# Major global health challenges in the 21st century: What can universities do?



Ole Petter Ottersen, President Karolinska Institutet
Former President of the University of Oslo
Chair Lancet Commission Global Governance for Health



#### Nobel lectures Karolinska Institutet 2008





for his discovery of human papilloma viruses causing cervical cancer"

"for their discovery of human immunodeficiency virus"



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Harald zur Hausen



Photo: Sakutin/SCANPIX

Françoise Barré-Sinoussi



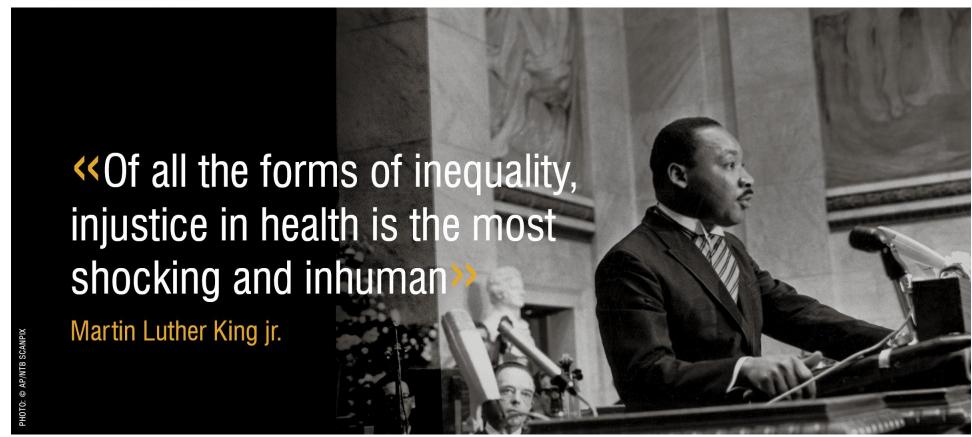
Photo: Magunia/SCANPIX

Luc Montagnier

Nobelprize.org

UiO : University of Oslo

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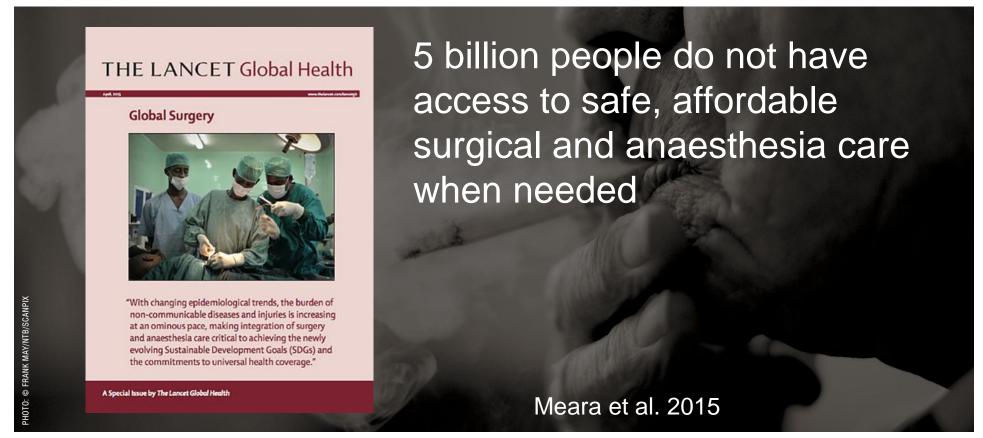


Global Governance for Health



UiO : University of Oslo

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Global Governance for Health





September 27, 2019

Global, Regional, and National Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life-Years for 29 Cancer Groups, 1990 to 2017

A Systematic Analysis for the Global Burden of Disease Study

Global Burden of Disease Cancer Collaboration

JAMA Oncology 27 September 2019

"Cancer and other noncommunicable diseases (NCDs) are now widely recognized as a threat to global development."

New Online Views 0   0	0   <u>Citations</u> 0   <u>Altmetric</u> 15			
Download PDF	<b> ● More</b> $\triangledown$	(f) Cite This	Permissions	
riginal Investigation			ONLINE FIRST	
September 27, 2019			ONLINE FI	

Global, Regional, and National Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life-Years for 29 Cancer Groups, 1990 to 2017

A Systematic Analysis for the Global Burden of Disease Study

Global Burden of Disease Cancer Collaboration

Figure 4. Change in the Absolute Number of Disability-Adjusted Life-Years (DALYs) Between 1990 and 2017 for Both Sexes at the Global Level for Global Burden of Disease Level 2 Causes<sup>a</sup>



	Communicable, maternal, neonatal, and nutritional diseases Noncommunicable diseases Injuries				
Rank	Cancer 2007	007 Rank 2017			
1	Respiratory infections and tuberculosis	Cardiovascular diseases	1		
2	Maternal and neonatal diseases	Neoplasms	2		
3	Cardiovascular diseases	Maternal and neonatal disease	3		
4	Enteric infections	Respiratory infections and tuberculosis	4		
5	Other infections diseases	Musculoskeletal disorders	5		
6	Neoplasms	Mental disorders	6		
7	Other noncommunicable diseases	Other noncommunicable diseases	7		
8	Unintentional injury	Chronic respiratory disease	8		
9	Chronic respiratory disease	Neurological disorders	9		
10	Neglected tropical diseases and malaria	Unintentional injury	10		
11	Nutritional deficiencies	Diabetes and chronic kidney disease	11		
12	Musculoskeletal disorders	Enteric infections	12		
13	Mental disorders	Digestive diseases	13		
14	Transport injuries	Transport injuries	14		
15	Neurological disorders	Self-harm and violence	15		
16	Self-harm and violence	Sense organ diseases	16		
17	Digestive diseases	HIV/AIDS and sexually transmitted infec	tions 17		
18	Diabetes and chronic kidney disease	Neglected tropical diseases and malaria	18		
19	Sense organ diseases	Nutritional deficiency	19		
20	HIV/AIDS and sexually transmitted infections	Other infectious diseases	20		
21	Skin diseases	Substance use	21		
22	Substance use	Skin diseases	22		



## THE LANCET







# The Global Syndemic of Obesity, Undernutrition, and Climate Change: *The Lancet* Commission report



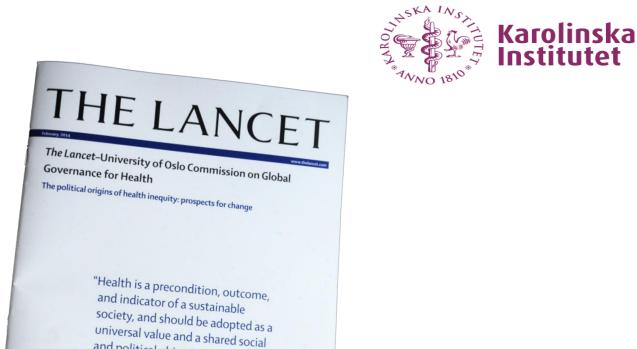
Boyd A Swinburn, Vivica I Kraak, Steven Allender, Vincent J Atkins, Phillip I Baker, Jessica R Bogard, Hannah Brinsden, Alejandro Calvillo, Olivier De Schutter, Raji Devarajan, Majid Ezzati, Sharon Friel, Shifalika Goenka, Ross A Hammond, Gerard Hastings, Corinna Hawkes, Mario Herrero, Peter S Hovmand, Mark Howden, Lindsay M Jaacks, Ariadne B Kapetanaki, Matt Kasman, Harriet V Kuhnlein, Shiriki K Kumanyika, Bagher Larijani, Tim Lobstein, Michael W Long, Victor K R Matsudo, Susanna D H Mills, Gareth Morgan, Alexandra Morshed, Patricia M Nece, An Pan, David W Patterson, Gary Sacks, Meera Shekar, Geoff L Simmons, Warren Smit, Ali Tootee, Stefanie Vandevijvere, Wilma E Waterlander, Luke Wolfenden, William H Dietz

27 Jan 2019

9/30/2019

We must reach beyond the health sector to find effective solutions:

Lancet-University of Oslo Commission on Global Governance for Health

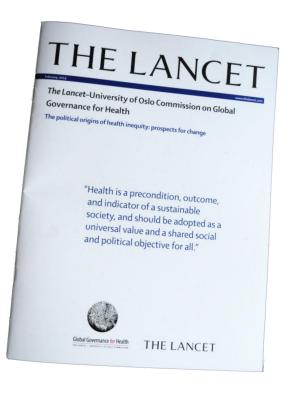


and political objective for all."

THE LANCET

Ottersen et al.: **The political origins of health inequity:** prospects for change. Lancet. 2014 Feb 15;383(9917):630-67.





#### **Points raised in our Lancet Commission**

- Market supremacy the commercial determinants of health
- Health subordinated to economic goals
- High cost of medicines
- Trade agreements and policy space of health
- Sticky institutions
- Access to knowledge

Health is increasing in complexity as we approach and transgress planetary boundaries

# United Nations Agenda 2030











# Karolinska Institutet's new Vision (2019)

We are advancing knowledge about life and strive towards better health *for all*:

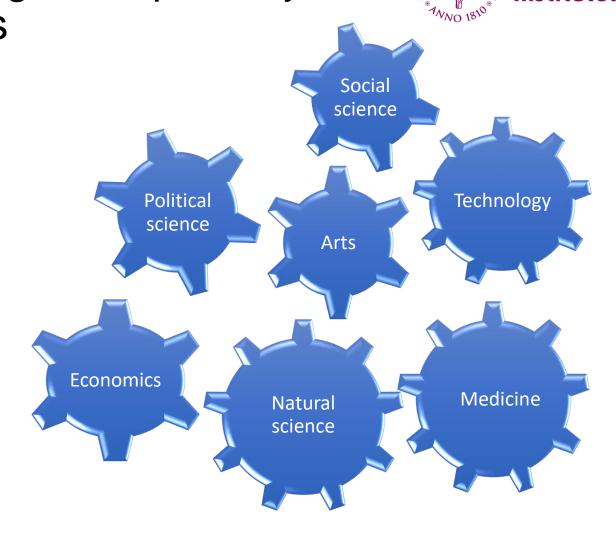
- Across generations
- Across borders
- Across social divides
- Across disciplines and sectors



Addressing major health challenges, inspired by the

Sustainable Development Goals

- Interdisciplinarity
- Persuasiveness of facts
- Synergies and trade-offs among the SDGs
- Develop educational programs to better prepare tomorrow's leaders and citizens
- Design new modes of international co-operation



Karolinska

# Synergies and trade-offs among the SDGs: The case of child health











## **Rethinking Higher Education**

**Inspired by the Sustainable Development Goals** 

#### Saturday 30 March 2019













Helen Clark



# **Rethinking Higher Education**

Inspired by the Sustainable Development Goals



Design new modes of international co-operation:

## Centre for sustainable health

Karolinska Institutet

- Reverse innovation
- Community voices
- Focus on implementation
- Attentive to the socioeconomic, commercial, and political determinants of health
- Comprehensive health care services
- New alliances



#### Couple medicine to technology



### MoMic Pop-Up Lab at Fogo Fogo Primary School, Tanzania

- AI-supported mobile digital microscope and algorithms that can detect parasites e.g. Schistosomiasis even without access to electricity





PhD Student Oscar Holmström

## Emphasize prevention

#### Collaborations in Global Health

#### Coalition for Epidemic Preparedness Innovations (CEPI)

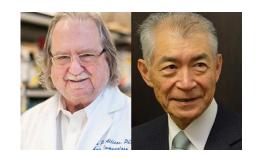
CEPI is a new alliance to finance and coordinate the development of new vaccines to prevent and contain infectious disease epidemics.

