

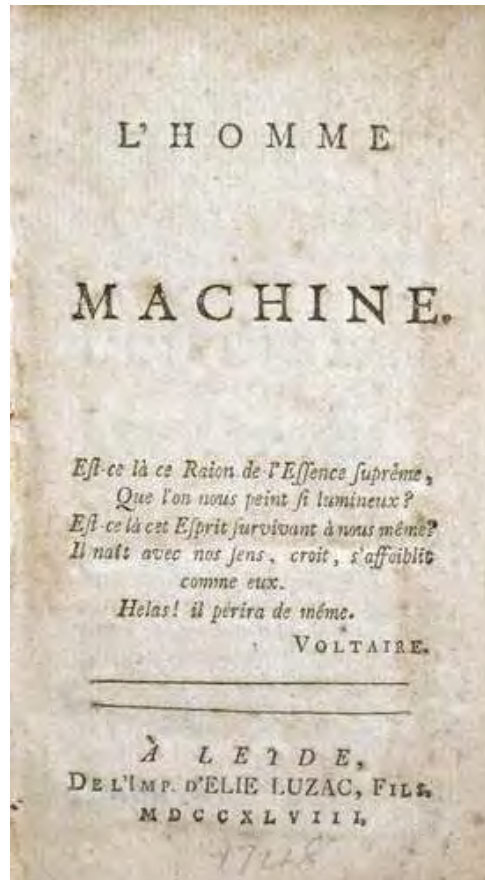


MEDIZINISCHE
UNIVERSITÄT WIEN



Vienna
General Hospital

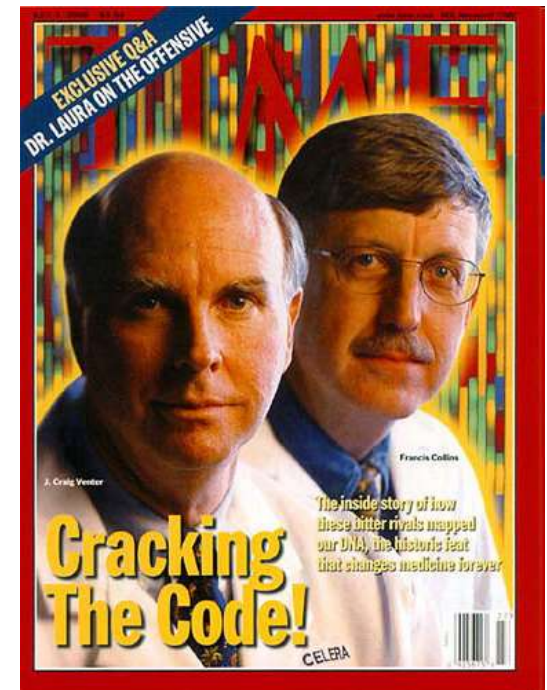
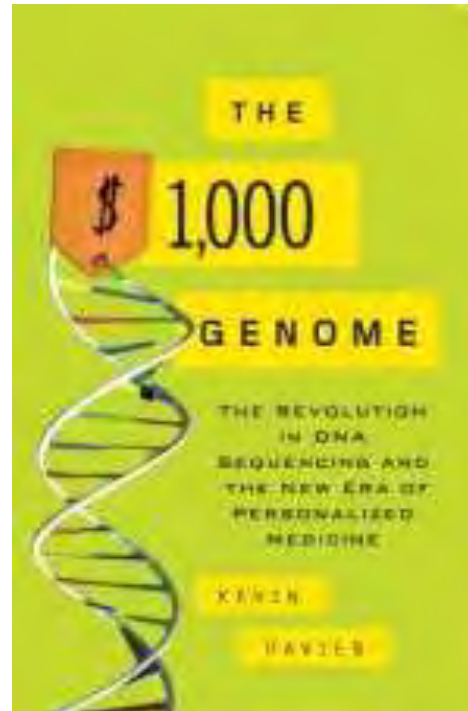
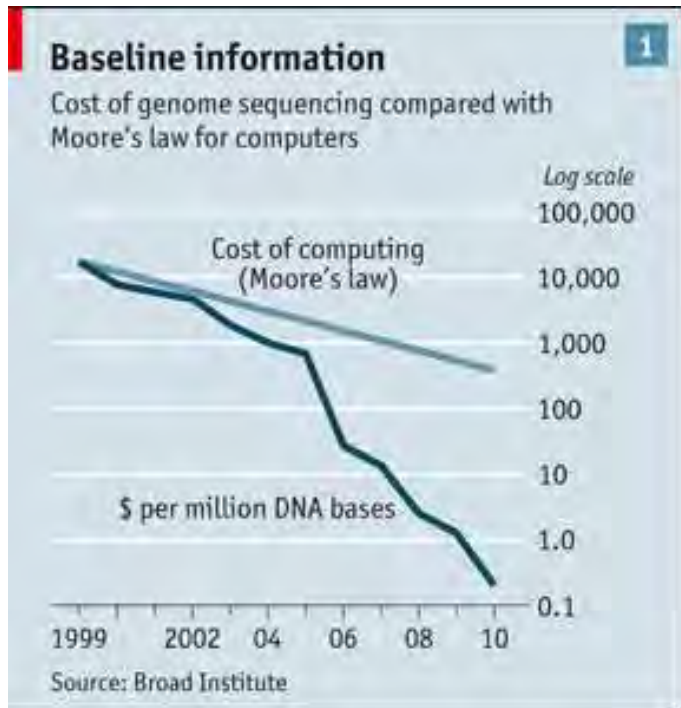
Reductionism: 1748 CE



