

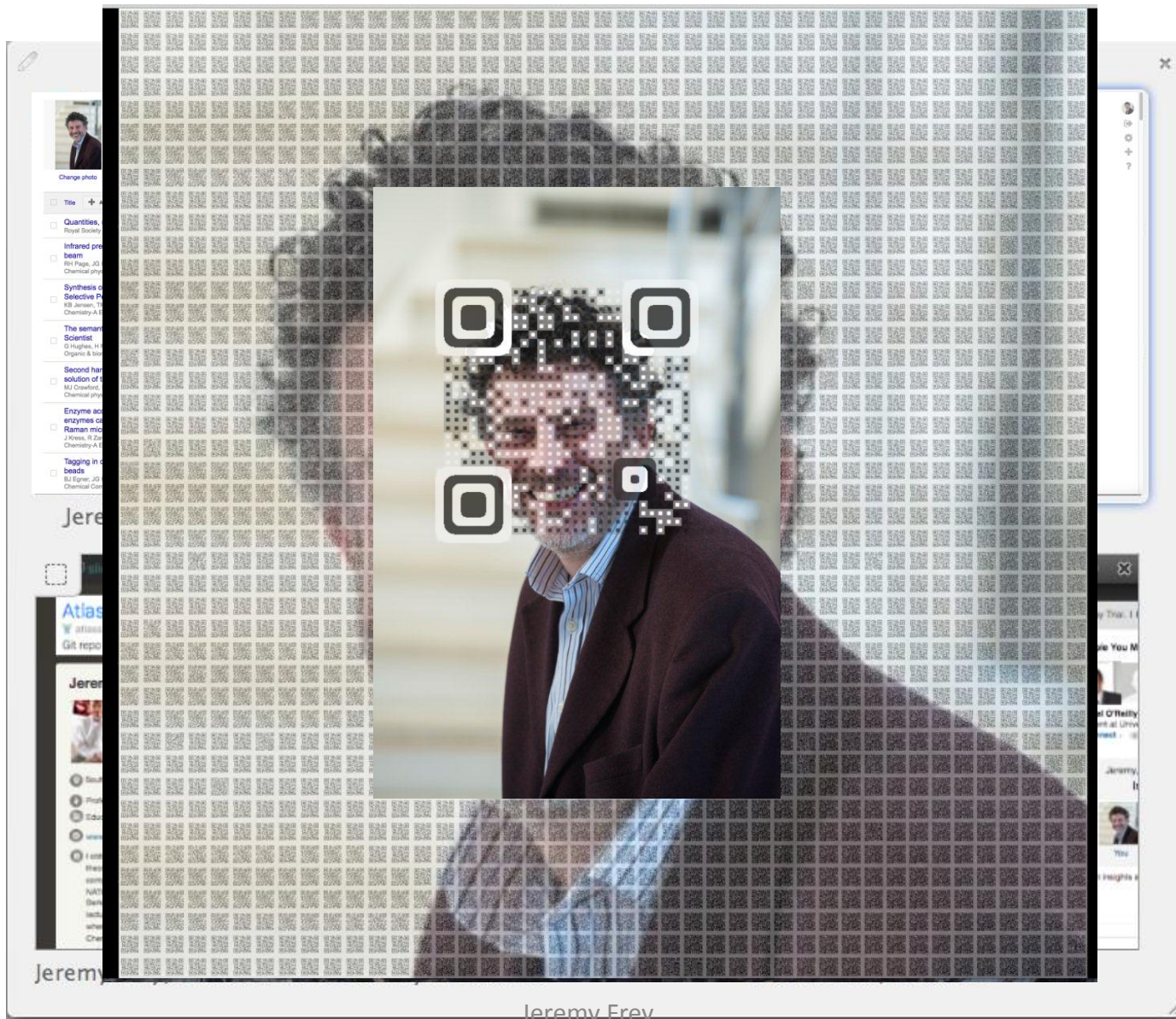


Cognitive computing

How the mind of the computer can help us tackle AMR

Jeremy Frey
Physical and Digital Chemist
University of Southampton

A Chemist's Digital Aura



Cognitive Computing

Finding connections from data

