What were some of the influencing factors that sparked your interest in your specialist areas – endocrinology, diabetes and metabolism?

My interest in metabolic regulation and the processes that underlie chronic diseases began in medical school. This led to my PhD studies focusing on regulation of carbohydrate metabolism and hormonal signalling pathways. I later transitioned into the field of lipid metabolism that is subjected to similar regulatory mechanisms.

How did you come to occupy the position of Director of the UC Davis Clinical and Translational Science Center (CTSC)? What does this role entail?

I served as Associate Program Director of the National Institutes of Health (NIH)-funded General Clinical Research Center at Columbia University for several years. As UC Davis was one of the universities that did not have such a centre, I was recruited with the intention of developing a similar resource here.

At UC Davis I presently serve as Professor of Medicine, Senior Associate Dean for Research, Director of the CTSC and Senior Director of Life Science Strategic Initiatives. In my capacity as Director of the CTSC, I am the Principal Investigator of the Clinical and Translational Science Award and responsible for all infrastructure activities, including services, education and translational science projects.

How has the CTSC developed since it was established in 2006?

The CTSC was established to transform the UC Davis medical research enterprise into a highly effective ‘open’ academic home for clinical and translational research. Initially, the CTSC served as an incubator of ideas and a catalyst for partnerships at UC Davis and beyond. During the first five-year period of the grant, programmes were developed and evolved into fully functioning resources that served as infrastructure to catalyse biomedical research processes. By the time of grant renewal in 2011, the CTSC had been successful in evolving programmes to become more fully integrated and serve the university research enterprise.

Now in its seventh year, the UC Davis CTSC is a comprehensive resource for investigators. The programme is seen as a vital component of the institutional fabric, and the School of Medicine Office of Research and the CTSC have been fully integrated, contributing to the sustainability of the programme. Investigators and staff turn to the CTSC for assistance in virtually all areas of clinical and translational research.

In your opinion, how can health and healthcare delivery be improved?

The CTSC plays a significant role in improving health and healthcare delivery in two key ways: first, by actively encouraging and selectively targeting research that leads to quality improvement in the efficient delivery of healthcare; and second, by providing education and training programmes to graduate students, faculty members and staff to enhance research outcomes.

We offer a fully fledged toolbox of resources across the spectrum of scientific and clinical research which can be used to improve health and healthcare delivery. The CTSC was designed to facilitate collaborative multidisciplinary research and benefit investigators, industry representatives, scholars and members of the community. In the organisational structure of the CTSC, considerable attention is paid to creating an organisation that is responsive and familiar to investigators; flexible and forward thinking; well linked to university leadership, academic units and the community; and facilitates the translation of research gains into medical practice.

Are there plans to expand the CTSC over the next five years?

The CTSC will be working on a biorepository project which will develop an evidence-based approach to obtaining informed consent for biobanking. Biobanking has created new opportunities for human subjects research while simultaneously highlighting longstanding challenges in informed consent processes. In terms of opportunities, it allows research participants to advance science and benefit society through procedures that are minimally invasive.

We will also be focusing on a metabolomics project. Already known for its collaborative atmosphere that favours working in interdisciplinary teams, the CTSC will help administer and run the Outreach and Promotion Core of the recently NIH-funded West Coast Metabolomics Center. The activities will go above and beyond UC Davis’ established collaborations by using educational workshops to inform biologists and clinicians on the wealth and power of metabolomics for translational science; by training the next generation of scientists through courses; and by providing direct access to integrative research resources and services.
Transforming translational science

In an effort to help overcome barriers to biomedical research, the Clinical and Translational Science Center at UC Davis in the US is supporting investigators through a unique structure and mission.

CURRENT BIOMEDICAL RESEARCH faces many barriers and challenges which can limit its implementation and outcomes. Among the obstacles faced by biomedical investigators are ever-changing regulatory requirements and the ability to advance research that improves health while maintaining high levels of patient safety and privacy. In recent years, collaboration spanning multiple sites and fields has been recognised as a way to improve the potential of scientific discovery and to overcome such difficulties. The Clinical and Translational Science Center (CTSC) at UC Davis in the US is one academic institution enthusiastically adopting this collaborative approach to biomedical research.

TRANSFORMING SCIENTIFIC DISCOVERY

Funded by the National Institutes of Health’s (NIH) Clinical and Translational Science Awards (CTSA), the UC Davis CTSC is a specialised unit that aims to provide an improved organisational infrastructure to support investigators while respecting the need for compliance. Led by Dr Lars Berglund, who has steered the Center since its inception in 2006, the CTSC offers a range of essential services, including an education and career development programme focused on ‘team science’; extensive collaborations across UC Davis schools, colleges and centres engaged in biomedical research; the introduction of catalyst functions through an innovative pilot project programme; flexible use of resources for translational and patient-orientated research; and a community engagement programme based on trust and respect. “By aligning the science, education and research strengths of UC Davis with clinical disciplines, the CTSC transforms the way scientific discovery is performed,” Berglund describes. “Sharing experiences and ideas, leaders from the medical centres are seeking UC-wide solutions to advance our potential beyond what any single centre can accomplish alone.”