Julien Offray de La Mettrie (1709 – 1751)

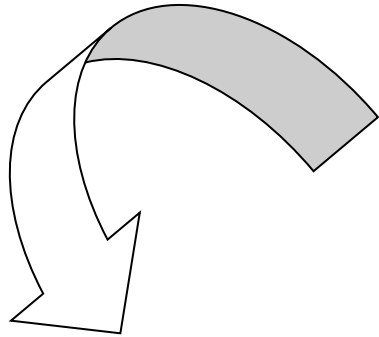
2000 CE: Molecular Reductionism - HUGO

„personalized medicine revolution“

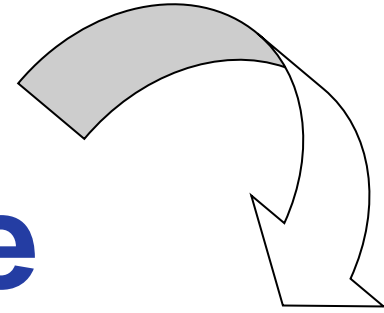


99,5% genetically „identical“

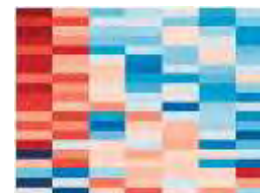




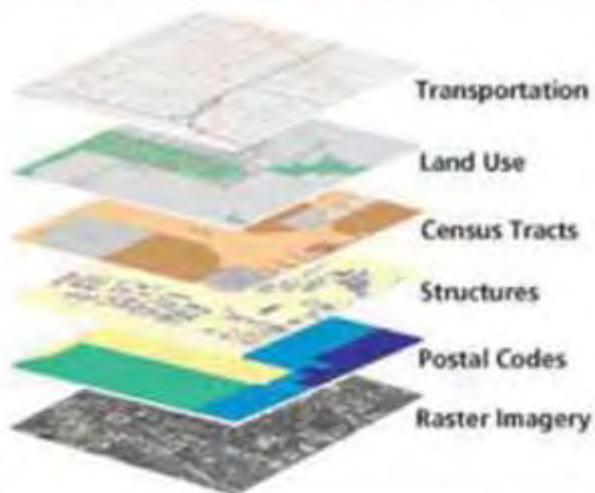
Genotype



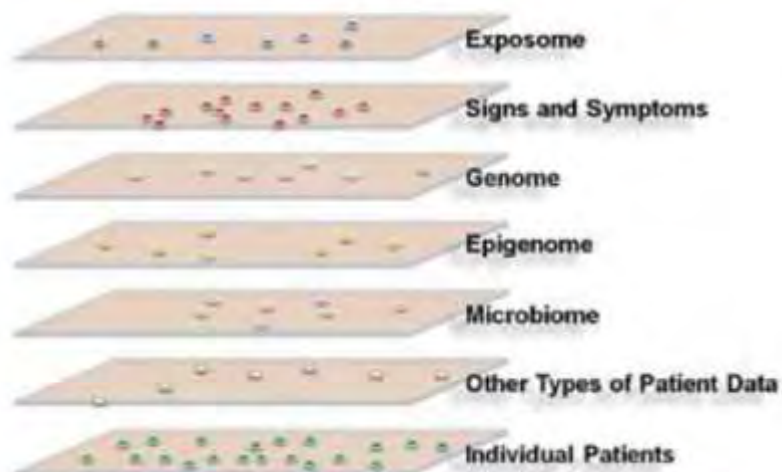
Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease



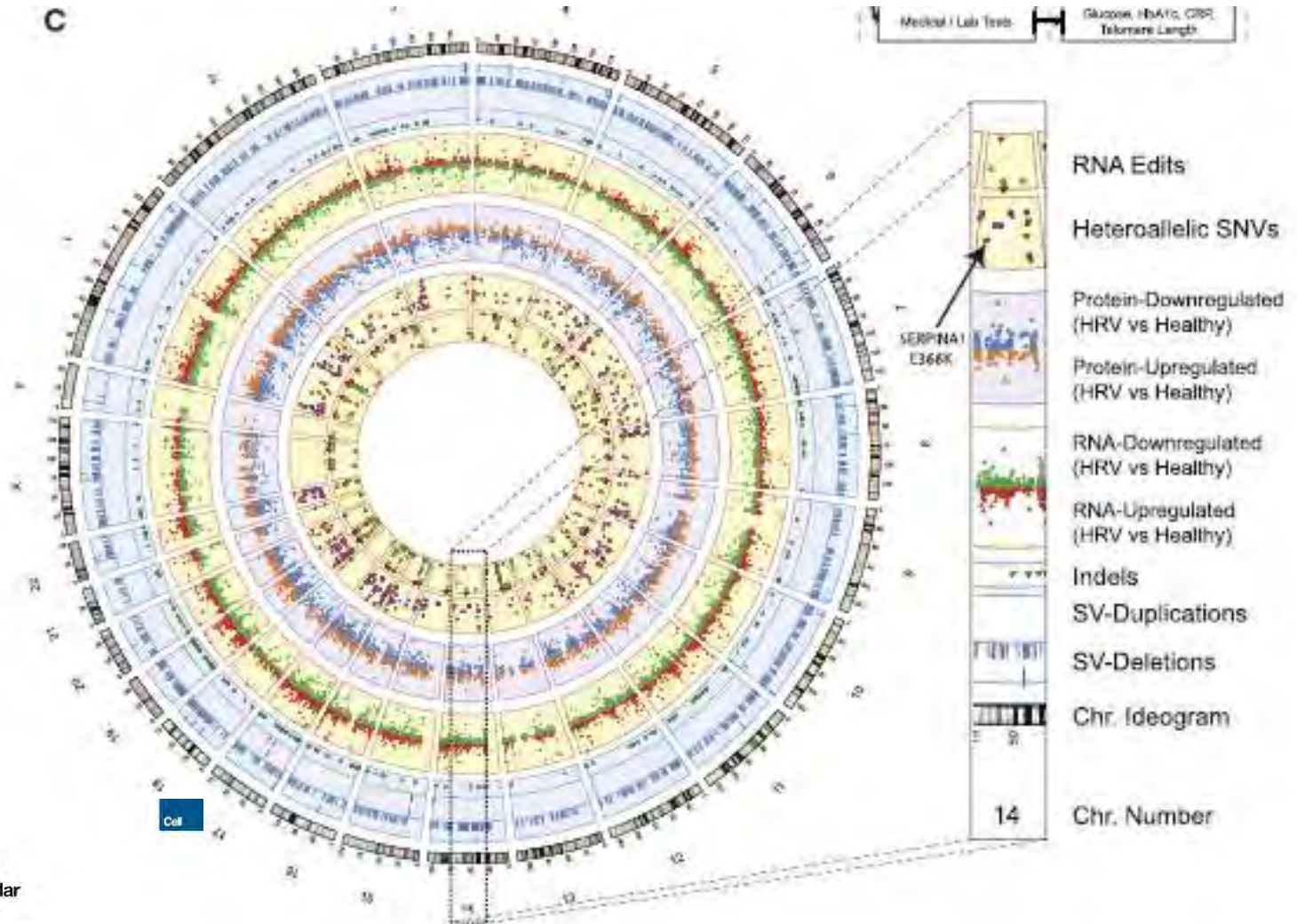
**Google Maps: GIS layers
Organized by Geographical Positioning**



