



BECKMAN LASER INSTITUTE

IN THE NEWS

Founder's Column	2
Honors and Awards	2
Newsbriefs	5
Recent Publications	6
Arrivals and Departures	7

FALL 2011

ANOTHER SUCCESSFUL WEST COAST VBF CONFERENCE

The 2011 Port Wine Stain and Vascular Birthmarks Conference was held on November 4-5, 2011, at the Island Hotel in Newport Beach, CA, and the Beckman Laser Institute. The conference was attended by approximately 275 people and many medical experts from around the country. Co-sponsored by Dr. J. Stuart Nelson, Medical Director of the Beckman Laser Institute (BLI), and the Vascular Birthmarks Foundation (VBF), a global foundation dedicated to helping families afflicted by vascular birthmarks, tumors or syndromes, the conference began on Friday night with a reception at the Island Hotel. Immediately following the reception, the



Nicole Hadley (center) holding award, is joined by BLI Medical Clinic colleagues; from left to right: Vaiola Jalomo, Andrea Giancarli, Lisa Quintero and Mina Blanchet.

attendees were welcomed by Dr. Nelson and VBF founder, Dr. Linda Rozell-Shannon.

Four awards were also presented that evening. The Physician of the Year

award was presented to Dr. Anne M. Comi, Director of the Hunter Nelson Sturge-Weber Center at Kennedy Krieger Institute in Baltimore, MD. The Service Award was given to Nicole Hadley for her work as a Child Life Specialist at BLI. Dr. Wangcun Jia was presented with the Dr. Michael W. Berns Achievement Award for outstanding research contributions to the understanding, diagnosis and treatment of vascular birthmarks. Lauri Firstenberg was given the first ever Patricia

Beckman Excellence in Philanthropy Award for her exemplary leadership in charitable giving that benefits the advancement and treatment of vascular

(VBF Conference continued on p. 3)

BLI Awarded UC Discovery Grant

A one-year UC Discovery grant has been awarded to Beckman Laser Institute (BLI) Director Bruce Tromberg, Ph.D., for the development of "A Handheld Tomographic Laser Breast Scanner (t-LBS)." The UC Discovery grant requires that a patent has been filed for the device and the device has commercial potential. The t-LBS is based on a well-established laser breast scanner (LBS) platform that was built in the Laser Microbeam and Medical Program (LAMMP) facility housed at BLI over the past 10 years and evaluated on more than 700 clinical subjects. This refrigerator-sized LBS platform has expensive components and is not a com-

mercially viable, portable medical device. In order to address this problem, Dr. Tromberg, Co-investigator Albert Cerussi, Ph.D., and Engineer Keun Sik No, Ph.D., have developed an enabling board-based device that replaces many of the standard LBS components. The board-based hardware has several important features including replacing approximately \$80,000 of LBS technology with a \$3,000 board that provides equivalent performance while also being small and

(UC Discovery Grant continued on p. 6)

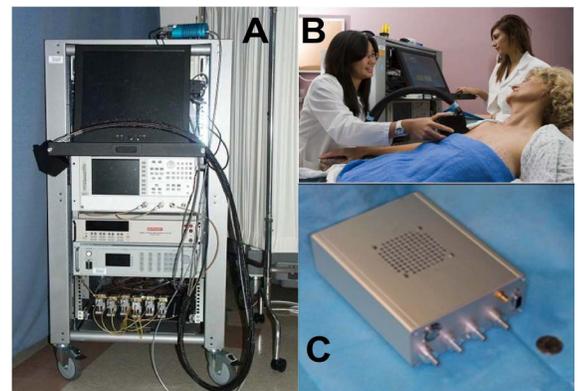


Figure A: Refrigerator-size LBS currently in national multi-center ACRIN trial, construction cost – approx. \$80,000. Figure B: Handheld probe scanning patient. Figure C: Box-enclosed, board-based technology with 4 laser diodes and detector that replaces most of the components in (A) and forms the core of the proposed desktop t-LBS, construction cost – approx. \$3,000.

