

The Dream Team: When Research and Administrative Objectives Are Aligned

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Agenda

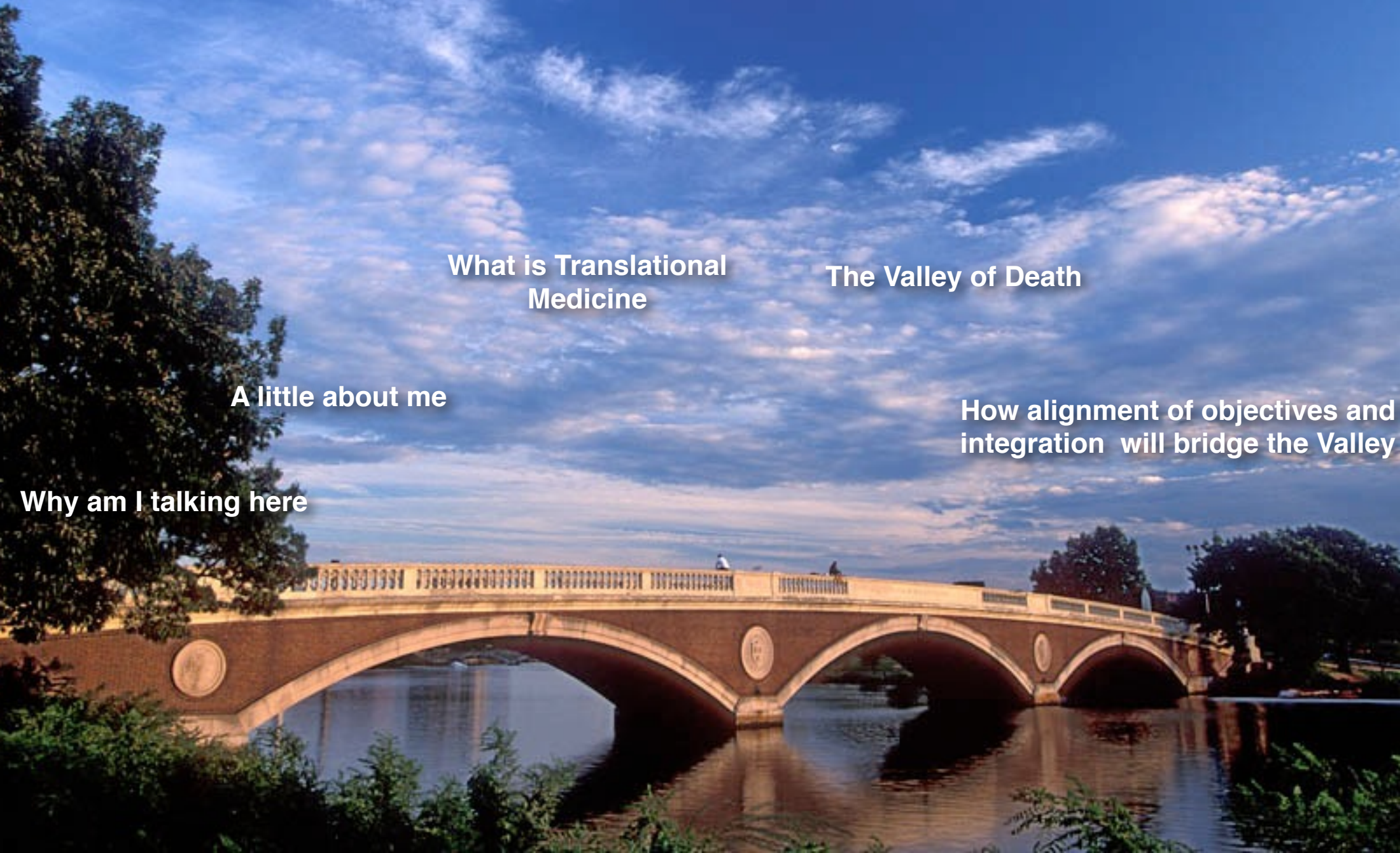
What is Translational
Medicine

The Valley of Death

A little about me

How alignment of objectives and
integration will bridge the Valley

Why am I talking here



Why am I talking here?



Not a new topic of awareness, perhaps a still unsolved one

ADMINISTRATIVE PROBLEMS

Sir Frederick White

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ADMINISTRATIVE PROBLEMS IN THE DEVELOPMENT OF SCIENTIFIC RESEARCH

SIR FREDERICK WHITE

Introduction

When I began to write this paper I had thought of writing to the organizers of this conference to suggest that the title of my talk be "The Management of Scientific Research" rather than that of "Administrative Problems in the Development of Scientific Research". I suppose this was rather an egotistical reaction to the word "administrative". However, I had recourse to looking at a dictionary and found that "to manage" meant "to direct, to control, to make subservient". I then had another reaction that this was not in fact how I regarded my role as the Chairman of the CSIRO. I do not direct, control or make subservient.