**Information Commons
Organized Around Individual Patients**



Personal profile ~ 5 tb



Resources

Personal Omics Profiling Reveals Dynamic Molecular and Medical Phenotypes

Crispar/Cas-9 gene editing revolution

personalized „patient tailored therapy“

universität wien
Medizinische Universität Wien

Vienna Doctoral School
Molecules of Life

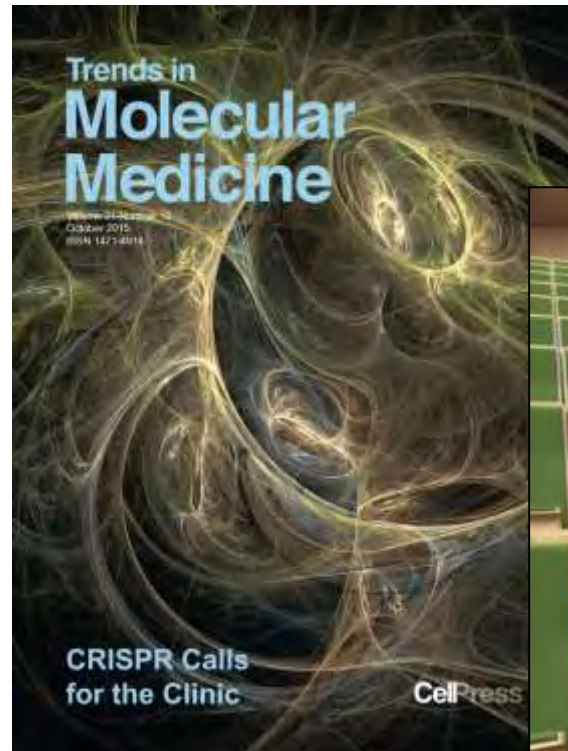
Kickoff Lecture
September 5th, 4:30 pm
IMBA Lecture Hall

Emmanuelle Charpentier
Max Planck Institute of Infection Biology, Berlin
"The transformative genome engineering CRISPR-Cas9 technology: Lessons learned from bacteria"

Kevin Eismayr
MFPL
"Redesigning or switching off a disease gene in the same cell using CRISPR/Cas9 genome engineering"

Introduced by
Heinz Faßmann
Vice Rector, University of Vienna
Markus Müller
Rector, Medical University of Vienna
Stefan Benke
MFPL

