

## ***Innovation and Technology Transfer for Global Health***

### ***'Bridging the Gap in Global Health Innovation – From Needs to Access'***

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#### **SESSION SUMMARIES – THE INTERFACE OF SCIENCE, TECHNOLOGY TRANSFER AND ACCESS<sup>1</sup>**

*This session was chaired by Tony Bunn and explored the role of the biotechnology industry; local communities and the need for linkage to national and global policy making; the power of networks for innovation; the technology transfer environment in Japan; and examples of capacity building initiatives in developing countries.*

*This session built on questions around how to establish and run partnerships and the importance of trust and networks for innovation.*

#### ***Biotechnology Companies and Innovation: James Geraghty, Genzyme Corp.***

Until recently, there has been little involvement of the biotechnology industry in trying to address global health issues. However, the industry can contribute significantly to product development and delivery and as a key collaborator in partnerships. The biotechnology industry is becoming interested in sharing its capabilities and knowledge, as well as products, where relevant.

Intellectual Property (IP) arrangements bring parties together and challenges related to IP can be overcome through “consideration for all parties and through transparent and equitable reward structures”. However, the biotechnology industry faces a series of perceived barriers to involvement as well as a lack of awareness of the ways in which individuals and companies can contribute constructively. To address these barriers, partnerships between the industry and the global public health community are essential. It is important to create a sustainable set of policies to allow industry to continue to thrive and to attract investment to develop further innovation.

#### ***Improving Access to Existing Global Health Solutions: Dr Devi Sridhar, Global Economic Governance Programme, University of Oxford***

Access is increasingly dependant on innovative strategies around delivery systems. Innovation at the community level, at the national government level and at a global level is required. At the global level, it is important to create policy space for developing country governments to assert their priorities. Donor interventions should respond to gaps in delivery and provide tools, empowerment and capacity building in order to improve developing country public health practice.

Developing countries require financial independence as well as strong leadership for health and access to medicines. Investments in delivery systems are needed to address the growing gap between what technology can achieve and what is being delivered in poor communities. A stronger educational system and technical capacity

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building will develop the role of developing countries in product development and delivery partnerships as opposed to being merely repeat recipients of assistance.

***A Technology Driven Anti-counterfeiting Approach to Counterfeiting: Dr Prabuddha Ganjali and Dr Praful Naik of Bilcare, India***

Counterfeiting leads to non-compliance, significantly increased healthcare management costs, and undermines the effectiveness of therapies. There is no consensus on the best approach to deal with the problem of counterfeiting, an industry which thrives on destabilising technological innovations. A positive approach to deal with the problem would be led by policy-makers. Solutions to the problems of counterfeiting need to empower the consumers, to be responsive to economic measures and to be transparent and sustainable. A technology driven anti-counterfeiting approach was presented.

***The Power of Networks for Innovation: Dr. Rafael Rangel-Aldao, Simon Bolivar University***

Biological networks work in a similar way to the networks that we use for social interaction and information e.g. the internet. Biological information is organised in small -world and scale-free networks where a few nodes become hubs dominating the entire network. Through these self-organising systems, knowledge transfer and technology transfer can be enabled.

The knowledge from systems biology could also be transferred and translated to better inform priorities for decision-makers and areas requiring intervention in health systems. Further research and policy adjustments are needed to support industry and other partnerships to invest appropriately, addressing challenges posed by issues such as fragmented product demand and regulatory systems and broken and insecure supply chains. With more connections, the more powerful the network and the greater the potential value extraction.

***New Initiatives in Japan: Prof. Katsuya Tamai, University of Tokyo***

Universities in Japan have embarked on several new initiatives aimed to develop IP right and technology transfer. Collaborations with the commercial sector are complex and it is typically far easier to generate funds from the public sector, which is less rigorous in examining outputs. However there is potential to align incentives appropriately. Some ventures been very successful but are faced by structural and policy-related challenges because the system is not yet mature, targets are ambiguous, and evaluation metrics are undeveloped.

***ICBG Program and its Impact in Academia, Conservation and Drug Discovery in Latin America: Prof. Barbara Timmermann, University of Kansas***

The International Cooperative Biodiversity Group (ICBG) focuses on building capacity in drug discovery from biodiversity for chronic and neglected diseases. It works through public-private collaborations which enable scientific training of developing country researchers in the US and the import of new technologies into developing world research laboratories. There is a need for upfront transparency and fairness in negotiations for the development of successful, longer-term relationships. Governments need to better understand issues around bio prospecting and biodiversity, including the need to develop structured IP agreements that result in benefits going back to the countries of origin.

***Implementation of Biomedical and Information Technologies in Developing Countries: Prof. Eva Harris, University of California***

The Sustainable Sciences Institute (SSI) follows a grassroots approach to capacity building for biomedical research, based on small scale, bottom-up projects which become self-sustaining. Programmes are based on “train the trainer” approaches and focus on research output and incorporating interventions such as low cost diagnostics, which can generate funding and research grants and enable interventions to become sustainable. The programmes have a multiplier effect in this way. Capacity building must be linked to community needs, provide technical and grant-writing skills to researchers to enable them to become self-sufficient by securing local funding, and be based on trusting relationships that enable fair IP ownership outcomes.

***Discussion***

Enabling communities to develop and manage initiatives and for interventions to become sustainable is essential. Power should be transferred more evenly in the policy-making process: developing-country governments must assume responsibility and commitment to fully realizing the potential of R&D and delivery initiatives, as well as trying to control the problems of counterfeit medicines. They need to listen to communities who must voice their needs. The private sector must take responsibility in developing integrated support systems and supply programmes.

In partnerships between industry and developing countries, or between governments and universities, there is a strong need for managing expectations. This can be dealt with through applying ‘principled negotiation’, in which parties are open and there is no reason for any distrust. In providing incentives for research, the orphan drugs model could be beneficial in the area of neglected disease. It simplifies the legislative processes, enabling price differentiation and stimulating innovation by developing countries in disease areas which are particularly important at a local level.

With regards to counterfeiting, the issue was raised as to whether IP protection could actually attract counterfeiting activity by creating higher profits. A similar dilemma might face companies with respect to maintaining high prices to preserve their reputation for quality, when these prices could attract counterfeiters. The division of responsibility in addressing counterfeiting, between manufacturers on the one hand and government and international agencies on the other, was discussed.