

Innovation in Healthcare RMATRIX Hawaii & Beyond

RCMI Multidisciplinary And Translational
Research Infrastructure Expansion in
Hawaii

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John A. Burns School of Medicine
University of Hawai'i at Mānoa

John A. Burns School of Medicine

UNIVERSITY OF HAWAI'I AT MĀNOA



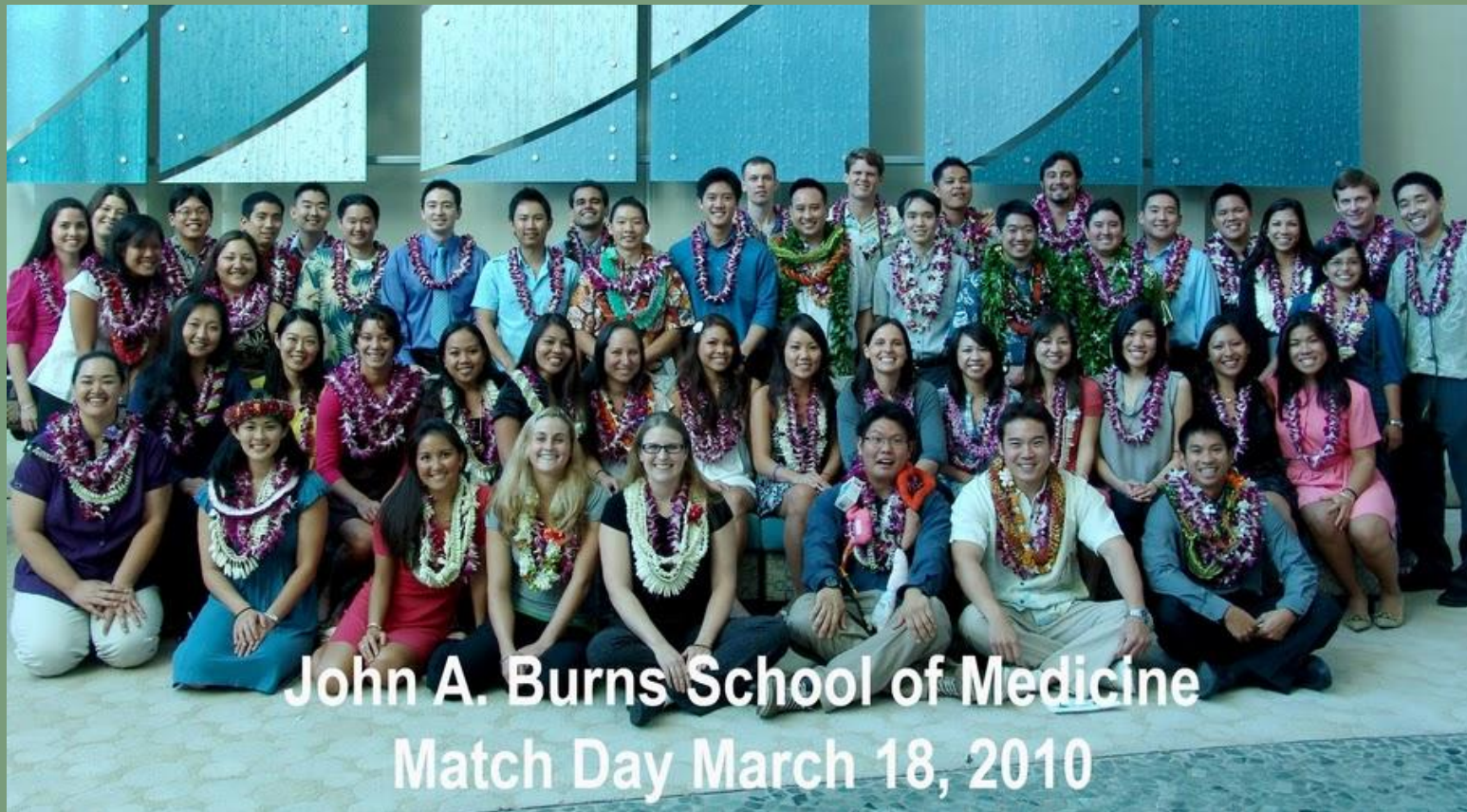
- Established in 1965 as a 2-year program
- Adopted 4-year degree program in 1973
- >2100 M.D. Graduates

Aloha!



John A. Burns School of Medicine
University of Hawai'i at Mānoa

Students



~1800 applicants, 64 chosen, 90% Hawai'i residents





John A. Burns School of Medicine
University of Hawai'i at Mānoa

Kaka'ako Campus



Ten acre,
\$150
million
campus
opened in
2005.





