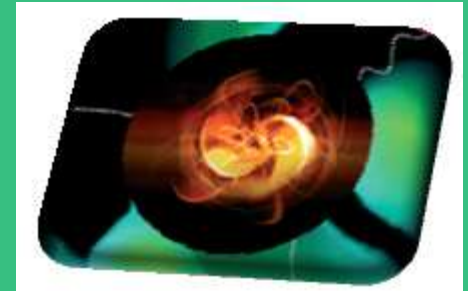




Konferenca učiteljev naravoslovnih predmetov

Od opazovanja in raziskovanja do znanja

Laško, 19. november 2013



Kaj je znanost?

Sašo Dolenc

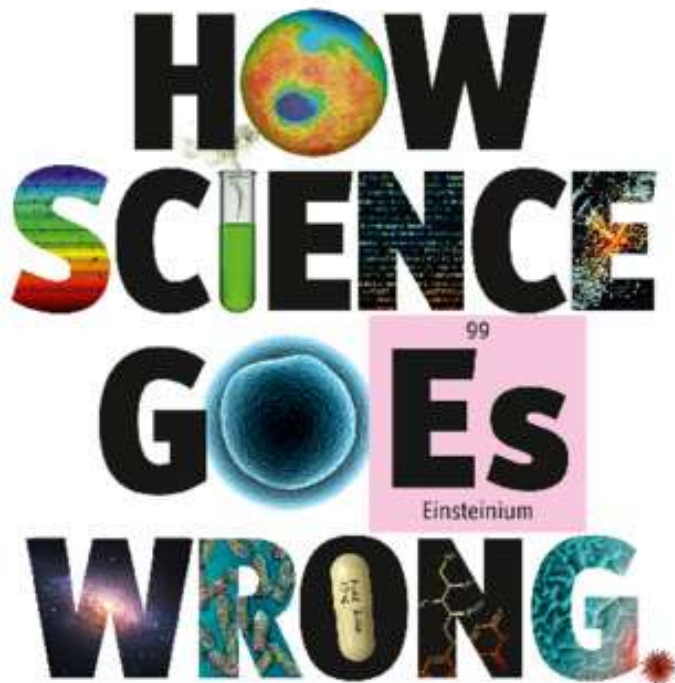
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HOW SCIENCE GOES WRONG



MUCH OF WHAT MEDICAL RESEARCHERS conclude in their studies is misleading, exaggerated, or flat-out wrong. So why are doctors—in a striking extent—still drawing upon misinformation in their everyday practice? Dr. John Ioannidis has spent his career challenging his peers by exposing their bad science.