I then looked up "administrator" and I found that this meant "to act as a minister or agent" and this seemed to me very much more closely related to what I consider my role to be. As you know I am the Chairman of the Executive of CSIRO, so I looked up "executive" and found that this had the meaning "the executive branch of government", but more importantly the dictionary also says that the executive has the role of "seeing effect given to a law or decree". This appealed to me very much because I think this is precisely what the word "executive" means in the CSIRO context.

I have thus chosen to talk about the administrative problems in the development of scientific research in a research agency of a government with responsibilities in the realm of the natural sciences. Although the way in which scientific research is conducted is the same in all institutions, the problems and principles of administration are dependent on the nature of the organization about which one is speaking. I would not, for example, expect exactly the same problems to arise in a university, nor expect their solution to be identical.

My remarks must inevitably reflect the practices we follow in the CSIRO; for this I make no apology for I will thus be speaking of a practical example rather than giving you some theoretical conception of these problems. Moreover, your remarks will be of great interest to me since as a scientist I must welcome external criticism of my experimental findings. And I stress this because in the administration of a scientific organization, my approach to the administrative problems has been experimental, to find out whether indeed they work in practice and if not to modify them suitably.


My subject therefore cannot be dealt with unless I first clarify the nature and the purpose of the institution about which I propose to speak. This is an essential first step since the judgment of the administrative structure must be in terms of its suitability to the nature of the institution and as to whether it contributes effectively to the fulfilment of its purpose. An administrative

SEARCH

A little about me

- Salvatore Albani, M.D., Ph.D., is currently Professor and Director of the SingHealth/Duke-NUS Translational Immunology and Inflammation Centre, and a Professor of Medicine at the University of California, San Diego.
- His main research interest is manipulation of immune responses to restore natural homeostasis, therefore controlling disease processes in a physiologic and specific fashion.
- Following this strategy, he has developed a first in class immunotherapy platform which he has tested for Rheumatoid Arthritis from idea to Phase II.
- Prof. Albani has published in some of the highest ranking peer reviewed journals, including *Nature Medicine*, *the Lancet*, *JCI*, *PNAS*, etc.
- He is an inventor of approximately 100 patents.
- Prof. Albani is also one of the founders of the Eureka Institute for Translational Medicine, a Foundation devoted to promoting education and research in Translational Medicine internationally.

A little about me



Conception
of the idea

MAKE A DIFFERENCE

Clinical
Application

Translational Medicine: a pleiomorphic definition

**Conception
of the idea**

In our opinion, translational medicine encompasses the continuum of activities that extend from the conception of an idea all the way into Phase II/III clinical testing and, ultimately, the development of a tangible product.

Application

The stepping stones

Unmet medical need

Financing

Regulatory Issues

Clinical
Application

Preclinical
Research

intellectual
property

Clinical
Research

Conception
of an idea



What is a Translational Scientist?





What are the challenges of a Translational Scientist?



The Valley of Death

Lack of knowledge of when a technology is “Druggable”

