



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

# HEP Funding Opportunities

Glen Crawford  
Director, Research and Technology R&D  
Office of High Energy Physics

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# Potential CR Impacts on DOE Grants

- **The Situation:**
  - We anticipate being on a Continuing Resolution (CR) through Mar 2017
  - We expect we will only have ~50% of the FY17 HEP budget available to fund actions thru March
  - DOE procurement requires that we have funding allocated before awards (grants) can be made final
  - We anticipate that we will not have sufficient funds to award many HEP grants by their nominal April 1 date
- **The Likely Impacts:**
  - For Continuing grants (going into  $\geq$ Year 2 of award):
    - Progress reports will be due in early Jan 2017. Reminders will go out soon.
    - If progress is satisfactory, award will be continued at or near planned funding level, but may come later than April 1
  - For New/Renewing grants:
    - Some PIs will be contacted in Jan/Feb 2017 to request revised budgets for recommended awards starting Apr 1 (normal).
    - Some PIs will be contacted in early 2017 to be informed of declination
    - Many PIs will not be contacted (one way or another) until FY17 budget passes
    - Do not panic. Mitigations may be possible (e.g., no cost extension) in case of difficulties.



# Schedule of DOE/HEP-based Solicitations

## *Ongoing: “FY 2017 Continuation of Solicitation for the Office of Science Financial Assistance Program” [DE-FOA-0001664]*

- Also known as the “general or open annual DOE/SC solicitation”
  - SC-wide FOA that invites applications in support of work in any of six SC offices, incl. HEP research
- Published annually, typically at beginning of FY (October), remains open until successive issuance
- **Decisions for FY2017 applications will not be made until at least April (see previous slide)**

## *New: “U.S.-Japan Science and Technology Cooperation Program in High Energy Physics” [DE-FOA-0001699] and [LAB 17-1699]*

- Support U.S. investigators in bilateral cooperative research activities that involve substantial collaboration with Japanese investigators
  - Proposal due January 15, 2017, at 11 pm Eastern Time

## *New: “Scientific Discovery through Advanced Computing: High Energy Physics” [LAB 17-1697]*

- HEP-ASCR Partnerships that enable and accelerate discovery via High Performance Computing
  - **REQUIRED Letter of Intent** due January 17, 2017, at 5 pm Eastern Time
  - Proposal due February 27, 2017, at 5 pm Eastern Time

## *Upcoming: “Research Opportunities in Accelerator Stewardship”*

- Specifically for accelerator R&D which predominantly impacts non-HEP applications
  - **REQUIRED Letter of Intent** will result in encourage/discourage response
  - Eligibility will include academia, national labs, and industry



# US-Japan Program in HEP

- This is an evolution of the previous “US-Japan Program” which had historically primarily funded Japanese HEP researchers working in the U.S., and was funded/managed solely by KEK in consultation with U.S.
- **Joint FOA/lab announcement with Japanese partners**
  - The FOA/LA solicits proposals with scopes of work in HEP that involve substantial collaboration with Japanese investigators, in order to better promote US-Japanese collaboration in HEP research and technology
  - DOE/HEP will support US investigators. KEK issued its own parallel solicitation for proposals to support Japanese investigators.
  - US (Japanese) proposals should describe ~identical overall scope of work with clear roles for US (Japanese) collaborators
  - Proposals will be jointly peer-reviewed and recommended for funding.
  - Topics supported include experimental HEP and technology R&D
    - Support includes materials, supplies, equipment, travel. **No personnel.**
  - **Not included:** ILC-related cost reduction R&D (see Jim’s talk)
  - **Please read the FOA/lab announcement in detail for complete information. FOA/LA and FAQ available on DOE website. Michael Salamon is POC.**
- **Proposals due January 15 2017.**

# Joint HEP-ASCR SciDAC 4 Lab Announcement

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- The SciDAC Program is an Office of Science program to accelerate the use of high-performance computing (HPC) through integrated collaborations between discipline scientists, applied mathematicians, and computer scientists to advance scientific discovery.
- This HEP-ASCR Announcement is part of the 2017 (SciDAC 4) re-competition of HEP-ASCR jointly funded SciDAC Partnerships for Laboratory-led, consortium proposals that conform to the guidelines detailed the Announcement.