By enabling the development of suitable vaccines against pathogens, which may cause epidemics, CEPI aims to stop epidemics before they turn into large-scale health emergencies. In order to avoid future humanitarian disasters caused by epidemics, vaccines should be readily available where and when needed most.

A similar strategy is urgently needed for the NCDs

#### **OCTOBER 2018:**





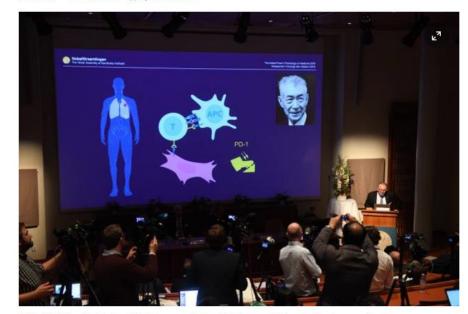
The Nobel Assembly at Karolinska Institutet
has today decided to award
the 2018 Nobel Prize in Physiology or Medicine
jointly to

James P. Allison and Tasuku Honjo

#### On my return from Kyoto:

## Nobelmedicin spräcker Sahlgrenskas budget

Av Omni ⊕ Lör, 12.40 ☐ Spara artikel



Arkivbild: Den 1 oktober tillkännagavs James P Allison och Tasuku Honjo som årets Nobelpristagare i medicin eller fysiologi vid en pressträff på Karolinska institutet i Stockholm. Foto: Fredrik Sandberg/TT / TT NYHETSBYRÅN

Sahlgrenska sjukhuset har överskridit sin budget för läkemedel med över 30 miljoner kronor för cancervården hittills i år. Det rapporterar P4 Göteborg.

"Nobel drugs kill hospital budget"

# The complexity can be crippling – universities must make it inspiring











Sir Alexander Fleming

"...the thoughtless person playing with penicillin is morally responsible for the death of the man who finally succumbs to infection with the penicillin–resistant organism. I hope this evil can be averted" (1945)

## Emphasizing multidisciplinarity

Journal List > Emerg Infect Dis > v.9(10); 2003 Oct > PMC3033100



Emerg Infect Dis. 2003 Oct; 9(10): 1242-1248.

doi: 10.3201/eid0910.020493

PMCID: PMC3033100

PMID: 14609458

#### Cultural Contexts of Ebola in Northern Uganda

Barry S. Hewlett<sup>™\*</sup> and Richard P. Amola<sup>†</sup>

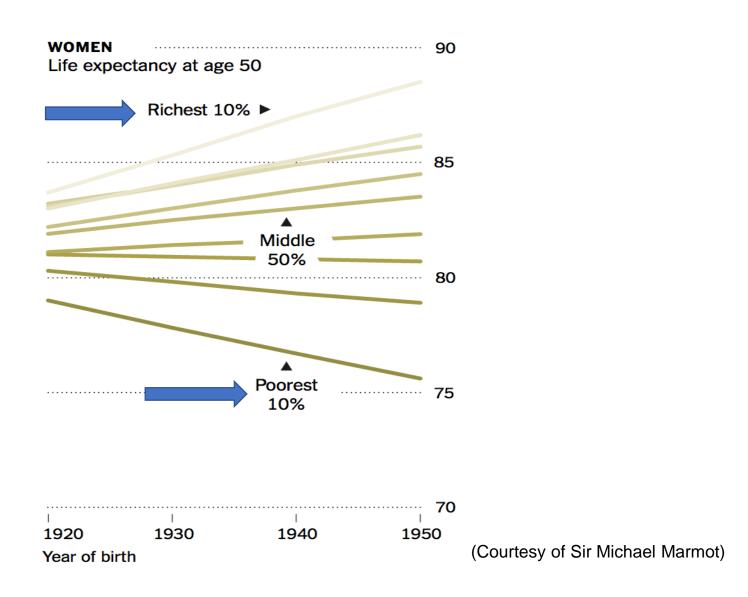
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This article has been cited by other articles in PMC.

Abstract Go to: ♥

Technical guidelines for the control of Ebola hemorrhagic fever (EHF) indicate that understanding local views and responses to an outbreak is essential. However, few studies with such information exist. Thus, we used qualitative and quantitative methods to determine how local residents of Gulu, Uganda, viewed and responded to the 2000–2001 outbreak of EHF. Results indicated that Acholi people used at least three explanatory models to explain and respond to the outbreak; indigenous epidemic control measures were often implemented and consistent with those being promoted by healthcare workers; and some cultural practices amplified the outbreak (e.g., burial practices). However, most persons were willing to modify and work with national and international healthcare workers.

## Life Expectancy for US women



# Inequities persist throughout the world



# Life expectancy at birth for England's poorest women has fallen significantly in recent years



## Emphasizing prevention

#### Collaborations in Global Health

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CEPI is a new alliance to finance and coordinate the development of new vaccines to prevent and contain infectious disease epidemics.

By enabling the development of suitable vaccines against pathogens, which may cause epidemics, CEPI aims to stop epidemics before they turn into large-scale health emergencies. In order to avoid future humanitarian disasters caused by epidemics, vaccines should be readily available where and when needed most.

#### International efforts to fight the global threat of epidemics

Since some diseases offer little economic incentives for pharmaceutical companies to take on the high development costs for vaccines, public funding by the international community is needed.

CEPI is a new alliance between governments, industry, academia, philanthropy, intergovernmental institutions, such as the World Health Organization, and civil society. The initiative focuses on diseases which the World Health Organization (WHO) has identified as possible originators for future pandemics. For the first five years, CEPI strives to raise funds of up to US\$ 1 billion. By 2018 Australia, Belgium, Canada, Germany, Japan, Norway, the European Commission as well as the Bill and Melinda Gates Foundation and the Wellcome Trust are supporting CEPI financially.



# Major global health challenges in the 21st century: What can universities do?

- New alliances
- Foster interdisciplinarity
- Educating for systems leadership
- Build capacity, based on local ownership
- · Harness innovativeness for sustainable health



# Health professionals for a new century

"Glaring gaps and inequities in health persist both within and between countries, underscoring our collective failure to share the dramatic health advances equitably."

- New infectious, environmental, and behavioural risks
- Rapid demographic and epidemiological transitions
- Additional demands on health workers
- Fragmented, outdated, and static curricula producing ill-equipped graduates



THE LANCET

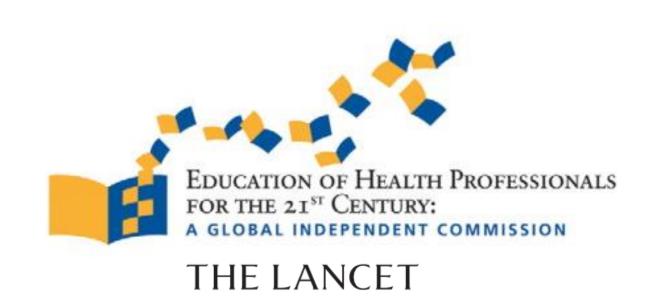


# Health professionals for a new century

"Redesign of professional health education is necessary and timely, in view of the opportunities for mutual learning and joint solutions offered by global interdependence...

...What is clearly needed is a thorough and authoritative re-examination of health professional education..."

-- Julio Frenk et al



Julio Frenk\*, Lincoln Chen\*, Zulfi qar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk. Lancet 2010; 376: 1923–58. Published Online November 29, 2010. DOI:10.1016/S0140-6736(10)61854-5

# Reducing health inequities is cross-cutting throughout SDGs





Reduce inequality within and among countries



Achieve gender equality



End poverty



Ensure healthy lives and promote wellbeing for all at all ages / Achieve universal health coverage



Ensure inclusive and equitable quality education



Enhance capacity-building support to developing countries to increase the availability of disaggregated data

# "Universities must lead on Sustainable Development Goals"



**Lennart Levi and Bo Rothstein,** University World News – Global, 09 November 2018, Issue No:528

## IAU HESD Cluster







# Why should academic institutions incorporate the pursuit of SDGs into their strategies and operations?



# 2030 as an incentive

- Think long term and strategically
- Answer "where do we want to be in 2030?"
- Develop strategies driven by SDGs, not perceived funding

# Reduce traditional silos

- Eliminate Global North vs. Global South thinking
- Foster transnational learning in health service delivery
- Promote collaborations across disciplines and sectors

# SDG3 partnerships as a catalyst

- Institutional capacity-building and transformation
- Facilitatation of evidence-based metrics to track partnership success and sustainability

**Source:** Cancedda C, Binagwaho A, Kerry V. It is time for academic institutions to align their strategies and priorities with the Sustainable Development Goals. *BMJ Global Health* 2018;**3:**e001067

# Getting started with SDGs in universities



- A whole-of-university approach is essential
- Universities can use the following steps to start and deepen their engagement with the SDGs
  - 1. Mapping what they are already doing
  - 2. Building internal capacity and ownership of the SDGs
  - 3. Identifying priorities, opportunities and gaps
  - 4. Integrating, implementing and embedding the SDGs within university strategies, policies and plans
  - 5. Monitoring, evaluating and communicating their actions on the SDGs

AUSTRALIA, NEW ZEALAND & PACIFIC EDITIO

## GETTING STARTED WITH THE SDGS IN UNIVERSITIES

A GUIDE FOR UNIVERSITIES, HIGHER EDUCATION INSTITUTIONS, AND THE ACADEMIC SECTOR







# Case for university engagement in the SDGs





### How do the SDGs help universities?

Create increased demand for SDG related education

Provide a comprehensive and globally accepted definition of a responsible university

Offer a framework for demonstrating impact

Create new funding streams

Support collaboration with new external and internal partners Knowledge

Learning

**Demonstration** 

**Impact** 

Collaboration

### How do universities help the SDGs?

Provide knowledge, innovations and solutions to the SDGs

Create current and future SDG implementers

Demonstrate how to support, adopt and implement SDGs in governance, operations and culture

Develop cross-sectoral leadership to guide the SDG response

**Source:** SDSN Australia/Pacific (2017): Getting started with the SDGs in universities: A guide for universities, higher education institutions, and the academic sector. Australia, New Zealand and Pacific Edition. Sustainable Development Solutions Network – Australia/Pacific, Melbourne.





### Global ranking of SDG pairs with high shares of synergies (left) and trade-offs (right) from top to bottom

#### Global top 10 pairs with synergies:

- SDGs 1 (No poverty)
- SDG 3 (Good health and well-being)
- SDG 6 (Clean water and sanitation)

### Global top 10 pairs with trade-offs either consist of:

- SDG 12 (Responsible consumption and production) or
- SDG 15 (Life on land)

Top 10 synergy pairs Ranks Top 10 trade-off pairs 13 CHAR 5 10000 ⅉ 6 MOSAMMON T  $\subseteq$ ◉ 10 (00000) (≡, ₫



**Source:** Pradhan, P., et al. (2017). A Systematic Study of Sustainable Development Goal (SDG) Interactions, *Earth's Future*, *5*, 1169 – 1179

3.1 Reduce global maternal mortality ratio



3.d Strengthen capacity for risk reduction

3.2 End preventable deaths children under 5

3.c Increase health financing & workforce

3.b Support research in vaccines and medicine

3.a Implement WHO FC Tobacco Control

3.9 Reduce number deaths illnesses pollution

3.8 Achieve universal health coverage

3 GOOD HEALTH AND WELL-BEING



3.3 End epidemics of communicable diseases

3.4 Reduce mortality non-communiable diseases

3.5 Prevention/treatment substance abuse

3.6 Halv number deaths injuries traffic accidents

3.7 Reproductive health, ensure universal access

**Source:** United Nations. Transforming our world: The 2030 agenda for sustainable development. New York; 2015.





### Open access: Better health through efficient dissemination



### Lancet-UiO commission:

"Restrictions on access to knowledge can widen existing knowledge disparities, and constrain access to information that is central to improvement of health."