Emmanuelle Charpentier 2011



Synthetic biology revolution



Jürgen Knoblich 2013

2017: extreme reductionism: „digital medicine“

Big data: „human beings as data sets“ Avatars

Resource

Cell

**Personal Omics Profiling
Reveals Dynamic Molecular
and Medical Phenotypes**



„Singularity“



artificial Intelligence

machine learning

creative industries/gaming

advanced imaging

predictive behaviour

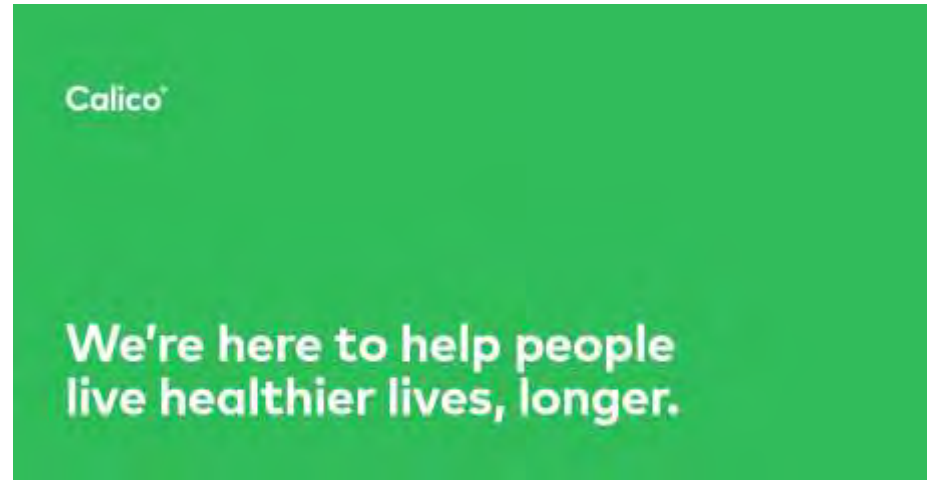
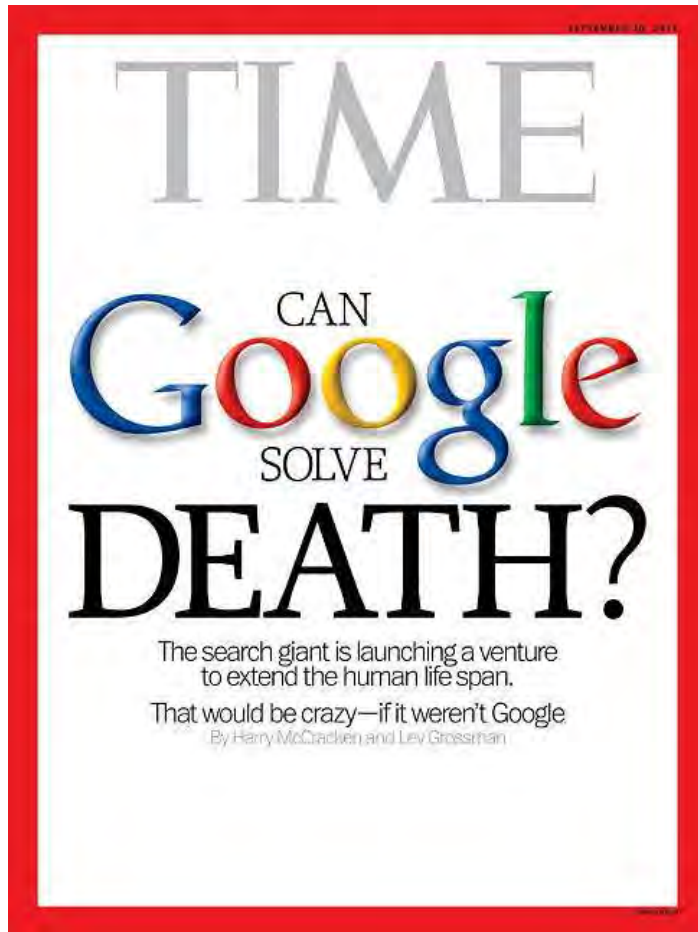
-omics and gene editing