## *Program Managers:*

Dr. Lali Chatterjee, High Energy Physics [lali.chatterjee@science.doe.gov](mailto:lali.chatterjee@science.doe.gov)

Dr. Randall Laviolette, Advanced Scientific Computing Research  
[Randall.laviolette@science.doe.gov](mailto:Randall.laviolette@science.doe.gov)

***Letter of Intent (Required) Due Date: 1/17/2017 at 5 PM Eastern Time***

***Proposal Due Date: 02/27/2017 at 5 PM Eastern Time***



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# SciDAC Supplementary Information

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- **Please read the lab announcement in detail for complete information**
- *Major Goal:* to facilitate advanced and effective use of DOE High Performance Computing (HPC) by major ongoing HEP experiments along with related theory and simulation activities and current and near term accelerator projects, via appropriate partnerships between the HEP and ASCR communities.
- **Proposals must be five-year consortium proposals with multiple institutional partners from HEP and ASCR communities to develop computational tools and algorithms for shared and cross cut use across HEP sub-areas or multiple experiments.**
- **The proposals must demonstrate HEP-ASCR partnerships that work collaboratively across HEP experiments and research areas to develop shared computing solutions related to use of DOE HPC.**
- **Proposals in support of single codes, or computational tools for single experiments or groups are excluded from this Announcement and will be declined without review.**
- **Lead Laboratories of Consortium proposals are strongly encouraged to engage university partners.**



# FY 2017 Accelerator Stewardship FOA

- **Planned for posting early in CY 2017, with up to \$3M in FY 2017 funding**
- **Track 1: Use-Inspired Basic R&D**
  - **Topic Areas:**
    - Particle Therapy Beam Delivery Improvements
    - Ultrafast Laser Technology Program
    - Energy & Environmental Applications of Accelerators
  - **Eligibility: All domestic institutions**
- **Track 2: Basic R&D**
  - **R&D leading to significant increases in accelerator performance and/or decreases in cost**
    - **Must** address a Stewardship Customer's identified R&D need
  - **Eligibility: All domestic accredited academic institutions or non-profits**
- **Track 3: Accelerator Stewardship Test Facility Program** 
  - ≤12 month non-renewable award to use accelerator R&D infrastructure at the DOE Office of Science Labs
  - **Eligibility: All domestic institutions, except DOE labs**
- **Please read the coming FOA carefully**
  - **It is incumbent on the PI to identify the Stewardship Customer and provide evidence of the Customer's support for their work**
    - "Customer" and "evidence" are both defined in the FOA
  - **Topic descriptions are specific for a reason**
    - Please contact Eric Colby and discuss if clarification is needed
  - **A Pre-application (2 pages) is required**
  - **Teaming and cost-sharing are strongly encouraged**



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# BACKUP



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# SciDAC Background

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- The SC SciDAC Program has sponsored Computational partnerships since 2001
  - The focus has been efficient use of DOE High Performance Computing Facilities  
<http://science.energy.gov/ascr/facilities/>
- The DOE ASCR HPC systems and related hardware-software-data computing ecosystem are valuable for HEP users and also evolving HEP Facilities
- Some past SciDAC Teams and SciDAC sponsored codes have successfully earned 'Application Development Awards' sponsored by the Exascale Project that is part of the DOE Exascale Initiative and the National Strategic Computing Initiative (NSCI)  
<http://insidehpc.com/ecp/> to be early users of DOE Exascale Computers of the future
- The current SciDAC 4 announcement is intended to sponsor new research to facilitate wider and more effective use of currently available DOE HPC by HEP users via appropriate partnerships between the HEP and ASCR researchers. The joint HEP- ASCR partnerships are expected to work across HEP experiments and thrusts to develop shared computational solutions.



# Accelerator Stewardship Test Facility Pilot Program Awards

- **Seven seed-funding awards made September 2015**
  - Duration: ≤12 months, Average award: \$190k
  - Awards chosen to be high-value collaborative R&D using unique lab capabilities
- **“Development of High-Gradient Accelerating Structures for Ion Beam Therapy”**
  - Radiabeam Technologies, LLC with Argonne National Laboratory
  - Uses RF test stand, and beam optics design capability of lab
- **Ultra-nanocrystalline diamond cathode testing in an SRF gun**
  - Euclid Techlabs, LLC with Brookhaven National Laboratory
  - Uses SRF gun and operating experience of lab
- **“Basic Materials for Conduction Cooled SRF”**
  - PAVAC Energy Corp. with Fermi National Accelerator Laboratory
  - Uses materials analysis and SRF engineering expertise of lab
- **“High Reliability, High Power Coupler Development”**
  - Euclid Techlabs, LLC with Fermi National Accelerator Laboratory
  - Uses SRF design and fabrication expertise of lab
- **“Fiber laser based coatings and surface activation facility for accelerators”**
  - Demaray LLC with Lawrence Berkeley National Laboratory
  - Uses lasers and laser-PVD expertise of lab
- **“Electromagnetic Modeling of Human Body Using High Performance Computing”**
  - Simmetrix, Inc. and Stanford University with SLAC National Accelerator Laboratory
  - Uses RF design and HPC modeling expertise of lab
- **“Elliptical Twin Cavity for Accelerator Applications”**
  - Old Dominion University with Thomas Jefferson National Accelerator Facility
  - Uses SRF design and fabrication expertise of lab