My Life Mentors

by **Michael W. Berns, Ph.D.**

Arnold and Mabel Beckman Professor
Co-Founder, Beckman Laser Institute

In my last column, I described my three academic mentors: my high school biology teacher, Bob Abrams, and two college professors, William T. Keeton and Lowell T. Uhler. But I also have been fortunate to have had three life mentors who impacted my life in extraordinary ways; in fact, all three were extraordinary people. The first was my grandfather, Samuel T. Metz. He was a role model and an inspiration. In the thirteen years that I was under his tutelage, I never heard him raise his voice in anger. He was the most even-tempered person I have ever met. He was calm, cool, and collected. I remember one day when we were on a farm, and a horse took off at a gallop with a little girl hanging from the saddle by her leg. My grandpa jumped right in front of that horse and grabbed the reins, saving that girl from severe injury. My grandpa was also an inventor and a tinkerer. He could fix anything from a car engine to my grandma's sewing machine—which he

could take apart and put together with his eyes closed. I was so fortunate to have a man like Samuel T. Metz as my guardian until he died in 1965.

My second life mentor was the man who attracted me to California and UC Irvine: Howard Schneiderman. He was one of the most enthusiastic and persuasive persons that I have ever met. I learned how to manage large programs by watching the way he ran the Developmental Biology Center and the School of Biological Sciences at UCI. He had a wonderful smile and enthusiasm for science that was infectious. He expressed interest in whatever your subject was, even if it was distant from his own personal interests. His mind was always two steps ahead of everyone else's, whether it was on a scientific issue or a life issue. Howard Schneiderman helped me to look at the big picture rather than get caught up with minutiae.

My third life mentor was Arnold O. Beckman. He was a great man. He was a scientist (although he often denied it), a businessman, and a philanthropist. His inventions and monetary gifts back to society will exist forever. He was a very exciting person to be around. His sense of humor was there every day, and although he loved to tell me and others,

“Don't take yourself too seriously,” what he really was saying was “have some humor in your life.” He tutored me in fundraising, and at one time said “...you professors think fundraising is like writing a purchase order.” I met Dr. Beckman when he was 80, yet he really was like a man in his 50's. At 92, I hosted a UCI Roundtable during which he was peppered with questions for over an hour and a half. He relished telling prominent Orange County and UCI officials who were in attendance, how he picked projects to fund and what he was worried about in American science and education. He ended by explaining in exquisite detail (with equations) how the pH meter, his first invention, worked. I saw him several times a week from 1982 to 1996 and cannot imagine another person who could measure up to his intelligence, inquisitiveness, and sense of humor. I end every guest lecture I give with his picture and a thank you, not only for supporting the idea of the Beckman Laser Institute but also for his faith in me.

I have been very fortunate to have had six outstanding mentors whose wisdom and guidance have allowed me to explore science and life to their fullest. ■

Honors and Awards

Rolf Saager, Ph.D.



Rolf Saager

BLI Postdoctoral Fellow Rolf Saager was the recipient of the “Postdoctoral Scholar Research Integrity Ambassador Award.” The award recognizes exemplary achievement in

leadership, scholarship, professional involvement, and university and community service, especially as it relates to involvement with research integrity. Dr. Saager was nominated by Francis Leslie,

Dean of Graduate Students, who noted: “As the President of our Postdoctoral Scholar Association (PDA) for the last three years, Rolf has demonstrated leadership in advising and supporting the University in issues such as professional development, mentoring, fostering a sense of community and identity among Postdoctoral researchers, and facilitating the integration of Postdoctoral Scholars into the research community.”

David Cuccia, Ph.D.

David Cuccia, Chief Technology Officer of Modular Imaging Inc., is the Principal Investigator of a 6-month Phase I SBIR (Small Business Innovation Research) grant from the Department of Defense

entitled “Non-radiological imaging devices for combat casualty care associated with burn.” Dr. Cuccia is also a Principal Investigator of a Phase II STTR grant from the NIH/NIGMS (see Anthony Durkin, Ph.D., in Honors and Awards).

