

REQUEST FOR EXPRESSIONS OF INTEREST (EOI):

INSULIN SENSOR INITIATIVE:

PURPOSE

JDRF is considering an initiative to accelerate the development of insulin sensors for use in artificial pancreas systems. JDRF is soliciting Expressions of Interest (EOIs). Based on these EOIs, potential applications will be subsequently invited to be developed and submitted as full proposals.

BACKGROUND

In 2006, the JDRF launched its Artificial Pancreas Project to accelerate the development of commercially available closed-loop systems. Since then, significant progress has been made in developing and testing algorithmic approaches to automate insulin delivery. Today, insulin levels are calculated based upon sophisticated models of insulin pharmacokinetics. However, there is currently no mechanism to empirically determine in vivo insulin levels, which could provide a number of significant benefits. To achieve more accurate insulin control and ultimate euglycemia stage, it is critical to mitigate the risks related to hypoglycemia (low blood glucose) and hyperglycemia (high blood glucose) as the result of, but not limited to

- Administration of wrong insulin dose,
- Wrong timing of insulin doses,
- Failure of blood glucose monitors or insulin pumps.
- Increased/decreased insulin sensitivity

An insulin monitoring mechanism as feedback control for the artificial pancreas will provide valuable additional data to the control system which may reduce the risk over insulin overdosing and could provide detection of insulin under dosing

OBJECTIVES

The objective of this initiative is to identify feasible ways to detect ambient circulating levels of insulin to better guide insulin dosing in conjunction with blood glucose levels and ultimately improve AP system control. Ideally, such a system would provide ambient insulin levels in real-time. However, episodic (i.e. incorporation into a BG or Ketone meter) insulin level quantification would also be valuable). Applications that have clear line-of-sight to commercial embodiments will be prioritized.

Examples of pertinent topics include, but are not limited to:

- Development and synthesis of molecules/assays for insulin detection,
- Real time insulin sensing in animal models to be used for preclinical evaluation,
- Technology (electrochemical, optical, others) for in vitro and in vivo insulin detection,
- Assessment of real time insulin monitoring for clinical evaluation.

MECHANISM

Projects may request a maximum of \$1,000,000 USD of milestone-based funding for up to 2 years. Since the nature and scope of research supported by this initiative may vary, the budget and length of awards may vary. Indirect costs may not exceed 10% of the direct costs.

ELIGIBILITY

Applications may be submitted by for-profit entities as well as nonprofit organizations, public and private universities, colleges, hospitals, laboratories, units of state and local governments. There are no citizenship requirements.

EXPRESSION OF INTEREST

An approved EOI is required prior to submission of a full proposal. Please see below for complete instructions.

DEADLINES

- Request for EOI Release Date:.....November 20, 2012
- EOI Submission Deadline:January 2, 2013
- EOI Notification:January 2013
- Application Receipt Date:February 28, 2013
- Response to Applicants Date:June 2013
- Earliest Anticipated Start Date:July 2013

SUBMISSION INSTRUCTIONS

Applicants must register as an applicant and submit both their EOI and application using the templates available at JDRF's on-line application system [proposalCENTRAL](https://proposalcentral.altum.com/) (<https://proposalcentral.altum.com/>).


As a courtesy, please email the scientific contact, Jiangfeng Fei (jfei@jdrf.org) to inform us of your intention to submit an EOI.


REVIEW CRITERIA

JDRF will review and select EOIs to be developed into full proposals with the aim of significantly accelerating product development through regulatory approval.

SCIENTIFIC CONTACT


Jiangfeng Fei, Ph.D.
JDRF
26 Broadway, 14th Floor
New York, NY 10004

 212-859-7832

 jfei@jdrf.org

ADMINISTRATIVE CONTACT

Deborah Kenyon
JDRF
26 Broadway, 14th Floor
New York, NY 10004

 212-479-7554

 dkenyon@jdrf.org

PROPOSAL CENTRAL

 <https://proposalcentral.altum.com/Login.asp>

 pcsupport@altum.com

 (301) 916-4557 ext. 227, or toll-free in the US, (800) 875-2562 ext. 227

Assistance can be obtained Monday through Friday between 8:30am and 5pm U.S. Eastern Time