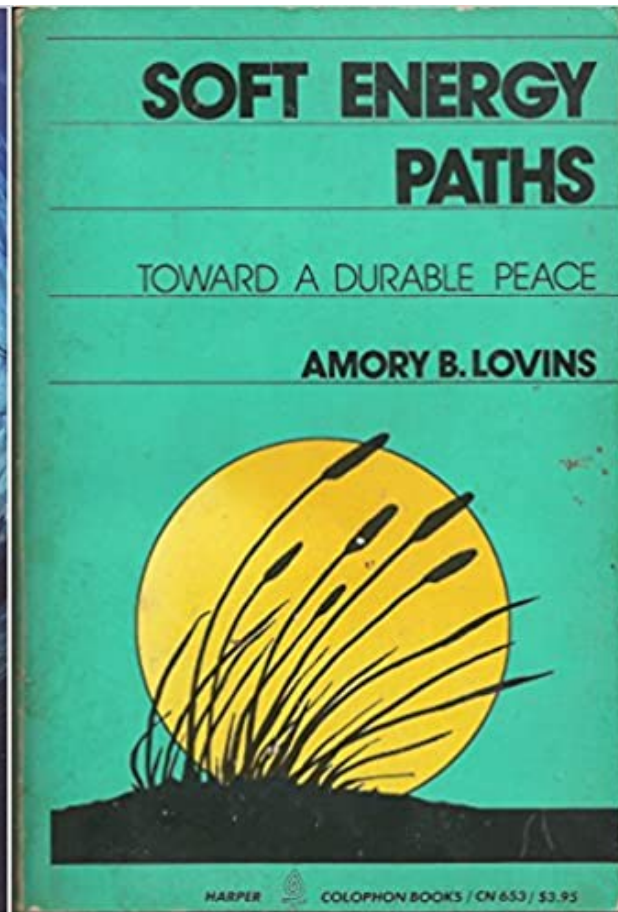


Toward Resilient Society

Hiroaki Kitano

**The Systems Biology Institute &
Okinawa Institute of Science and Technology**

文明の転換点

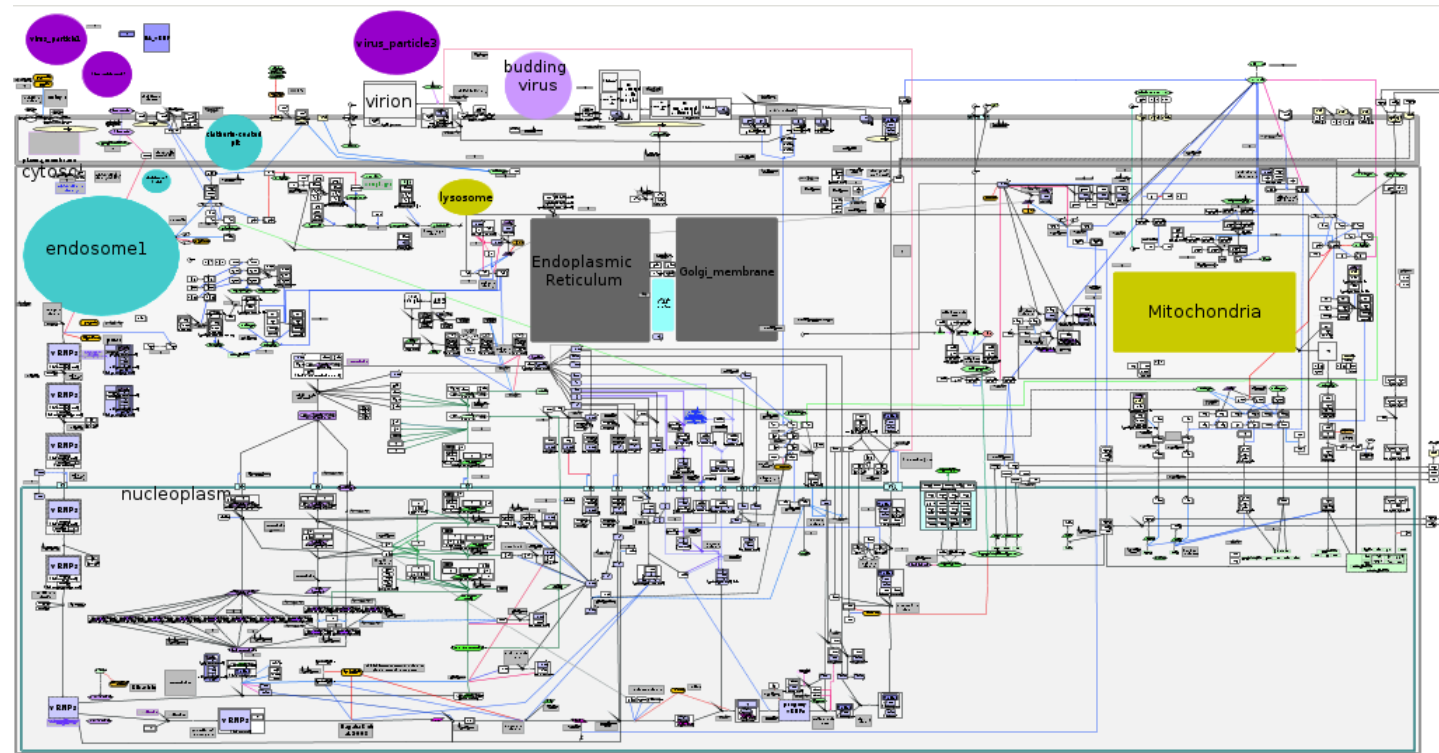
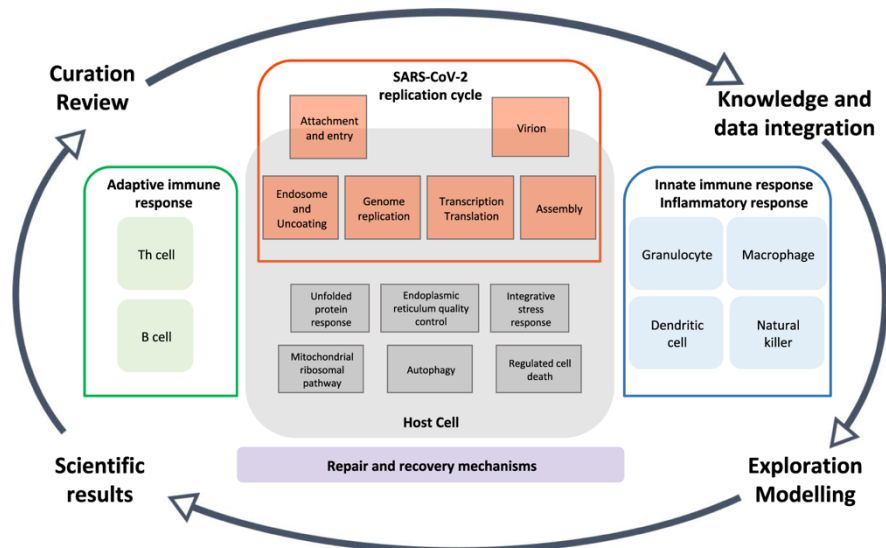


COVID-19 Disease Map, building a computational repository of SARS-CoV-2 virus-host interaction mechanisms

Marek Ostaszewski, Alexander Mazein, Marc E. Gillespie, Inna Kuperstein, Anna Niarakis, Henning Hermjakob, Alexander R. Pico, Egon L. Willighagen, Chris T. Evelo, Jan Hasenauer, Falk Schreiber, Andreas Dräger, Emek Demir, Olaf Wolkenhauer, Laura I. Furlong, Emmanuel Barillot, Joaquin Dopazo, Aurelio Orta-Resendiz, Francesco Messina, Alfonso Valencia, Akira Funahashi, Hiroaki Kitano, Charles Auffray, Rudi Balling & Reinhard Schneider ✉

Scientific Data 7, Article number: 136 (2020) | [Cite this article](#)

4425 Accesses | 161 Altmetric | [Metrics](#)



Taxila COVID-19 AI/NLP Service (<https://covid19.taxila.io/>)

4098¹

Welcome to COVID-19 Taxila

You have access to 50645 articles.
886 of them were published in the last week.



* Click And Drag on the graph to select specified time range

10 Apr, 2020 -- 09 May, 2020

1m 3m 6m 1yr All



Tag Type Filter

Tags Filter

LATEST PUBMED ARTICLES



Current State of Knowledge About SARS-CoV-2 and COVID-19 Disease in Pregnant Women

During any epidemic of infectious diseases, pregnant women constitute an extremely sensitive group due to altered physiology and immune functions, and thus altered susceptibility to infection. With regard to the management of pregnant COVID-19 patients, in addition to the treatment of the infection...

