Water
- Veolia
- CDM Smith
- Singapore Public Utility Board
- M-I SWACO/Schlumberger
- Turkish Petroleum Corporation
- Produced Water Society
- U.S. Office of Naval Research
- Istanbul Municipality EPA
- Great Ships Initiative
- Pace Technologies
- Environmental Defense Fund
- SPEC Services
- InPore Technologies

Institutional partners:
- College of Engineering
- College of Agriculture and Natural Resources
- College of Natural Science
- Broad College of Business
- James Madison College
- Center for European, Russian and Eurasian Studies
- Environmental Science and Policy Program
Suggestions for applicants (part 2)

- Areas other than Europe and Asia are underrepresented in PIRE
- Think proactively of balancing funding support within PIRE
  - Especially important for partners from developing countries
  - With very few exceptions, U.S. NSF PIRE funding is for U.S. participants
  - PEER, CRDF, NATO, other "NSFs", binational programs (e.g. PUF) ... See Newtons list
- Resources:
  - OVPRGS
  - negotiate with your Dean
  - consider hiring outside consultant
- Why would your proposed PIRE work not possible without the international partners?
<table>
<thead>
<tr>
<th>Title</th>
<th>Countries</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIRE: Water and Commerce: Technologies to enable environmental sustainability in global markets</td>
<td>France, Turkey, Singapore</td>
<td>$4,750,443</td>
</tr>
<tr>
<td>PIRE: Low Energy Options for Making Water from Wastewater</td>
<td>Australia</td>
<td>$4,858,314</td>
</tr>
<tr>
<td>PIRE: Sustainability, Ecosystem Services and Bioenergy Development across the Americas</td>
<td>Argentina, Brazil, Mexico</td>
<td>$4,841,735</td>
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<tr>
<td>PIRE: Nuclear Energy Systems and Materials under Extreme Conditions</td>
<td>Japan, Russia, Germany, Ireland</td>
<td>$3,916,844</td>
</tr>
<tr>
<td>PIRE: US-Denmark Cooperative Research and Education in Intermittency</td>
<td>Denmark</td>
<td>$4,501,750</td>
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<tr>
<td>PIRE: Materials for Renewable Energy NaturE's Way (RENEW)</td>
<td>UK, Brazil, Italy, Belgium</td>
<td>$3,800,000</td>
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<tr>
<td>PIRE: USA/Europe Partnership for Integrated Research and Education in Wind Energy Intermittency: From Wind Farm Turbulence to Economic Management</td>
<td>Denmark, Spain, Switzerland, Netherlands, Belgium</td>
<td>$4,302,110</td>
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<tr>
<td>PIRE: Context Sensitive Implementations of Synergistic Water-Energy Systems</td>
<td>Netherlands, Belize, Mexico, UK, Czech Republic</td>
<td>$3,900,644</td>
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<tr>
<td>PIRE: Advancing Earth Dam and Levee Sustainability through Monitoring Science and Condition Assessment</td>
<td>Netherlands, France, Bangladesh</td>
<td>$3,857,960</td>
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<td>PIRE: Developing Low-Carbon Cities in the USA, China &amp; India through Inter-Disciplinary Integration Across Engineering, Environmental Sciences, Social Sciences &amp; Public Health</td>
<td>India, China</td>
<td>$4,450,093</td>
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<tr>
<td>PIRE: Assembly of Marine Biodiversity Along Geographic and Anthropogenic Stress Gradients</td>
<td>Indonesia</td>
<td>$4,872,672</td>
</tr>
<tr>
<td>PIRE: Mapping evolutionary process in the face of climate change: an integrated approach to education and conservation prioritization in Central Africa</td>
<td>Cameroon, Gabon, United Kingdom, Germany</td>
<td>$4,950,000</td>
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Top Producers of U.S. Fulbright Scholars and Students

Institutions Producing the Most Fulbright Scholars, by Type, 2014-15

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Number of awards</th>
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</thead>
<tbody>
<tr>
<td>U. of California at Berkeley</td>
<td>10</td>
</tr>
<tr>
<td>Harvard U.</td>
<td>9</td>
</tr>
<tr>
<td>U. of Florida</td>
<td>8</td>
</tr>
<tr>
<td>U. of Washington</td>
<td>7</td>
</tr>
<tr>
<td>Michigan State U.</td>
<td>6</td>
</tr>
<tr>
<td>Ohio State U.</td>
<td>6</td>
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<tr>
<td>U. of Arizona</td>
<td>6</td>
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<tr>
<td>U. of Georgia</td>
<td>6</td>
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<tr>
<td>U. of Illinois at Urbana-Champaign</td>
<td>6</td>
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<tr>
<td>U. of Kansas</td>
<td>6</td>
</tr>
<tr>
<td>U. of Michigan at Ann Arbor</td>
<td>6</td>
</tr>
<tr>
<td>U. of North Texas</td>
<td>6</td>
</tr>
<tr>
<td>U. of Wisconsin at Madison</td>
<td>6</td>
</tr>
</tbody>
</table>
Core Fulbright U.S. Scholar program

Source: http://www.cies.org/programs-us-scholars-core/notification-timeline
General information

Important links:
Program website: [http://www.cies.org/program/core-fulbright-us-scholar-program](http://www.cies.org/program/core-fulbright-us-scholar-program)
Catalog of awards: [http://catalog.cies.org/](http://catalog.cies.org/)

1) 2015 deadline (for 2016-2017 awards): August 3
2) Proposal is 5 pages only
   • References are important
   • Difficult to write. No “magic recipe” or even firm guidance
3) Selection process cryptic. (In country selection especially)
4) Success rate depends on host country
5) It is your proposal. No MSU transmittal
Core Fulbright U.S. Scholar program

Suggestions for applicants

1) Not a typical grant
   • Teaching, Research, or Teaching/Research
   • Being an ambassador of your country.
2) Consider Flex option (http://www.cies.org/fulbright-flex-awards)
   1) Only research type awards
   2) “For scholars who require multiple visits abroad to accomplish their research objectives”
   3) Let’s you keep your sabbatical if you wish
3) Very helpful
   • Website
   • Fulbright webinars
4) Strongly recommend getting advice from:
   • MSU Fulbright Program Adviser: Roger Bresnahan
   • Former Fulbrighters