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Research: Infectious Disease



**Biosafety Level 3
laboratory on
site**

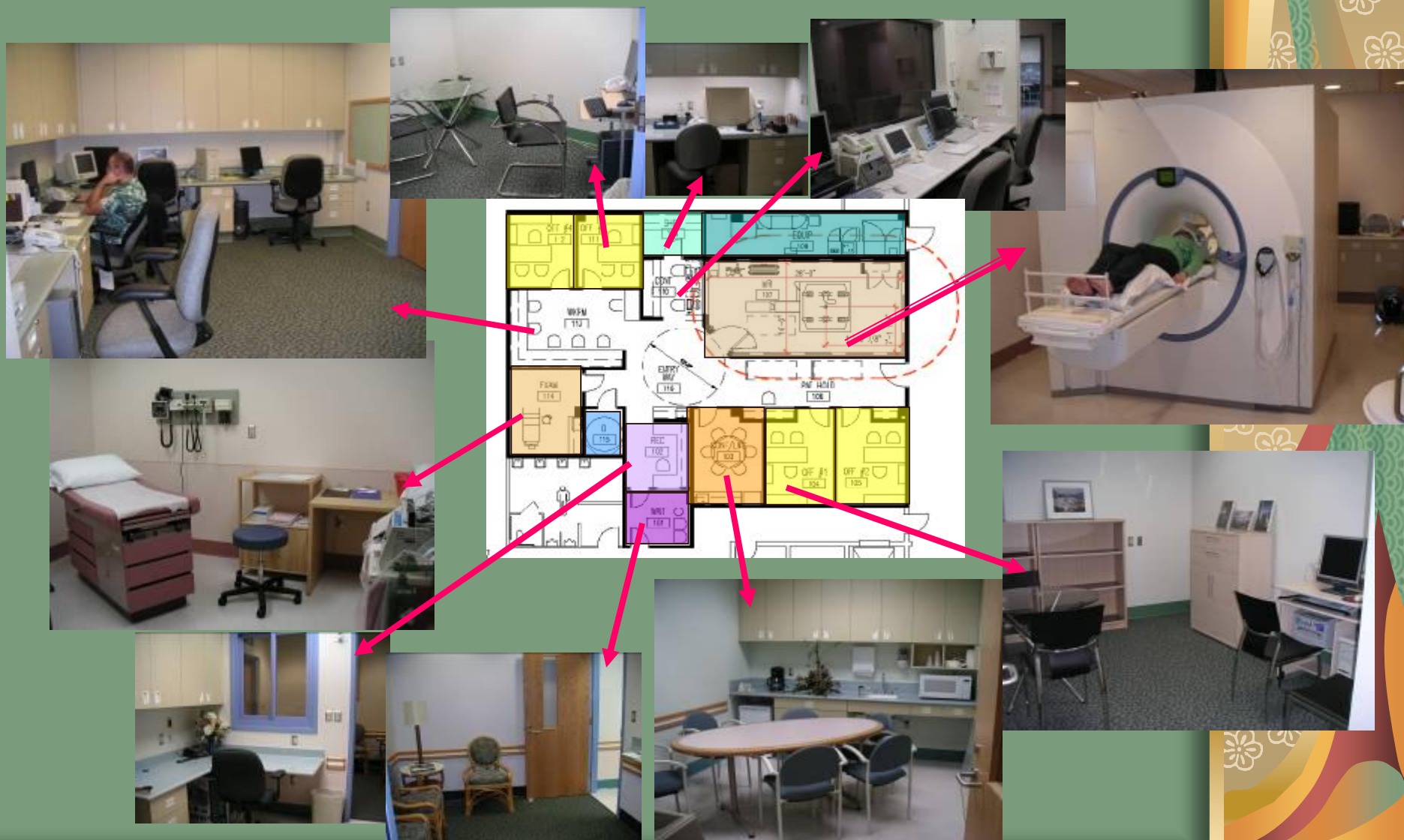


Dengue Fever
Avian Flu
West Nile Virus
HIV/AIDS



Existing Resources

3 T MR scanner (\$3 million) - Office of National Drug Control Policy
UH-QMC 3 T MR Research Facility (~\$2 million) - Queens Medical Center