Lack of infrastructure support

Diseases are not unitary phenomena that can be cured with single therapy

Lack of knowledge of Translational Medicine

Disconnect among the various components of the translational itinerary

Lack of predictive models of efficacy and even toxicology

Lack of funds for early-stage projects

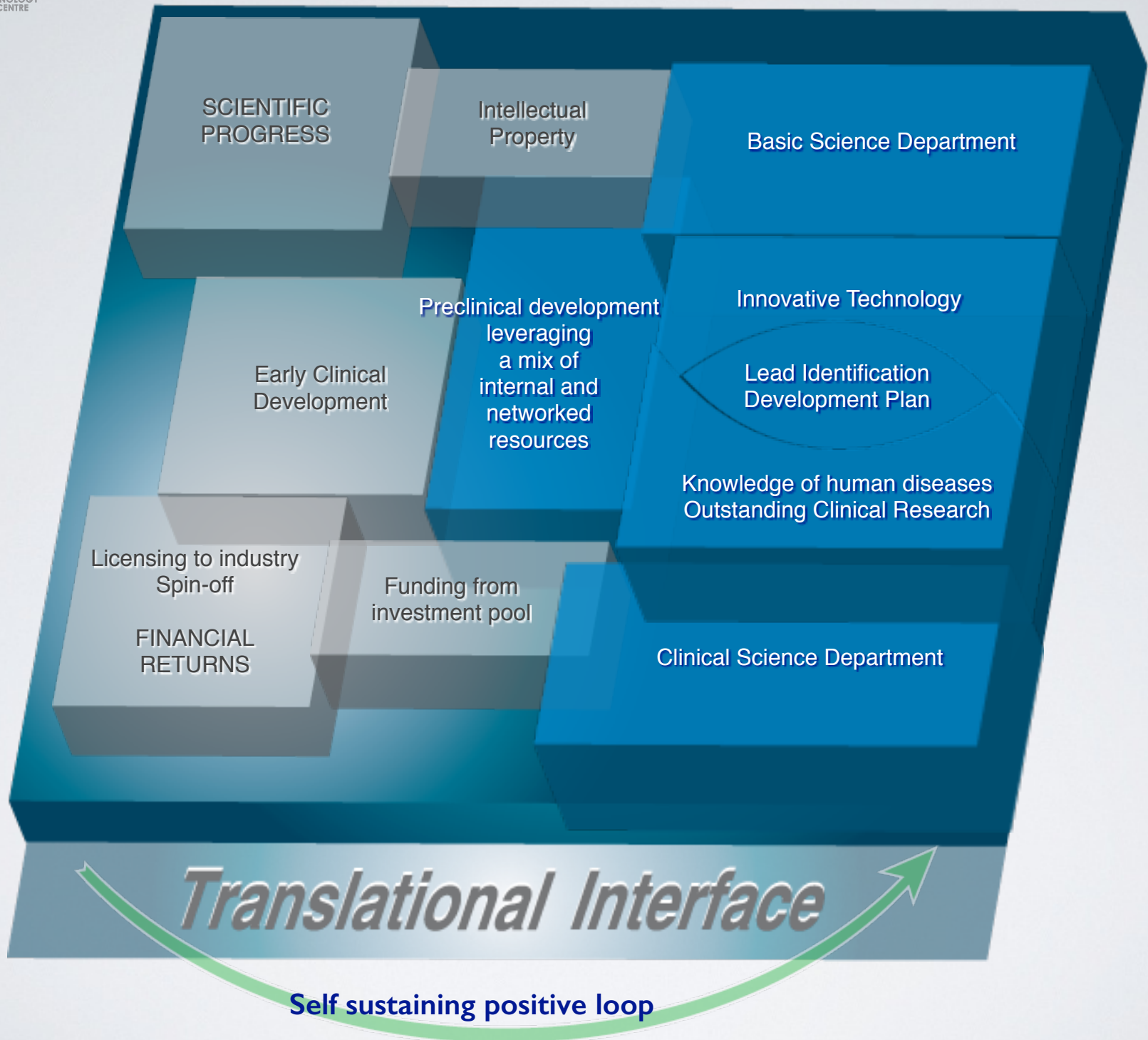
IP strategies often inadequate

High regulatory bar to develop new therapies

Need for Precision Medicine

Lack of knowledge on next steps after discovery:
What is Company?
Who is part of it?

