



**Technology Transfer and
Intellectual Property Services**

...pipeline to innovation

University of California, San Diego

TechTIPS

June 2003

Dr. Varki and the Fork in the Road

Dr. Ajit Varki, M.D., is a Professor of Medicine and Cellular & Molecular Medicine at the University of California, San Diego (UCSD)–School of Medicine. In addition to his teaching duties, Dr. Varki adeptly wears many hats at the university.



*Dr. Ajit Varki
Professor of Medicine and
Cellular & Molecular Medicine
Co-Director, Glycobiology Research
and Training Center*

Dr. Varki, an internationally recognized glycobiology expert, is Co-Director of the Glycobiology Research and Training Center (<http://grtc.ucsd.edu>) at UCSD. His research is at the forefront of advances in understanding glycans (cell-surface sugars) and their roles in complex biological processes such as cellular signaling and cell-to-cell adhesion. Dr. Varki has authored over 130 original research articles and 80 invited papers which have been widely read, and has lectured throughout the U.S., as well as Asia, Australia, Europe, and South America. He runs his research lab in collaboration with Nissi Varki, M.D., Professor of Medicine and Pathology at UCSD.

Professor Ajit Varki embodies many qualities of our excellent UCSD faculty, averaging one innovation disclosure a year that stems from his research. He has nineteen innovations registered with the campus and system-wide technology transfer offices. Dr. Varki holds US Patent No. 5,449,781, titled “*Fluorescent or UV visualizable tagging agents for oligosaccharides.*” A recent innovation disclosure involves the inhibition of selectin (cell-surface sugar) adhesion molecules which has potential applications in the prevention of inflammation or the metastasis of cancer cells. A new patent covering this invention will soon be issued and is titled “*Inhibition of L-Selectin and P-Selectin Mediated Binding Using Heparin.*”

In addition to the oncological facets of his research, Professor Varki is Coordinator for the UCSD Project for Explaining the Origin of Humans, that takes a multidisciplinary evolutionary approach to this fascinating problem. In an article published last year, Dr. Varki and his colleagues presented their research determining when humans genetically diverged from the apes. Collaborating with an international team of medical researchers and anthropologists, Dr. Varki and his colleagues used multiple approaches to analyze fossils and gene mutations, and concluded that one of the human genetic forks in the road from apes occurred about 2.8 million years ago.

Professor Varki began his UCSD career over twenty years ago. He received his medical training from the Christian Medical College in Vellore, Temple University in Philadelphia, and the University of Nebraska Medical Center in Omaha; and his research training at Washington University in St. Louis.

TechTIPS Pipeline Calendar:

- Sept. 9, 2003 (1 p.m. - 3 p.m.)
TechTIPS Seminar: Intellectual Property at UCSD Faculty Club—Special Section on IP issues with Multi-Center Cooperative Agreements—Speaker from Gray Cary Ware & Freidenrich LLP
- Sept. 24, 2003
Licensing Executive Society Annual Meeting –Workshop Session 5: “Licensing Technologies from Universities and Research Institutes—Made Easy” with TechTIPS, UCI, the Salk Institute, and the Burnham Institute at the Manchester Hyatt
www.usa-canada.les.org
- Sept. 26, 2003 (1 p.m. - 5 p.m.)
TechTIPS Conference: Biotech Bootcamp and VC Forum at Institute of the Americas
- Oct. 9, 2003 (1 p.m. - 3 p.m.)
TechTIPS Seminar: Risk Management – How to Protect yourself in Industry Relations at the Fung Auditorium—Speaker to be announced
- Oct. 16-17, 2003
AgBIO Symposium & Showcase: Plant Manufactured Pharmaceuticals at the Salk Institute’s Frederic de Hoffmann Auditorium
www.sdcm.org
- Nov. 13, 2003
Project T2: Technology Transfer Conference –Presented by LARTA, Southern California Edison, and participating Southern California universities, at the Millenium Biltmore Hotel in Los Angeles
www.larta.org/T2

For more information on any of these events go to <http://invent.ucsd.edu>

TIP: Did you know?

Available technologies are posted on the TechTIPS website. Non-confidential disclosures and specific industry segment brochures can be found at: <http://invent.ucsd.edu/technology/index.htm>.

TechTIPS Participates in Jacobs School Research Review

Issued US Patents

Sadik Esener
6,574,028

Opposing electrode light modulator array and method for manufacturing the same

Murray Goodman
6,525,182

Guanidinylation, guanidino-glycosides, uses, and methods of assaying their activity

Randal Goomer
6,573,101

Compositions for receptor liposome mediated transfection and methods of using same

Guo-Li Ming
6,512,004

Promoters of neural regeneration

Michael Karin
6,514,745

Oncoprotein protein kinase

Fred Levine
6,528,309

Vacuum-mediated desiccation protection of cells

Jerrold Olefsky
6,511,811

Protein kinase C antagonist related to insulin receptor

Eyal Raz
6,514,948

Method for enhancing an immune response

6,534,062

Methods for increasing a cytotoxic T lymphocyte response in vivo

6,552,006

Immunomodulatory polynucleotides in treatment of an infection by an intracellular pathogen

The Jacobs School of Engineering held the 22nd Annual Research Review on February 28th. The theme of this year's event was "Data to Decision: predicting, assessing, and responding to today's challenges."