- Although knowledge can in principle be made available to all as a global public good, in practice its benefits are often restricted through secrecy, paywalls, or intellectual property rights.
- In the ideal world, society should have free access to research while researchers should be free to publish in the journal of their choice. The art is to let these freedoms thrive side by side.



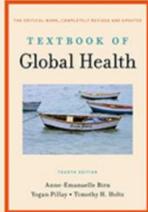
### **Independent Monitoring** Panel on Global Governance for Health

- Globalisation
- Development
- Health policy
- Food security
- Public health
- Sociology
- Geography
- Anthropology
- Health equity
- Innovation and health technology



















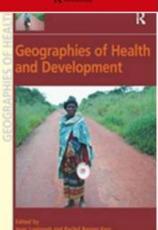




Globalization and

Health











With more to come...

WØRLD ECONOMIC

Global Agenda Leadership in the Fourth Industrial RevolutionSustainable Development

### Systems leadership can change the world but what exactly is it?



Christina Figueres' leadership helped bring 195 countries together to sign the 2015 Paris Agreement

Image: REUTERS/Denis Balibous



### **Definition of Global Health**

"The area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide".\*



<sup>\*</sup>Koplan JP, Bond TC, Merson MH, et al. (June 2009). "Towards a common definition of global health". Lancet. 373 (9679): 1993–5.



It comes down to public health abroad could hurt American companies' profits.

#### By The Editorial Board

The editorial board represents the opinions of the board, its editor and the publisher. It is separate from the newsroom and the Op-Ed section.

July 9, 2018

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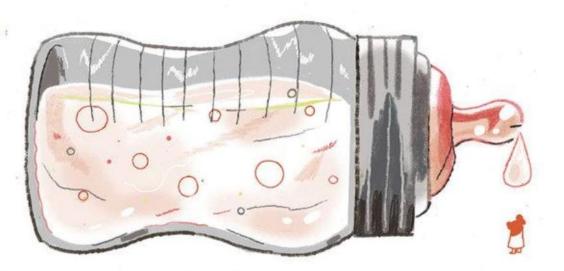








Leer en español





"But it was not surprising. In fact, it's just one of several recent examples of the Trump administration's zeal for badgering weaker countries into tossing public health concerns aside to serve powerful business interests. The baby formula industry is worth \$70 billion and, as breast-feeding has become more popular in more developed countries, the industry has pinned its hopes for growth on developing nations."

### Dr Tedros visiting KI April 2019





Tedros Adhanom Ghebreyesus WHO Director-General

"Building strong systems is what will protect people, communities and the world."

- Leadership
- Multi-sectoral collaboration
- Groundbreaking science
- Better data
- Evidence-based guidelines
- Better coordination among national and international actors to tackle the global burden of disease.

A presentation of KI's Strategy 2030

# GLOBAL GOVERNANCE DYSFUNCTIONS

INADEQUATE POLICY SPACE

INSTITUTIONAL STICKINESS

DEMOCRATIC DEFICIT

MISSING/WEAK INSTITUTIONS

WEAK ACCOUNTABILITY

## Karolinska Institutet: New vision in Strategy 2030



We are advancing knowledge about life and strive towards better health for all





### Independent Monitoring Panel on Global Governance for Health



# Trade agreements and policy space

Trade agreements and policy space for achieving universal health coverage. UN Committee for Development Policy background paper, no. 38. Sakiko Fukuda-Parr and Kim Treanor.

Trade and Investment Agreements: Implications for Health Protection. Journal of World Trade, 2017. Desmond McNeill, Pepita Barlow, Carolyn Deere Birkbeck, Sakiko Fukuda-Parr, Anand Grover, Ted Schrecker, David Stuckler.

Political origins of health inequities: Trade and investment agreements (TIA). Viewpoint in The Lancet, 2016. Desmond McNeill, Carolyn Deere Birkbeck, Sakiko Fukuda-Parr, Anand Grover, Ted Schrecker, David Stuckler.





### **Panel's Publications**

### Karolinska Institutet

#### **Extractive industries and health**

Canadian mining and ill health in Latin America: a call to action. Canadian Journal of Public Health (2018), p1-5. Anne-Emanuelle Birn, Leah Shipton & Ted Schrecker

How extractive industries affect health: Political economy underpinnings and pathways. Health & Place (2018), Vol 52, p135-147 (open access). Ted Schrecker; Anne-Emanuelle Birn & Mariajosé Aguilera

Extractive Industries and Health, A Bibliography for the Independent Panel on Global Governance for Health. Mariajosé Aguilera, Anne-Emanuelle Birn, Ted Schrecker, Leah Shipton.

#### Canadian Journal of Public Health Revue canadienne de santé publique





#### Bibliography: Extractive Industries and Global Health

This bibliography compiles more than 1,000 publications on the extractive industries and health found through a thorough review of grey and peer-reviewed literature.

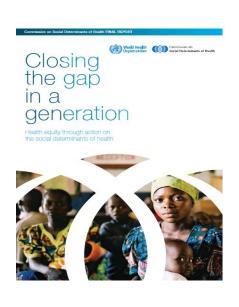
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Photo: Colourb

### From social determinants of health (2008)

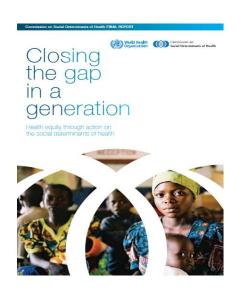


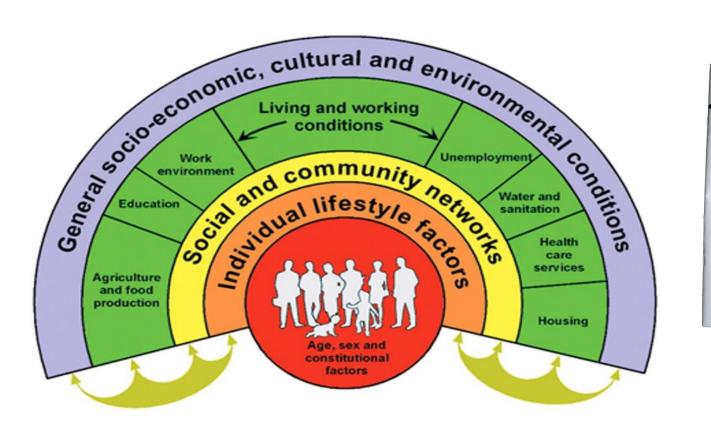


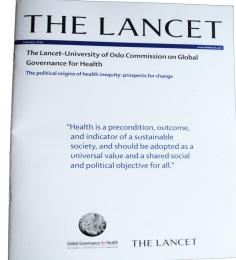


# From social determinants of health (2008) to the political determinants of health



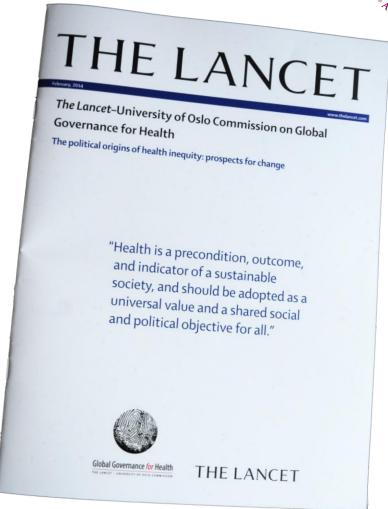








### The root causes of inequity: The political determinants of health



The Lancet-University of Oslo Commission on Global Governance for Health



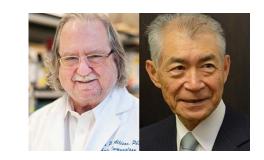


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meeting
Kyoto 10
October
2018:
Honoring
Allison and
Honjo







The Nobel Assembly at Karolinska Institutet

has today decided to award

the 2018 Nobel Prize in Physiology or Medicine

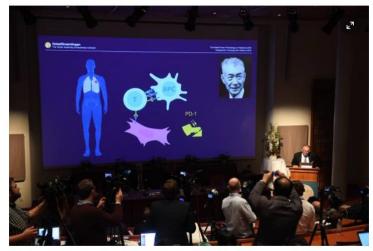
jointly to

James P. Allison and Tasuku Honjo



### Nobelmedicin spräcker Sahlgrenskas budget

Av Omni ⊕ Lör, 12.40 ☐ Spara artikel



Arkivbild: Den 1 oktober tillkännagavs James P Allison och Tasuku Honjo som årets Nobelpristagare i medicin eller fysiologi vid en pressträff på Karolinska institutet i Stockholm. Foto: Fredrik Sandberg/TT / TT NYHETSBYRÅN

Sahlgrenska sjukhuset har överskridit sin budget för läkemedel med över 30 miljoner kronor för cancervården hittills i år. Det rapporterar P4 Göteborg.

The solution: Center of Sustainable Medicine?





WHO WE ARE WHAT WE DO PUBLICATIONS RESOURCES EXPERTS











ABOUT APHRC



### KI Infection Retreat

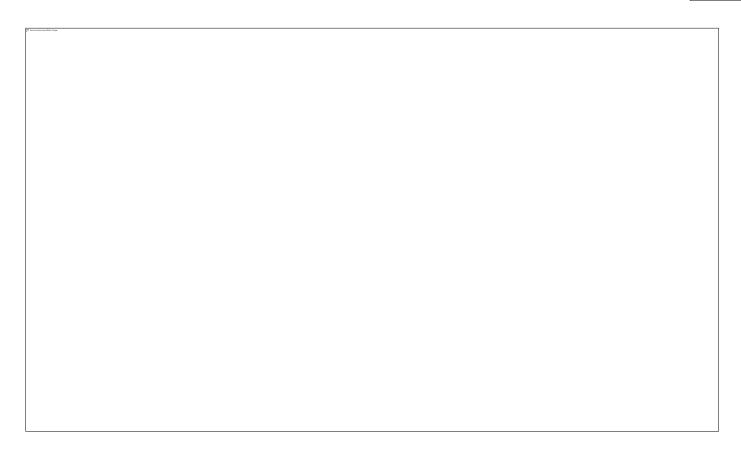
Ole Petter Ottersen, President, Karolinska Institutet 3-4 September 2019