Unmet Medical Needs



Precision Medicine

👉 Patient Stratification 👉 Bio-signatures 👉 Prediction of response to therapy

Leads for therapy development

Targets for lead identification

Develop Physician Scientists as Global Leaders

Industry

Translational Immunology

Clinical Research

Clinical Data

Samples

Precision Rheumatology

Translational Research in Paediatric Food Allergy

Cancer Microenvironment

Heart Failure

Immune Cells and Pregnancy

Epitope Specific Immunotherapy

Translational Immunology of the eye

Unmet Medical Needs

At Top Level, Technologies are Complex and Multidimensional

Sample collection

Immunomics
Epigenetics

Microbiomics

CyTOF

Identification of Signatures

FACS ARIA
sort

Nanostring

Functional Assays

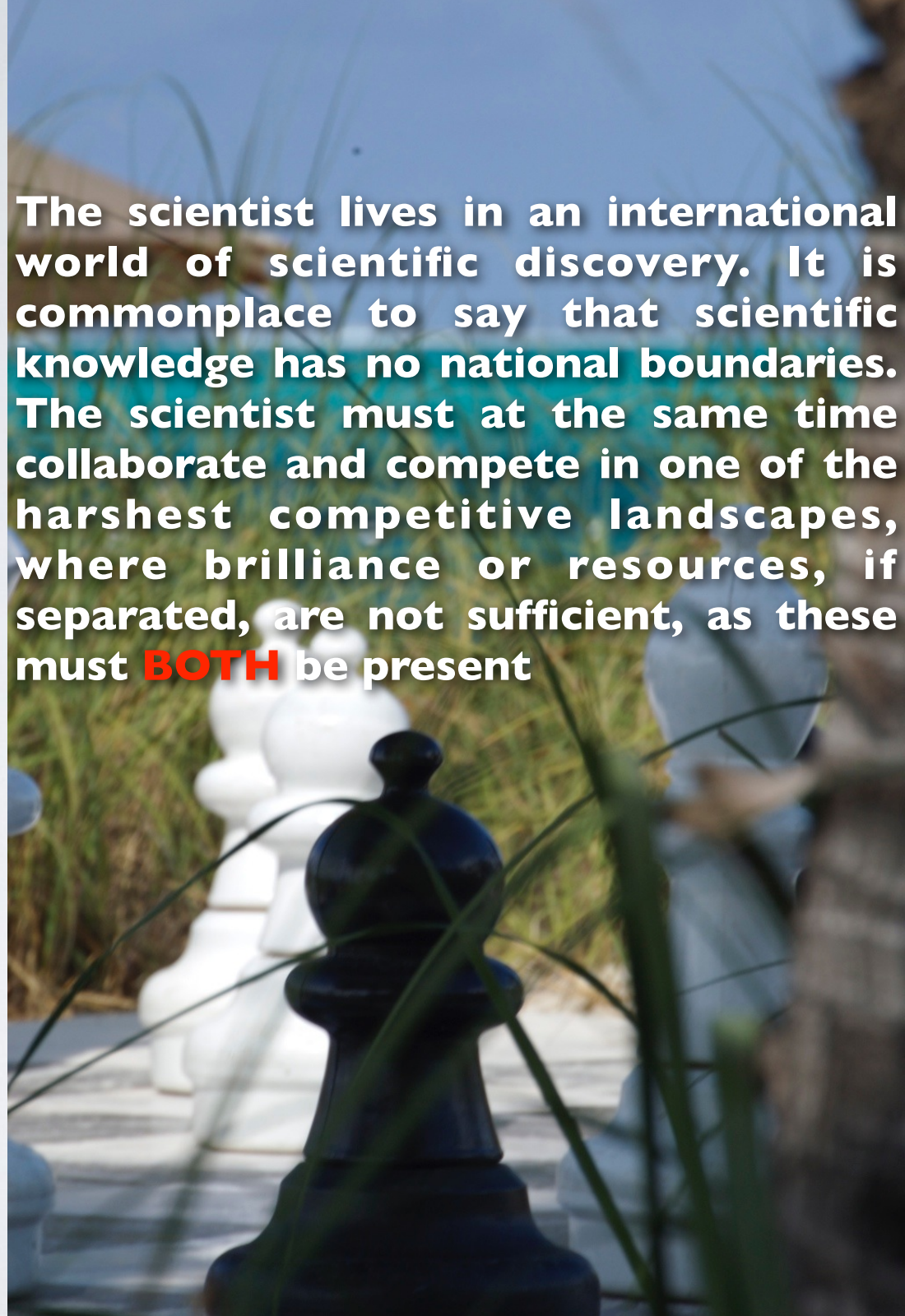
Antigen Specificity
Studies

Genome-Wide Methylation

miRNA

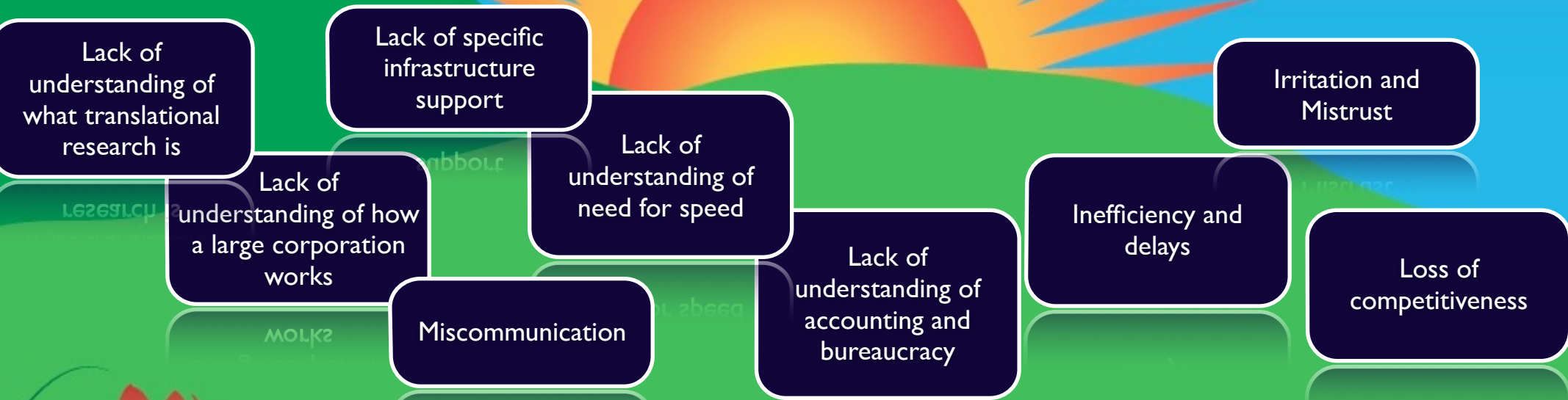


Are Scientists embedded in non-Academic Institutions different from those roaming in the wild?




The scientist lives in an international world of scientific discovery. It is commonplace to say that scientific knowledge has no national boundaries. The scientist must at the same time collaborate and compete in one of the harshest competitive landscapes, where brilliance or resources, if separated, are not sufficient, as these must **BOTH** be present

The Research-Corporate Valley of Death





**Are Administrators embedded in
non-Academic Institutions
different from those who work in
Academia?**



The administration of a research organization of government must understand the training, the ambitions and way of life of the research scientist and aim to provide the maximum opportunity for creative original discovery within the broad objectives of the institution.



How relevant is the Science?

The Executive has the responsibility to see to it that the work being undertaken has a reasonable chance of contributing to practical needs.

The Executive sometimes is able to make this choice very easily because of the obvious practical need that exists. On the other hand the Executive also must make a reasoned judgment as to whether longer-term research is worth supporting in view of the possibility that might lie in it for ultimate practice results, even though these cannot easily be foreseen at the time.

