

STANFORD
biodesign



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2011 ANNUAL REPORT



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Top, 2011-12 Fellows Red Team

Below, the first Singapore Program Graduation

Fellows End Year on a High Note



Left, The fellowship red team celebrates with Dr. Julian Gorodsky.

Above, staff receive accolades at the 10th Anniversary graduation.

The 2010-11 Fellows

Congratulations to our 2010-11 Biodesign Innovation Fellows who have graduated this year: Michael Ackermann, Joelle Barral, Brandon Felkins, Victor McCray, Ashish Nimgaonkar, Ravi Pamnani, Michael Schaller, Sidhartha Sinha, and Garrett Smith.

The 2010-11 Red Team entered and won a number of competitions this year with their device Oculeve, for the treatment of dry eye: they took 2nd place in the BMEIdea competition; they also entered the Venture Cup Startup Competition in Denmark and

won 1st prize in the Healthcare category; they took first place in the London Business School Entrepreneurship Club's Business Plan Competition with a prize of £10,000; they took 1st prize in the Stanford BASES E-Challenge and took the Biotech/Life Sciences Product award in the E. Challenge 5th Annual \$100k Business Plan Pitch Competition; and they took first prize in the UCSD Entrepreneurship Challenge.

Brandon Felkins and Victor McCray were part of a Med School 101 event for teens at Stanford School of Medicine. The event is held annually

by the School to encourage students to consider careers in Medicine. Our fellows spoke about the Biodesign program and the opportunities it presents to med students at Stanford.

Sid Sinha and Michele Barry, Dean of Global Health in the Stanford School of Medicine, published an article in the New England Journal of Medicine's Health Policy and Reform magazine: Health Technologies and Innovation in the Global Health Arena. The article features technology that was done in the Stanford-India Biodesign program.

Best of luck to all our graduates!

Stanford-India Biodesign Low Cost Device Development

From fellows to interns to the summit the focus is on low cost devices.

Our 2011 fellows Avijit Bansal, Ayesha Chaudhary, Mridusmita Choudhury and Chinmay Deodhar are in

India continuing to work on maternal and fetal health needs. We recently announced the selection of our 2012 fellows: Siraj S Bagwan, Jagdish Chaturvedi, Siddhartha Joshi and Jonathan D. Pillai, who joined Stanford Biodesign in January 2012.

Anurag Mairal, Associate Director for SIB, and Raj Doshi, Executive Director for SIB, spoke at the Commonwealth Club of California on the state of medtech development in India.



Commonwealth Club

The 5th Annual SIB-sponsored Indian Medtech Summit was held in Delhi, India on December 5, 2011. This year we partnered with the National Institutes of Health to announce a Grand Challenge in Low Cost Medical Technology. Over 300 people attended to discuss the future of medtech in India. Dr. Francis Collins, pictured left, Director of the NIH, was the keynote speaker and discussed a new era of collaborative development of low cost medical technology between the US and India. Other speakers included Dr. Raj Bhan, Secretary of the Department of Biotechnology in the Indian Government, Dr. Deka, Director of AIIMS and

Dr. Rod Pettigrew, Director of the National Institute for Biomedical Imaging and Bioengineering.

We're pleased to announce the selection for the Stanford-India Biodesign Interns for 2011: Prashant Soni, Megha Agrawal, Nitin Aggarwal, Pragun Goyal, Reshma Maurya, Chandini Kabra, Sonakshi Pandey, Vishal Agale, Ramakanteshwara Rao.

Dr. Raman Singh, Chief Minister of Chhattisgarh, India, spent time at Stanford to solidify a partnership begun this summer with our Global Exchange Program. The new program hosts Stanford students with our Global Partners.



Students visiting Chhattisgarh



Global Programs Expand

Singapore-Stanford Biodesign

The SSB Fellowship Program is centered in the Biopolis in Singapore and is administered as a collaboration between Stanford University, the Singapore Economic Development Board (EDB), the Agency for Science, Technology and Research (A*STAR). A separate but linked SSB graduate class has been developed with the National University of Singapore (NUS) and the Nanyang Technological University (NTU) and was held for the first time in 2011.

Our first team started in 2011 - Anthony Tang, Fiona Loke, Iris Tan and Henry Ho came to Stanford in January and departed for Singapore in June.

The team spent the next six months examining clinical needs within the Singapore, identifying opportunities for medical technology innovation. Working closely with EDB, A*STAR advisors and Stanford, NUS and NTU faculty, the team develops one or more new technologies. Fellows are also mentored by “real-world” experts from the medical technology, legal and venture capital industries in the United States and Singapore.

The next batch has been selected and will begin at Stanford in 2012. We welcome Luke Tay, Tze Kiat Ng, Pearline Teo and Justin Phoon.

Ireland and Russia

We're fortunate this year to have had a visiting faculty from the University of Galway in Ireland. Mark Bruzzi spent one quarter at Stanford

Biodesign learning about the program and examining our best practices.

Ireland has initiated a new Biodesign-like program as a joint project across 5 universities. Dr. Bruzzi will now head up the new BioInnovate program in Ireland.

In 2012 we will have a visitor from Russia for the same purpose.



C-IDEA

Beginning in 2011, Biodesign embarked on a program to provide students, faculty and fellows at Stanford the opportunity to work with our Global partners to help solve unmet clinical needs in India, Singapore, and elsewhere. The initiative is under the C-IDEA, the Consortium for Innovation, Design, Evaluation and Action, a program in the School of Medicine funded by the National Institutes of Health under the leadership of Dr. Michele Barry, the Senior Associate Dean of Global Health, Director of Global Health Initiatives in Medicine and Director for the Center for Innovation in Global Health.