Featured speakers included: Hossein



Dr. Bill Decker (right) has a discussion with a Jacobs School Research Review attendee at the TechTIPS booth.

Eslambolchi, President of AT&T Laboratories and CTO of AT&T; Larry E. Rosenberger, Vice President of Research and Development, Fair,

In March, Assistant Vice Chancellor Alan Paau, MBA, Ph.D., presented an intellectual property seminar for the Mechanical Aerospace Engineering Department. Dr. Paau provided an overview of invention disclosures and IP management processes on campus.

In the same month our office, along with the Office of Contract & Grant Administration (OCGA), presented a *Material Transfer Agreement (MTA) Workshop*. This workshop reviewed the different types of MTAs that are used to transfer material to and from the university, along with contract language and sample agreement clauses.

Incoming materials transfer and outgoing transfers of materials not developed at UCSD are managed by OCGA. Carroll Ekberg, Principal Administrative Analyst, provided an overview of the types of materials that require a signed MTA. In her presentation, Ms. Ekberg also discussed the various issues that may arise during agreement negotiations.

The TechTIPS office manages outgoing MTAs of UCSD-developed materials and Melissa Fitzgerald, Ph.D., Senior Licensing Officer, discussed transfer procedures, typical MTA terms and the criteria for "Shrink-Wrap

Isaac and Company; and Peter A. Freeman, National Science Foundation, Assistant Director for the Directorate for Computer & Information Science & Engineering.

The topics discussed ranged from systems biology and genetic circuits to advances in biometrics and face recognition.

The exhibits included over 150 research posters by Jacobs School graduate students, and technical displays by members of the Jacobs School's Corporate Affiliates Program. The TechTIPS office, along with other campus groups, were invited to participate in the exhibits session.

MTAs" that can be signed by the principal investigator.

During the Q&A session, the panel expanded to include Senior Licensing Officers William J. Decker, Ph.D., and Jane Moores, Ph.D. This combined panel addressed the various questions at the latter half of the workshop.

For additional information on material transfer agreements please refer to the websites below or call our office at (858) 534-5815.

Incoming materials and outgoing Non-UCSD developed materials:

<http://ocga2.ucsd.edu/>

Outgoing UCSD developed materials:

<http://invent.ucsd.edu/faculty/mta/index.htm>



Attendees from the MTA Workshop listen to the presentations.

The TechTIPS office is abuzz with activity. In support of our mission we provide information about intellectual property to the greater UCSD community, which includes faculty, staff and students. Our staff has conducted seminars for a wide variety of groups since the year began. In January, we hosted a *Software Copyright Intellectual Property Seminar*, that was conducted by a local copyright attorney who provided an overview on Copyright law and basics. The seminar was held in the San Diego Supercomputer Center (SDSC) Auditorium, and attracted over 70 attendees.

An important aspect of the Licensing Officers' (LO) work involves outreach and developing relationships with individual faculty and different groups on campus. Each LO has a technology focus depending on their expertise. TechTIPS LOs welcome the opportunity to conduct informational seminars for various groups. Recently, David Gibbons, Physical Science Licensing Officer was invited to present a graduate seminar to the Structural Engineering group at the Jacobs



Dr. Melissa Fitzgerald, Senior Licensing Officer, lectures to Political Science undergraduate students.

School of Engineering on the ins and outs of intellectual property law from the engineering perspective.

In another example, Dr. Melissa Fitzgerald, Life Science Senior Licensing Officer, presented a seminar on Technology Transfer and Biotechnology Innovations at UCSD to an upper division Political Science class. In her lecture, Dr. Fitzgerald gave an overview on the UCSD technology transfer with a specific emphasis on biotechnology.

Issued US Patents

Geert Schmid-Schoenbein
6,534,283
Method for treatment and prevention of physiological shock

J. Edwin Seegmiller
6,521,615
Diagnosing an animal for pyrophosphate gout, osteoporosis, or osteoarthritis by assaying intracellular pyrophosphate content in peripheral blood cells

Raluan Soltero
6,566,326
Chemically modified hemoglobin for burn shock resuscitation

Richard Walker
6,537,778
Eukaryotic mechanosensory transduction channel

Flossie Wong-Staal
6,555,107
Lentiviral nucleic acids and uses thereof

Tony Yaksh
6,573,282
Peripherally active anti-hyperalgesic opiates
6,576,650
Peripherally active anti-hyperalgesic opiates

Martin Yanofsky
6,541,683
Method of decreasing seed size in a plant

Licensing Corner: Focus on Life Science



*Denise Lew, Ph.D.
Senior Licensing Officer*

Dr. Denise Lew, a senior licensing officer in the biomedical area, earned her Ph.D. in Biochemistry from the University of Illinois at Urbana where she studied the molecular biology of estrogen receptors. She conducted her postdoctoral research at the Salk Institute, creating and utilizing transgenic mice to study the developmental regulation of mammalian gene expression. As a researcher in the San Diego biotech industry for 10 years, her investigations included developing gene therapies for cancer and infectious diseases. One of the most satisfying aspects of her job at TechTIPS is learning about the ongoing research of UCSD investigators, and understanding the potential for this research to improve human health.