Deep Learning

Learn

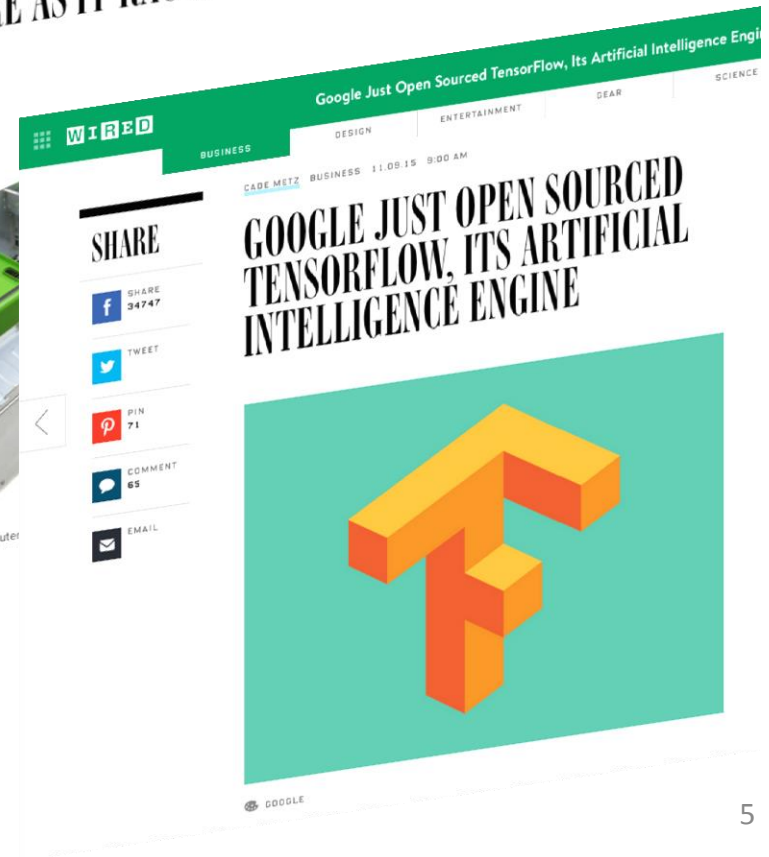
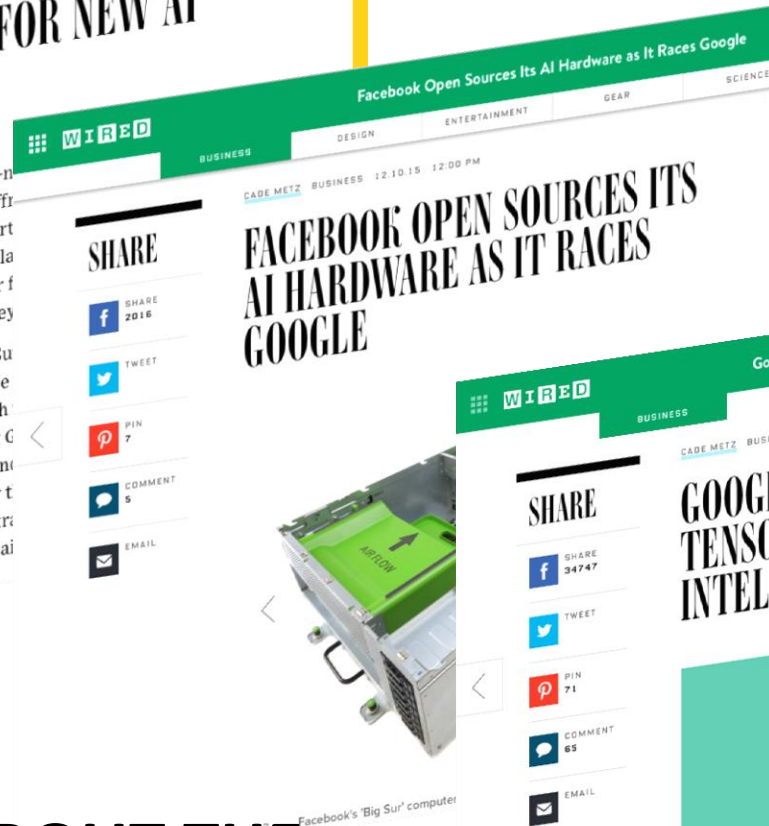
Unlearn

Relearn

— Toffler
as cited in
"NOW YOU SEE IT"
by @CathyNDavidson



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**ITS REALLY ALL ABOUT THE
DATA!**