May 09, 2020

0 Likes 0 Saves

BIORXIV AND MEDRXIV



BIORXIV AND MEDRXIV



Optimal control of an SIR epidemic through finite-time non-pharmaceutical intervention

We consider the problem of controlling an SIR-model epidemic by temporarily reducing the rate of contact within a population. The control takes the form of a multiplicative reduction in the contact rate of infectious individuals. The control is allowed to be applied only over a finite time interval,

May 09, 2020

0 Likes 0 Saves

BIORXIV AND MEDRXIV



BCG vaccine-induced protection from COVID-19 infection, wishful thinking or a game changer?

A series of epidemiological explorations have suggested a negative association between national BCG vaccination policy and the prevalence and mortality of COVID-19. Nevertheless, these comparisons are difficult to validate due to broad differences between countries such as socioeconomic status, demog

May 09, 2020

BIORXIV AND MEDRXIV



Comprehensive Testing Highlights Racial, Ethnic, and Age Disparities in the COVID-19 Outbreak

The United States (US), which is currently the epicenter for the COVID-19 pandemic, is a country whose demographic composition differs from that of other highly-impacted countries. US-based descriptions of SARS-CoV-2 infections have, for the most part, focused on patient populations with severe disease

May 09, 2020

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BIORXIV AND MEDRXIV



Identification and Analysis of Shared Risk Factors in Sepsis and High Mortality Risk COVID-19 Patients

BACKGROUND Coronavirus disease 2019 (COVID-19) is a novel coronavirus strain disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease is highly transmissible and severe disease including viral sepsis has been reported in up to 16% of hospitalized cases. The admis

May 09, 2020

BIORXIV AND MEDRXIV



Severe obesity is associated with higher in-hospital mortality in a cohort of patients with COVID-19 in the Bronx, New York

Background & Aims: New York is the current epicenter of Coronavirus disease 2019 (COVID-19) pandemic. The underrepresented minorities, where the prevalence of obesity is higher, appear to be affected disproportionately. Our objectives were to assess the characteristics and early outcomes of patients

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BIORXIV AND MEDRXIV



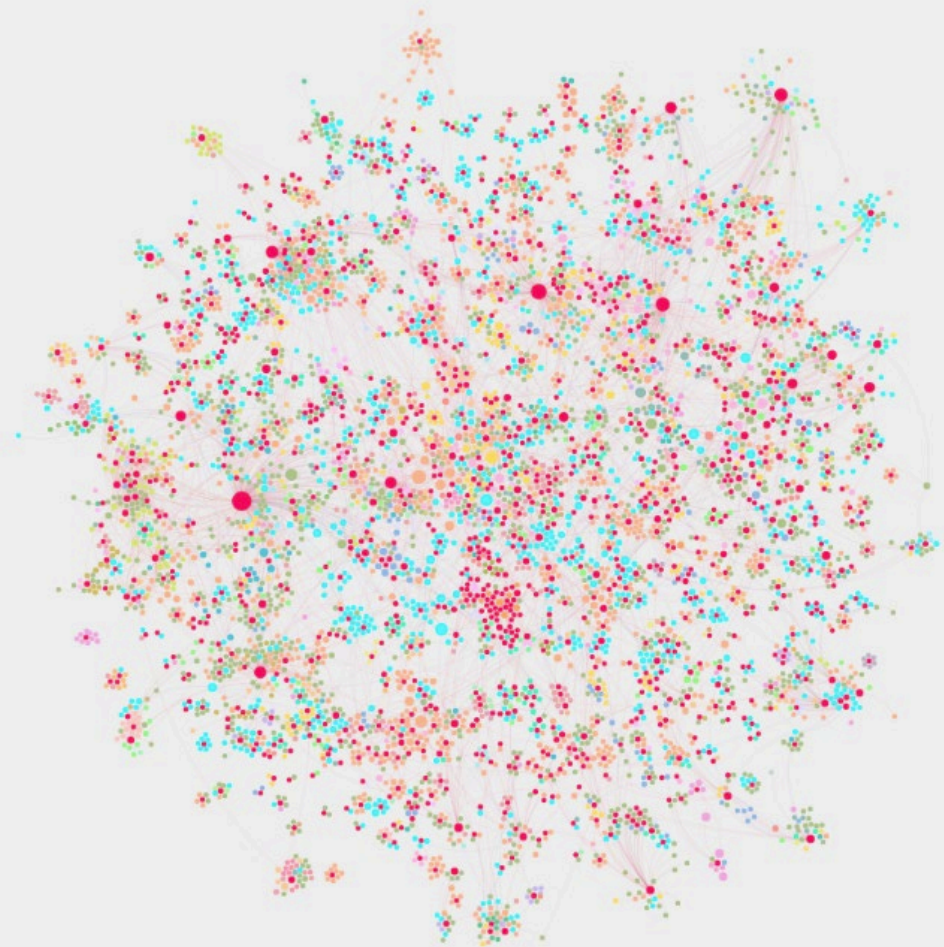
Containing Covid-19 outbreaks with spatially targeted short-term lockdowns and mass-testing