Anthony Durkin, Ph.D.

BLI Associate Professor Anthony Durkin and David Cuccia of Modulated Imaging, Inc., are Principal Investigators of a 2-year Phase II STTR (Small Business Technology Transfer) grant from the National Institutes of Health/National Institute of General Medical Sciences (NIH/NIGMS) for “Assessment

(Honors and Awards continued on p. 4)

VBF Conference *(cont'd from p. 1)*

birthmarks. This award was established in memory of a wonderful friend and donor to BLI, Patricia "Pat" Beckman. Dr. Nelson talked about the contributions that Pat Beckman made to BLI during her lifetime and about the difference she made in the lives of those around her.

The evening ended with four breakout sessions which were informal question and answer sessions with experts in the fields of port wine stains, hemangiomas, malformations and syndromes (including both head & neck and extremities).

On Saturday morning, an international group of physicians specializing in vascular malformations and related diseases presented the latest findings on research, diagnoses, and treatments for vascular birthmarks and related syndromes to families from as far away as

Massachusetts and as close as Irvine, CA. In the afternoon, at the Beckman Laser Institute, approximately 100 clinic appointments were scheduled and conducted by four medical teams specializing in various vascular malformations. Dr. Nelson remarked that he was extremely pleased with the positive response from attendees and felt that the conference, once again, was able to provide a great amount of information and support to families dealing with vascular birthmarks.

Contributing to the success of the conference were generous donations by the following individuals and organizations: Syneron, Lauri Firstenberg, Muldoons Restaurant, Dr. Michael W. Berns, BLI Foundation, Inc. non-profit, Dr. Bruce J. Tromberg, Laser Microbeam and Medical Program (LAMMP), National Center for Research Resources (NCRR), National Institutes of Health (NIH), UCI Medical Center, the



Dr. J. Stuart Nelson (right) presents the Dr. Michael W. Berns Achievement Award to Dr. Wangcun Jia.

Chancheya family, Whole Foods Market, and Dr. J. Stuart Nelson.

Next year the conference will be held in New York City on Nov. 9-10, 2012. The Beckman Laser Institute will again host the annual vascular birthmarks conference in 2013. For more information, please visit the Vascular Birthmarks Foundation website (www.birthmark.org) or contact Erin Miller at (949) 824-4111. ■

In Memoriam - Pat Beckman



Pat Beckman

Pat Beckman, daughter of Arnold and Mabel Beckman, passed away in August 2011 at the age of 78. Pat and her parents had a long history of partnership and philanthropy at UC Irvine, beginning in 1982 with the establishment of the Beckman Laser

Institute and Medical Clinic (BLI). Co-founded by her father, the Institute has been dedicated to cutting-edge interdisciplinary research at the interface of physical science, engineering and biology since 1986. Pat was a former member of the BLI non-profit Board. She was also active in the BLI programs for treating Port Wine Stain birthmarks in children and frequently visited BLI, sometimes even joining in "brainstorming" sessions late Friday afternoons in BLI Director Bruce Tromberg's office with other researchers.

Pat is remembered as a gentle, giving person, and an active volunteer and philanthropist who was the Founding President of the Orange County Chapter of the Achievement Rewards for College Scholars (ARCS) Foundation which funds graduate fellowships in the sciences. Having earned degrees in both Occupational

Therapy and Nursing, and working in those fields for many years, Pat had a special interest in healthcare and nursing, and she served on the leadership council for UC Irvine's Program in Nursing Science.

She loved nature, hiking, gardening, reading and, most of all, encouraging young people in their pursuit of their scientific education. She shared her knowledge and expertise on many boards of philanthropic organizations and educational institutions, including the Board of Trustees for the UC Irvine Foundation. Pat also served as a director and active board member of the Arnold and Mabel Beckman Foundation which has given more than \$400 million to various charities and organizations.