A presentation of KI's Strategy 2030





KI:s Strategy 2030 is inspired by UN's Agenda 2030

Name Surname 24/05/19 **63** 



### Wind of Change – Health in All Goals









### **Rethinking Higher Education**

**Inspired by the Sustainable Development Goals** 

#### Saturday 30 March 2019













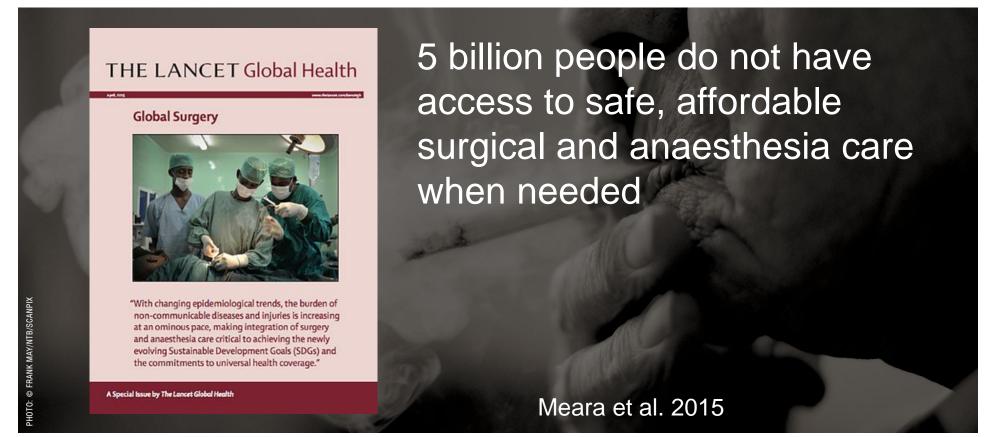


Helen Clark



UiO : University of Oslo

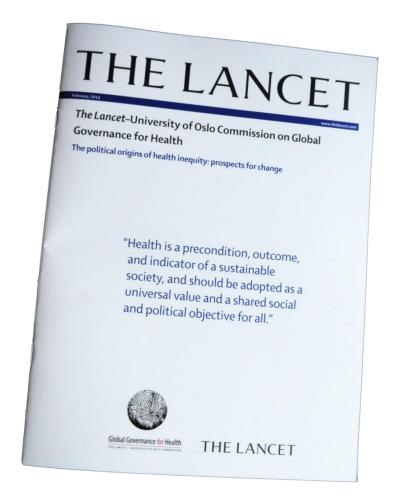
THE LANCET



Global Governance for Health



Lancet-University of Oslo Commission on Global Governance for Health



Ottersen et al.: **The political origins of health inequity:** prospects for change. <u>Lancet.</u> 2014 Feb 15;383(9917):630-67.



### Our strategic choices

KI shall approach 2030 as a groundbreaking, engaged, and global university.

**Engaged** 

Global

Groundbreaking



A presentation of KI's Strategy 2030

### Emphasizing prevention



#### Collaborations in Global Health

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En presentation av KI:s strategi 2030 24 maj 2019

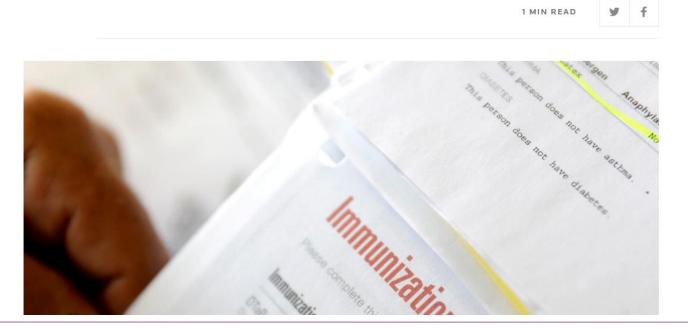
### Emphasizing prevention





HEALTH NEWS SEPTEMBER 2, 2019 / 4:37 PM / UPDATED 19 HOURS AGO

# U.S. records 19 new cases of measles as of last week



En presentation av KI:s strategi 2030 24 maj 2019





Sir Alexander Fleming

"...the thoughtless person playing with penicillin is morally responsible for the death of the man who finally succumbs to infection with the penicillin–resistant organism. I hope this evil can be averted" (1945)

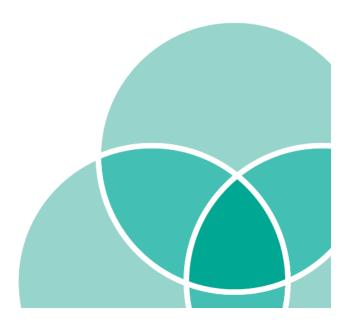






### IMPACT – A One Health collaboration on antibiotic resistance for sustainable change

PROJECT SUMMARY





#### Colleagues involved in the IMPACT project 2014–2018

#### **Zhejiang University**

#### Yonghong Xiao (PI)

Lihua Guo Chen Huang Tianshui Niu Ping Shen Hao Xu Xiao Yu Beiwen Zheng Kai Zhou

#### Public Health Agency of Sweden

#### Otto Cars (PI) Anette Hulth (PI)

Saga Alvring Sara Byfors Malin Grape Sonja Löfmark Martha Melin

#### China Agricultural University

#### Jianzhong Shen (co-PI)

Run Fan
Nansong Jiang
Jiyun Li
Shizhen Ma
Hongwei Ren
Zhangqi Shen
Chengtao Sun
Shaolin Wang
Yang Wang
Xi Xia
Ke Xiao
Wenjuan Yin

#### **Shandong University**

#### Qiang Sun (co-PI)

Xiaohui Chi Lilu Ding Xiang Ji Xuewen Li Yao Liu Pan Sun Huiyu Xia Ding Yang Xiwe Yang Jia Yin Qian Zhao Ziyu Zhou Huiyun Zou

#### Karolinska Institutet

#### Cecilia Stålsby Lundborg (co-PI)

Oliver Dyar Nada Hanna Gaetano Marrone Ashok Tamhankar Göran Tomson Karin Wikander Tianyang Zhang

#### **Linköping University**

#### Lennart E Nilsson (co-PI)

Björn Berglund Maud Nilsson Maria Tärnberg Hong Yin

#### Shandong Academy of Agricultural Sciences

Ming Hu Baohua Huang Yuqing Liu Yanbo Luo

#### Shandong Center for Disease Control and Prevention

Zhenqiang Bi Zhenwang Bi Baoli Chen Yan Li Miaomiao Wang Yiqing Zhu

#### Swedish National Food Agency

Mia Egervärn Jakob Ottoson

#### Swedish National Veterinary Institute

Stefan Börjesson Christina Greko Marie Sjölund

### Emphasizing multidisciplinarity



Journal List > Emerg Infect Dis > v.9(10); 2003 Oct > PMC3033100



Emerg Infect Dis. 2003 Oct; 9(10): 1242-1248.

doi: 10.3201/eid0910.020493

PMCID: PMC3033100

PMID: 14609458

#### Cultural Contexts of Ebola in Northern Uganda

Barry S. Hewlett<sup>™\*</sup> and Richard P. Amola<sup>†</sup>

► Author information ► Copyright and License information <u>Disclaimer</u>

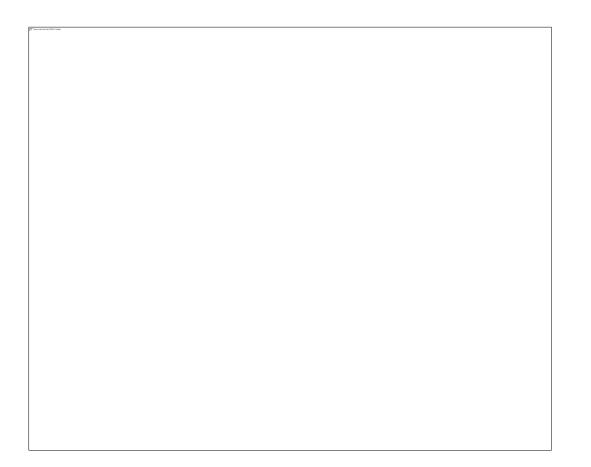
This article has been cited by other articles in PMC.

Abstract Go to: ♥

Technical guidelines for the control of Ebola hemorrhagic fever (EHF) indicate that understanding local views and responses to an outbreak is essential. However, few studies with such information exist. Thus, we used qualitative and quantitative methods to determine how local residents of Gulu, Uganda, viewed and responded to the 2000–2001 outbreak of EHF. Results indicated that Acholi people used at least three explanatory models to explain and respond to the outbreak; indigenous epidemic control measures were often implemented and consistent with those being promoted by healthcare workers; and some cultural practices amplified the outbreak (e.g., burial practices). However, most persons were willing to modify and work with national and international healthcare workers.

En presentation av KI:s strategi 2030 24 maj 2019

- Emerg Intect Di



Karolinska Institutet

Stockholm Trio launched April 2019

En presentation av KI:s strategi 2030 24 maj 2019



### MoMic Pop-Up Lab at Fogo Fogo Primary School, Tanzania

- AI-supported mobile digital microscope and algorithms that can detect parasites e.g. Schistosomiasis even without access to electricity





PhD Student Oscar Holmström

### Dr Tedros visiting KI April 2019





Tedros Adhanom Ghebreyesus WHO Director-General

"Building strong systems is what will protect people, communities and the world."

- Leadership
- Multi-sectoral collaboration
- Groundbreaking science
- Better data
- Evidence-based guidelines
- Better coordination among national and international actors to tackle the global burden of disease.

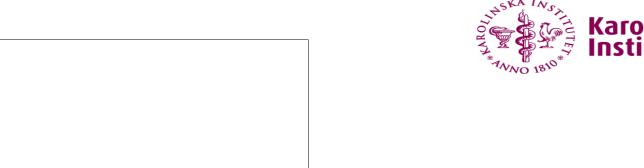


## Strategy 2030

- Data
- Region Stockholm
- Infrastructure
- Adm. support
- Horizon Europe
- Medicine and technology
- Open Science
- Implementation
- Ethics
- Economy

**Core values** 

Strategy 2030 79





## "The Pandemic Century"



"We might say that infectious diseases nearly always have wider environmental and social causes. Unless and until we take account of the ecological, immunological, and behavioral factors that govern the emergence and spread of novel pathogens, our knowledge of such microbes and their connection to disease is bound to be partial and incomplete".

- Mark Honigsbaum

En presentation av KI:s strategi 2030 24 maj 2019









#### We all need to have a global mindset

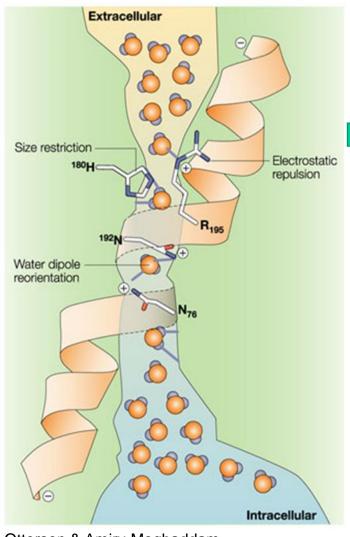




Hans Rosling (1948-2017) and Bill Gates
Clinical pharmacology at KI: Sune Bergström (1916 – 2004) and Folke Sjöqvist

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Ottersen & Amiry-Moghaddam

Nature Reviews | Neuroscience



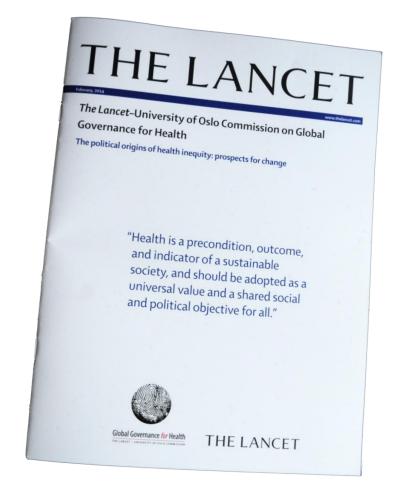
President University of Oslo 2009 – 2017



President Karolinska Institutet 2017 -



Lancet-University of Oslo Commission on Global Governance for Health



Ottersen et al.: **The political origins of health inequity:** prospects for change. <u>Lancet.</u> 2014 Feb 15;383(9917):630-67.