We assess the efficacy of spatially targeted lockdown or mass-testing and case-isolation in individual communities as a complement to contact tracing and



Global Network of Researchers

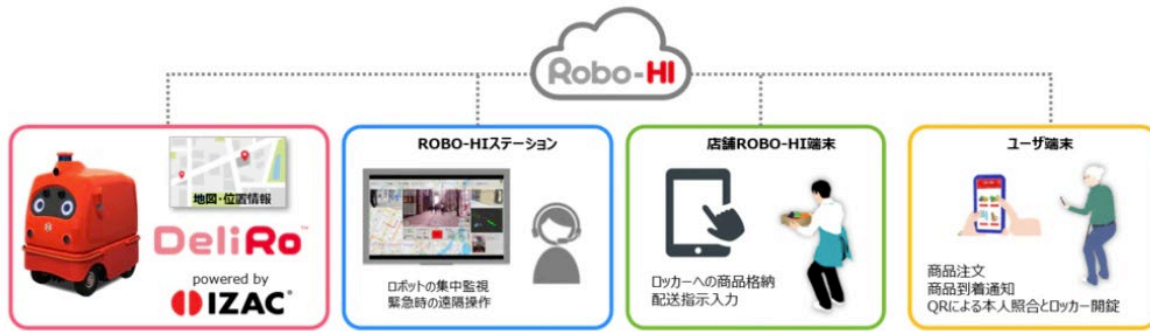
Who is working on which molecule?



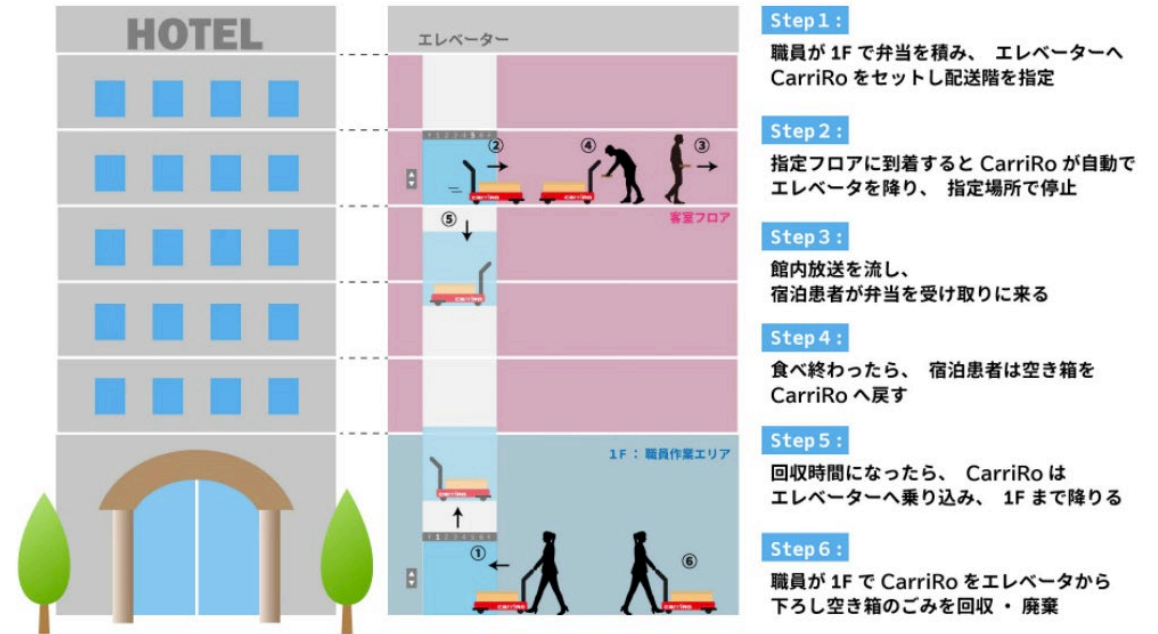
Who is working with who?



