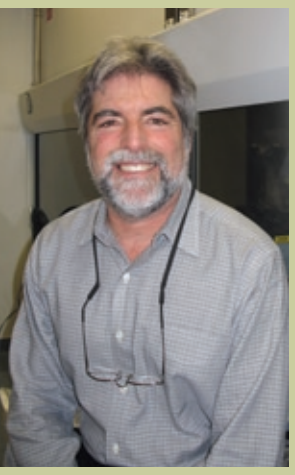
NEWS from the **Diabetes Center** at UCSF

SPRING 2008

Collaborating for a Cure

The Diabetes Center at UCSF has more than half a century of breakthrough research discoveries that have led to significant, life changing clinical and therapeutic applications for patients with diabetes.



Director Jeffrey Bluestone

Today, the Diabetes Center continues to be at the forefront of the most exciting and promising areas of diabetes research. The strength of our research lies in the number of close collaborations that take place among different disciplines. These include immunology and developmental biology, with a particular focus on regeneration/stem cells, as well as our work in genetics and metabolism.

We value our role as an integral and integrated part of the UCSF system – both intellectually and physically. We are looking forward to the expansion of a "diabetes

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Diabetes Center Drug Continues to Offer Great Promise as a Type 1 Therapy

Much has happened since 2002 when the *New England Journal of Medicine* published groundbreaking research involving a powerful monoclonal antibody, anti-CD3, which was developed by UCSF's Jeffrey Bluestone, PhD, and Yale University's Kevan Herold, MD. This study demonstrated for the first time that an antibody therapy could slow and potentially stop the autoimmune destruction of insulin-producing beta cells.

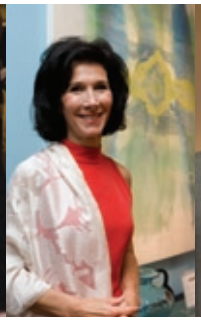
Numerous other studies involving anti-CD3 have since been conducted around the world and have continued to prove that this drug is effective in protecting the beta cells from being destroyed in type 1 diabetes.

In late 2007, two leading pharmaceutical companies teamed up with two smaller companies to develop and commercialize anti-CD3 drug therapies to treat, and potentially prevent, type 1 diabetes. Eli Lilly and MacroGenics will be developing teplizumab, and GlaxoSmithKline and Tolerx will be developing otelixizumab.

This is much welcomed news since the average cost to take a promising drug to market is $500 million. Academic research institutions like UCSF excel in conducting basic research and early stage human clinical trials. For cost reasons, however, it is important that promising therapies are picked up by private industry.

This is the first time that private industry has embraced an exclusively type 1 diabetes treatment. Not only is this drug a potential prevention therapy for type 1 diabetes, it may also help those individuals currently living with the disease – especially if further progress is made in stem cell research, beta cell regeneration, and islet transplantation.

Susan Coulter and Diabetes Center Leadership Council members Helen and Tom Clausen



Linda Mayne

Members of the Diabetes Center Leadership Council: Robert Friend, Mike Gordon, Loren Gordon and Joanne Kagle

Roche Bobois Benefit for Diabetes Center

A spectacular party was held on November 8 in the showroom of Roche Bobois in San Francisco to kick off the holiday season and to benefit the UCSF Diabetes Center. More than 200 people attended the "Celebration of Innovation," which featured paintings by Bay Area artist Linda Mayne. A percentage of proceeds from the evening's sales benefited the Diabetes Center's research and clinical care programs.

Mapping the Future

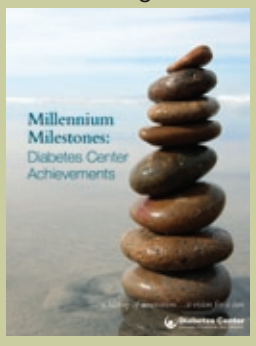
On the heels of the completion of a university-wide strategic planning process, the Diabetes Center at UCSF began its own effort to plot out its direction for the future. The center has grown tremendously and accomplished much during the last eight years – due in large part to the commitment of both faculty and staff, as well as the tireless advocacy and generosity of friends and donors.