Crossing the Valley of Death

Solo



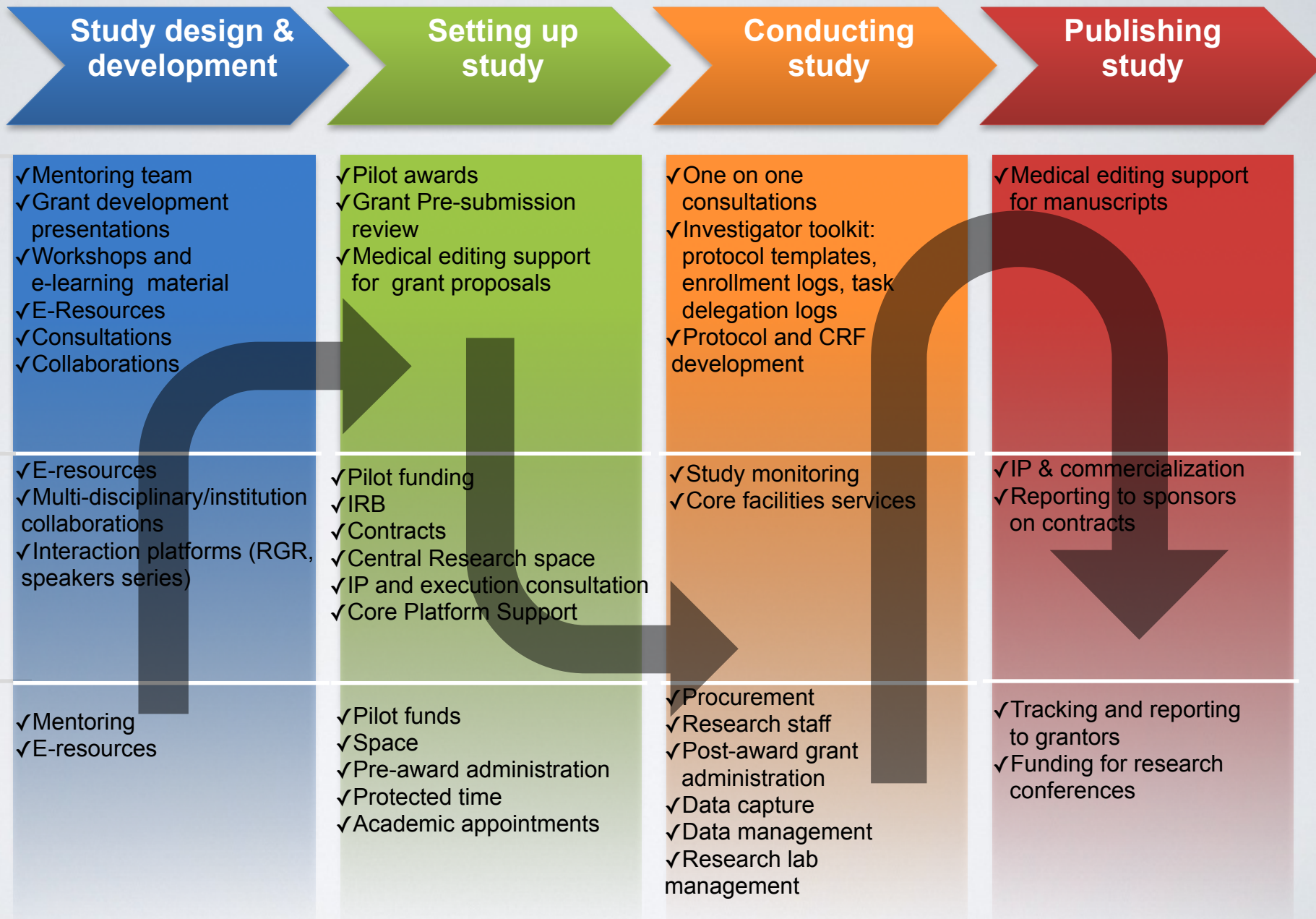
Team Work



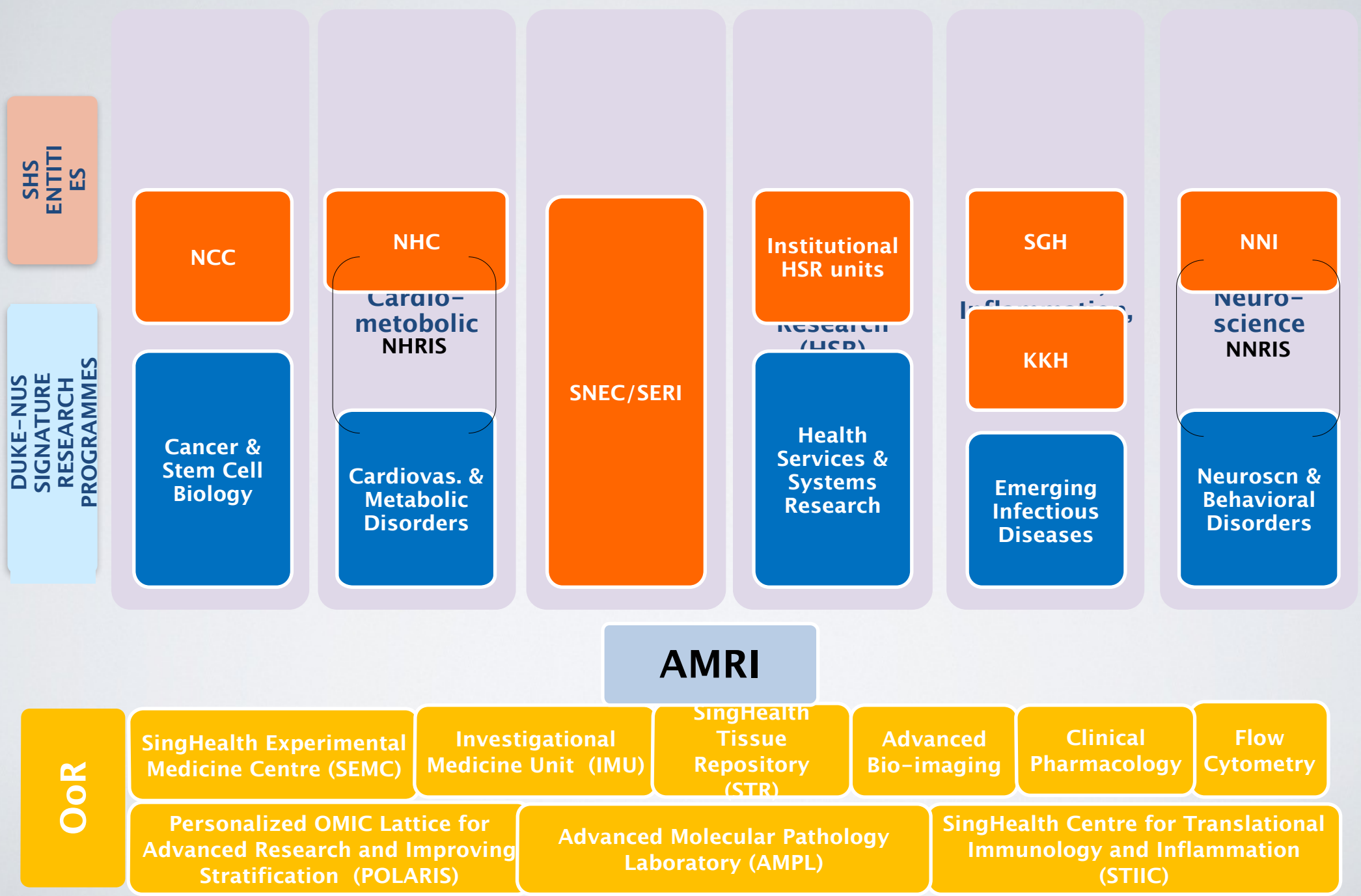
The Hub

- An integrated research support function which brings together scientific and operational expertise from SingHealth Research, OOR and AMRI aiming to facilitate and advance Translational and Clinical research in SingHealth and Duke-NUS AMC.
- The one stop resource centre for advancement of Translational and Clinical Research in SingHealth and Duke-NUS Academic Medicine framework.

