IMPORTANT NEWS FLASH

It's a 10!
The UCSD/UCLA/Salk/Cedars-Sinai DRC SCORES
a PERFECT 10
on the 2013-2018 renewal!

Sincerest THANKS to everyone who participated in and contributed their information to the renewal application.

This score reflects the remarkable accomplishments of our membership.

We are very pleased to announce that our UCSD/UCLA Diabetes Research Center competitive renewal application scored a 10, the top possible score! We fully expect that the grant will be funded for a new five-year period as of 5/1/13. This Newsletter outlines some of the new developments and alignments of the year 11 renewal of our Center grant. The new Center grant retains the previous Core services and adds a new Core featured later in this newsletter.

New Name of the NIDDK Centers program is:
Diabetes Research Centers (DRC)
Grant number remains: P30 DK063491

The Components of the Renewal include:

A. Transgenic and Knock-out Mouse Core
   Pamela L. Mellon

B. Mouse Metabolic and Molecular Physiology Core
   Andrea Hevener, Karen Reue, & Edward Dennis

C. Epigenetics and Genomics Core
   Chris Glass, Bing Ren, Gary Hardiman, and Nicholas Webster

D. Human Genetics Core
   Jerome Rotter & Leslie Raffel

E. Novel Target Discovery and Assay Development Core
   Julian Whitelegge & Peter Tontonoz NEW in 2013, SEE PAGE 4

F. Pilot and Feasibility Program
   Kuk-Wha Lee & Peter Tontonoz

G. Enrichment Program
   Maike Sander & Mark Goodarzi

H. Administrative Component
   Jerrold M. Olefsky, Pamela Mellon & Peter Tontonoz

We particularly recognize the contribution of Betsy Hansen in organizing and assembling this outstanding application. Betsy has been Dr. Olefsky’s Administrative Assistant for over 35 years. She is exceptional and will be sorely missed as she retires this month. CONGRATULATIONS on your retirement, Betsy.
Upgrades to our Cores Effective 5/1/13

Our Biomedical Research Cores have undergone substantial growth and change in the renewal process. For example, our Inflammation Core (previous Core E) will be incorporated into the Metabolic and Molecular Physiology Core (Core B) and an entirely new core entitled "Novel Target Discovery and Assay Development Core" has been created as new Core E. This new core focuses on proteomic analysis of plasma and tissue samples and provides unique services in the generation of novel immunoassays for biologically relevant proteins of interest. For the next project period, the Transcriptional Genomics Core (previous Core C) will incorporate a variety of epigenetic technologies, which provide a major new strength for our DRC faculty. Bing Ren is now the Co-Director of this new Epigenetics and Genomics core (new Core C), along with Chris Glass, Dr. Ren is a well-recognized world leader in this field. He established cutting-edge technologies for the analysis of histone and DNA-based epigenetic marks that are now part of this core. Our Mouse Phenotyping Core (previous Core B) has also undergone significant evolution and growth and will become the "Metabolic and Molecular Physiology Core" (new Core B) to reflect these changes. For example, a Lipidomics sub-core has been added to this program, headed up by Dr. Edward Dennis. Dr. Dennis is the Director of the LIPID MAPS Consortium at UCSD and his laboratory has developed many new methodologies for analyzing over 700 lipid species in blood as well as tissue samples from humans and mice. He is among the world’s leaders in this area, and the addition of these mass spec-based lipidomics methodologies and analyses to the Metabolic and Molecular Physiology Core (B) represent powerful new services available to our membership. This core has also acquired important new technologies in mitochondrial functional analyses, as well as ex vivo studies of insulin target tissues. The Transgenic and Knock-out Mouse Core (A) will also add new advanced technologies including conditional Tet-inducible and tamoxifen-inducible transgenes, tissue-specific knock-outs using Cre-LoxP and Flp recombinases and Recombination-mediated Cassette Exchange (RMCE), BAC transgensics, BAC-Trap, RiboTag, and other specialized technologies, facilitating the advances of our DRC investigators in genetically modified mice. The Human Genetics Core (Core D) will expand its genotyping capabilities, adding specialized chips including the Cardio-MetaChip, the ImmunoChip, the Exome chip, and the HumanMethylation450 DNA Analysis BeadChip. Exome and targeted DNA sequencing, and induced pluripotent stem cells (iPSC) have been added. All of these changes and new services will be presented throughout this year in upcoming newsletter features.
## 2012 DERC P&F Grants AWARDED

### Pilot and Feasibility Projects in Endocrinology & Diabetes

Pilot & Feasibility Program, current Director: Pinchas Cohen

On behalf of the UCSD/UCLA Diabetes & Endocrinology Research Center Pilot and Feasibility Grant Committee, the UCSD/UCLA DERC Center is delighted to announce that we have awarded four outstanding projects for seed funding in 2012 out of 21 superb applications. The number and quality of the applications is clear evidence for the remarkable scientific environment that exists in our universities for supporting diabetes research especially among promising young scientists. The UCSD/UCLA DERC funds four grantees per year at approximately $30,000-$50,000.