Now, the Diabetes Center has reached a critical juncture and must consider what the road ahead should look like. How will the Diabetes Center continue to lead the way toward its ultimate mission of finding a cure for diabetes? What are the major issues facing the Diabetes Center and its role in the national landscape of diabetes research, care and education? These are just some of the questions that the strategic plan will explore.

To lead this effort, the Diabetes Center has engaged AMC Strategies of Los Angeles. Diana Carmichael and her colleagues at AMC were a tremendous asset to the UCSF strategic planning effort. AMC Strategies has interviewed faculty, staff, donors and volunteers of the UCSF Diabetes Center, as well as leaders of other top diabetes centers, in order to create benchmark and environmental assessments. The final plan is expected to be released this spring.

Diabetes Center's Millennium Milestones

UCSF's 80-year commitment to diabetes research and clinical care has produced a steady stream of historical milestones in the understanding and treatment of the disease. The Diabetes Center's record spans all levels of diabetes research, from the discovery of genes thought to play a precipitous role in the development of diabetes, to the first clinical tests of synthetic human insulin – which has led to relief for millions of sufferers.



Since the year 2000, the Diabetes Center at UCSF has rapidly accelerated the pace of research and clinical care in diabetes – realizing a number of significant scientific and clinical achievements.

Millennium Milestones was recently created to highlight many of the Diabetes Center's advances in this decade involving both type 1 and type 2 diabetes. To receive a copy, contact Kevin McAteer at 415/476-3627.

UCSF Names New Pediatric Diabetes Chair

The Mary B. Olney, MD/KAK Chair in Pediatric Diabetes and Clinical Research – made possible by a generous gift from a family whose lives have been affected by type 1 diabetes – has been awarded to Stephen Gitelman, MD, director of the UCSF Pediatric Diabetes Program.


Stephen Gitelman

Olney was a visionary UCSF physician and School of Medicine graduate who founded Bearskin Meadow Camp, one of the first camps for diabetic children, in 1938. She also created the Diabetic Youth Foundation, an organization that continues today and operates Bearskin Meadow.

Although Olney died in 1993, her legacy of "treating the whole child" continues to thrive today through Gitelman and his pediatric diabetes team.


Mary Olney

Gitelman is an accomplished pediatric diabetologist and an international leader in type 1 diabetes clinical research. The Pediatric Diabetes Clinic provides care for more than 600 children and adolescents with diabetes, with five to 10 new patients added each month. His research interests include type 1 and type 2 diabetes, especially issues related to children and adolescents.

Ongoing research studies include:

- Prevention of type 1 diabetes, including participation in NIH-sponsored studies such as TrialNet, to better understand the natural history of type 1.
- The use of novel immune agents such as anti-CD3 and thymoglobulin at diagnosis to prolong endogenous insulin secretion.
- The use of insulin pump therapy, continuous glucose sensors and other evolving technologies to optimize metabolic control for children with diabetes.
- Innovative efforts to improve outcomes for Latino youths with diabetes.
- Prevention of type 2 diabetes in obese adolescents.

For more information about the Pediatric Diabetes Program at UCSF, call 415/353-7337 or email quanc@peds.ucsf.edu.

To speed the translation of scientific discovery into therapies, investigators will be clustered in interconnected research pavilions organized by disease-based working groups.

Stem Cell and Diabetes Research Under One New Roof

With its world-renowned research and clinical strengths, no institution is better poised to unleash the healing power of stem cells than the University of California, San Francisco. A campus priority, the UCSF Institute for Regeneration Medicine (IRM) is singularly focused on driving stem cell research to potential therapies for patients with many devastating illnesses, disabilities and injuries. UCSF is moving forward with the firm conviction that treatments developed from stem cell research will someday alleviate suffering on a scale never seen before.

Under the collaborative umbrella of the IRM, the work of more than 125 investigators in more than 60 UCSF laboratories is organized along strategic, disease-based "pipelines" – a concept that has proven successful in the private sector at accelerating the introduction of new therapies. The role of stem cells in the treatment and potential cure for diabetes will be explored within the framework of the Pancreas and Liver Research Pipeline.