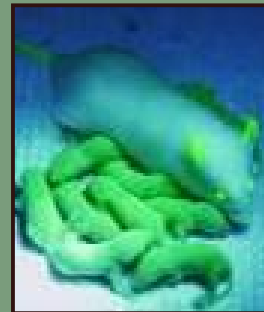


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Institute for Biogenesis Research



Founder, Dr. Ryuzo Yanagimachi



- Assisted fertilization
- Transgenesis

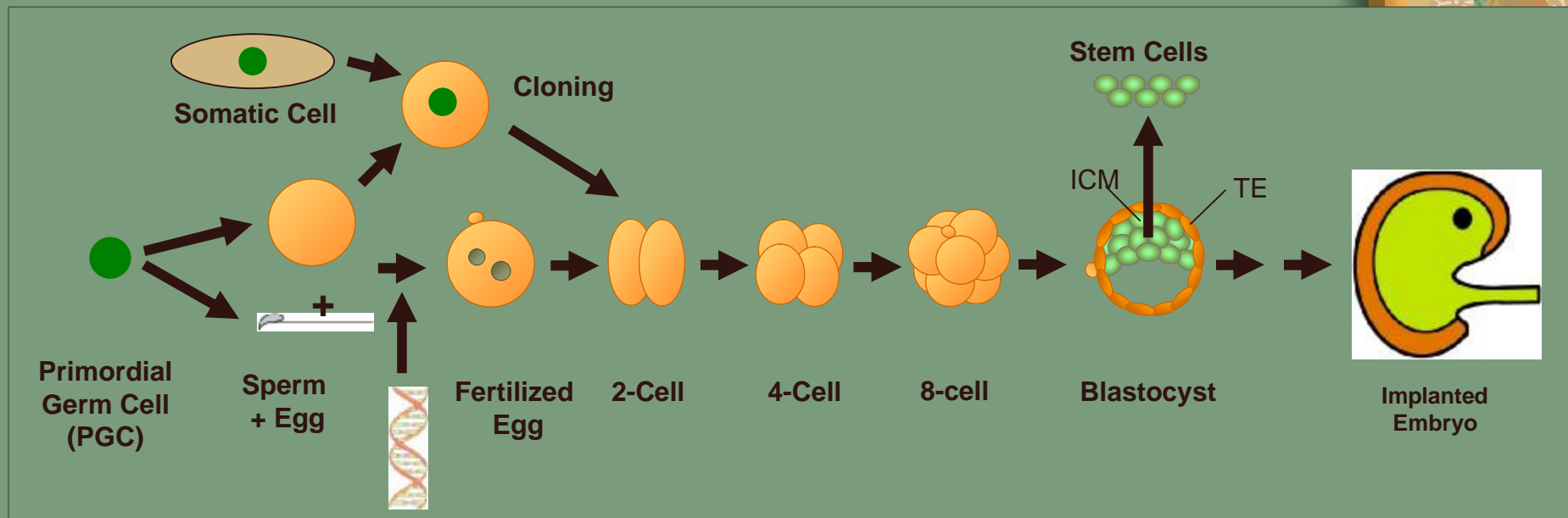
Dr. W. Steven Ward, Principal Investigator

Ryuzo Yanagimachi *Fertility*

Yukiko Yamazaki *PGCs and Cloning*

Rich Allsopp
*Telomerase &
Stem Cells*

Scott Lozanoff
*Morphogenesis
& Birth Defects*



Steve Ward
Sperm Chromatin

Stefan Moisyadi
Active Transgenesis

Vernadeth Alarcon
*Cell Differentiation in
The Early Embryo*

Yusuke Marikawa
*Body Plan
Formation*

Monika Ward *Sperm Genetics and Function*



National Children's Study

- 1,000 Oahu children carefully monitored for twenty years
- Medical and environmental data





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Geriatric Medicine Department



- Aging population
- Nationally-ranked programs tailored to Hawai'i's diverse communities
- Recent FOX-AO3 discovery





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Native Hawaiian Health Department



diabetes
heart disease
asthma
obesity

**Center for Native and Pacific
Health Disparities Research**



Dr. Marjorie Mau
Dr. Keawe'aimoku
Kaholokula



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Cancer Research

MESOTHELIOMA

Dr. Michele Carbone, Landon Prize for
International Collaboration



Turkey



Some of the NIH Programs at JABSOM

- INBRE (Science – Investigator Pipeline)
- CRECD (MS/PHD Clinical Research)
- RCRII (Clinical Research Center)
- CCRE (Cardiology)
- COBRE (Cardiology, Biogenesis, Trop Med)
- CCHD (Center for NHPI Health Disparities)
- SNRP (Neuroimaging – Amphetamines/HIV)