Robotics solution



DeliRo(デリロ)×ROBO-HI(ロボハイ) Stationとの連携イメージ

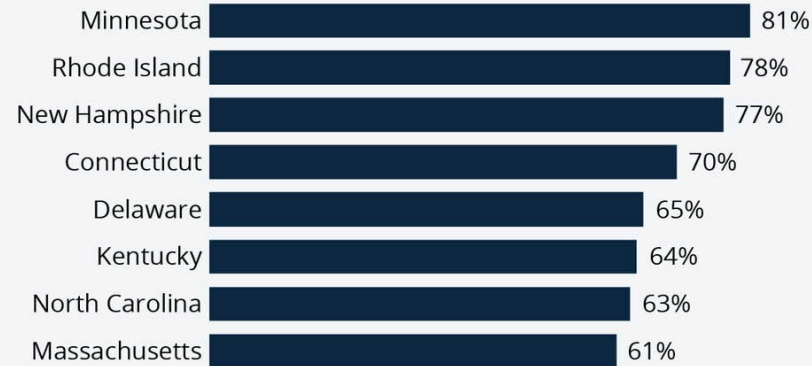


新型コロナウイルス感染者受け入れ施設での物資運搬フロー例

多因子が寄与し、複合的対策が必要 → 科学的・戦略的政策決定と実行が必要

High COVID-19 Mortality Rate Linked To U.S. Care Facilities

COVID-19 deaths in long-term care facilities as share of total COVID-19 deaths (as of May 21, 2020)*



* Long-term care facility definition differs by state. Reflects a combination of nursing facilities, assisted living facilities, adult care centers, intermediate care facilities, and/or other long-term care facilities.

Source: Kaiser Family Foundation



statista

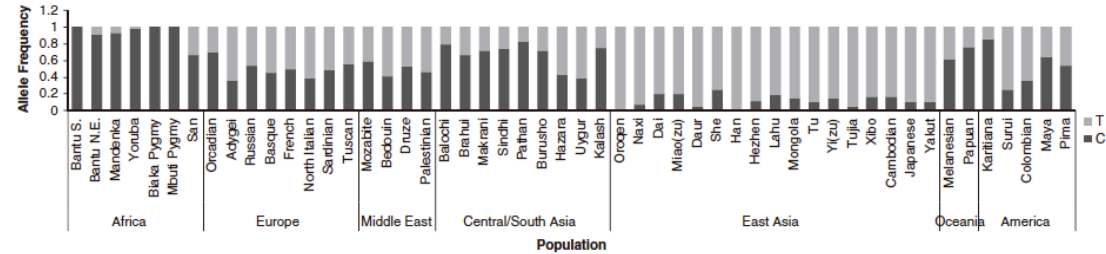


Figure 1 Frequency of VKORC1 rs9923231T and C alleles in 52 Human Genome Diversity Project-Centre Etude Polymorphisme Humain (HGDP-CEPH) populations.

Worldwide allele frequency distribution of four polymorphisms associated with warfarin dose requirements

Ross, K., et al., *Journal of Human Genetics*, 55, 582-589, 2010

Kendra A Ross¹, Abbigail W Bigham², Melissa Edwards¹, Agnes Gozdzik¹, Guilherme Suarez-Kurtz³ and Esteban J Parra¹



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People™

Groups at Higher Risk for Severe Illness

Conditions and Other Risk Factors

Asthma	Liver disease
Chronic kidney disease being treated with dialysis	People aged 65 years and older
Chronic lung disease	People in nursing homes or long-term care facilities
Diabetes	Serious heart conditions
Hemoglobin Disorders	Severe obesity
Immunocompromised	

都市の再構築

Reshaping Cities

- 都市の変革
 - デジタル化、自動化、高安全化
 - 開疎化→自然の中での新たな居住形式の模索

新しい都市の価値

Human-out-of-the-loop City

デジタル化 (通勤無し、オフィス無しの世界)

ロボット化 (人の介在しない物流とサービス)

高安全化 (デジタル・リスク回避の実現)