Big Data

Jeremy Frey

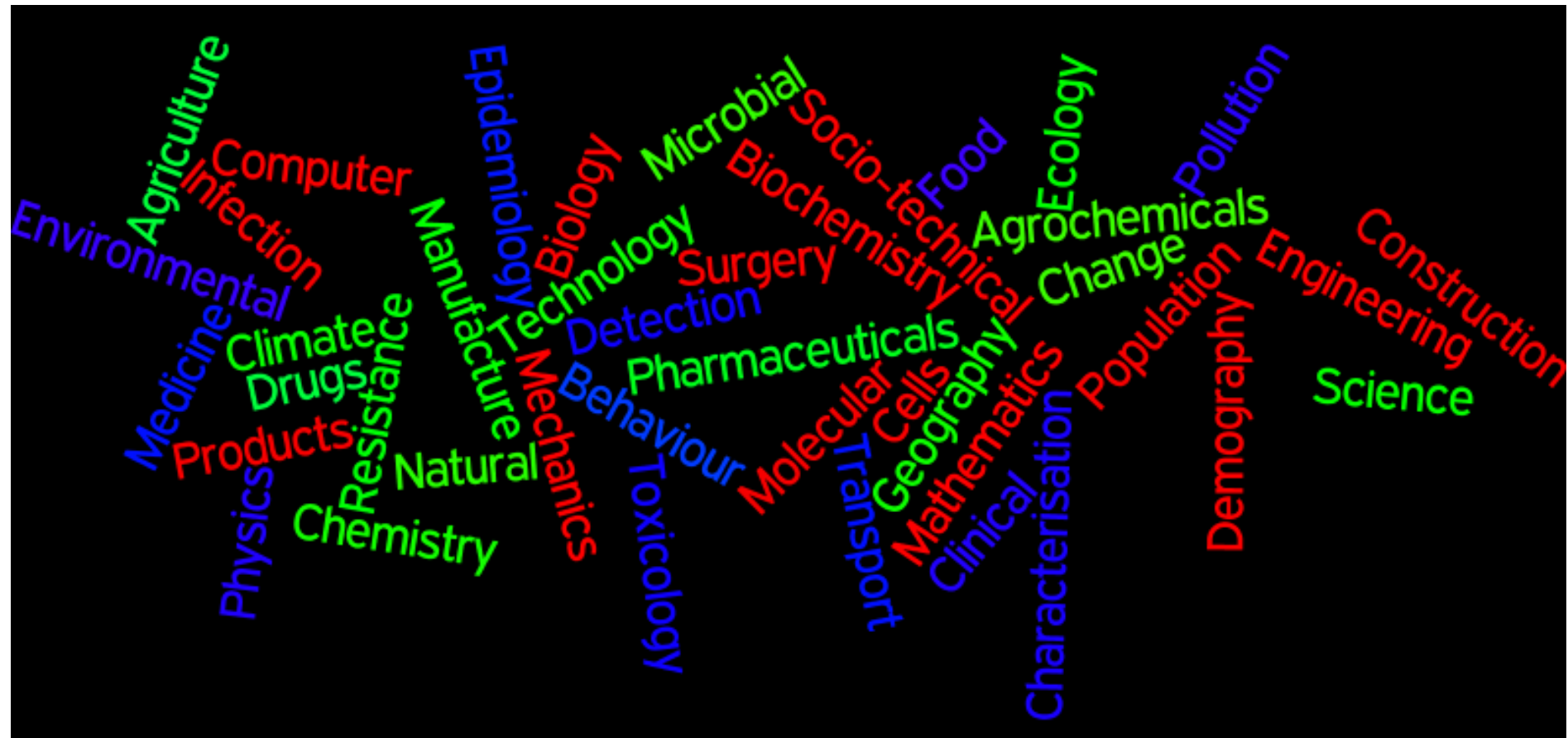
Data is the new Spice



Enrichment

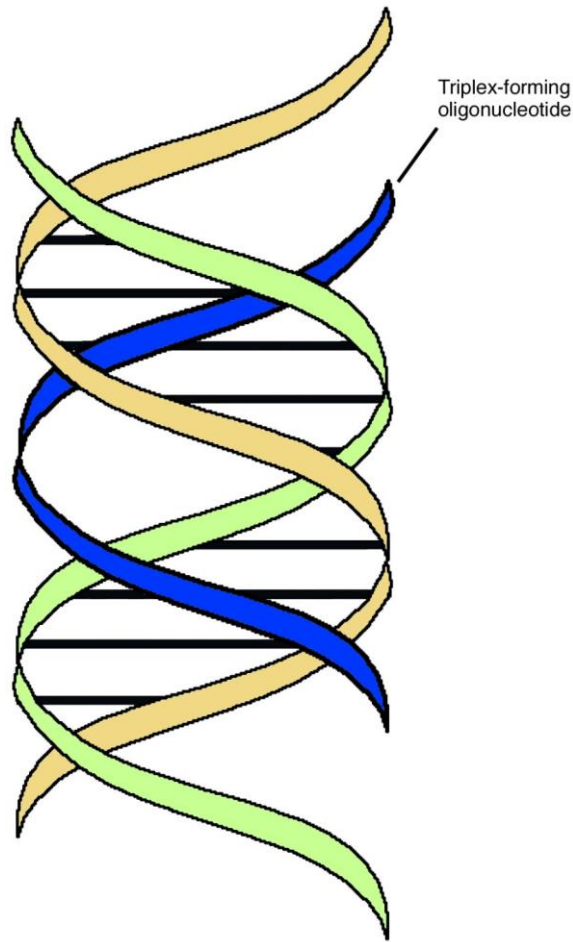


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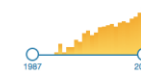
antimicrobial