Translational Research Concept

- Research Centers in Minority Institutions (RCMI)
- **RCMI Clinical & Translational Research Infrastructure (RCTR)** application
- Develop and strengthen infrastructure required for the conduct of clinical and translational research in RCMI institutions
- JABSOM was eligible to apply because of:
 - Clinical Research Center (CRC),
 - CCRE (Center of Clinical Research Excellence);
 - Clinical Research Education and Career Development (CRECD)

Health Disparities in Hawaii

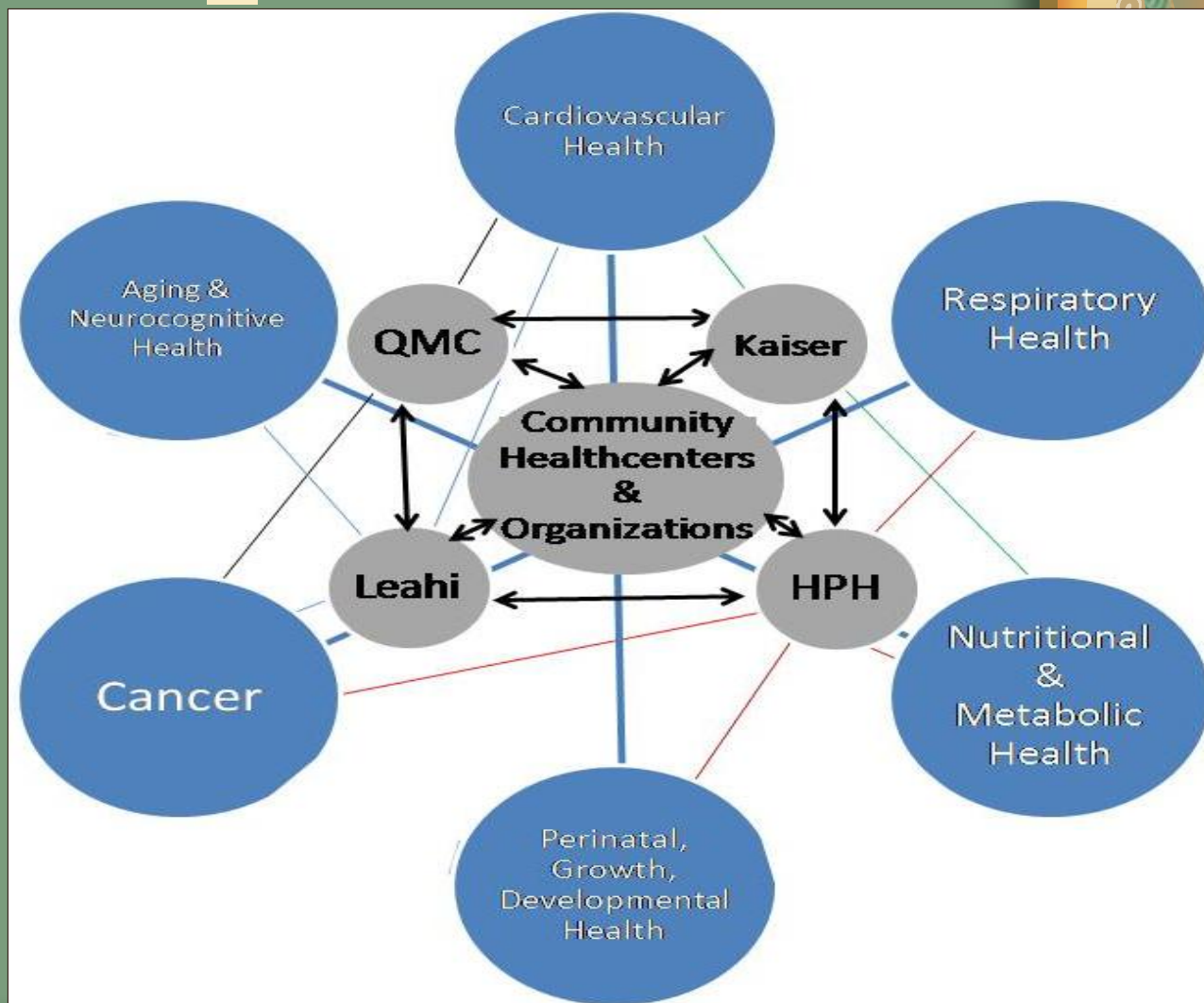
Health inequities lead to health disparities in Native Hawaiians, Pacific Islanders, Asians in Hawaii:
HEALTH Initiatives (Health Equity & Lifestyle Transformation in Hawaii)