Always inquisitive and fully involved, Pat loved visiting BLI and learning about the research. We will miss her.

Medical Students Travel To India To Study Oral Cancer



Part of the group of first-year UCI medical students who traveled to Bangalore, India. From left to right: Martin Hofmann, Dawn McDonald, David Tehrani, Cristina Wheeler Castillo and Patrick Nelson.

Under a Global Health Travel Fellowship Award and funds from the Department of Medical Education at UC Irvine, a group of nine first-year medical students from UC Irvine spent a month (July 13-August 12, 2011) in India, visiting 4 hospitals: the Christian Medical College, Vellore, Gudalur Adivasi Hospital, Narayana Hrudayala, Bangalore and the Mazumdar-Shaw Cancer Center, Bangalore. The students spent 10 days (August 2-August 11, 2011) at the Mazumdar-Shaw center, a 1400-bed cancer specialty hospital, where they observed a pilot program to detect and

evaluate oral cancer, a major cancer killer in India. The oral cancer program involves 1 health worker per 1,000 people (mostly poor) who asks 7 basic questions to determine cancer risk of each individual and uses a cell phone to take photos of potential candidates with oral cancer. There are presently 100 health workers and a total of 100,000 people who have been involved with the program. The photos are sent to an oncologist who, based on risk factors and the

photo, decides who most needs treatment for his/her lesion. The patient is sent to the Mazumdar-Shaw hospital in Bangalore.

The types of oral cancer seen at the hospital are usually very advanced and often involve the tongue. This is due to the prevalent social custom of using “paan,” a tobacco leaf wrapped with spices and a betel nut. The paan is chewed to relieve stress. Because this practice is so widespread and readily available commercially, the average age of the onset of oral cancer is 35-40 years

old—an alarmingly young age for cancer. Another cause for oral cancer is a high alcoholism rate. So far, 24 cases with photos and documentation have been completed.

Using this data, BLI Dental Director Petra Wilder-Smith hopes to submit a grant to the National Institutes of Health which will describe a small, hand-held camera using optical coherent tomography (devised by BLI Professor Zhongping Chen) that can be produced and used in medically underserved communities in India. Because prevention campaigns are non-existent, the next most effective means is to be able to catch the oral cancer at an early stage.

Under the guidance of Professor Moni Abraham Kuriakose at the Mazumdar-Shaw hospital, the medical students were able to see many procedures performed at the hospital as well as go to other communities outside of Bangalore to do well-child checks and screening for diabetes and sickle cell anemia. The students were mentored in India by Professor K. George Chandy from the Department of Physiology and Biophysics, UCI School of Medicine. This is the third group of UCI medical students he has mentored in India. ■

Honors and Awards *(cont'd from p. 2)*

of reconstructive surgical flaps using spatially resolved tissue oximeter.” The central aim of the proposed Phase II research is to further the development of Modulated Imaging and to assess the viability of this as a means to determine the status of tissue reconstruction flaps.

Jun Zhang, Ph.D.



Jun Zhang

BLI Assistant Project Scientist Jun Zhang has been awarded a National Institutes of Health NHLBI K25 Mentored Quantitative Research

Development Award entitled “Evaluation of obstructive sleep apnea with long range 3D endoscopic FDOCT (Fourier Domain Optical Coherence Tomography).”

Ryan Lim, Ph.D.



Ryan Lim

Ryan Lim defended his thesis, “Characterization of atherosclerotic plaque using multimodal nonlinear optical microscopy,” on June 1, 2011, and was a part of Dr. Bruce Tromberg’s lab.

Ryan is now working as a Scientist at Mosaic Laboratories in Lake Forest, CA.

Jared Stephens, Ph.D.



Jared Stephens

Jared Stephens defended his thesis, “The cellular response to DNA double strand break repair during mitosis in human cells,” on March 18, 2011. He worked in the lab of Dr. Michael W. Berns.