brain machine Interfaces

bionics, synthetic biology

advanced manufacturing 3D

Digital Medicine



„Disease is a computational problem“

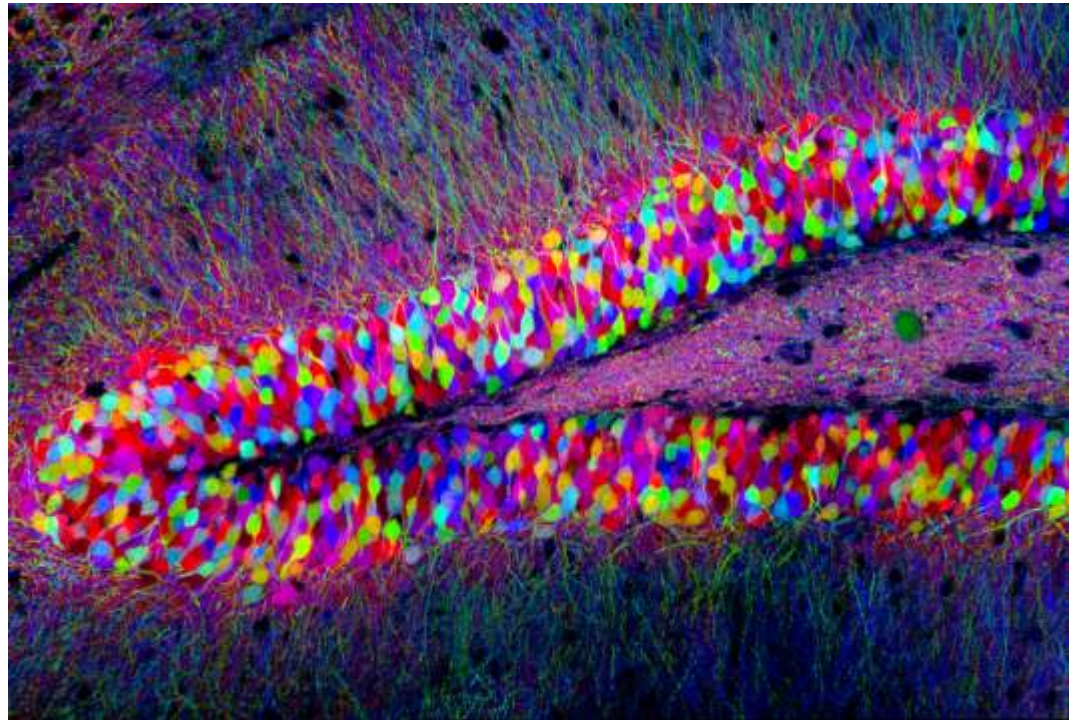
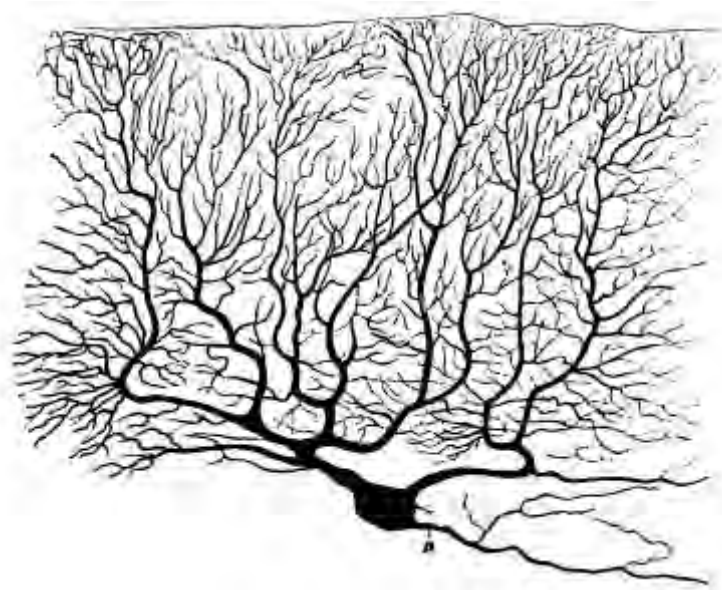
Human brain project



