

Metabolism: from bench to bedside

There are as many definitions for ‘translational medicine’ as there are translational researchers. The one we prefer is rather simple: translating scientific discoveries into improved health. The discipline begins where fundamental biology ends, traverses disease pathogenesis and drug development, and extends to the delivery of new therapies and improved health care in the clinic.

Given that translational medicine is so broad, it is difficult to design an educational forum for exchanging ideas about it. Laboratory scientists have their own lexicon that is often impenetrable to clinical researchers, and they often lack formal training in medicine and have a limited appreciation for the nuances of health care or unmet clinical needs.

Five years ago, the Clinical and Translational Research Institute at the University of California–San Diego (UCSD) and *Nature Medicine* got together to try to bridge this gap with a new kind of symposium. Choosing broad multidisciplinary areas such as host defense or aging, we organized the scientific sessions such that they included top basic, translational and clinical researchers. We then asked the speakers to follow some basic advice on how to give their talk: a bench scientist would present sophisticated molecular mechanisms to clinicians in an accessible way, and the clinician would explain clinical challenges and approaches to laboratory investigators. There was initial skepticism, as the new ‘Frontiers of Clinical Investigation’ series was neither fish nor fowl. Truth be told, we were not sure who would attend or how it would be received.

Four years after the first meeting, we are delighted with the results. The Symposium has consistently featured top bench scientists and clinicians, who have embraced the idea behind the event. The topics we have chosen have been timely and ripe for developing meaningful interactions among scientists working on the various spheres of what constitutes translational

medicine. The collegial ambience of the meeting and the warm October weather in San Diego have also helped us develop the Symposium. So, Frontiers of Clinical Investigation has grown from just over 100 delegates in 2005 to nearly 300 scientists and trainees from around the world in 2009.

So the meeting has grown and gained notoriety. To add to this visibility, this issue of *Nature Medicine* includes a series of brief Commentary articles from some of the speakers from last year’s meeting—‘Metabolism 2009: Bench to Bedside’. We invited one speaker from each of the sessions to write, asking them to provide a brief overview of translational research in that specific area. The aim was not to publish a meeting report or a comprehensive, scholarly review, but to provide you with a feel for what the meeting was like, the kinds of topics that were discussed and what the current preoccupations of translational scientists are in the numerous subfields of metabolism research.

Thus, Gokhan Hotamisligil discusses some general issues raised during the session on lipids and atherosclerosis, Gerald Shulman covers the session on muscle function and metabolism, Christopher Newgard writes a very thoughtful piece relevant to the session on mechanisms of obesity and Tony Lam focuses on some of the key questions that emerged from the session on central nervous system and hormone regulation.

We hope that you find these articles of interest and that they stimulate you enough to want to join us next October at the 2010 Frontiers of Clinical Investigation Symposium ‘Pain 2010: Bench to Bedside’. In closing, we would like to thank all of our colleagues who helped us organize the 2009 Symposium, in particular Jerry Olefsky (UCSD) and Randy Levinson (*Nature Medicine*). It is to their credit that the event was so successful.

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