Denise maintains philanthropic involvement in the San Diego community. She serves on the Board of Governors for the San Diego Foundation and is the Chair of their Science and Technology group, which distributes grants to address local needs

in science education and research. She recently joined the board of the Doris A. Howell Foundation for Women's Health Research, an organization that supports and encourages young people to pursue careers emphasizing women's health. Denise is also a founding member of the San Diego Women's Foundation and serves on its Education Committee. In her free time, she particularly enjoys international travel for the opportunity to scuba dive and photograph underwater marine life.

Innovator Roundtable Meeting

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TechTIPS organized the latest Innovators Roundtable Meeting (IRM) for a group of UCSD physical science researchers. IRMs are regularly scheduled throughout the year to provide analyses and feedback from our industry partners and other campus groups about the latest innovations developed at the university. These meetings provide discussion forums regarding potential commercial applications and strategies for UCSD developed technologies.

This month's IRM featured five innovations:

BOLD fMRI Signal in Brain as an Indicator of Preference for Commercial Products—Dr. Martin Paulus, Assistant Professor of Psychiatry and Dr. Lawrence Frank, Associate Professor of Radiology.

Low Bit-Rate Video Compression in Mobile Applications—Dr. Truong Nguyen, Professor of Electric and Computer Engineering.

New Spin Field-Effect Transistor with Ferromagnetic Gates—Dr. Lu Sham, Professor of Physics.

Topological Fingerprints for Speaker Identification—Dr. Bernardo Mindlin, Research Scientist in the Institute for Non-Linear Science.

Single-Molecule Assay-Quality Detection without PCR Amplification—Dr. Michael Heller, Professor of Bioengineering.

Industry partners were represented at this meeting by: M. Albert Capote of Aguila Technologies; Dina Lozofsky from BTG International Corporation; Greg Arnold of Carmel Canyon Partners; Heiner Sussner and Robert Holmen of Miramar Venture Partners; Adam Lieber of Mission Ventures; Joe O'Neill, Sales and Marketing Consultant; Conrad Burke of Sevin Rosen Funds; Bill Porter from UTEK Corporation; and Vern Yates of Yates Ventures.

Campus participants included Abi Barrow, Tim Rueth, and Jack Savidge from the von Liebig Center and Tom James from the Center for Wireless Communications.

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Life Science Licensing

Jane Moores, Ph.D. – Asst. Director
Melissa Fitzgerald, Ph.D. – SLO
Denise Lew, Ph.D. – SLO
Donna Shaw, Ph.D. – SLO
Laura Wolszon, Ph.D. – LO

Physical Science Licensing

Bill Decker, Ph.D. – Asst. Director
Barry Gelernt, Ph.D. – SLO
David Gibbons, PE, MBA – LO

SLO = Senior Licensing Officer
LO = Licensing Officer

If I have seen further than others, it is by standing upon the shoulders of giants.

- Isaac Newton (1642-1727)



SensorMetrix: Exclusive Source for Negative Index Materials

SensorMetrix Corporation is our exclusive licensee for the manufacture and sale of Negative Index Materials for research use, as of June 30, 2003. These materials were licensed from UCSD and UCLA and are based upon these schools' rapidly growing portfolio of related IP. The deal, coordinated by TechTIPS' David Gibbons, makes SensorMetrix the key supplier of materials and designs to the US research community. Growing interest by several government agencies is expected to complement development of commercial applications for Negative Index Materials (a.k.a. Left Handed Materials). This effort may potentially seed the market with valuable designs, giving UCSD and SensorMetrix a key role in the future commercialization of this exciting technology. To learn more about SensorMetrix and its products visit www.sensormetrix.com.

New License with Droplet Measurement Technologies

Droplet Measurement Technologies (DMT) of Boulder, Colorado became the exclusive licensee of *Dr. Greg Robert's* invention "A Continuous-Flow Longitudinal Thermal-Gradient Diffusion Chamber". The device, a collaboration with Athanios Nenes formerly of Caltech, collects cloud condensation nuclei (CCN) formation measurements in a novel airborne format. Early indications predict strong demand for the instrument and full-scale production and sales are expected in 2004. DMT's customers will include private industry as well as state and federal agencies. Additional information about this new technology or Droplet Measurement Technologies, Inc. can be found at www.dropletmeasurement.com.

New Engineering License

The University has recently licensed technology developed jointly by *Professor Sadik Esener* and Omer Acikel (AMCC) to Applied Micro Circuits Corporation. The method utilizes a unique pulse shaping algorithm that increases bit-rate in digital communications.

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