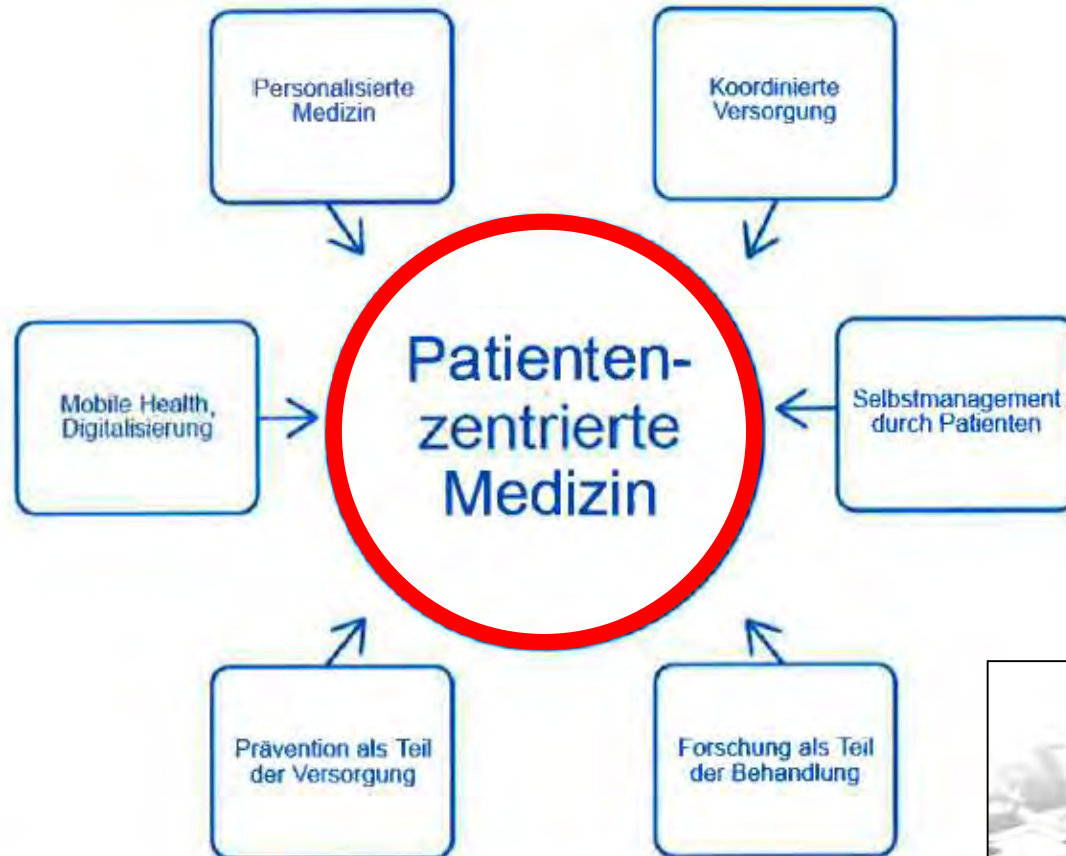
Eric Kandel

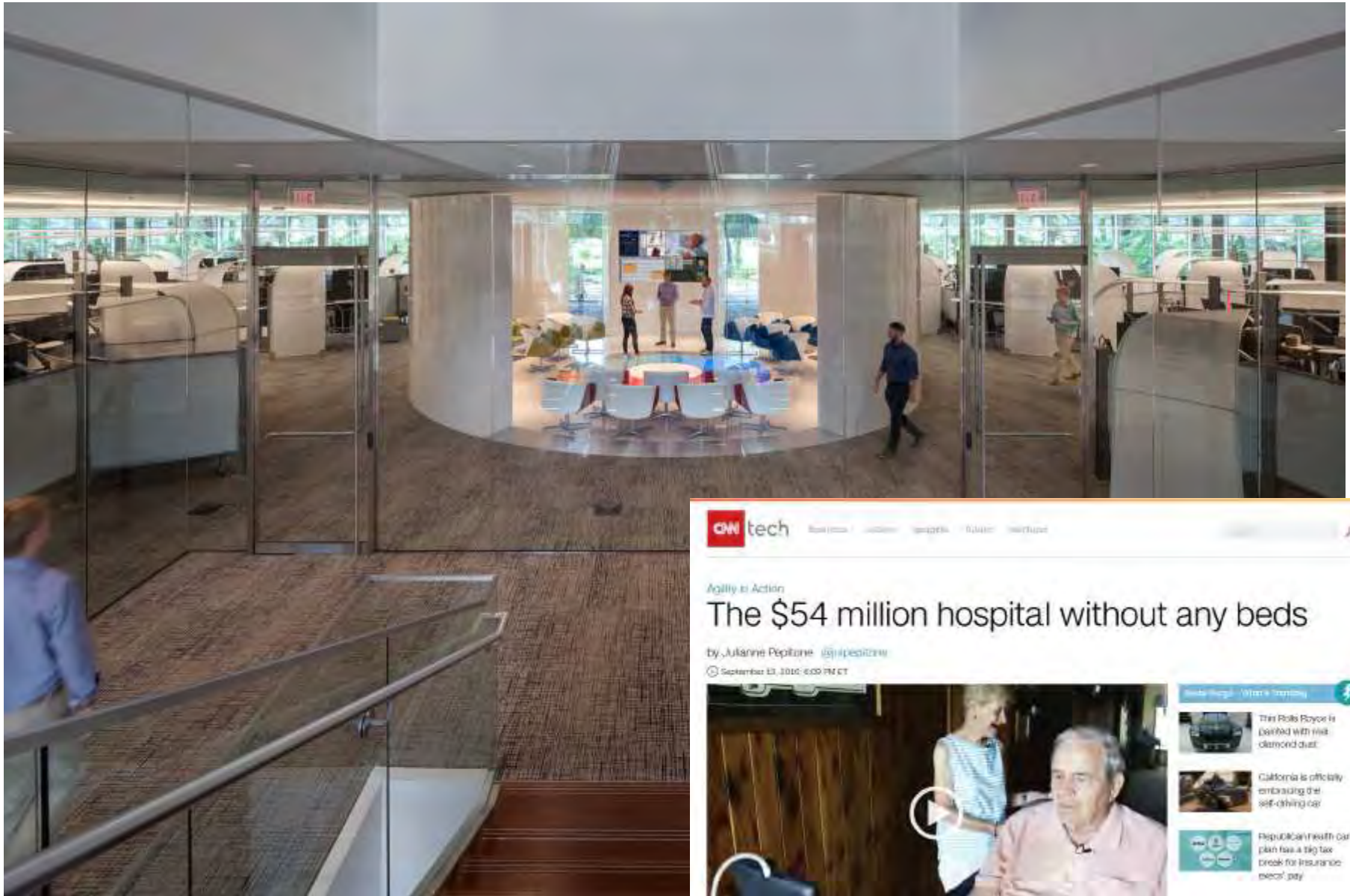


$$10^{11} \times 10.000 = 10^{15}$$



Zukunft der Medizin: Sechs Trends





CNN tech Business | Lifestyle | Sports | Culture | Healthcare

Agility in Action

The \$54 million hospital without any beds

by Julianne Pepitone @jpepitone

September 13, 2016 6:00 PM ET

Video recap: What's trending

- The Rolls Royce is painted with real diamond dust
- California is officially embracing the self-driving car
- Republican health care plan has a big tax break for insurance execs' pay

ZENTRUM FÜR PRÄZISIONSMEDIZIN

MEDUNI CAMPUS AKH



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