

USTAR

INNOVATION INSIGHTS

VOL. 9 | ISSUE 55 | 7.20.15



INNOVATION INSIGHTS: THE BIOMEDICAL EDITION

In this issue of the USTAR eNewsletter, we are pleased to highlight a few examples in the medical technology field that cover the spectrum of product development, from concepts and ideas that are seeded in the lab to Utah companies that are investing in new technologies and positively impacting healthcare.

The State of Utah has a thriving business community and an unprecedented, proactive level of government and industry support. In fact, it was these attributes that attracted Edwards Lifesciences to the state, and led the company to open a facility in Draper, as opposed to other global business destinations where it has additional operations.

Support of the biomedical and medical technology industries in Utah is exceptional. Being a member of the USTAR Governing Authority, as well as the corporate vice president of healthcare solutions for Edwards Lifesciences, has given me insight into the collaboration and accountability the legislature, executive branch and private sector provide to build and sustain a strong biomedical ecosystem in Utah.

Although this industry is in its infancy in the State, the support and motivation is here to foster it. Now, it's time to advance to the next level.

We hope you enjoy this edition of the USTAR eNewsletter.

Sincerely,

Richard Lunsford

NEWS FROM THE GHANDEHARI LAB



Nanoparticles

At the Utah Center for Nanomedicine, Hamid Ghandehari and his coworkers are working on understanding how size, shape and surface characteristics of engineered nanoparticles influence their interactions with cells and tissues. With advances in nanotechnology the fabrication of nanoparticles with specific shapes such as rods, cages and alike has been possible. Little is known about how cells and immune system reacts to such particles that are a thousandth of the size of the thickness of a human hair. Understanding their safety helps with developing them for future imaging and therapy of diseases such as cancer, arthritis, and infections.

[More](#)

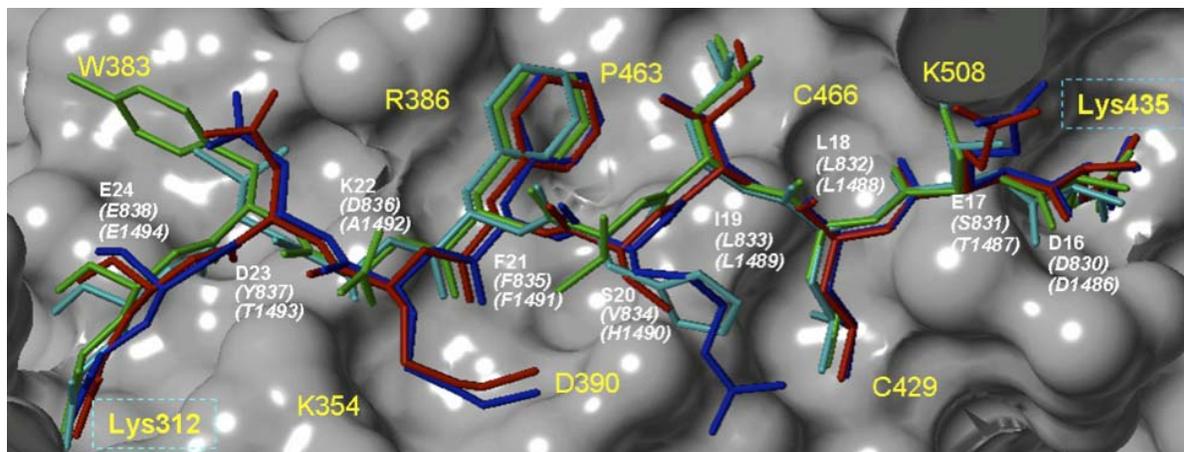
4D SCANNER GIVES 3D LOOK INSIDE BODY

Minimally invasive surgery means faster recovery time for patients and less expensive procedures. However, accuracy can be an issue because the surgeon loses direct sight of the anatomy. Advanced imaging technologies help surgeons navigate accurately inside the human body the same way GPS technology guides drivers safely to their location.