# 2015: United Nations Agenda 2030 with its 17 sustainable development goals (SDGs)



Clinical Pharmacology is instrumental for realizing the SDGs To contribute we need to get out of our comfort zone



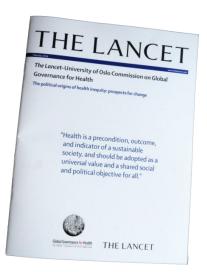




Good Manufacturing Practice (GMP) guidelines lack environmental considerations

How to ensure environmentally safe production and use of medicines?

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#### **Points raised in our Lancet Commission**

- Market supremacy the commercial determinants of health
- High cost of medicines
- Trade agreements and policy space of health
- Extractive industries and health
- Intellectual property rights
- Migrant health
- Sticky institutions
- Access to knowledge





Lancet-UiO commission: "Restrictions on access to knowledge can widen existing knowledge disparities, and constrain access to information that is central to improvement of health."

Although knowledge can in principle be made available to all as a global public good, in practice its benefits are often restricted through secrecy, paywalls, or intellectual property rights.

In the ideal world, society should have free access to research while researchers should be free to publish in the journal of their choice. The art is to let these freedoms thrive side by side.





## Strategy 2030



Core values

Strategy 2030





- 1. An ethical approach, academic freedom, critical reflection, high quality and high ambitions must permeate and constitute a foundation for all our activities.
- 2. A deep commitment to human health globally, nationally and locally should characterize our education and research.
- 3. A rich diversity of perspectives and clear synergies should characterize our education and research
- **4. Inter-professional learning**, life-long learning and internationalization should characterize our education.
- 5. Curiosity-driven search for knowledge about life processes and disease mechanisms, world class scientific breakthroughs, reproducibility and modern methodology will characterize our research.

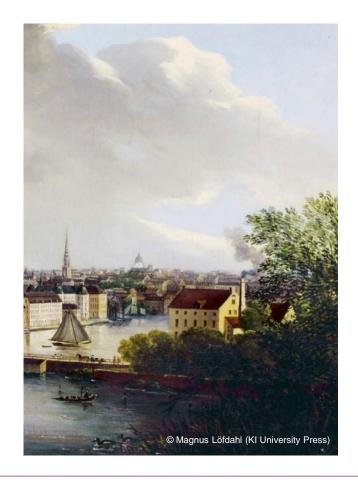
Strategy 2030



## A long history

On 13 December 1810, King Karl XIII establishes an "Academy for the training of skilled army surgeons".

Fierce opposition from Lund and Uppsala Alfred Nobel's bequest, 1895





## The Nobel prize

Alfred Nobel's will, 1895

The foundation was established to manage Nobel's assets

The Nobel Prize is awarded in six categories

The Nobel Assembly at Karolinska Institutet awards the Nobel Prize in Physiology or Medicine

The prize is awarded on 10 December, the anniversary of Nobel's death

The prize has been awarded since 1901

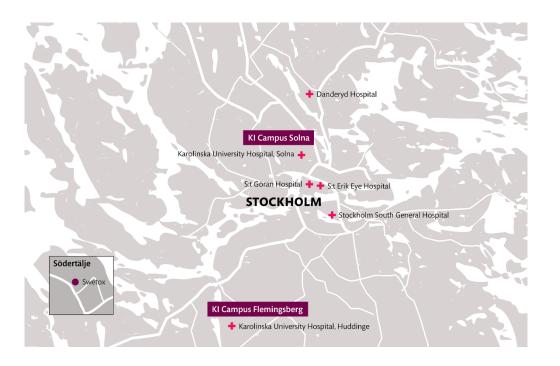
Alfred Nobel was a one man distillation of the global approach to science





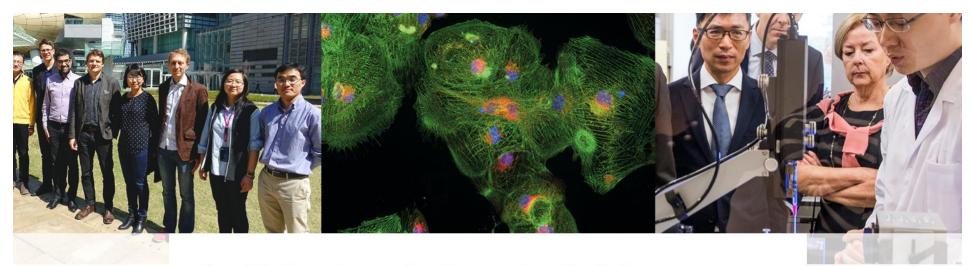
## One university – two campuses

Campus Solna
Campus Flemingsberg
Collaboration with and
presence
at the main hospitals, local
health authorities and primary
care facilities in the
Stockholm region.





## The 3rd campus in Hong Kong



#### Ming Wai Lau Centre for Reparative Medicine

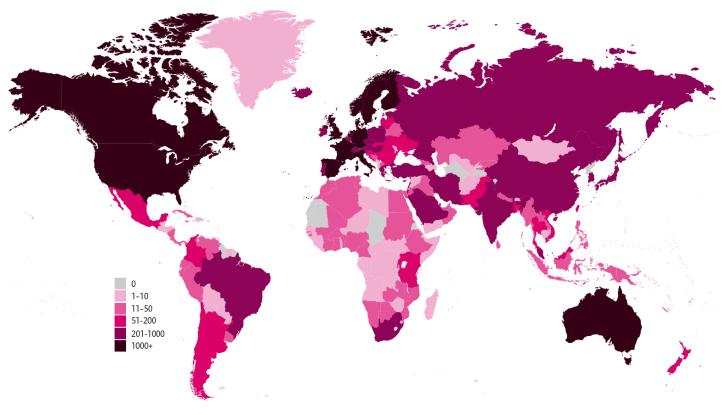
Ming Wai Lau Centre for Reparative Medicine is established to further accelerate research in stem cell biology, biomedical engineering, biotechnology, and regenerative medicine at Karolinska Institutet.

Visit the Hong Kong node

Visit the Stockholm node



## International joint publications 2013–2016



The number of academic articles published by Karolinska Institutet's researchers in collaboration with one or more researchers from each country or territory.

Given the inevitable delay in the release of data, figures for 2011 are not included.

Certain data included herein are derived from the Web of Science ® prepared by THOMSON REUTERS ®, Inc. (Thomson®), Philadelphia, Pennsylvania, USA: © Copyright THOMSON REUTERS ® 2015. All rights reserved.

2017 Annual report



#### **Definition of Global Health**

"The area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide".\*

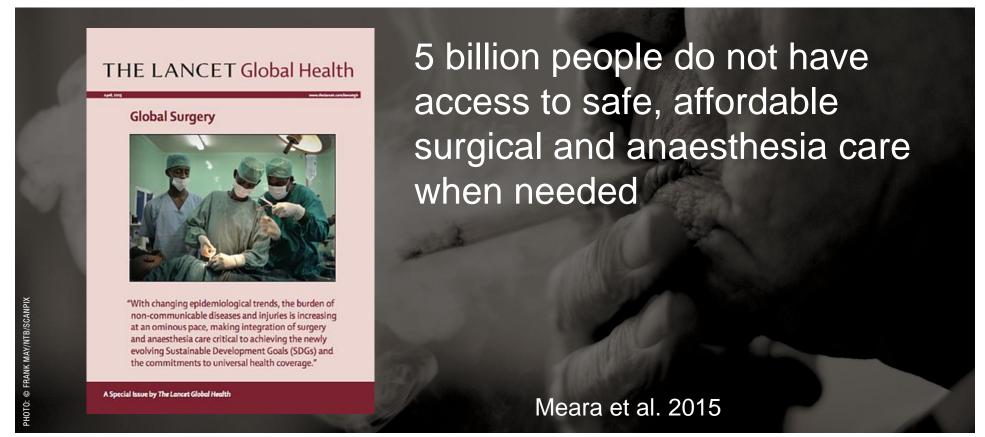


<sup>\*</sup>Koplan JP, Bond TC, Merson MH, et al. (June 2009). "Towards a common definition of global health". Lancet. 373 (9679): 1993–5.



UiO : University of Oslo

THE LANCET







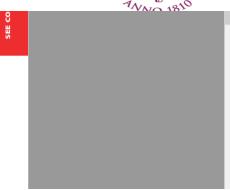


#### Global trends in antimicrobial use in food animals

Thomas P. Van Boeckel<sup>a,1</sup>, Charles Brower<sup>b</sup>, Marius Gilbert<sup>c,d</sup>, Bryan T. Grenfell<sup>a,e,f</sup>, Simon A. Levin<sup>a,g,h,1</sup>, Timothy P. Robinson<sup>i</sup>, Aude Teillant<sup>a,e</sup>, and Ramanan Laxminarayan<sup>b,e,j,1</sup>

<sup>a</sup>Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ 08544; <sup>b</sup>Center for Disease Dynamics, Economics & Policy, Washington, DC 20036; <sup>c</sup>Universite Libre de Bruxelles, B1050 Brussels, Belgium; <sup>d</sup>Fonds National de la Recherche Scientifique, B1000 Brussels, Belgium; <sup>e</sup>Princeton Environmental Institute, Princeton, NJ 08544; <sup>f</sup>Fogarty International Center, National Institutes of Health, Bethesda, MD 20892; <sup>g</sup>Beijer Institute of Ecological Economics, 10405 Stockholm, Sweden; <sup>h</sup>Resources for the Future, Washington, DC 20036; <sup>1</sup>International Livestock Research Institute, 00100 Nairobi, Kenya; and <sup>j</sup>Public Health Foundation of India, New Delhi 110070, India

Contributed by Simon A. Levin, February 18, 2015 (sent for review November 21, 2014; reviewed by Delia Grace and Lance B. Price)











STUDY PROTOCOL

Million Migrants study of healthcare and mortality outcomes in non-EU migrants and refugees to England: Analysis protocol for a linked population-based cohort study of 1.5 million migrants [version 1; referees: 2 approved, 2 approved with reservations]

Rachel Burns <sup>1</sup>, Neha Pathak <sup>1</sup>, Ines Campos-Matos <sup>3</sup>, Dominik Zenner<sup>4,5</sup>, Srinivasa Vittal Katikireddi <sup>6</sup>, Morris C. Muzyamba<sup>3</sup>, J. Jaime Miranda <sup>7,8</sup>, Ruth Gilbert<sup>2,9</sup>, Harry Rutter <sup>1</sup>, Lucy Jones<sup>11</sup>, Elizabeth Williamson <sup>1</sup>, Andrew C. Hayward<sup>2</sup>, Liam Smeeth<sup>13</sup>, Ibrahim Abubakar<sup>5</sup>, Harry Hemingway<sup>14</sup>, Robert W. Aldridge <sup>1</sup>, 3

<sup>&</sup>lt;sup>1</sup>Centre for Public Health Data Science, University College London, London, UK

<sup>&</sup>lt;sup>2</sup>Institute of Epidemiology and Healthcare, University College London, London, UK

