

# Memorandum of Understanding

between

The Regents of the University of California, as  
Management and Operating Contractor for the  
Lawrence Berkeley National Laboratory

and

The Institute for Basic Science

## **Concerning Collaboration in the Field of Dark Matter Physics**

This Memorandum of Understanding (MOU) is between The Regents of the University of California (The Regents), in its capacity as the manager and operator of the Lawrence Berkeley National Laboratory (LBNL), and The Institute for Basic Science (IBS), South Korea.

LBNL is a U.S. Department of Energy (DOE) National Laboratory managed and operated by The Regents pursuant to DOE Contract No. DE-AC02-05CH11231. Institute for Basic Science (IBS), is an institution located in Daejeon, the Republic of Korea under of the auspices of the Ministry of Science, ICT and Future Planning.

LBNL and IBS are collectively herein referred to as the "Participants" or individually as a "Participant."

### **1. Objective**

The Participants intend to explore potential future collaboration in the field of dark matter physics and related areas.

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### **2. Proposed Areas of Collaboration**

The Participants intend to collaborate in one or more of the following areas:

- A. Photo-sensors for underground liquid scintillator detectors;
- B. Design and fabrication of underground liquid scintillator detectors and ancillary items for dark matter experiments;
- C. Algorithms for analysis of data from underground liquid scintillator detectors and dark matter experiments; and
- D. Techniques for low-background, underground experiments

The scope of the above activities and cooperation may be changed or extended to other areas by mutual written consent of the Participants.

### **3. Proposed Forms of Collaboration**

The Participants expect to collaborate through mutual visits, the exchange of information, exchanges of researchers and experts, training and planning for potential future joint research, with any future collaborative research to be undertaken only pursuant to an appropriate written agreement therefor.

### **4. Proposed Mechanisms of Collaboration**

- A. To administer the implementation of this MOU, each Participant should designate one principal coordinator in charge of the collaboration, through whom all requests and plans of that Participant should be made.
- B. The principal coordinators may hold meetings when necessary to discuss matters related to collaboration under this MOU.
- C. The principal coordinator for The Regents is James Symons, Associate Laboratory Director. The principal coordinator for IBS is Yeongduk Kim, Research Director of IBS, Center for Underground Physics.

### **5. Commencement, Modification and Discontinuation**

- A. Cooperative activities under this MOU may commence upon signature of all Participants and continue for a five (5) year period, unless discontinued in accordance with paragraph B of this Section 5.
- B. The Participants may discontinue this MOU at any time by mutual written consent. Alternatively, a Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least thirty (30) days written notice to the other Participant.
- C. This MOU may be modified or extended for additional periods by mutual written consent of the Participants.

### **6. Exchange of Information**

The Participants do not anticipate the exchange of any business-confidential information. If the Participants decide that a particular activity may lead to the exchange of business-confidential information, they should consult with each other and make appropriate written arrangements for the protection of such information.

### **7. General Provisions**

- A. This MOU does not create any legally binding obligations between the Participants.
- B. Each Participant should conduct the activities contemplated by this MOU in accordance with all applicable laws, regulations and other requirements to which it is subject, and international agreements to which its government is a party, including, without limitation, export control laws, environmental, health and safety laws and regulations, and international agreements to which its Government is party.
- C. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources.
- D. Each Participant is to be responsible for the costs it incurs in participating in cooperative activities under this MOU.

MOU between The Regents of the University of California and The Institute for Basic Science

Signed in duplicate.

For The Regents of the University of  
California

By: Michael Witherell

Name: Michael Witherell

Title: Laboratory Director

Date 4-5-16

For The Institute for Basic Science

By: Doochul Kim

Name: Doochul Kim

Title: President – Institute for Basic  
Science

Date April 11, 2016