

CAPT Symposium:

***Future Pharmascape***

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*Supported by Merck Canada*

**IHE**

INSTITUTE OF  
HEALTH ECONOMICS  
ALBERTA CANADA

# Institute of Health Economics

- IHE - Alberta-based non-profit research institute
- Multi-stakeholder Board includes:
  - Two Deputy Ministers (Health and Advanced Education)
  - Alberta Health Services – the single provincial health authority
  - Deans of both Medical Schools
  - Dean of Pharmaceutical Sciences
  - Vice-Presidents of Research from both major universities
  - Heads of Economics Departments
  - Industry partners: Merck, Pfizer, GSK, Eli Lilly, Astra Zeneca
- Solutions will only come from all partners working together
- IHE has served as the secretariat for CAPT for the past 10 years.



## Clinicians

“See patients and treat their problems”

## Clinician-scientists (scientists)

“See patients (problems) and seek better solutions – innovation”



Innovation is critically dependent on  
discovery (basic) research

## **1st message: Innovation Changes Outcomes**

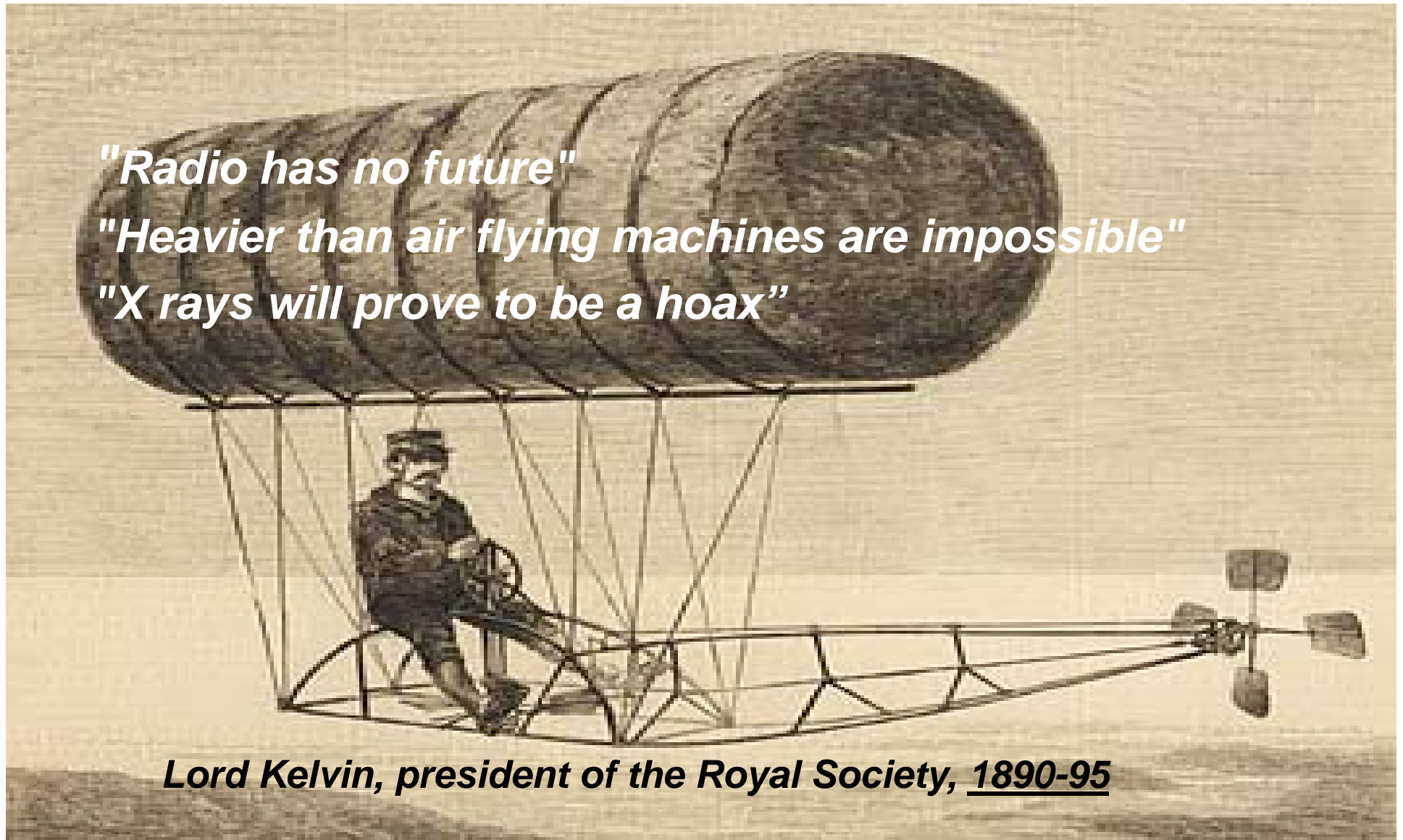
- AIDS-Fatal to Stable Disease in less that 20 years.
- Gleevecin Chronic Myeloid Leukemia
- Peptic Ulcer Disease-H. Pylorus and antibiotics
- Brain and body imaging
- Today-Gene therapy for a congenital form of blindness