We've established two programs within C-IDEA: a grant making program for projects based on global needs (needs derived in our global partners' setting), and a student exchange program which allows

Stanford students the opportunity to work on a global need and travel to our partner countries to find such needs and help solve them.

Our Global Grant Program has funded seven projects that features low-cost medical technology innovation:

- Affordable Augmented Anatomy - an affordable prosthetic solution for upper limb amputees
- Clear Ear - a magnification, visualization, illumination and cleaning tool for the ear canal.
- Matchstick Microscope - A 'matchstick' as a complete fluorescence microscope
- Vaccine Carrier - a 'last mile' vaccine container that ensures optimal temperature with low power requirements
- Jaundice Detection - an inexpensive device that tests for jaundice in newborns
- AdaptAir - a nosepiece that allows newborns better access to oxygen

China

In late 2011 we started discussion with the School of Engineering in offering Medical Device Internships at Medtech companies in Shanghai and Beijing. These internships are for Stanford Engineering and Business students to experience the medtech business environments in China over a 10 week summer program. In 2012 we hope to offer 3-5 companies with 1-2 slots per company.

Community Events Educate



*Above, Jeff Kappos, of the USPTO
Far Left, From the Innovator's
Workbench features The Foundry.*

*Left, Ezekiel Emanuel at our 2nd
Workbench event.*

From the Innovator's Workbench

We hosted four members of the Foundry team on March 1. David Cassak interviewed Allan Will, Hank Plain, Mark Deem and Hanson Gifford on the roles each played in the success of the Foundry and its start-ups. Stories of Ardian and Satiety were of great interest to the crowd of over 200 attendees. Audio is available on our website.

Ezekiel Emanuel

Our final Workbench of the year featured Ezekiel Emanuel, architect of Obama's Healthcare Plan. David Cassak interviewed Dr. Emanuel on his role in helping shape health care

reform in the United States. Speaking to an audience of 150 at Vidalakis, Dr. Emanuel spoke on the elements of the reform bill and how they will impact the medtech community.

USPTO and Biodesign

Intellectual Property and Entrepreneurship in Medical Devices: A Joint Conference between USPTO and Stanford University featuring David Kappos, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (USPTO) and USPTO's Chief Economist Stuart Graham.

FDA 501k Analysis

Jan Pietzsch (Global Biodesign Faculty) and John Linehan (Consulting Faculty) have completed an in-depth analysis of the FDA's 510(k) regulatory pathway--through which more than 90% of medical devices receive clearance--and of industry's practices within it. The study is the most comprehensive survey to date about the 510(k) process. The findings were presented at a news conference at the National Press Club. The project was funded by InHealth.

2012 WORKBENCH EVENTS PLANNED

<p>From The Innovator's Workbench an industry's memory was large</p>	<p><i>March 14</i> Alex Gorsky, Vice Chairman Johnson & Johnson</p>	<p><i>May 10</i> Robert, David and Scott Fischell Father and Son Medtech Innovators</p>
	<p><i>April 9</i> Michael Kaschke President and CEO Carl Zeiss AG</p>	<p><i>May 29</i> Marty Leon Interventional Cardiologist; Founder, TCT</p>

Coulter Funding

We experienced a great tenth anniversary year in Biodesign culminating with Stanford announcing the receipt of \$10M from the Wallace H. Coulter Foundation. The fund is matched by \$10M from the President's office. The resultant \$20M endowment will be used to support projects in translational research in Bioengineering. Biodesign manages the grant-making program.

Awards

Ashish Nimgaonkur and Brandon Felkins have received an NCIIA E-Team grant for his device for the management of ascites, a condition in which large quantity of fluid accumulates within the abdominal cavity. This condition is a complication of various underlying disease such as Cirrhosis, Cancer and Heart Failure. The grant is for \$20,000.

Matthew Callaghan has received an NCIIA E-Team grant for his heart failure device project. The award is \$20,000.

Scott Delp, the James H. Clark Professor in the School of Engineering and Engineering advisor to Biodesign, has been named the 2011 recipient of

the American Society of Biomechanics Borelli Award.

One Biodesign course project and one Biodesign fellowship project from 2010 have been awarded NCIIA Advanced E-Team grants. Congrats to the Deep Vein Insufficiency project and the CathNect medical team.

Video Resources

Biodesign released a series of video tutorials on the regulatory environment in the U.S. The videos feature an interview format where Paul Yock, Director of Biodesign, interviews two regulatory experts on what it takes to get a device through the FDA. Subjects range from the history of the FDA to the differences in device classifications and pathways. Also featured is a case study of Acclarent's FDA experience. See www.ebiodesign.org/index.php/component/content/article/357

Facebook/Twitter

Like the rest of the world (or so it seems) Biodesign has joined the Social Networking world. You can follow us on twitter at #biodesignfellow or 'like' us on Facebook at Biodesign. We post regular updates to our program, news, events, opportunities and an occasional blog post about medtech.

Staff Additions

We're pleased to announce the addition of Athena Reyes and Linda Lucien to the staff at Biodesign. Athena serves as the Program Assistant and Linda helps run the Coulter and CTSA grant programs.



Sponsors Make This Possible

We're pleased to have an incredible set of sponsors from both the corporate and foundation worlds as well as partners in law, venture, accounting and incubators. Individuals who support our named fellowships are some of the best known names in Medtech. Our In Kind sponsors provide goods and services that benefit our students and fellows. We would like to thank all of these organizations and individuals for their continued support of Blodesign.

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