Henry Hirschberg, M.D., Ph.D.

BLI Research Professor Henry Hirschberg and Dr. Marlon Mathews of the UCI Department of Neurosurgery have been awarded a grant from the American Society for Laser Medicine

(Honors and Awards continued on p. 8)

BLI Visited by New Dean

Dr. Greg Washington, the new Dean of The Henry Samueli School of Engineering, visited the Beckman Laser Institute for a tour of the facility and research demonstrations on October 3, 2011.



Graduate student Zander Lin (left) demonstrates spatial frequency domain imaging with an LED microprojector to Dean Greg Washington (center) and BLI Director Bruce Tromberg (right).

BLI Co-founder Speaks at His Alma Mater

BLI Co-founder, Dr. Michael W. Berns, was invited to give two lectures at his alma mater, Cornell University, on September 14-15, 2011. At the Reproductive Physiology/Endocrinology Seminar, Dr. Berns spoke on "Shedding 'light' on gamete motility using laser scissors and tweezers." The following day Dr. Berns addressed the Department of Biomedical Engineering on "Shedding light on cell structure and function with laser tweezers and nano-scissors." This work started at Cornell in 1966 with a primitive ruby laser mounted on a microscope. Over the past 46 years, a variety of lasers with progressively shorter exposure times have been interfaced with computer-controlled automated microscopes and low light level detection cameras for manipulation of cells and their organelles. Problems studied with this system include whole cell motility, such as energetics of sperm swimming, and intracellular motility, such as the movement and biomechanics of chromosomes on the mitotic and meiotic spindles.

BLI Visited by Hamamatsu Photonics Engineers

The Beckman Laser Institute (BLI) was visited by Dr. Totumo Hara and Mr. Yutaka Yamashita, engineers from Hamamatsu Photonics in Japan, on August 26, 2011. The visit included a tour of BLI and demonstrations using diffuse optical spectroscopic imaging (DOSI) and spatial frequency domain imaging (SFDI). BLI has been evaluating a time-resolved spectroscopy system (TRS-20) for Hamamatsu Photonics which is a different way of measuring optical parameters. One of the demonstrations involved clinical measurements of muscle and brain using the TRS-20 and DOSI developed

by BLI. The all-day event was organized by Postdoctoral Researchers Darren Roblyer and Tom O'Sullivan who were aided by fellow postdoctoral researchers Soren Konecky and Amaan Mazhar and graduate student Alexander Lin.

BLI Hosts Laser Aesthetics Course

The Beckman Laser Institute (BLI) was host to a CME-accredited Laser Aesthetics educational course on November 12-13, 2011, sponsored by the American Society of Laser Medicine and Surgery (www.aslms.org). The course was available to physicians and other clinicians who currently use or are investigating the use of lasers in their practice in order to receive a basic understanding of lasers and other light energy-based technology and

their use in clinical aesthetic applications, such as hair removal, vascular lesions, skin tightening, skin rejuvenation, acne scars, port wine stains, irregular pigmentations, nevi, melasma, and tattoos. The program featured renowned faculty members: Gerald N. Goldberg, M.D., J. Stuart Nelson, M.D., Ph.D., E. Victor Ross, M.D., and Emil A. Tanghetti, M.D. The course was limited to 50 participants.

Dental Collaboration

Rebecca Ho, D.D.S, Ph.D., recently spent 3 months at the Beckman Laser Institute (BLI) to work in the laboratory of Dental Director Petra Wilder-Smith. She concentrated on an optical approach to bio-film formation (plaque) on tooth and dental restoration materials. Her visit was part of an ongoing collaboration between BLI and Dr. Arthur Chiou, Director of the Biophotonic Interdisciplinary Research Center, National Yang-Ming University, Taipei, Taiwan.