開疎化*された新しい居住地

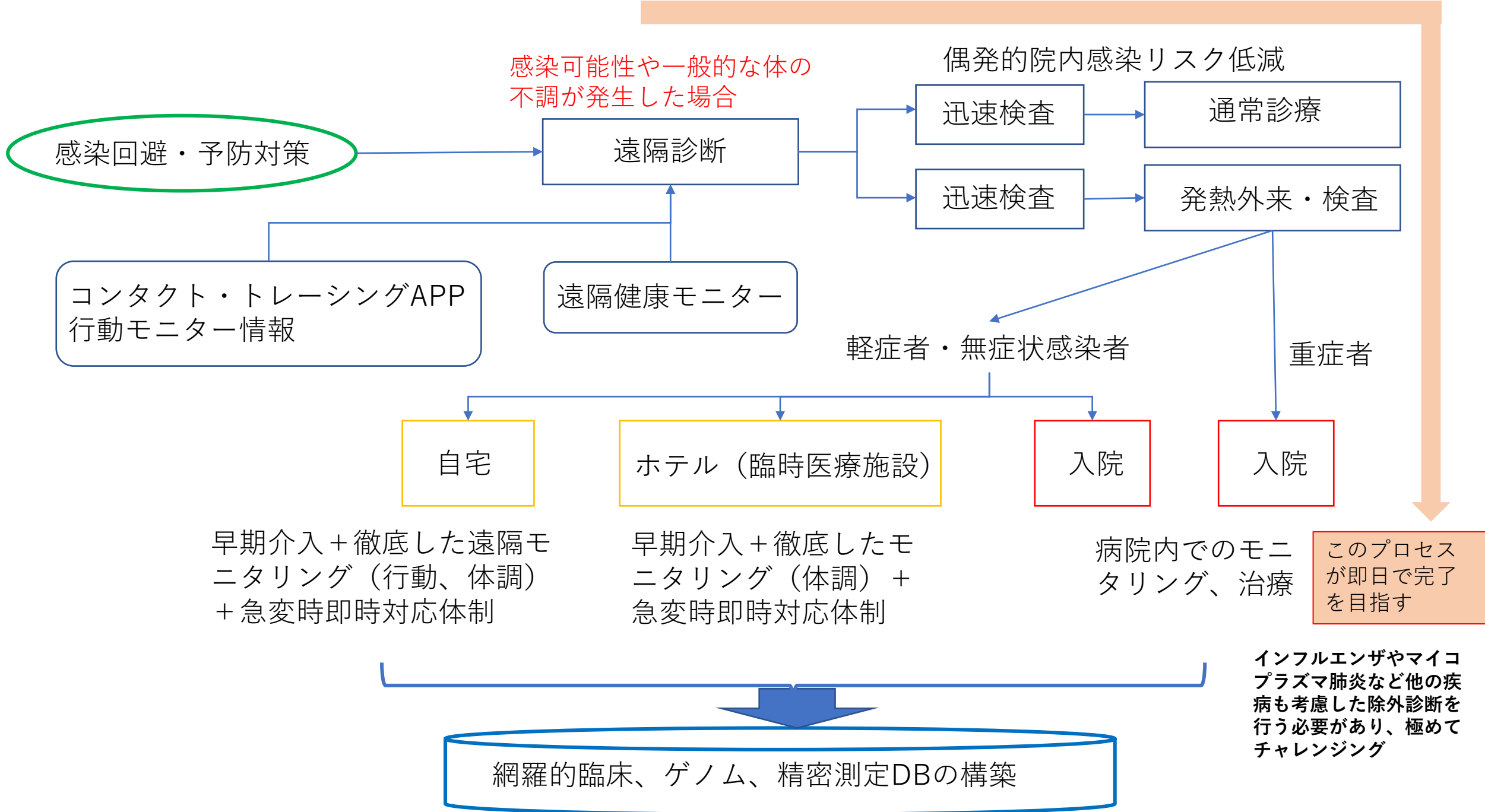
Nature embraced Sparse Village

デジタル化, ロボット化、高安全化は徹底する

Off-Gridでの高品位サービスの実現

生物学的多様性の増大とShort supply chainの実現

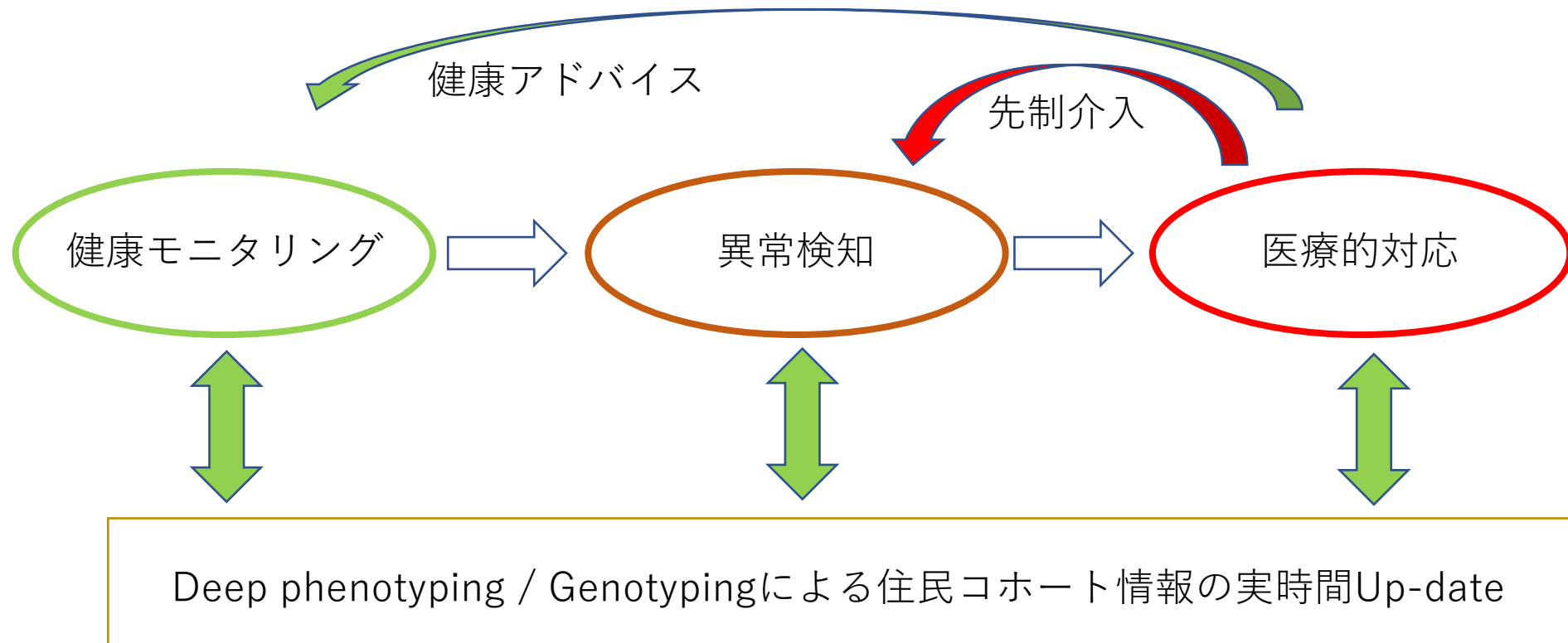
* 風の谷構想 (安宅和人 「シン・ニホン」) より
その他、OIST North Campus構想などもこの方向



医療の再構築