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APD: the Antimicrobial Peptide Database

Zhe Wang, Guangshun Wang - NAR - 2004

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Abstract: An antimicrobial peptide database (APD) has been established based on an extensive literature search. It contains detailed information for 525 peptides (498 antibacterial, 155 antifungal, 28 antiviral and 18 antitumor). APD provides interactive interfaces for peptide query, prediction and design. It also provides statistical data for a select group of or... (More)

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CAMP: a useful resource for research on antimicrobial peptides

Shahni Thomas, Shreyas Kannik, Ram Shankar Baral, Vaidyanathan K. Jeyaraman, Susan Idicula-Thomas - NAR - 2010

[Cited by 13 selected papers](#) • Citation velocity: 3

Abstract: Antimicrobial peptides (AMPs) are gaining popularity as better substitute to antibiotics. These peptides are shown to be active against several bacteria, fungi, viruses, protozoa and cancerous cells. Understanding the role of primary structure of AMPs in their specificity and activity is essential for their rational design as drugs. Collection of... (More)

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APD2: the updated antimicrobial peptide database and its application in peptide design

Guangshun Wang, Xia Li, Zhe Wang - NAR - 2009

[Cited by 15 selected papers](#) • Citation velocity: 4

Abstract: The antimicrobial peptide database (APD, <http://aps.unmc.edu/AP/main.php>) has been updated and expanded. It now hosts 1228 entries with 65 anti-cancer, 76 antiviral (53 anti-HIV), 327 antifungal and 944 antibacterial peptides. The second version of our database (APD2) allows users to search peptide analyses reveal that the frequently used amino acid... (More)

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ANTIMIC: a database of antimicrobial sequences

Manisha Brahmachary, S. P. T. Krishnan, Judice L. Y. Koh, Ael M. Khan, Hong Seng Seah, Tin Wee Tan, Vladimir Brusic, Vladimir B. Bajic - NAR - 2004

[Cited by 11 selected papers](#)

Abstract: Antimicrobial peptides (AMPs) are important components of the innate immune system of many species. These peptides are found in eukaryotes, including mammals, amphibians, insects and plants, as well as in prokaryotes. Other than having pathogen-lytic properties, these peptides have other activities like antitumor activity, mitogen activity, or they may act... (More)

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Ontology

Jeremy Frey

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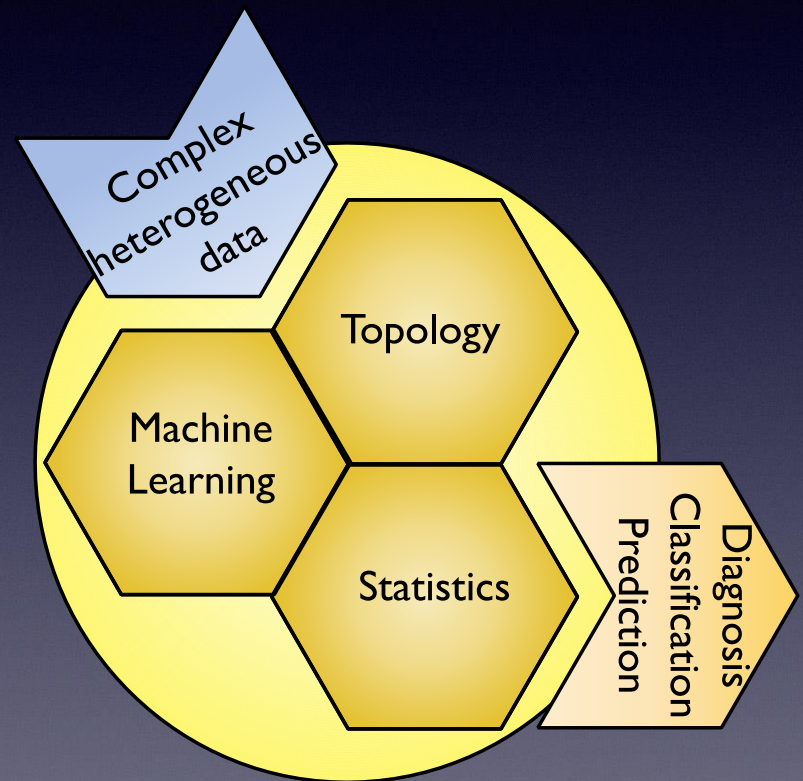
Joining the dots

How to **find meaning** in the deluge of data?

EPSRC-sponsored (£1.5M) **interdisciplinary programme**

Builds on a substantial work to create cross-disciplinary collaborations

A great example of IfLS unifying philosophy



Thank you for listening



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