BLI Postdoc Joins Modulated Imaging

Dr. Amaan Mazhar, a former graduate student and postdoctoral researcher at the Beckman Laser Institute (BLI), has accepted a position with Modulated Imaging Inc., as Director of Research. Modulated Imaging is one of four companies located in the BLI Photonics Incubator.



ASLMS Laser Aesthetics Course speakers from left to right: Drs. E. Victor Ross, Emil A. Tanghetti, J. Stuart Nelson and Gerald N. Goldberg.

UC Discovery Grant *(cont'd from p. 1)*

portable.

At present, the board-based instrument is capable of one-dimensional images. The UC Discovery grant will enable researchers to expand the LBS so it is capable of 3D functional imaging in thick tissues. The board can be packaged in modular units making compact, broadband multi-channel instruments possible for the first time. An important implication of this design feature is that the basic handheld LBS concept can now gain tomographic (i.e., 3D subsurface

imaging) capabilities in addition to simultaneous real-time mapping of multiple breast locations with a single, handheld probe.

The LBS is also now undergoing standardization and validation on neo-adjuvant chemotherapy (NAC) patients in an investigator-initiated, hypothesis-based multi-center clinical trial supported by the National Institutes of Health (NIH) and the American College of Radiology Imaging Networks (ACRIN-6691). This is the first time an optical imaging device has been tested by ACRIN (acrin.bli.uci.edu).

By developing the t-LBS prototype in parallel with the ongoing LBS multi-center trial, many of the risks associated with matching a new technology with an appropriate market will be mitigated. When the trial is completed in April 2013, a compact t-LBS prototype will be available with all of the features of the original standardized and validated LBS technology. In addition, this medical device will have expanded capabilities and will be ideally positioned for commercialization and FDA approval which will facilitate more rapid adoption of this new technology in the clinic. ■

Selected Recent Publications

“Analysis of single Monte Carlo methods for prediction of reflectance from turbid media” by M. Martinelli, A. Gardner, D. Cuccia, C. Hayakawa, J. Spanier and V. Venugopalan in *Optics Express* 19: 19627-19642, 2011.

“Laser speckle imaging in the spatial frequency domain” by A. Mazhar, D. J. Cuccia, T. B. Rice, S. A. Carp, A. J. Durkin, D. A. Boas, B. Choi and B. J. Tromberg in *Biomedical Optics Express* 2: 1553-1563, 2011.

“Novel combined miniature optical coherence tomography ultrasound probe for in vivo intravascular imaging” by J. Yin, X. Li, J. Jing, J. Li, D. Mukai, S. Mahon, A. Edris, K. Hoang, K. K. Shung, M. Brenner, J. Narula, Q. Zhou and Z. Chen in *Journal of Biomedical Optics* 16: 060505, 2011.

“Photothermal treatment of glioma: an in vitro study of macrophage-mediated delivery of gold nanoshells” by S. K. Baek, A. R. Makkouk, T. Krasieva, C. H. Sun, S. J. Madsen and H. Hirschberg in *Journal of Neuro-oncology* 104: 439-448, 2011.

“Method for depth-resolved quantitation of optical properties in layered media using spatially modulated quantitative spectroscopy (SMoQS)” by R. B. Saager, A. Truong, D. J. Cuccia and A. J. Durkin in *Journal of Biomedical Optics* 16: 077002, 2011.

“Needle electrode-based electromechanical reshaping of rabbit septal cartilage: a systematic evaluation” by E. C. Wu, D. E. Protsenko, A. Z. Khan, S. Dubin, K. Karimi and B. J. F. Wong in *IEEE Transactions on Biomedical Engineering* 58: 2378-2383, 2011.

“Electromechanical reshaping of costal cartilage grafts: a new surgical treatment modality” by C. T. Manuel, A. Foulad, D. E. Protsenko, A. Hamamoto and B. J. F. Wong in *The Laryngoscope* 121: 1839-1842, 2011.

“Assessment of pulpal vitality using laser speckle imaging” by C. Stoianovici, P. Wilder-Smith, and B. Choi in *Lasers in Surgery and Medicine* 43: 833-837, 2011.