- Cardiovascular Health
- Respiratory Health
- Cancer Health
- Nutrition & Metabolic Health
- Perinatal and Growth/Developmental Health
- Aging & Neurocognitive Health



Health Equity & Lifestyle Transformation in Hawaii

HEALTH Initiatives



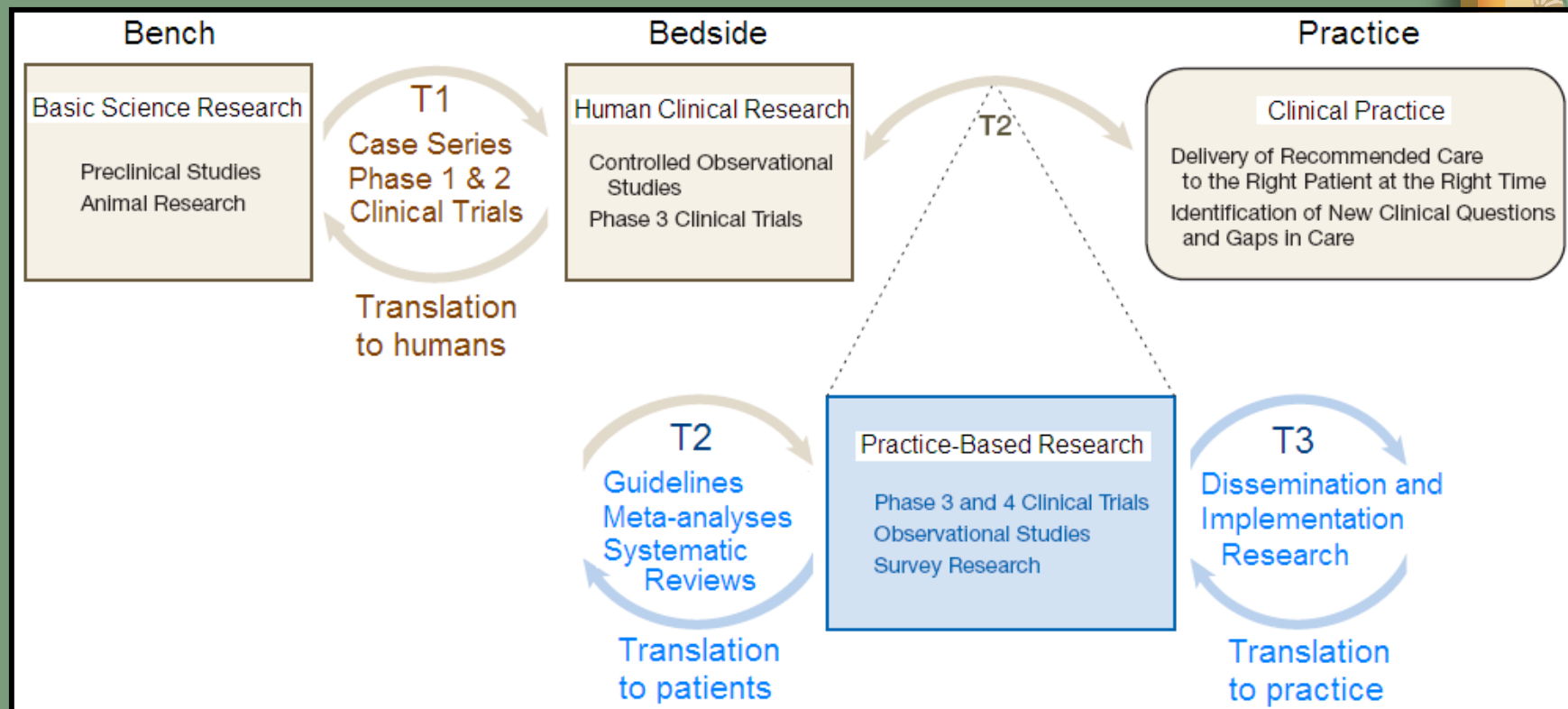
RMATRIX Key Functions

1. Collaborations and Partnerships
2. Community-Engaged Research
3. Participant and Clinical Resources
4. Multidisciplinary Research Education, Training, and Career Development
5. Biomedical Informatics
6. Research Design & Biostatistics
7. Research Ethics
8. Regulatory Knowledge & Support
9. Evaluation Milestones

RMATRIX Objectives

1. Integrated “home” for clinical and translational science in Hawaii
2. Consolidate, assimilate, and enhance existing infrastructure to strengthen RCMI Programs
3. Support investigators thru research education, training, and career development
4. Foster research collaborations across disciplines and throughout the communities
5. Partner in Community Engaged Research

NIH Roadmap for Medical Research: Need for Collaborations and Partnerships



Why Now? Why Here?

