

The Wellcome Trust
Social, Ethics and Public Policy Research on Biomedical Science

Research Summary

Title: Collaborations between developing and developed countries in advancing biomedical population genetics, neglected diseases and bioprospecting research and development: Developing policy and practice guidelines for going forward in the 21st century

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Host/Sponsor Institutions: Wellcome Trust South East Asia Centre, Thailand: Dr Nick Day and Dr Nick White

Wellcome Trust Africa Centre for Health and Population Studies (Dr Mike Bennish)

Institution: Cambridge University, Judge Institute of Management Studies, UK

Type of grant: PhD Studentship

Time period: 36 months

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Background

The challenge of achieving global health and sustained advancements from biomedical research, and biotechnology and pharmaceutical ventures, requires a global outlook on health-care that strategically embraces international cooperation between institutions in developed and developing countries. The future output and impacts of biomedical sector innovation on public-health improvement will be dependent on the quality and ethics of collaborative relationships that stakeholders establish with dispersed carriers and users of natural, scientific, financial, political and community resources. These collaborative relationships require supportive policy frameworks. However, limited experience and insufficient insight into both the risks and opportunities of bioscience innovation environments in developing countries has impeded collaborative engagements.

A detailed understanding of the socio-economic, cultural, scientific, political and legal contexts governing biomedical research and development (R&D) in the developing world, is needed to identify and expose complex underlying issues that exert an impact on biomedical collaborations between developing and developed countries, and to establish support systems for optimising their performance.

Aims

The project will examine the structure, organization and interplay of key ethical, socio-economic, health-policy and commercial concerns implicated in the establishment of sustainable support systems (policies, institutions, R&D and commercial practices) for

biomedical collaborations between developing and developed countries, framed around a need to align participant incentives – within a system that promotes and ensures ethical practice. It will address issues including access to genetic resources, benefit sharing and ethical concerns, IPR protection, technology transfer and capacity building in developing countries, and draw novel and improved performance measures, assessments of fairness and equity and collaboration practice guidelines for researchers, policy makers and collaboration coordinators and participants.

Methodology

Research will build on theoretical and empirical evidence from the fields of global health, bioethics, alliance theory, innovation management and development studies. The project will employ a multiple methodology approach, combining evidence from comparative case studies of collaborative R&D efforts at biomedical centres in the developing world (e.g. the Wellcome Trust South East Asia and Africa Centres), interview data, company profiles, descriptive statistics, bibliometric and patent data. Empirical evidence for best-practice transfer will draw on contextual insight from the fields of population genetics, neglected diseases and bioprospecting, where innovations are commonly developed through collaborative practice.

The project will sequentially:

- Gain an in-depth understanding of the unique institutional features of the environment framing biomedical innovation in the *developing world context*, so as to identify underlying issues that influence cross-national collaborations.
- Examine the principal risks, uncertainties and opportunities that participants in collaborative “First-Third World” biomedical R&D activities have encountered, and clarify how the unique elements of developing world bioscience innovation environments relate to the scope for minimizing risks and maximizing opportunities in collaborations.
- Elucidate the benefits and shortcomings of current collaboration practice, highlight their implications and through investigating the interplay between trade-offs and competing tensions facing collaborative efforts (e.g. exploration *versus* exploitation, competition *vs* cooperation, planning *vs* emergence), draw performance measures, assessments of fairness and equity, and novel and improved guidelines for translating the goals of collaborations into tangible medical advances and public health improvements, as well as contributions to scientific and technological capacity building and sustainable development in “Third World” regions.

Main research questions

The project will address a series of research questions that tackle a set of core concerns for sustainable collaboration practice:

CORE CONCERNS

- Limited experience and insufficient insight into both the risks and opportunities of biomedical innovation environments in developing regions, has impeded collaborative engagements.
- Optimal output form collaborative biomedical R&D has been hindered by conflicts of interest, which are largely a result of information asymmetries as to the goals, objectives, and implementation and follow-up strategies of collaborative engagements.
- Ethical, science and technology policy, and socioeconomic regimes frame the evolution of collaborative projects between developing and developed countries. These regimes are inter-related, and subject to the impact of a series of trade-offs and competing tensions (e.g. exploration *versus* exploitation, short *vs* long-termism, trust *vs* vigilance, competition *vs* cooperation, opportunism *vs* altruism, planning *vs* emergence). Managing trade-offs and

competing tensions is crucial for the sustainability of a biomedical collaboration and effective management must identify, understand and balance the interplay of competing tensions, in a manner that can maintain the collaboration system in a state of “dynamic equilibrium”.

RESEARCH QUESTIONS

- What is the nature and structure of context-specific ethical, cultural, science and technology policy and socioeconomic elements of biomedical R&D environments in the developing world, and how do these influence the framing of innovation outputs and advancement from research?
- What aspects of a collaboration, arising at the entry, implementation and follow-up stages, must be included into informed and clear guidelines for a collaboration, *prior* to its initiation, in order to minimize risks and maximize opportunities?
- What characterizes variance in the nature, scope and intensity of distinct trade-offs and competing tensions facing collaboration across specific biomedical focus areas/diseases and/or in particular developing world regions?
- How will the interplay of ethical, science and technology policy and socioeconomic regimes determine to what extent, under which conditions and by which justifications distinct “trade-offs and competing tension” forces are mutually exclusive versus alignable and adjustable?
- How do institutions involved in collaboration management develop a sustainable framework of ethical, science and technology policy, and socioeconomic [commercial] regimes that can identify, account for and incorporate the impact of trade-offs and competing tension forces into an effective collaboration?

Applications of research results

While the primary output of this project will be a PhD dissertation, Sonja Marjanovic intends to work with her collaborators to disseminate research findings through publications, progress reports, conferences and seminars. The results of the project should prove valuable to researchers, collaboration coordinators, practitioners, pharmaceutical and biotech stakeholders wishing to engage in biomedicine collaborations between developing and developed countries, and who require more insight into the institutional factors affecting the success of such engagements. It should also be of interest to policy makers and development agencies, and funders of biomedical R&D activities in developing countries, who need in-depth understandings of how the risks and opportunities that developing world bioscience advancement and collaboration environments hold, should be incorporated into ethical and effective policy development or aid assistance.

Further information

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