<sup>&</sup>lt;sup>3</sup>Public Health England, London, UK

<sup>&</sup>lt;sup>4</sup>Migration Health Division, International Organization for Migration, Brussels, Belgium

<sup>&</sup>lt;sup>5</sup>Institute for Global Health, University College London, London, UK

<sup>&</sup>lt;sup>6</sup>MRC/CSO Social and Public Health Sciences Unit, Institute of Health and Wellbeing, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, UK

ORONICAS Center of Excellence in Chronic Diseases, Universidad Peruana Cayetano Heredia, Lima, Peru

<sup>&</sup>lt;sup>8</sup>School of Medicine, Universidad Peruana Cayetano Heredia, Lima, Peru

<sup>&</sup>lt;sup>9</sup>Administrative Data Research Centre for England, University College London, London, UK

<sup>10</sup>Faculty of Humanities and Social Sciences, University of Bath, Bath, UK

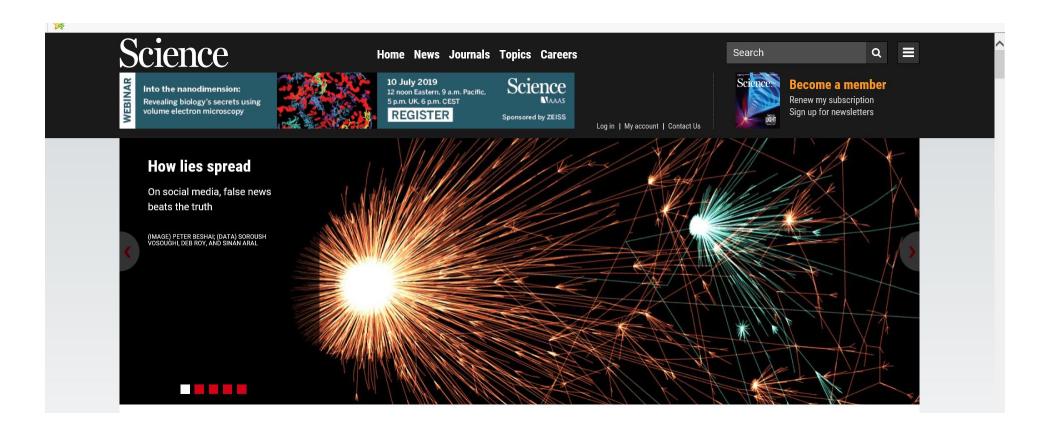
<sup>&</sup>lt;sup>11</sup>UK programme manager, Doctors of the World, London, UK

<sup>&</sup>lt;sup>12</sup>Faculty of Epidemiology & Population Health, London School of Hygiene and Tropical Medicine, London, UK

<sup>13</sup> Department of Non-Communicable Diseases Epidemiology, London School of Hygiene and Tropical Medicine, London, UK

<sup>&</sup>lt;sup>14</sup>Institute of Health Informatics Research, Faculty of Population Health Sciences, University College London, London, UK







Pharmacoepidemiol Drug Saf. 2016 January; 25(1): 35–44. doi:10.1002/pds.3911.

# ASSESSMENT OF YOUTUBE VIDEOS AS A SOURCE OF INFORMATION ON MEDICATION USE IN PREGNANCY

Craig Hansen<sup>1,2</sup>, Julia D Interrante<sup>2,3</sup>, Elizabeth C Ailes<sup>2</sup>, Meghan T Frey<sup>2</sup>, Cheryl S Broussard<sup>2</sup>, Valerie J Godoshian<sup>2,4</sup>, Courtney Lewis<sup>2</sup>, Kara ND Polen<sup>2</sup>, Amanda P Garcia<sup>2,3</sup>, and Suzanne M Gilboa<sup>2</sup>

<sup>1</sup>South Australian Health and Medical Research Institute, Adelaide, Australia

<sup>2</sup>National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA

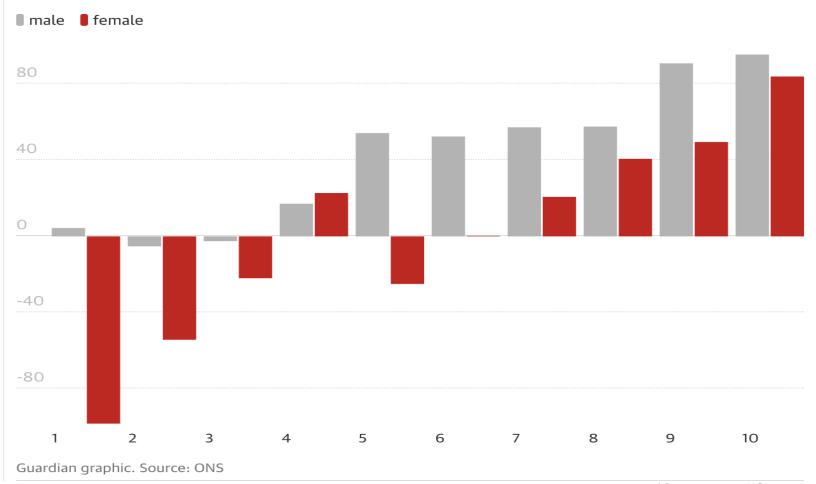
<sup>3</sup>Oak Ridge Institute for Science and Education, Oak Ridge, TN

<sup>4</sup>Rollins School of Public Health, Emory University, Atlanta, GA



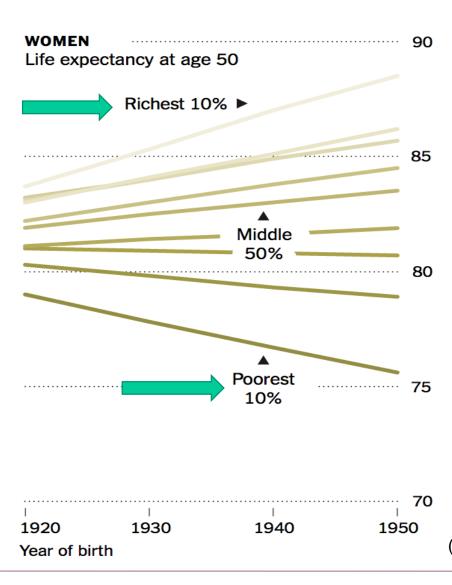
# Life expectancy at birth for England's poorest women has fallen significantly in recent years

Change to life expectancy in days, 2012-14 to 2015-17. 1 = poorest, 10 = richest decile



## Life Expectancy for US women

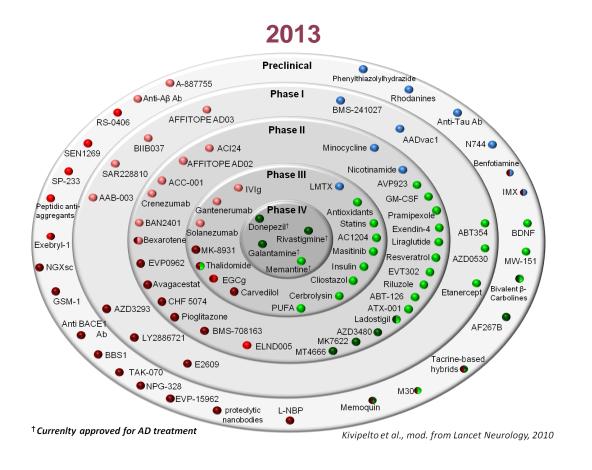


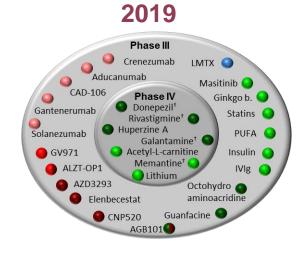


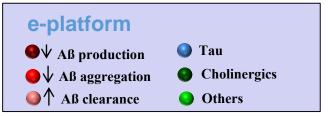
(Courtesy of Sir Michael Marmot)



### **Treatment of Alzheimer's disease – in the offing or not?**







09 April 2019



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Karolinska Institutet





## **Rethinking Higher Education**

**Inspired by the Sustainable Development Goals** 

#### Saturday 30 March 2019







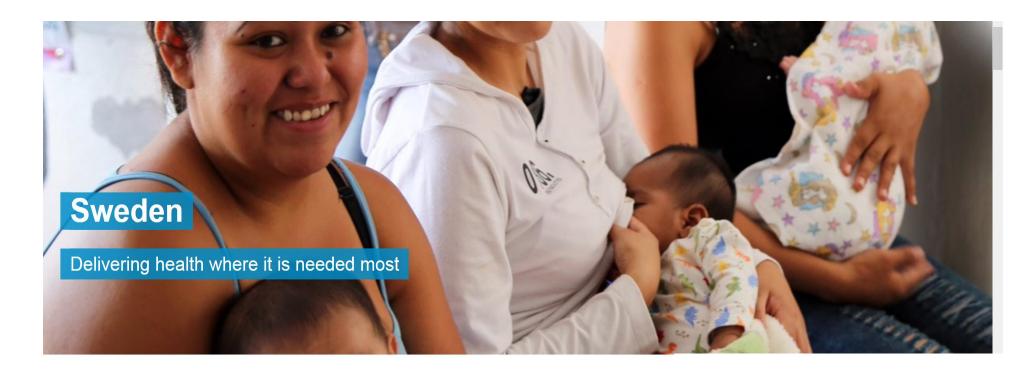






Helen Clark





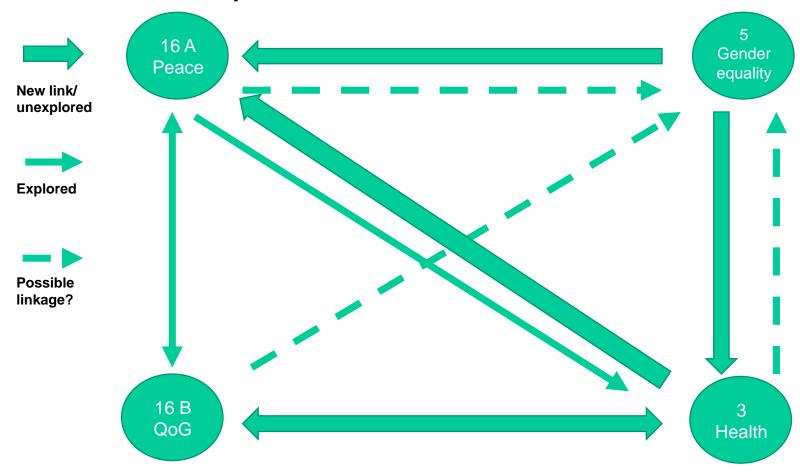
#### Partners in global health

WHO and Sweden have a longstanding partnership that has made the world a healthier and safer place for all of us. Sweden plays a key role in global health, as a leader in advocating for sexual and reproductive health and rights and mainstreaming gender in policy and in programmes. The country also hosts and contributes to important global health institutions that collaborates with WHO, such as the Swedish Institute for Global Health Transformation (SIGHT) the Karolinska Institute, and Lund University, to mention a few.

