

## 2016 Medical Device and Diagnostics Symposium

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The 2016 Medical Device & Diagnostics Symposium titled “Innovation, Collaboration and Commercialization” was held on Saturday, December 10, 2016, at the MIT Stata center, in Cambridge. This conference was jointly hosted by Chinese-American Biomedical Association (CABA) and New England Chinese Information and Networking Association (NECINA) to



enhance interactions of biomedical, medical device, and information technology professionals. This annual conference aims to foster innovation, entrepreneurship and mutual cooperation in the life sciences sector, between scientists and investors in US and China.

### Opening Remarks

**Jingzhong Zhang**, event Co-Chair opened the symposium by reiterating the theme, “Innovation, Collaboration, and Commercialization”; and welcoming over 150 attendees to this event, including entrepreneurs, students and visiting dignitaries from China. CABA President, **Eric Shi**, and NECINA President, **Tony Tian**, each provided an overview of their organizations; current membership initiatives; and planned meetings in the coming year. These two groups provide a professional focal point for the Chinese community, in the Boston area, in their respective fields of biomedical technology and computer science. In sponsoring this symposium jointly, they emphasize the convergence of biology, physical science, and information technology in the emerging field of medical devices and diagnostics; and the power of interdisciplinary collaborations.

Plenary opening address was made by the honorable **Jijun Xing**, Science and Technology Counselor of the Chinese Consulate-General, in New York. In his address, delivered in



Mandarin, Dr. Xing discussed the many opportunities that are present in the medical device, life sciences and information technology fields as China embarks on its next phase of vigorous economic growth and innovation. He invited entrepreneurs, investors, and academics to consider the opportunities to start new business enterprises in China.

### Session 1 - Innovation and Cutting-Edge Technologies

Session moderator, **Chunxiao Yu**, introduced the three speakers in this session.

Associate professor, Dr **Xuanhe Zhao**, of MIT delivered the keynote address: "Stretchable Hydrogel Electronics and Devices". His talk was a technical tour-de-force on innovative and robust hydrogel materials whose properties can be tuned according to the desired application. He described applications of materials and extending the frontier of their properties toward "tough" and "elastic" qualities. These new hydrogel materials have biocompatible properties, including a high water content; yet exhibit compatibility with electronic components and rigid engineering materials. One early success is a new start-up in China to make smart hydrogel "Band-Aid" type wound dressings. Additional opportunities were described, where hybrid hydrogel biomaterial structures are built up, layer-wise, using 3-D printing; hydrogel products were integrated with electronics and sensors; and hydrogels are integrated with living cells.

**Ru Zheng**, MBA, Senior Manager at Thermo Fisher spoke on "Precision Medicine Solutions". Ms Zheng addressed the field of "precision medicine" –an emerging approach to disease treatment and prevention that takes into account the individual genetic, environmental and lifestyle variability of the patient. While the idea, itself is not new, recent developments in diagnostics, medical devices, and laboratory instrumentation have brought precision medicine to realization. She described the broad sweep of the field and current innovative programs and collaborations in US, EU, and China, where Thermo-Fisher has become the go-to collaborator. Their involvement has accelerated scientific discovery; advanced personalized medicine; and applied biology beyond research. The net benefit of their approach has been in solving analytical challenges; improving patient diagnostics; and increasing lab productivity.

The last talk of the morning session was delivered by **Bicheng Han**, CEO and Founder of Brainco, Inc. "Medical Application of Brain Sciences" In this engaging presentation, He described ways in which a simple computerized approach to biofeedback can train and condition individuals to mitigate attention deficit, ADHD, in lieu of the standard of care, drug therapy which is fraught with side effects. He pointed out the pioneering ways in which simple brain-wave monitoring equipment can be used to measure attention level of participants in an audience; and how similar devices and software can be used in a self-training environment to control simple video game tasks. In conclusion, he hinted at the broad applicability of the technology and unveiled an inexpensive personal device to be used with a smart-phone APP. The product is scheduled for release in the coming year.

### **Lunch Break and Networking**

Excellent box lunch, served by our able volunteers was provided by our partner KamMan Market, of Quincy.

### **Session 2 – Entrepreneurship and Opportunity**

The session moderator, **Jian Shao**, introduced the three speakers in this session.

The **Keynote Address**, “Lessons From Entrepreneurial Success”, was presented by Dr **Shuqi Chen**, who spoke about his decade of experience as Cofounder, CEO, and Chairman of IQuum in Marlborough, MA. Following a rapid rise to corporate success, IQuum Was acquired by Roche diagnostics, where Dr, Chen is now VP of R&D of Point of Care, at Roche Molecular Systems.

This unique and versatile Point-of Care PCR diagnostic system can be operated in a doctor’s office and provide medical diagnostic results in minutes, as opposed to the conventional off-premise CLIA –lab which may require overnight or several days. He described the patient and painstaking entrepreneurial long-march that resulted in stunning success and unprecedented short FDA approval time of the device and its assays.



The story of the company and its people was summarized in three lessons, drawn from first-hand experience: 1) Set up the right goals; 2) Execute Effectively; and 3) Use the money smartly. He concluded: “With the right goal and right focus – Nothing is impossible - but Nothing is Simple.”

The second talk of this session “Rebuilding the Healthcare System around the needs of the patient” was presented by Dr. **Trishan Panch**, CMO, and Dr. **Gopal Ramachandran**, CTO, of Wellframe. They spoke of the need to leverage technology to improve outcomes, patient compliance, and overall cost of outpatient treatment in a managed care environment. Their mobile APP provides a daily patient check-in; and delivers healthcare guidance in small bits the individual can understand. The computer engine adjusts patient instructions dynamically based on the daily patient reports. Their innovation is expected to significantly impact the \$10 Billion contract healthcare management market by allowing resources to be focused . This promises to improve patient compliance and outcomes in the low-volume high-cost cases.

**Phillipe Schwartz** of Square Peg capital spoke on “Disrupting Healthcare”. He pointed out that society is in a constant state of disruptive change due to the layering effect and advances in technology. Yet Healthcare is mainly conducted the same as it has been for decades. He predicts that disruption will come soon - focused on prevention of diseases over a lifetime; and using data and individual profiling, to reverse problematic trends before they impair

individual health. The magnitude of innovation will be greater. The healthcare consumer will be at the center of it.

### **Session 3 – Operation and Collaboration**

The session moderator, Dr **Lan Cao**, introduced the three speakers in this session.

**Zorina Pitkin**, VP of Organogenesis Discussed “Quality Support for Organogenesis Commercial Products”. This talk provided insight into the quality procedures in place for cell-based regenerative medical products as a Class-III medical device; and collagen-based matrix, as a 501(k) Class-II product. They support best practices in all phases of process control; QC of raw materials ; product control ( in process and final) ; and quality systems. The most challenging area is manufacturing process control to maintain sterility and product functionality.

The final two talks focused on opportunities for entrepreneurship in China: **Xiang Cheng** gave an “Introduction of Nantong Medical Device Industry Valley.” **Qiuping Zhou** provided a “Brief Introduction of Jiangsu Biomedicine Overseas Talents Exchange Center”

### **Closing Remarks**

Dr **Kevin Fang**, CABA President-Elect delivered the closing remarks. He thanked the R&D professionals, Biotech Entrepreneurs and all attendees for making the event successful. He invited all interested life science professionals to come back again for future symposia.