The 4D scanner by nView medical, an early-stage start up based at the University of Utah's Research Park, provides a 3D look inside the body updated in real time during surgery. In traditional procedures surgeons rely on standard x-ray 2D images that can lead to surgical inaccuracies and revision surgeries that could be avoided. This 4D imaging technology will translate into faster, more accurate and less invasive surgeries, benefitting patients, surgeons and hospitals.

[More](#)

CHEMISTRY: MEET BIOLOGY



Protein-protein interaction

The Mark Ji laboratory is a place where chemistry meets biology. We focus on structure-based design and synthesis of drug-like small molecules that can modulate specific cellular signaling pathways with an emphasis on protein-protein interactions and target specificity. Organic synthesis and biological chemistry are of primary importance for our studies. We initiate our individual studies based on the molecular recognition between two proteins, develop new chemistry tools for the rational design of selective protein-protein interaction inhibitors, and apply these newly established tools and techniques to tackle important and challenging therapeutic targets. Technique core in our laboratory is fragment-based *de novo* design.

Three types of chemistry tools and related databases that we are working on are (1) new chemistry-oriented techniques to design highly selective small-molecule inhibitors specific for one protein-protein interface; (2) rational approaches for small-molecule allosteric inhibition of protein-protein interactions; and (3) natural product building blocks and the study of their ability as versatile building blocks for fragment-based inhibitor design.

[More](#)

NON-INVASIVE TEMPERATURE MEASUREMENT TECHNOLOGY

*Therm*Image

ThermImage, Inc. is a medical device company offering a unique and proprietary platform technology focused on non-invasive deep tissue and core temperature measurement and monitoring. The company's MicroSense™ technology permits non-invasive temperature measurements in the body up to a depth of 7 cm - a major scientific accomplishment that creates a strong future in patient care for *ThermImage* and paves the way for expanded product opportunities.

A small antenna placed over the area of interest measures the microwave energy generated by the heat within the body. The microwave energy detected is processed, converted to temperature data through proprietary algorithms, and displayed on a monitor. This system is more than one thousand times more sensitive than a cellphone, and is capable of receiving microwave signals of less than one billionth of a watt.

[More](#)

USTAR IN THE NEWS

Genomics England selects University of Utah, Omicia Technology for 100,000 Genomes Project

Genomics England announced that it will be using technology co-developed in a partnership between the University of Utah and Omicia, and exclusively commercialized through Omicia, to interpret the DNA of Britons as part of the 100,000 Genomes Project, a national effort to hasten creation of diagnostics and treatments that are tailored to a person's genetic make-up.

[More](#)

MOU Formalizes Cooperative Partnerships

As part of Utah Governor Gary R. Herbert's trade mission to Western Europe, the Governor's Office of Economic Development (GOED) and Utah Science Technology and Research (USTAR) agency are pleased to announce USTAR, KU Leuven, University Hospitals Leuven, imec and the Flemish Institute of Biotechnology signed a memorandum of understanding in Leuven, Belgium. The MOU formalizes cooperative partnerships to advance technology transfers in support of economic development.

[More](#)

UPCOMING EVENTS



The poster features a circular logo on the left with a network of white nodes and orange lines. Below it is the text 'USTAR UTAH'S TECHNOLOGY CATALYST'. To the right, an orange banner contains the event title. Below the banner, text lists the keynote speaker, registration status, and location. A bottom row of four images shows laboratory work: a person holding a petri dish, a person at a microscope, a person at a computer, and a person handling a pipette.

**2015
USTAR CONFLUENCE:
WHERE RESEARCH MEETS COMMERCIALIZATION**

KEYNOTE SPEAKER:
Lawrence "Murf" Murphy
CHIEF OF GLOBAL DESIGN
GE HEALTHCARE

WHAT
A two-day symposium to stimulate innovation, collaboration and commercialization and build entrepreneurial excitement

WHO
Science & Technology Leaders, Industry Sponsors, Angel & Venture Capital Investors and Government Stakeholders

REGISTRATION:
COMING SOON

WHERE
James L. Sorenson Molecular Biotechnology Building: A USTAR Innovation Center
36 S. Wasatch Drive
Salt Lake City, UT 84112

USTAR.ORG

SAVE THE DATE:
**SEPTEMBER
29-30, 2015**