The Diabetes Research Program in Regeneration Medicine is a comprehensive effort devoted to bringing together basic and clinical research to advance understanding and treatment of type 1 and type 2 diabetes through stem cell therapy. The program is built upon the strength of the internationally acclaimed UCSF Diabetes Center, the Immune Tolerance Network, and UCSF's accomplishments in unraveling the developmental biology of the pancreas. It is the only program in the state, and one of the few programs in the country, that combines superb developmental and stem cell research with a dedicated clinical program of islet transplantation, as well as the immunology efforts needed to move aggressive basic research toward potential cures for this disease.

The greatest obstacle to rapid progress in regeneration medicine is the financial commitment required to underwrite the research and infrastructure needed to support it. To accelerate the pace of discovery in every aspect of this revolutionary science, UCSF plans to build a state-of-the-art facility on the Parnassus campus. The new facility will bring laboratory and clinical investigators together in an intensely collaborative environment specially designated for this research.

Diabetes Center faculty members Michael German, MD, Justine K. Schreyer Endowed Chair in Diabetes Research (above) and Matthias Hebrok, PhD, Hurlbut-Johnson Endowed Chair in Diabetes Research (left) are international leaders in the effort to coax stem cells into creating insulin-producing beta cells.

Designed by Rafael Viñoly Architects, the UCSF Institute for Regeneration Medicine building will provide 80,000 square feet for laboratory research and training in the most promising areas of regeneration medicine. It will also create laboratory space for more than 200 stem cell scientists, space for researchers from other campus labs who are experimenting with human embryonic stem cell lines, and offices for visiting professors. Up to five Diabetes Center investigators will be housed in the Diabetes Research Pavilion in the new building.

Teaching Center Launches Educational Website

A new educational resource for diabetes is now available on the Internet, thanks to the UCSF Diabetes Teaching Center. The type 1 section of UCSF Diabetes Education Online is available at www.dtc.ucsf.edu, and within months, the portion focused on type 2 diabetes will go live.

The Genesis of UCSF Diabetes Education Online

The UCSF Diabetes Teaching Center's clinical team, led by Martha Nolte, MD, envisioned creating an online educational resource for both type 1 and type 2 diabetes. As one of the country's oldest diabetes education programs and a pioneer in the development of intensive self-management regimens, the clinical care team members were concerned that their limited resources could not effectively support the masses of individuals living with diabetes. As the rate of diabetes increased in the United States – far faster than the number of dedicated diabetes care providers – the clinical team's frustration grew. Innovative solutions were definitely needed to help support this growing population and, naturally, Nolte and her team looked to the Internet for answers. Nolte's dream of an online education resource became a reality in late 2007.

Special Thanks

The Diabetes Center team deeply appreciates the following Bay Area individuals and foundations who generously supported this project: the Joseph Drown Foundation; Robert and Michelle Friend; the Koret Foundation; the Bernard Osher Foundation; Elana Weinstein; and Will Weinstein. Their visionary support will help make a difference in the lives of individuals living with diabetes and in the lives of their loved ones.

THE UCSF DIABETES TEACHING CENTER offers 2-day and 3½-day self-care classes and insulin pump workshops. Individual appointments are also available. The center also offers an online resource to help individuals with diabetes to control their blood sugar levels and manage the disease. www.dtc.ucsf.edu

Collaborating for a Cure

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research neighborhood" within the new Institute for Regeneration Medicine building being planned for the Parnassus campus *(see story inside).*

Our commitment to an innovative and highly collaborative research environment of discovery will lead to improved treatment, care and prevention of diabetes and, ultimately, a cure.

Jeffrey A. Bluestone, PhD

Director, UCSF Diabetes Center and Immune Tolerance Network

A.W. and Mary Margaret Clausen Distinguished Professor of Medicine, Pathology, Microbiology and Immunology

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For more information on any of these stories or to support the UCSF Diabetes Center, contact Kevin McAteer at 415/476-3627 or kmcateer@support.ucsf.edu.

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Editor: Jody Duncan | Design: Laura Myers Design | Photography: Carmen Holt | Architectural Renderings: Rafael Viñoly Architects

UCSF Box 0248
San Francisco, CA 94143-0248

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