### THE UCSD/UCLA DERC is Proud to Announce the 2012 P&F AWARDEES:

#### 2012 Junior Faculty Developmental Award winner:

- **Jane J. Kim, MD**, UCSD, for her project "The Epigenome in Obesity and Insulin Resistance".

#### P&F awardees:

- **Robyn Cunard, MD**, UCSD, for her proposal "Novel Regulators of Podocyte Function in Diabetes"
- **Ming Guo, MD/PhD**, UCLA, for the proposal "Identifying Disease State Suppressors in a Drosophila Model of Type 2 Diabetes"
- **Djurdjica Coss, PhD**, UCSD, for the study asking "Does Maternal Obesity Alter Inflammatory Cytokines in the Hypothalamus and Pituitary and Predispose Offspring to Reproductive Pathologies?"

Please join us all in congratulating these promising young investigators and we all look forward to seeing the fruits of their research in the literature and in future DERC meetings.

See a full history of our P&F awardees at: [http://derc.ucsd.edu/pf/award-history.shtml](http://derc.ucsd.edu/pf/award-history.shtml)

Pinchas Cohen, M.D., Professor and Chief of Diabetes & Endocrinology, Mattel Children’s Hospital at UCLA & the David Geffen School of Medicine at UCLA. Co-Director, UCSD/UCLA Diabetes/Endocrinology Research Center, and currently is the Director of the Pilot and Feasibility Program.

### Final report and presentation at the annual retreat

A report on each pilot and feasibility study conducted will be provided at the end of the study period and an update will be provided yearly for four years after the completion of the award. These brief reports will contain professional career status at the time of the award and at the time of the report; an overview of the project including its significance and salient results; a list of resulting publications; and peer-reviewed subsequent funding in the same or related areas. Funded P&F investigators will attend the annual DERC retreat as well as a meeting of Regional P&F awardees, and present the results of their work in the year immediately following their award. Travel to these meetings will be charged to the individual P&F awards.

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**ALL PAPERS MUST CITE P30 DK063491**
The Novel Target Discovery and Assay Development Core (NTDAC) will provide investigators at UCLA, UCSD, the Salk Institute and Cedars-Sinai with consultancy and a suite of state-of-the-art molecular measurements not available from other national resources. The new NTDAC core assembles a comprehensive and highly specialized core with expertise in biological mass spectrometry and proteomics (Julian Whitelegge Ph.D., Director), as well as ELISA assay development (Peter Tontonoz M.D. Ph.D., co-director). Strengths of this biomedical core include the extensive expertise of the core leadership in diabetes research, wide experience in protein and peptide analysis, access to bioinformatics resources, and the collegial outreach of NTDAC leadership to DRC investigators to assist in the strategic planning and execution of studies relevant to the DRC mission.

The objectives of the new core can be summarized in five aims.

A) **Novel target discovery and assay development core user interface.** Responsive consultation to streamline direct analysis of proteins and peptides.

B) **Discovery mass spectrometry services and bioinformatics.** Experimental approaches to discover new diabetes-related proteins and peptides.

C) **Biomarker qualification, immunocapture and top-down mass spectrometry.** Qualification of lead proteins and peptides with respect to biological function.

D) **Assay construction for novel peptides and proteins.** Development and optimization of reliable protein and peptide assays for advancement toward the clinic.

E) **ELISA services for novel assays.** Provision of unique, newly developed translational assays for use in diabetes care.

The overarching function of the Novel Target Discovery and Assay Development Core (NTDAC) is to enable DRC members to investigate a clinically relevant research question in an open ‘discovery’ mode, from mouse to cell to patient in an efficient, cost-effective and expedited fashion. Discovery proteomics and peptidomics mass spectrometry experiments will reveal potential new biomarkers that will be qualified and validated before development of robust clinical ELISA assays for improving patient outcomes.