“Optical imaging of breast cancer oxyhemoglobin flare correlates with neoadjuvant chemotherapy response one day after starting treatment” by D. Roblyer, S. Ueda, A. Cerussi, W. Tanamai, A. Durkin, R. Mehta, D. Hsiang, J. A. Butler, C. McLaren, W.-P. Chen and B. J. Tromberg in *Proceedings of the National Academy of Sciences USA* 108: 14626-14631, 2011.

“Breast cancer spatial heterogeneity in near-infrared spectra and the prediction of neoadjuvant chemotherapy response” by Y. Santoro, A. Leproux, A. Cerussi, B. Tromberg and E. Gratton in *Journal of Biomedical Optics* 16: 097007, 2011.

“Automated computation of functional vascular density using laser speckle imaging in a rodent window chamber model” by S. M. White, S. C. George and B. Choi in *Microvascular Research* 82: 92-95, 2011.

“Intensity-based modified Doppler variance algorithm: application to phase instable and phase stable optical coherence tomography systems” by G. J. Liu, L. D. Chou, W. C. Jia, W. J. Qi, B. Choi and Z. Chen in *Optics Express* 19: 11429-11440, 2011.

“Quantitative determination of dynamical properties using coherent spatial frequency domain imaging” by T. B. Rice, S. D. Konecky, A. Mazhar, D. J. Cuccia, A. J. Durkin, B. Choi and B. J. Tromberg in *Journal of the Optical Society of America A* 28: 2108-2114, 2011.

“First-in-human pilot study of a spatial frequency domain oxygenation imaging system” by S. Gioux, A. Mazhar, B. T. Lee, D. J. Cuccia, A. Stockdale, R. Oketokoun, Y. Ashitate, E. Kelly, M. Weinmann, N. J. Durr, L. A. Moffitt, A. J. Durkin, B. J. Tromberg and J. V. Frangioni in *Journal of Biomedical Optics* 16: 086015, 2011.

“Hybrid diffusion and two-flux approximation for multi-layered tissue light propagation modeling” by D. Yudovsky and A. J. Durkin in *Applied Optics* 50: 4237-4245, 2011.

Arrivals and Departures

ARRIVALS

Yong-Suk Cho, M.D.

Division of Gastroenterology, Yonsei University College of Medicine, South Korea, has joined the lab of Dr. Matthew Brenner for one year on a fellowship from the Korean government. He is interested in learning about the current applications of the diffuse optical spectroscopy and optical coherent tomography technologies developed at BLI and exploring the possibilities of translating those technologies into the field of gastroenterology.



Yong-Suk Cho

Seok Jin Hong, M.D.

is a Visiting Scientist from the Department of ORL-Head & Neck Surgery, Korea University College of Medicine, South Korea, who has joined the lab of Dr. Henry Hirschberg. During his stay at BLI, Dr. Hong will be involved with the in vitro portion of a project entitled "Macrophage-mediated delivery of nanoparticles for photothermal ablation of malignant gliomas" and will also participate in surgical procedures.



Seok Jin Hong

Christopher

Hua, B.S., has joined Dr. Petra Wilder-Smith's lab as a Junior Specialist. He will be working on a project to characterize dry mouth and dental decay using optical techniques. The goal is to develop a tool for early diagnosis as well as monitoring the individualized effectiveness of treatments.



Christopher Hua

Byungjo Jung, Ph.D.

is a Visiting Professor from the Department of Biomedical Engineering, Yonsei University, South Korea, who will be working with Dr. J. Stuart Nelson on collaborative research.



Byungjo Jung

Huaxu Liu, M.D., Ph.D.

is a Visiting Scholar from Shandong Provincial Institute of Dermatology and Venereology, China, and will be working with Dr. J. Stuart Nelson on laser and anti-angiogenic therapy.