**2<sup>nd</sup> message:** *be careful about predicting the future.*

*"Radio has no future"*

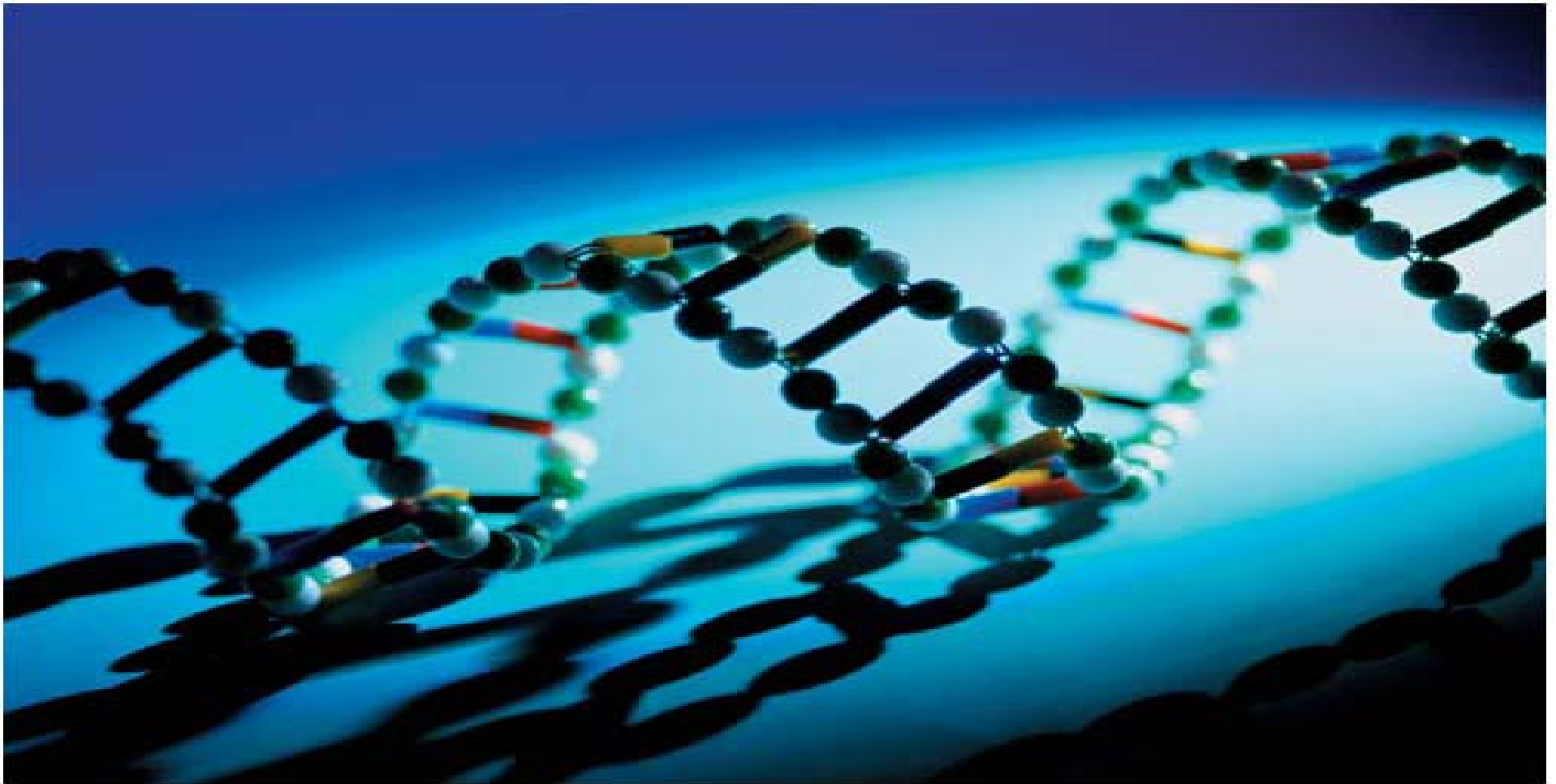
*"Heavier than air flying machines are impossible"*