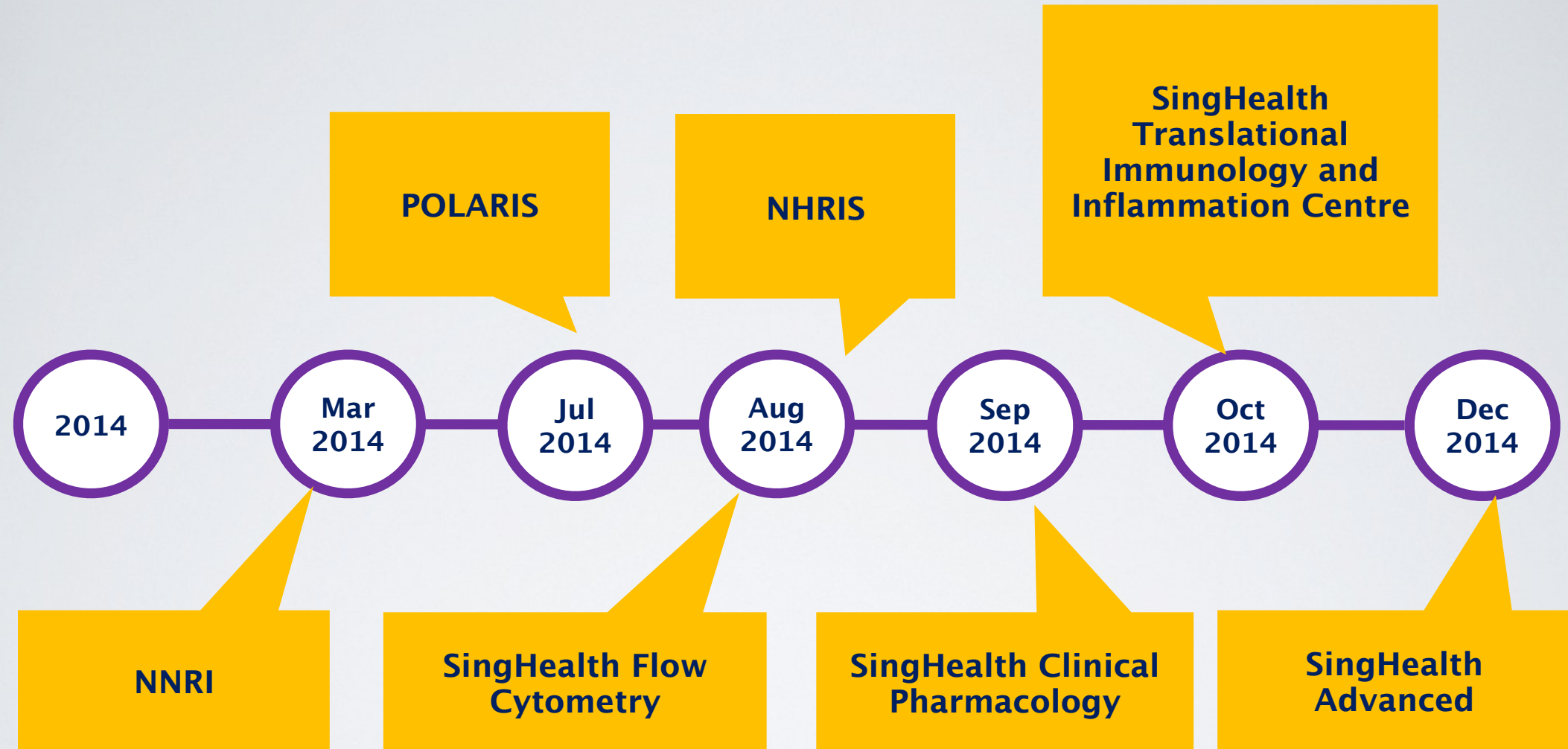
The Hub (Scientist's View)



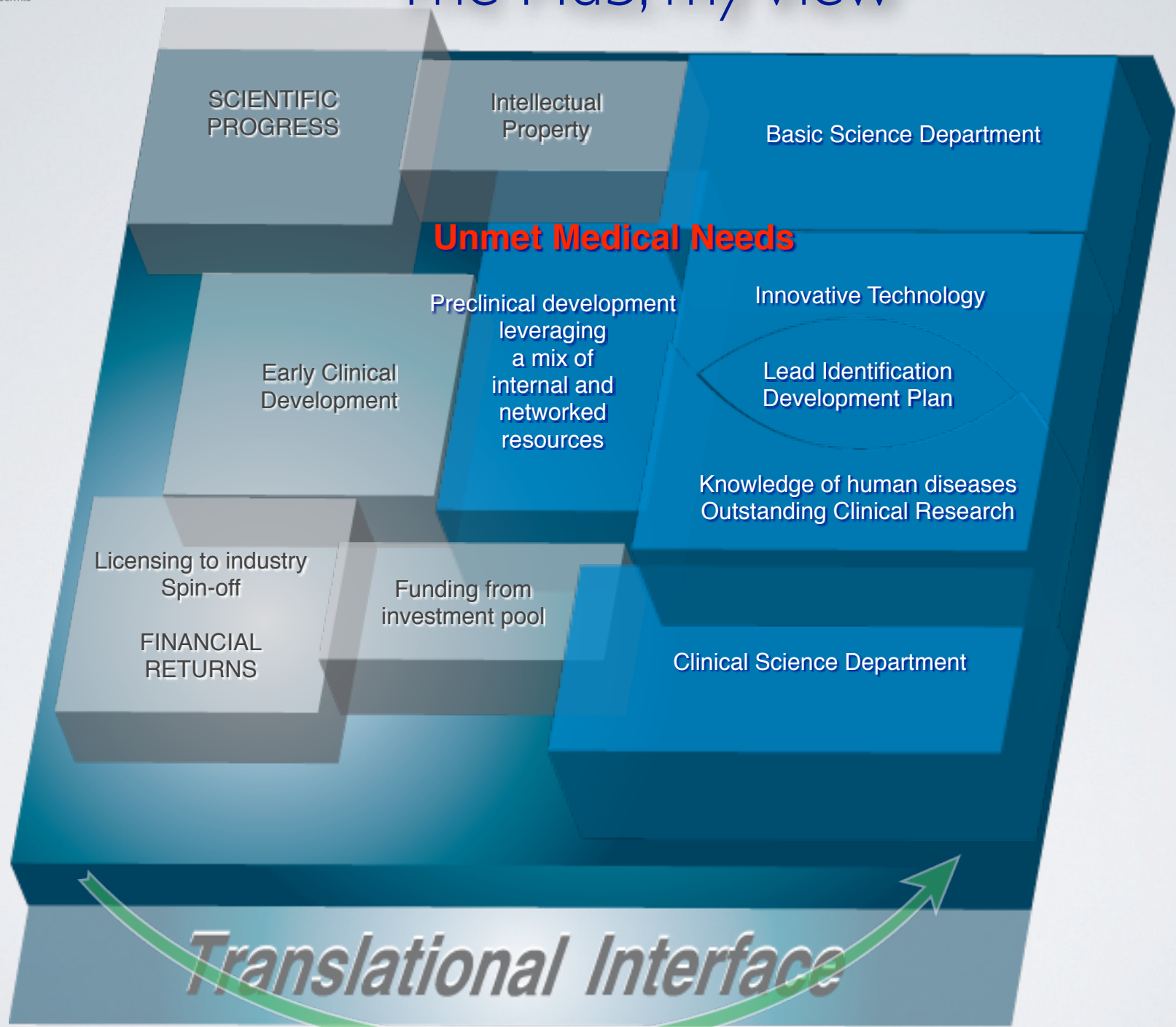
The Hub (Administrator's View)