One of 12 inaugural CTSA centres and part of a national consortium of over 60 CTSA-funded institutions, the CTSC has three overarching goals: to provide a comprehensive array of critical tools and services to spark clinical and translational research; to ensure the training of a well prepared workforce of trainees, staff and investigators; and to effectively communicate available tools, services and training in order to ensure innovative translational science advances that will improve human health.

UNIQUE MISSION

Clinical research assistance has always been at the heart of the CTSC and continues to be a key component of its success. Many investigators do not have access to their own research staff, but the CTSC can partner with them to provide highly trained research nurses, technicians and coordinators, as well as facilities to support clinical trials.

Unique in its organisation and mission, the CTSC is a source of centralised knowledge and experience that UC Davis researchers can tap into. It is also home to a number of services that enhance research by providing investigators with networks and specialised expertise in eight unique programme areas: Biomedical Informatics; Clinical Research Resources and Facilities; Research Design, Biostatistics and Clinical Research Ethics; Pilot and Collaborative...
The Clinical and Translational Science Awards (CTSA) is a registered trademark of DHHS in 2002. Columbia University in 1993 and to UC Davis residency training at the Karolinska Institutet, Berglund received his MD and PhD from Research Center (GCRC), founded in 2004. 2006. Prior to the CTSC, he was Programme and Senior Associate Dean for Research at USA Sacramento, CA 95817 2921 Stockton Boulevard UC Davis CTSC Science Center (CTSC) Director, UC Davis Clinical and Translational Professor Lars Berglund CONTACT Professor Lars Berglund Director, UC Davis Clinical and Translational Science Center (CTSC) UC Davis CTSC University of California, Davis 2921 Stockton Boulevard Sacramento, CA 95817 USA T +1 916 703 9120 F +1 916 703 9124 E lars.berglund@ucdmc.ucdavis.edu LARS BERGLUND is Professor of Medicine and Senior Associate Dean for Research at UC Davis and has served as the Director for the UC Davis CTSC since its inception in 2006. Prior to the CTSC, he was Programme Director for the UC Davis General Clinical Research Center (GCRC), founded in 2004. Berglund received his MD and PhD from Uppsala University, Sweden and received his residency training at the Karolinska Institutet, Stockholm, Sweden. He was recruited to Columbia University in 1993 and to UC Davis in 2002.

Studies; Regulatory Knowledge and Support; Research Education, Training and Career Development; Technological Resources; and Community Engagement. In addition, the CTSC places a strong emphasis on outreach, both across the UC Davis campus and to other institutional and community partners: “By spreading awareness of our mission, we forge and strengthen connections that serve as resources to support high impact research,” said Berglund.

Some pioneering studies currently being supported by the CTSC include an investigation exploring the importance of fructose in promoting insulin resistance and lipid formation; two protocols designed to study the rare but debilitating Huntington’s disease; as well as extensive support for studies aimed at investigating the association between exposure to environmental and nutritional factors and the development of autism.

If this support is not enough, the CTSC connects researchers with external funding opportunities. Throughout the year, it also provides opportunities for those with research ideas to compete for pilot funding that can help begin or continue their work.

FUELING COLLABORATION

The UC Davis CTSC offers a link with other UC Schools of Medicine and the Office of the President through the Biomedical Research Acceleration, Integration and Development (BRAID) organisation. Launched in 2010 in an effort to fuel collaborative research and stimulate ideas that challenge the status quo, UC BRAID creates interscholastic opportunities to streamline research through coordinated efforts aimed at reducing the barriers that currently impede the research process. To date, UC BRAID has established working groups to address methods to improve upon contracting practices, Institutional Review Board review, informatics, drug discovery and development, and metrics to define processes and outcomes of the programme.

One benefit of being part of the CTSAs national consortium is that researchers have been able to forge a range of regional and specialised collaborations. These include: participation in and leadership of other NIH-funded projects; participation at the national level on discussions that relate to clinical research and regulatory infrastructure; the creation of a federated multi-site clinical data repository; the creation of NeuroNEXT – an organisation that fosters neurologic research; links to private foundations and industry to assess promising new therapies and increase the efficiency of clinical trials; and participation in national discussions among experts to define metrics to assess the effectiveness of research efforts, by establishing common criteria for evaluation and tracking programmes.

ONGOING SUCCESS

Highly lauded for its ongoing success, the CTSC received a five-year funding renewal in 2011. “The CTSC continues to be a premier contributor to highly innovative research through its programmes and offerings,” Berglund enthuses. “The overall accomplishments have cemented a strong foundation for the future success of the CTSA programme at UC Davis, and we will continue our extensive track record of sharing our experiences at the regional and national levels.”

Many investigators do not have access to their own research staff, but the Clinical and Translational Science Center can partner with them to provide highly trained research nurses, technicians and coordinators, as well as facilities to support clinical trials.