Strategi 2030 January 24th 2019 **111** 



### Impact on conceptualization of new commissions

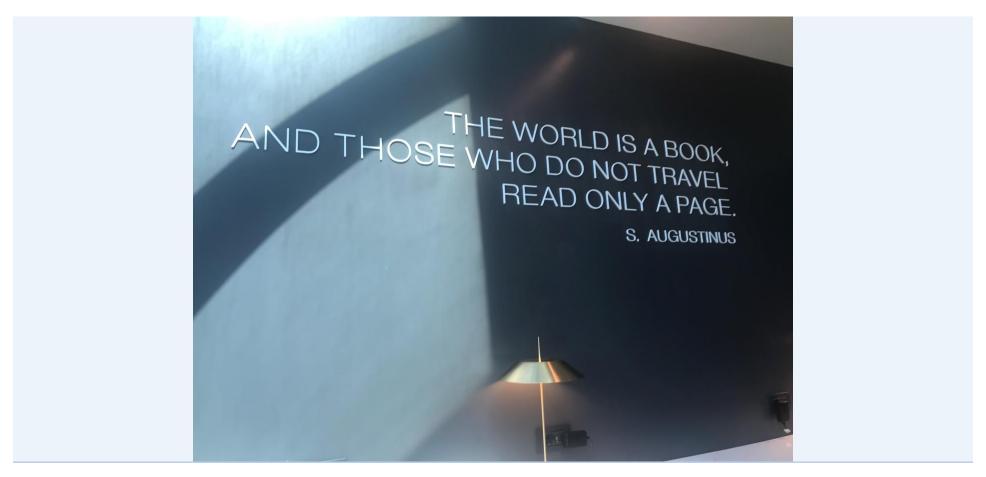


Courtesy of Göran Tomson & Johan Dahlstrand, KVA, SIGHT

#### KI in the world



113



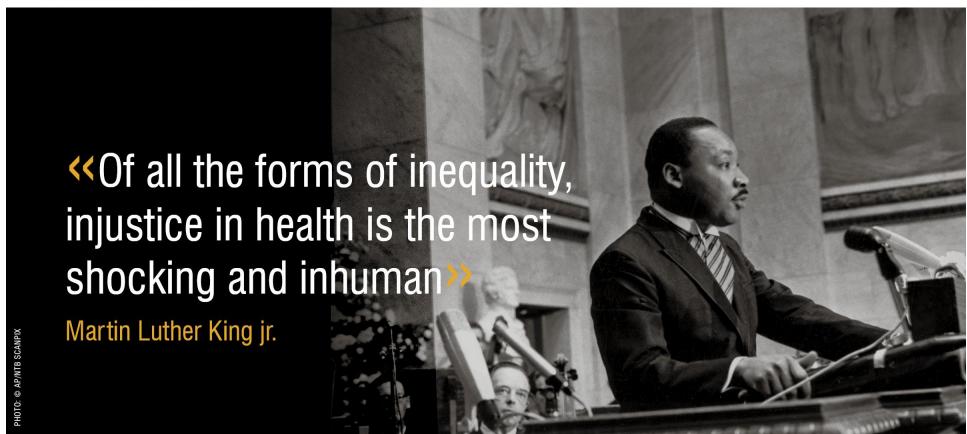
Rome 27 March 2019

Strategi 2030 January 24th 2019



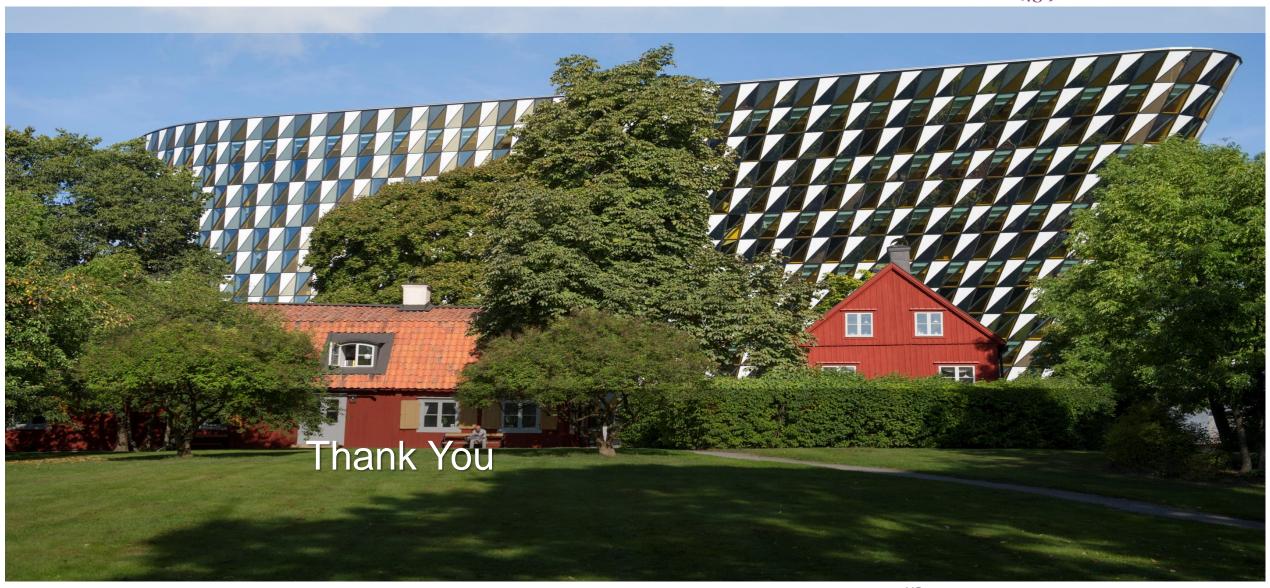
UiO : University of Oslo

THE LANCET



Global Governance for Health
THE LANCET - UNIVERSITY OF OSLO COMMISSION

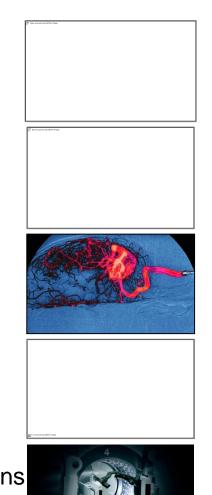


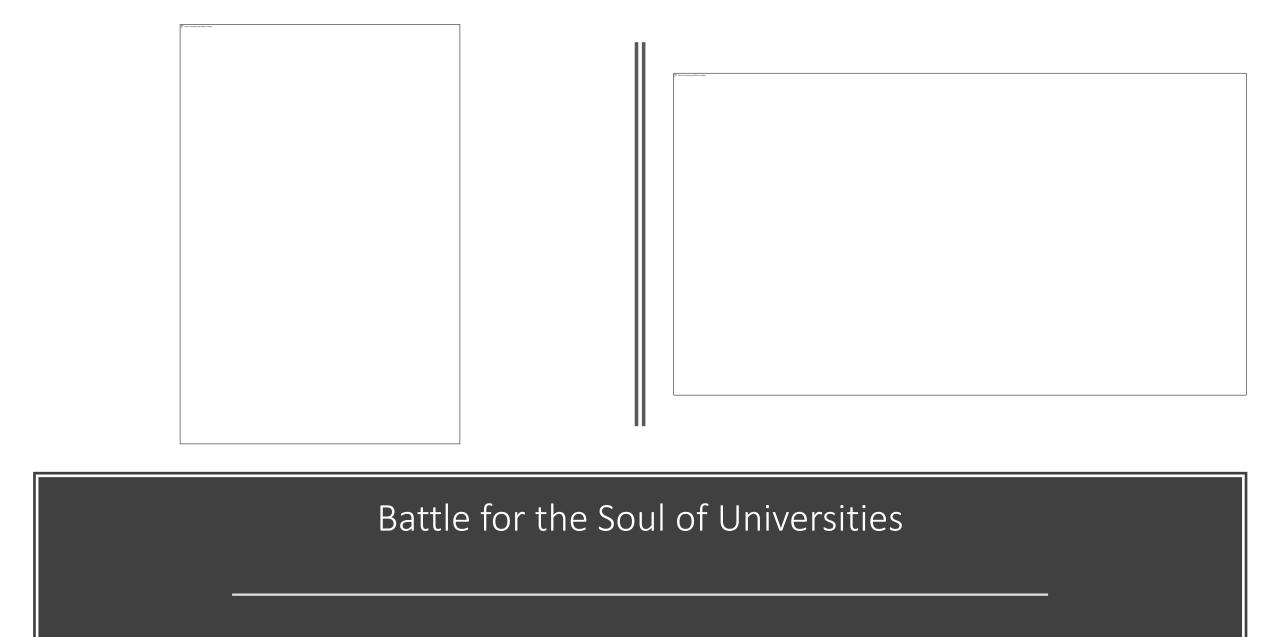




#### KI discoveries and innovations

**Rolf Sivert 1890s** – measurement of ionizing radiations Robin Fåraeus 1915 - blood sedimentation reaction Erik Jorpes 1920s - preparation of pure insulin **Yngve Eriksson 1940s** - fluoridation for dental health Sixten Franzén 1950s - puncture cytology **Svem Ivar Seldinger 1952** - angiography Arne Tiselius & Hugo Theorell 1955 - oxidation enzymes Ake Senning & Rune Elmqvist 1958 - the pacemaker Ragnar Granit 1967- retinal functions Lars Leksell 1968 - the gamma knife Rolf Luft 1960s - mitochondrial medicine Sune Bergström & Bengt Samuelsson 1982 - prostaglandins

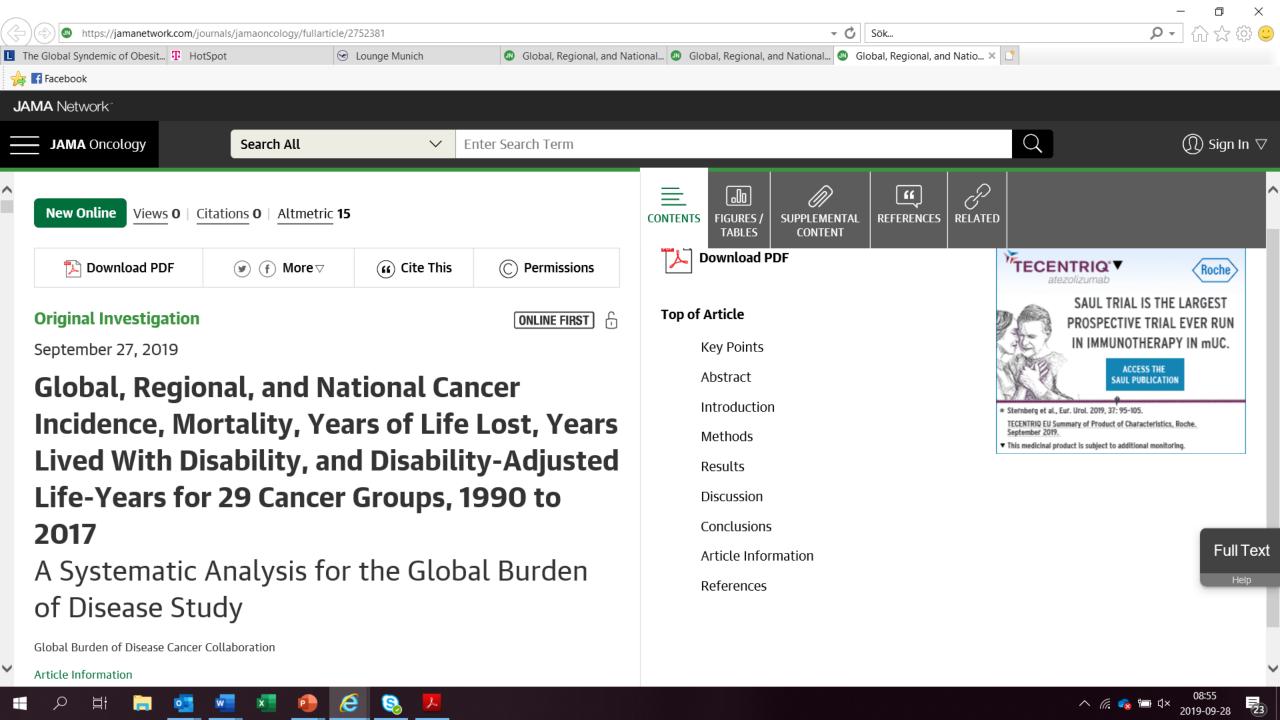




Health embedded in most of the SDGS

Health more complex than ever before (see my blog) Need for interdisciplinarity and cross sectoral governance (horizontal thinking and action at the levels of science as well as governance/politics Educational programmes must be revised (our rethinking meeting in march)