Huaxu Liu

Zhonglie Piao, Ph.D.

is a Visiting Scientist from the Department of Cogno-Mechatronics Engineering at Pusan National University, South Korea. He will be working with Dr. Zhongping Chen on developing light sources for optical coherence tomography.



Zhonglie Piao

Hideki

Takeuchi, M.D., Ph.D., Department of Breast Oncology, Saitama Medical University International Medical Center, Hidaka, Japan, will be at the BLI for the next two years working with Dr. Albert Cerussi on optical imaging of breast cancer.



Hideki Takeuchi

DEPARTURES

Valerie Croft is leaving BLI for opportunities in Texas. Valerie started at BLI in October 2006 as the Director's Executive Assistant. In October 2010, she was promoted to Purchasing Manager.

Chang Soo Kim, Ph.D., has accepted a postdoctoral position in the Department of Chemistry at the University of Massachusetts, Amherst. He will be joining Dr. Vincent Rotello's group to develop nanoparticles in delivery therapeutic materials and disease diagnosis applications.

Adria Sherman, B.S., who worked in Dr. Michael W. Berns lab, has been accepted into the graduate program of the Department of Bioengineering at UCLA. She will be doing research with Warren Grundfest, M.D.

Pinghe Wang, Ph.D., Assistant Professor, School of Optoelectronic Information, University of Electronic Science and Technology, Chengdu, China, has returned to his teaching position in China. He worked with Dr. Zhongping Chen developing optical imaging systems.

BLI Newsletter Staff

Editor: Bruce Tromberg

Writers: Elaine Kato, Erin Miller, Deborah Birnie

Layout & Design: Brian Hill



BECKMAN LASER INSTITUTE

1002 Health Sciences Road East

Irvine, California 92612

<http://www.bli.uci.edu>

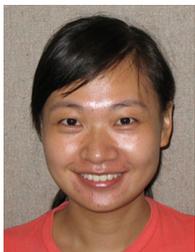
Nonprofit Organization
U.S. Postage
PAID
Santa Ana, CA
Permit No. 1202

Return Service Requested

Honors and Awards *(cont'd from p. 4)*

and Surgery for “Photochemical internalization (PCI) enhanced nonviral transfection of tumor suppressor genes: a potential treatment modality for gliomas.”

Jiechen Yin, Ph.D.



Jiechen Yin

Jiechen Yin defended her thesis, “Development of integrated optical coherence tomography-ultrasound system for intravascular imaging,” on August 22, 2011.

She worked in the lab of Dr. Zhongping Chen and has returned to China.

Alexander Lin, B.S.

Alexander (Zander) Lin, an M.D./Ph.D. graduate student in the Department of Biomedical Engineering who works in

Dr. Bruce Tromberg’s lab, has received a National Research Service Award (NRSA) from the National Institutes of Health (NIH) for “Novel translatable optical imaging platform for staging vascular impairment in Alzheimer’s disease.”

Ed Wu, B.S.



Ed Wu

Ed Wu, a medical student at UC Irvine, received the Alpha Omega Alpha Carolyn L. Kuckein Student Research Fellowship for “pH-dependent mechanisms of electromechanical cartilage reshaping.” Ed also received the Best Student/Resident Paper in Surgical Applications/Interstitial Laser Therapy Award from the 2011 American Society for Laser Medicine and Surgery Annual Conference for “Ex vivo evaluation of laser auricular cartilage reshaping

with carbon dioxide spray cooling in a rabbit model.” Ed works in the lab of Dr. Brian Wong.

Leiza Walia



Leiza Walia

Leiza Walia, a Biological Sciences undergraduate student who does research in BLI Dental Director Petra Wilder-Smith’s lab, was awarded two grants from the UCI

Undergraduate Research Opportunities Program (UROP). She was selected as an Interdisciplinary Summer Undergraduate Research Experience (ID-SURE) Fellow as well as a Summer Undergraduate Research Program (SURP) Fellow for Summer 2011 for “Screening dental caries with optical coherence tomography.”