- National Health Plan focus on reducing health disparities within the population
 - Why do some population subsets have more disease or worse disease?
- Controversy/confusion on interplay of factors influencing health
 - Socio-economic and demographic status
 - Genetics, ethnicity, cultural practices
 - Access to healthcare, medicines, procedures
- Hawaii provides the multicultural, multiethnic community that can answer this issue

Translation to the community

- Telemedicine
 - Endocrinology, Psychiatry
 - Chronic disease management
- Preventive Programs
 - Childhood obesity
 - Hawaii 5-2-1-0



Next steps

- Personalized medicine
 - Ethically & culturally tailored
- Transitions to new business models
 - Health focused
 - Use of alternative delivery systems
 - Minimization of redundancy
 - Evidence driven

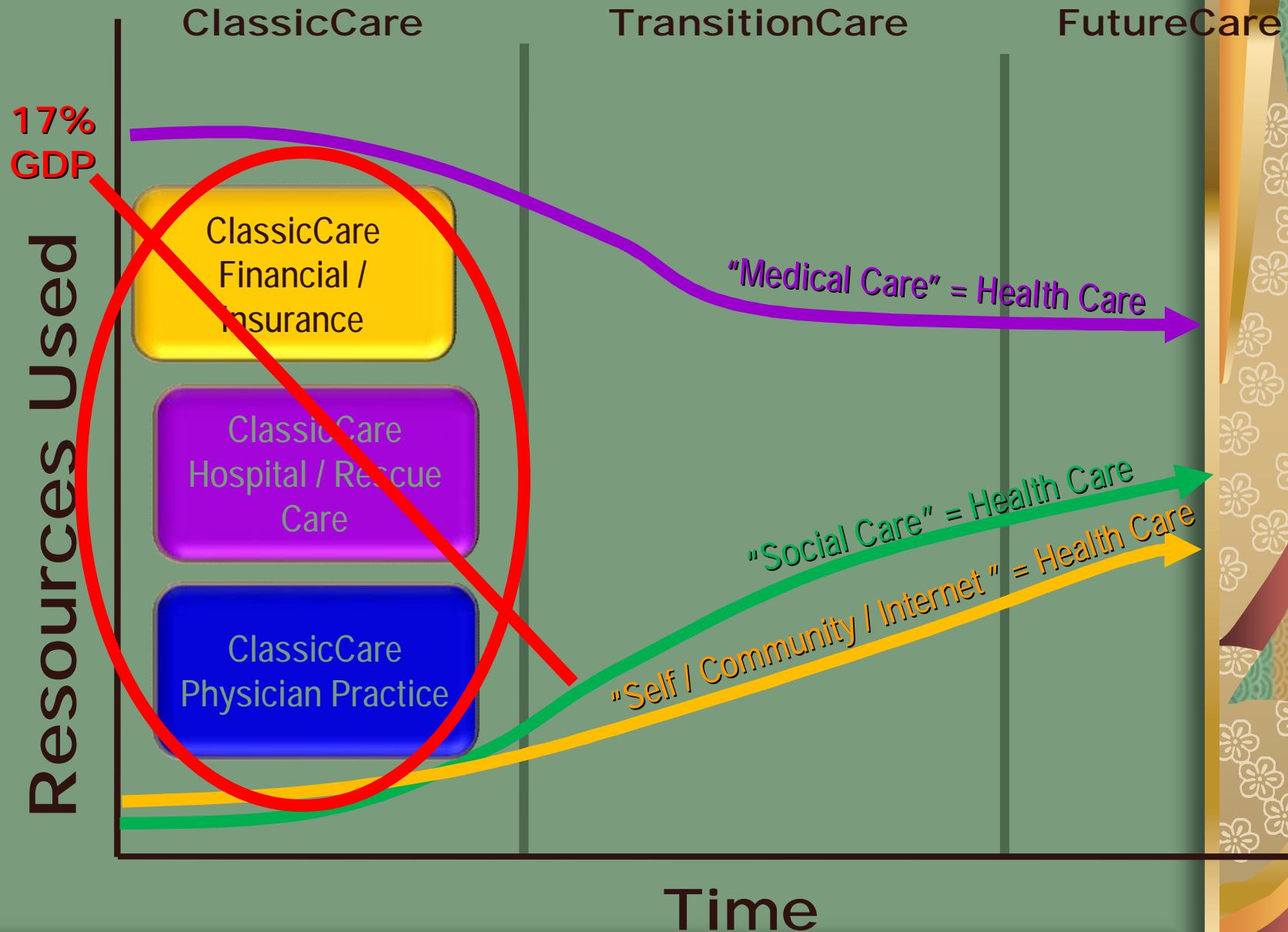


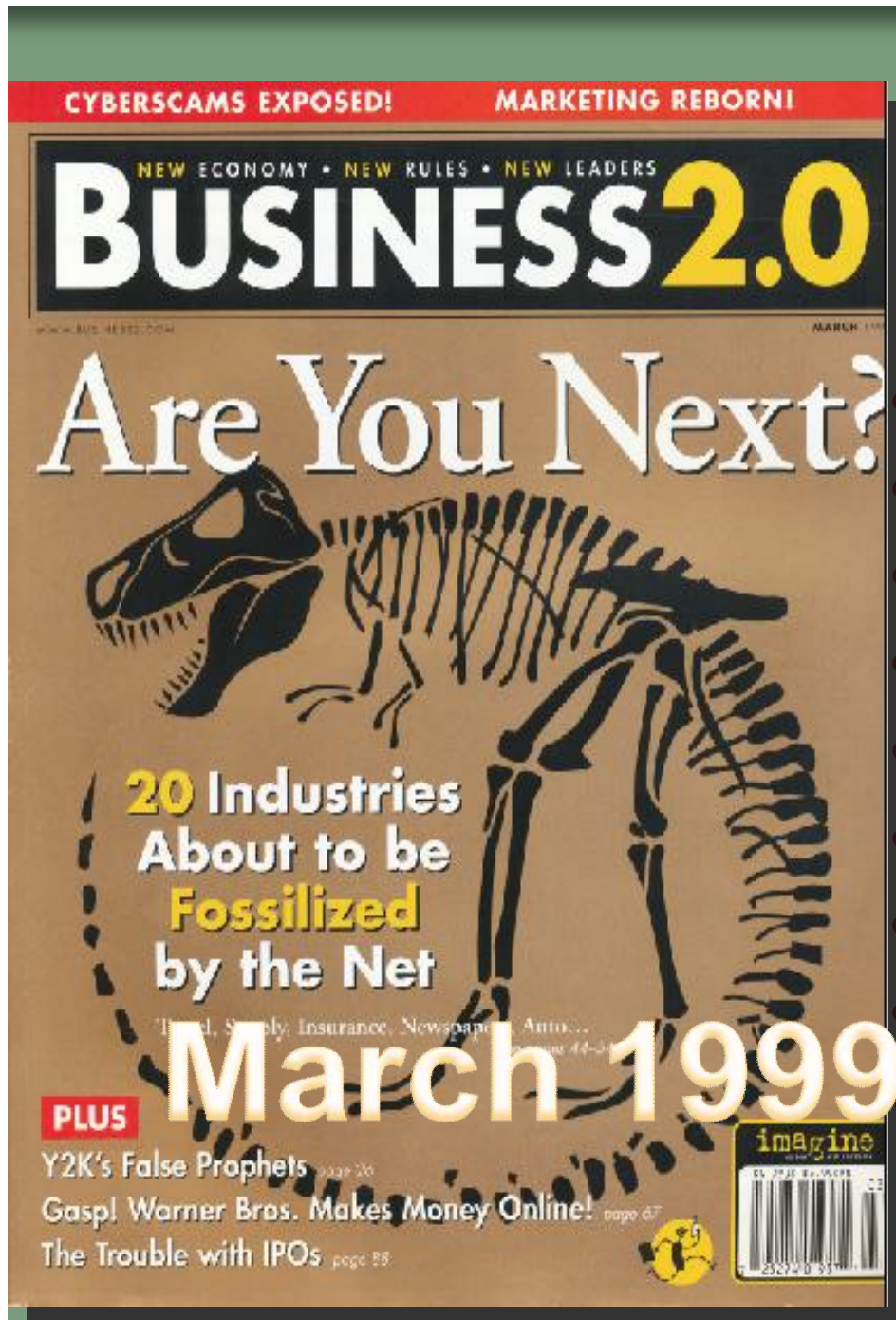
Personalized medicine

- Right treatment for Right person at the Right time
- Why do some treatments work for some and not others?
- Personalized dosing and treatment combinations driven by disease understanding and individual characteristics
 - Proteomics, genomics, epigenetics