Narratives (from blogs): need for expertise on history, culture, society etc to understand how to fight ebola Commercial determinants of health hamper preventive medicine Equity in health: a major challenge with new and costly treatments Responding to this challenge: our plan for a center for sustainable health, with Makerere Commercial determinants Interdisciplinary ebola Equity Sustainable health Sdg Trade agreements – Michelle Bachelet Eisenhower – military industrial



IMPORTANCE Cancer and other noncommunicable diseases (NCDs) are now widely

recognized as a threat to global development. The latest United Nations high-level meeting

on NCDs reaffirmed this observation and also highlighted the slow progress in meeting the

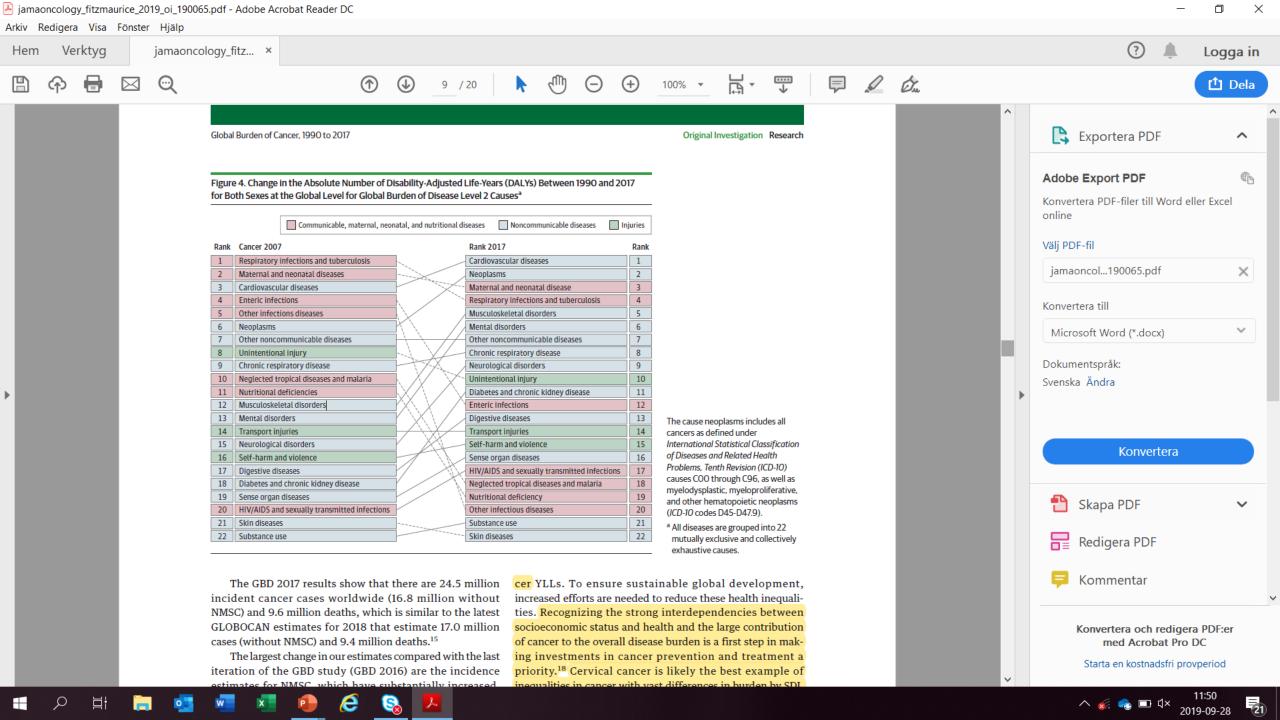
2011 Political Declaration on the Prevention and Control of Noncommunicable Diseases and

the third Sustainable Development Goal. Lack of situational analyses, priority setting, and

budgeting have been identified as major obstacles in achieving these goals. All of these have

in common that they require information on the local cancer epidemiology. The Global

Burden of Disease (GBD) study is uniquely poised to provide these crucial data.





"for his discovery of human papilloma viruses causing cervical cancer" "for their discovery of human immunodeficiency virus"



© Klaus Rüschhoff, Springer Medizin Verlag

Harald zur Hausen



Photo: Sakutin/SCANPIX

Françoise Barré-Sinoussi



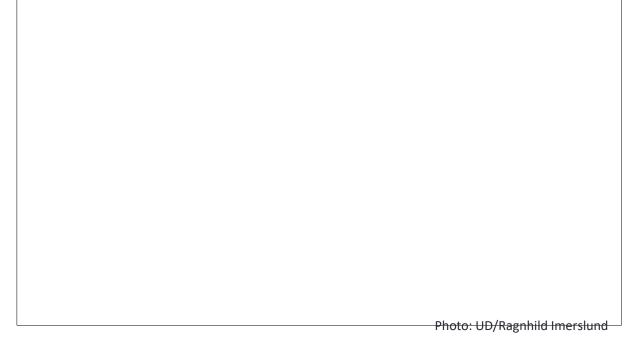
Photo: Magunia/SCANPIX

Luc Montagnier

# Oslo Ministerial Declaration on Global Health and Foreign Policy (2007)

## The group of seven countries:

Brazil, Norway, France, Indonesia, Senegal, South Africa, and Thailand.



Health as a major outcome of foreign policy

Independent Panel on Global Governance for Health

#### Panel's Publications

#### Political origins and change

The political origins of health inequity: prospects for change. The Lancet - UiO Commission on Global Governance for Health, 2014.

Global Governance for Health: how to motivate political change? Public Health, 2015.

Desmond McNeill and Ole Petter Ottersen.

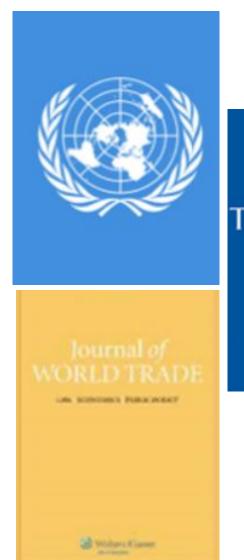
Tradadegagements and phincy space for achieving universal health coverage. UN Committee for Development Policy background paper, no. 38.

Sakiko Fukuda-Parr and Kim Treanor.

Trade and Investment Agreements: Implications for Health Protection. Journal of World Trade, 2017.

Desmond McNeill, Pepita Barlow, Carolyn Deere Birkbeck, Sakiko Fukuda-Parr, Anand Grover, Ted Schrecker, David Stuckler.

Political origins of health inequities: Trade and investment agreements (TIA). Viewpoint in The Lancet, 2016. Desmond McNeill, Carolyn Deere Birkbeck, Sakiko Fukuda-Parr, Anand Grover, Ted Schrecker, David Stuckler.





#### **Extractive industries and health**

Canadian mining and ill health in Latin America: a call to action. Canadian Journal of Public Health (2018), p1-5. Anne-Emanuelle Birn, Leah Shipton & Ted Schrecker

How extractive industries affect health: Political economy underpinnings and pathways. Health & Place (2018), Vol 52, p135-147 (open access). Ted Schrecker; Anne-Emanuelle Birn & Mariajosé Aguilera

Extractive Industries and Health, A Bibliography for the Independent Panel on Global Governance for Health. Mariajosé Aguilera, Anne-Emanuelle Birn, Ted Schrecker, Leah Shipton.

#### Canadian Journal of Public Health Revue canadienne de santé publique





#### Bibliography: Extractive Industries and Global Health

This bibliography compiles more than 1,000 publications on the extractive industries and health found through a thorough review of grey and peer-reviewed literature.

Access the bibliography ->



Photo: Colourb

World Bahkn, and Health: A Commentary. Global Health Governance, 2018. Desmond McNeill.

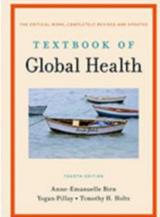
Promoting Global Health: Can Law be the Solution? Blog on Global Health Governance, 2014. Desmond McNeill.

## A selection of panel members' publications

- Globalisation
- Development
- Health policy
- Food security
- Public health
- Sociology
- Geography
- Anthropology
- Health equity
- Innovation and health technology



















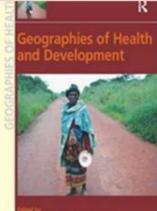




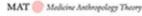














With more to come...

### Impact on institutions

Karolinska Institutet – New Vision Strategy 2030 (approved by the board October 2018)

# We are advancing knowledge about life and strive towards better health for all



## Impact on national strategy

# Målbilden för det svenska arbetet inom global hälsa



Att bidra till att människor kan leva långa, friska och hälsosamma liv

l.

Skapa samhälleliga förutsättningar för god och jämlik hälsa II.

Hälsosystem som är effektiva, hållbara och motståndskraftiga (resilienta) III.

Ökat beredskap och kapacitet att upptäcka och hantera utbrott av sjukdomar och andra hälsohot

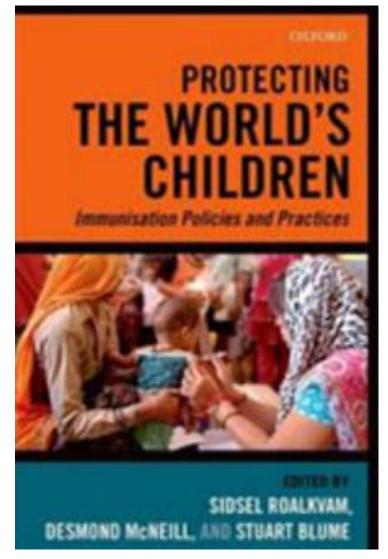


## Impact on the evidence base

"The global politics of health: actors and initiatives" by Desmond McNeill

Selected as one of the ten best resources on power in health policy and systems in low- and middle-income countries by:

Veena Sriram et al. *Health Policy and Planning*, Volume 33, Issue 4, 1 May 2018, pp. 611–621, https://doi.org/10.1093/heapol/czy008



### Innovations...



## ...require responsible counter-innovations





# Independent Panel on Global Governance for Health Panel's Publications



#### Political origins and change

The political origins of health inequity: prospects for change. The Lancet - UiO Commission on Global Governance for Health, 2014.

Global Governance for Health: how to motivate political change? Public Health, 2015. Desmond McNeill and Ole Petter Ottersen.



World Bank, Human Rights and Health: A Commentary. Global Health Governance, 2018. Desmond McNeill.

Promoting Global Health: Can Law be the Solution? Blog on Global Health Governance, 2014. Desmond McNeill.