Reshaping Medical System

- デジタル化によるリアルタイム即応システムの構築
- AI/ロボットも利用したメディカル・アクセスの向上

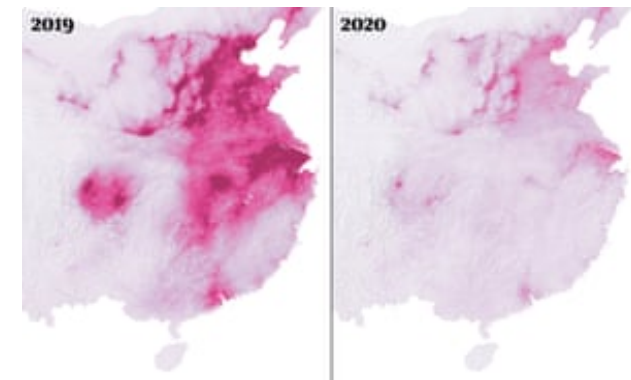


A New Paradigm of Cities and Medicine

- デジタル化、自動化、Off-grid化
- 分散即応システムとしての社会システム
- 自然の一部としての人間の営み、生物学的多様性、環境負荷低減
- 新しい文明の形態を目指す
- すぐに着手するべき



インドで、30年ぶりにヒマラヤが見えた



英国の大気汚染の激減