*"X rays will prove to be a hoax"*

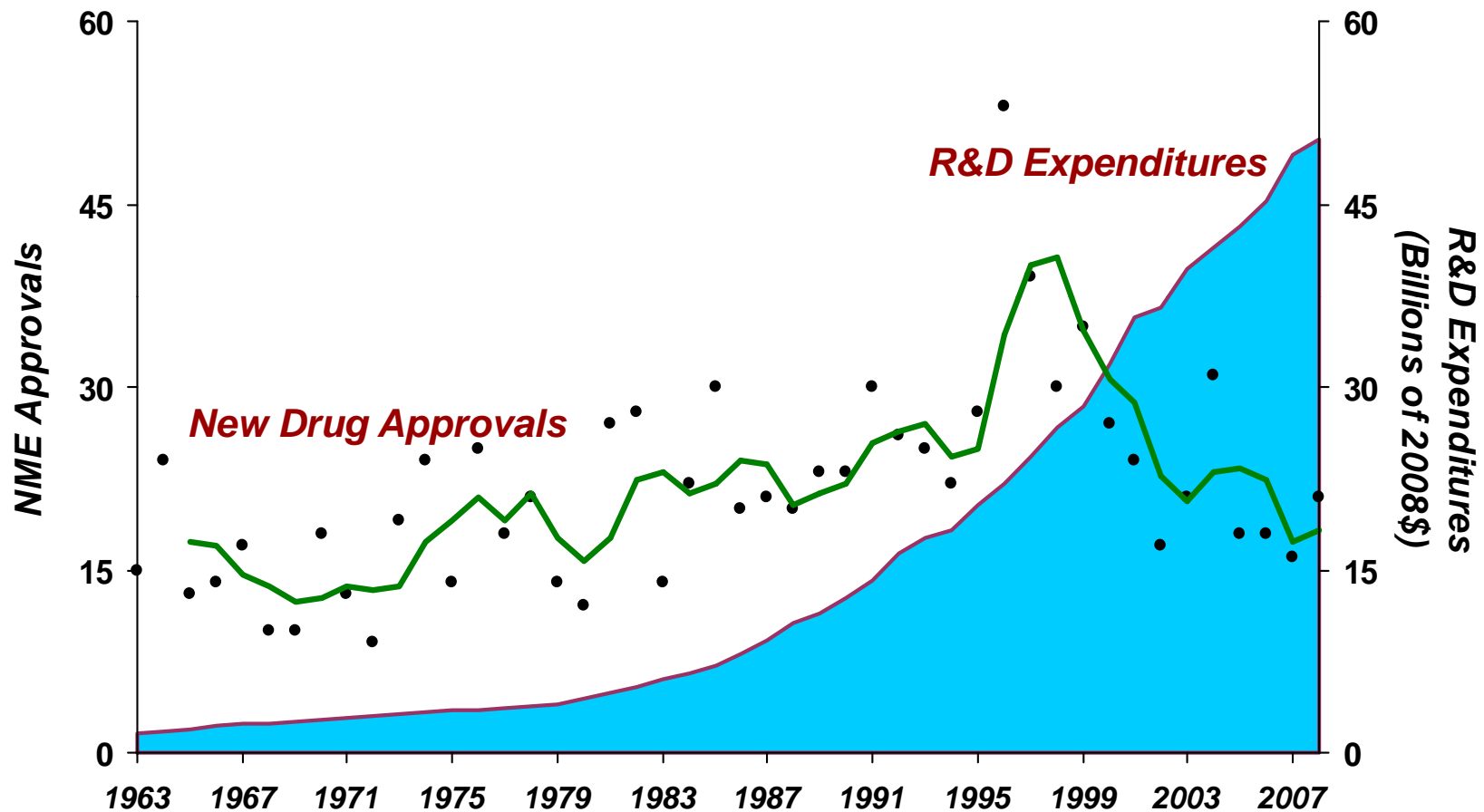


***Lord Kelvin, president of the Royal Society, 1890-95***

***“By 2003, every American will have a credit card containing all of his or her genetic information.”*** Craig Venter, 1999



# New Drug Approvals and R&D Spending



*R&D expenditures are adjusted for inflation; curve is 3-year moving average for NMEs*

*Source: Tufts CSDD, PhRMA, 2009*



# Challenges to make personalized medicine work

- Research community needs to improve its understanding of genetic pathways and how predictive tests work.
- Reimbursement and regulatory changes to encourage development of predictive tests and treatments.
- Need superior methods for validation and assessing reliability of predictive tests.
- Regulatory and reimbursement system needs to be dynamic and able to adapt to rapid changes in technology.
- Development of high quality, unified and systematic population databases.
- Education of Patients and Providers
- Process to resolve ethical/societal concerns

## 3<sup>rd</sup> Message: *Reimbursement should not be a simple yes/no*

- Need to develop ways to allow promising technologies to be used.



## 4<sup>th</sup> Message: Interdisciplinary science and collaboration across public/private sectors is the future

- Convergence of mathematics, chemistry, biology, physics, computing sciences, medicine, engineering –never has there been such opportunities to solve medical challenges
- Systems biology and systems engineering
- Mimicry of sensor/effector pathways
- Image analysis
- Predictive modeling of biological systems
- Interdisciplinary Cooperation Essential
- Clinical and Regulatory support.

***"If it were not for the great variability among individuals, medicine might as well be a science, not an art."***

**Sir William Osler, 1892**