Possible Direction of US Health Care



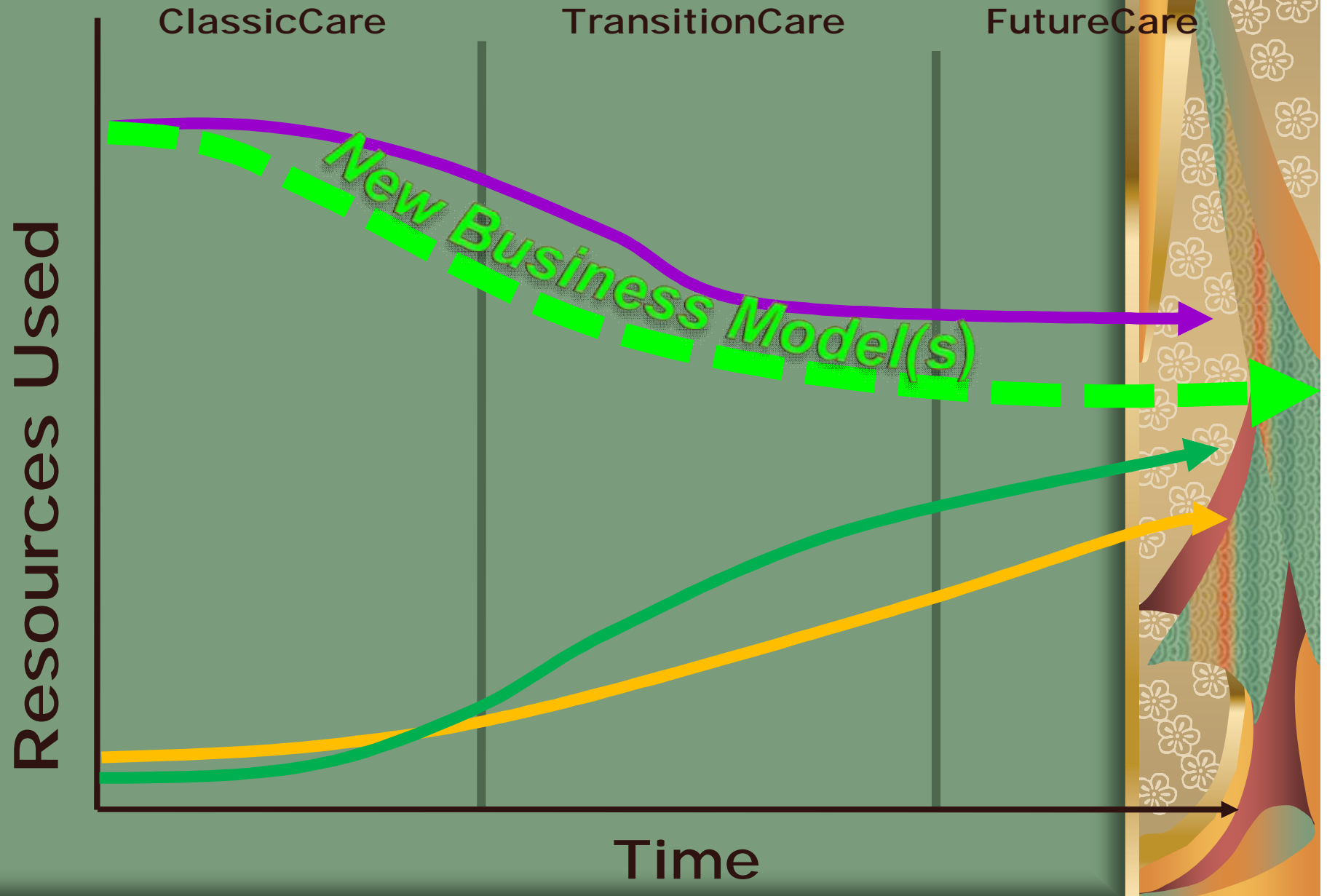


Vanishing Businesses/ Industries

- Travel Agencies
- Lehman Bros.
- Printing Industry
- Block Buster Video
- Local Book Stores
- Local Newspapers
- Broadcast TV
- Corner Bank
- WAMU



Our Potential Adventure



BIOLOGY

General to
Molecular

PHYSICS

Newtonian to
Quantum

GEOMETRY

Euclidian to
Fractals

A Paradigm Shift In Health Care