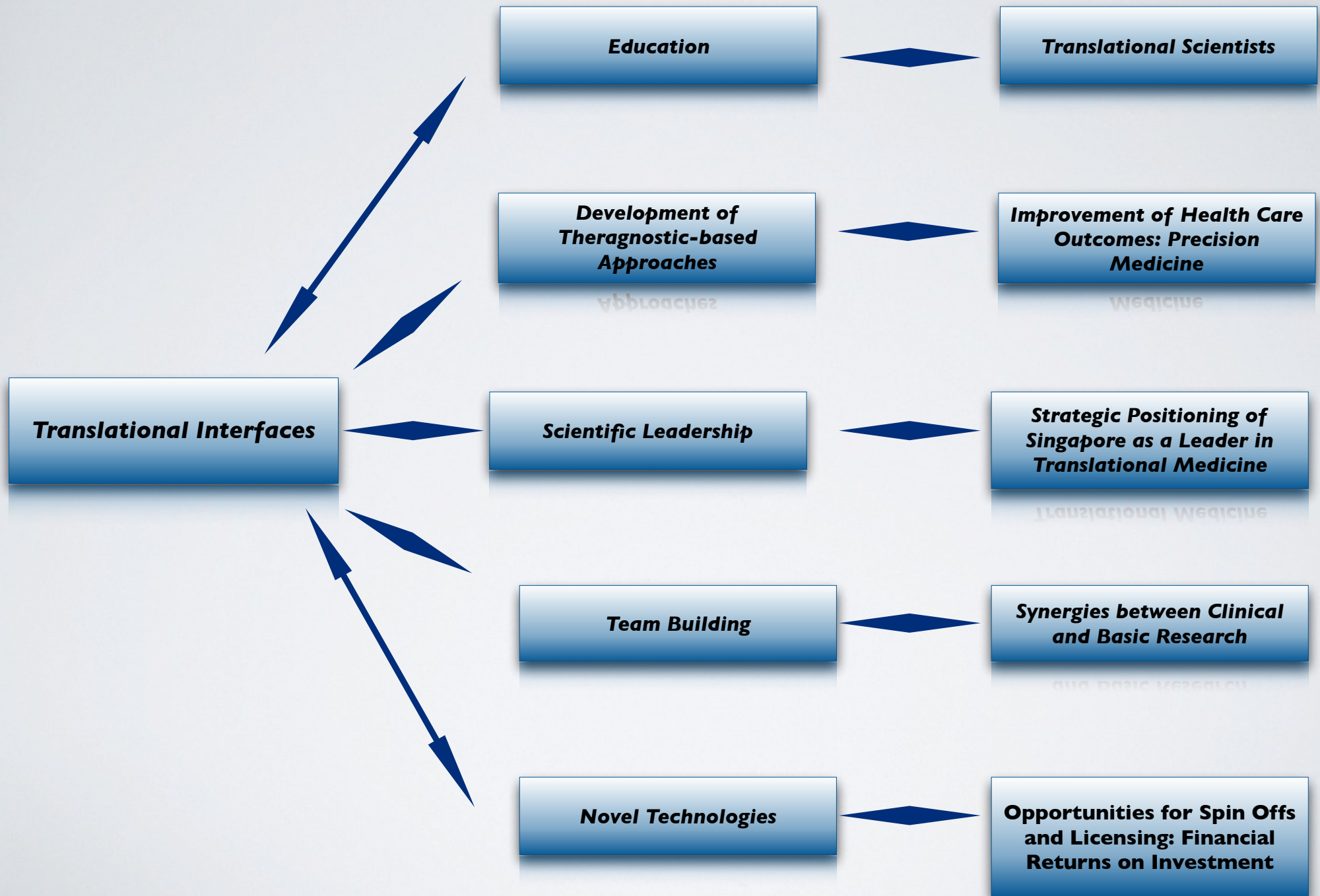
The Hub Grows



The Hub, my View



Disconnection and Friction can evolve into Operational Networks



It is the People who make a difference



Next Steps



Thank you