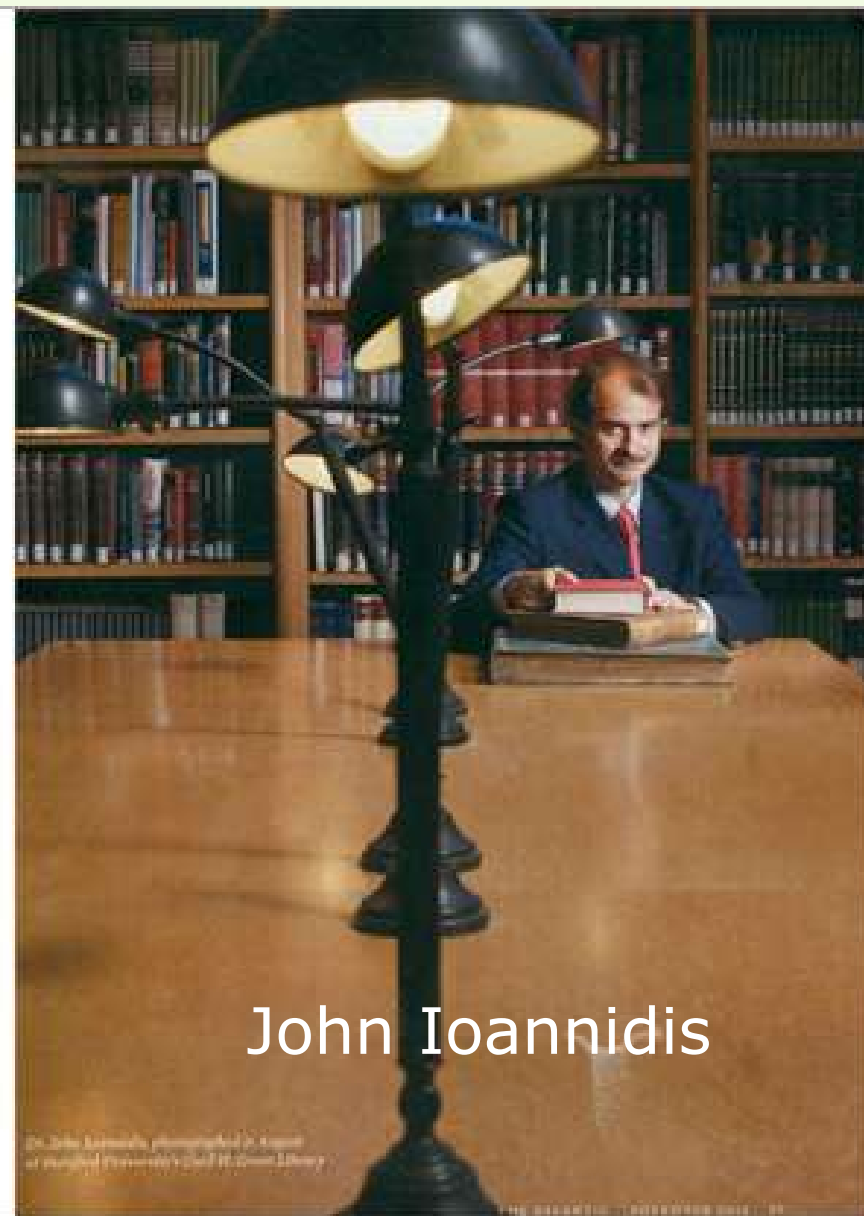
LIES, DAMNED LIES, AND MEDICAL SCIENCE

By DAVID H. FREEDMAN

IN 2001, doctors were circulating in Greek hospitals this surgery residents, eager to rack up scalpel time, were falsely diagnosing hapless Albanian immigrants with appendicitis. At the University of Toronto (and school's teaching hospital), a nearby medical doctor named Athina Tsimoni was discussing the rumors with colleagues when a professor who had overheard asked her if she'd like to try to prove whether they were true—he seemed to be almost daring her. She accepted the challenge and, with the professor and other colleagues' help, eventually produced a formal study showing that, for whatever reason, the appendicitis removed from patients with Albanian names in six Greek hospitals were more than three times as likely to be perfectly healthy as those removed from patients with Greek names. "It was hard to find a journal willing to publish it, but we did," recalls Tsimoni. "I also discovered

that I really liked research." Good thing, because the study had actually been a sort of audition. The professor, it turned out, had been putting together a team of exceptionally bright and curious young researchers and wanted to join him in starting an unusual and controversial agenda.

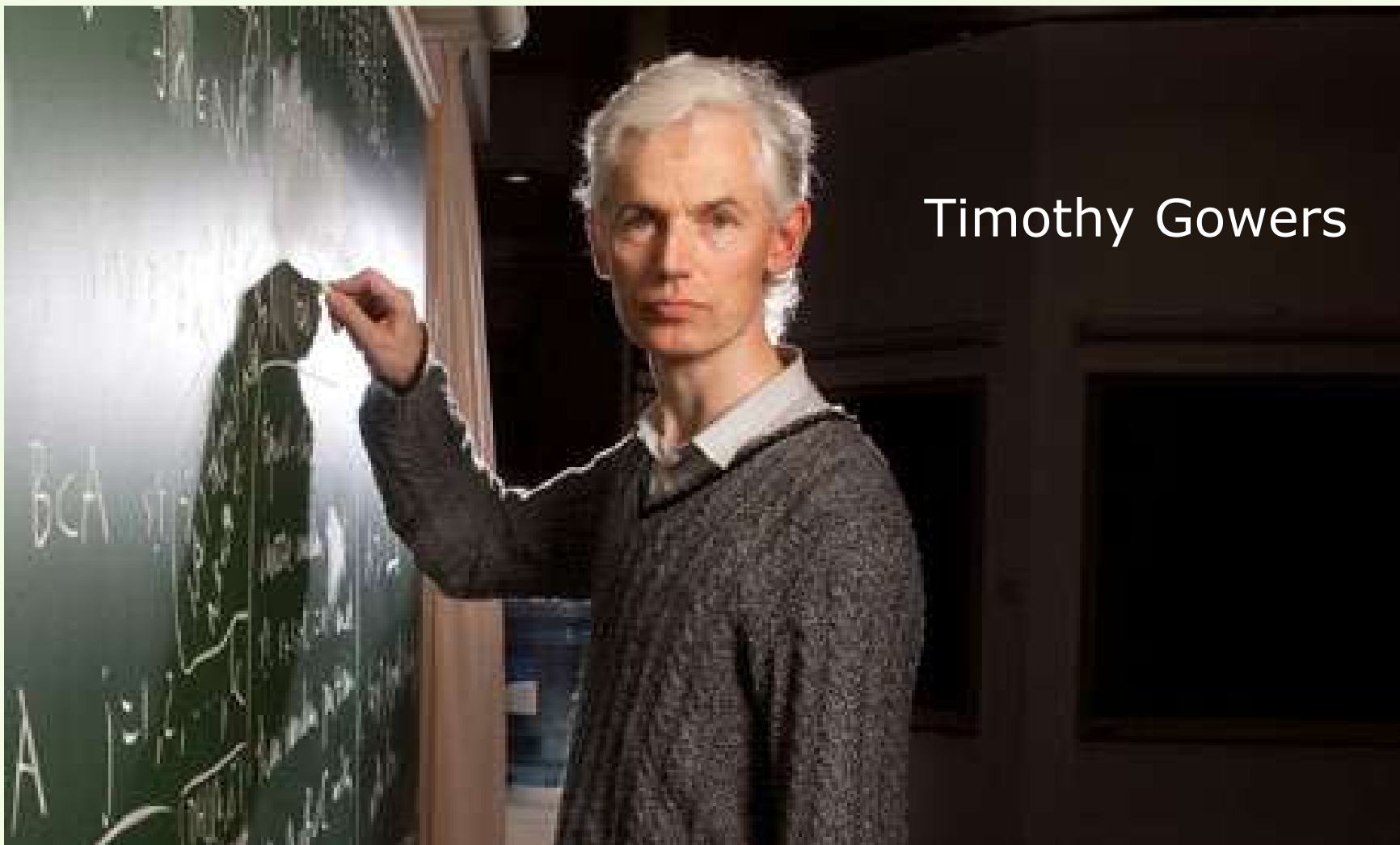
Last spring, I sat in on one of the team's weekly meetings on the medical school's campus, which is plastered entirely across a series of sharp hills. The building in which we met, like most at the school, had the look of a barracks and was festooned with political graffiti. But the group convened in a spacious conference room that would have been at home at a Silicon Valley start-up. Sprinkled around a large table were Tsimoni and eight other youngish Greek researchers and physicians who, in contrast to the gray younger staff frequently seen in U.S. hospitals, looked like the usually glamorous cast of television medical drama. The professor,



John Ioannidis

Dr. John Ioannidis, photographed by Anne
at Wright University and H. Green Library





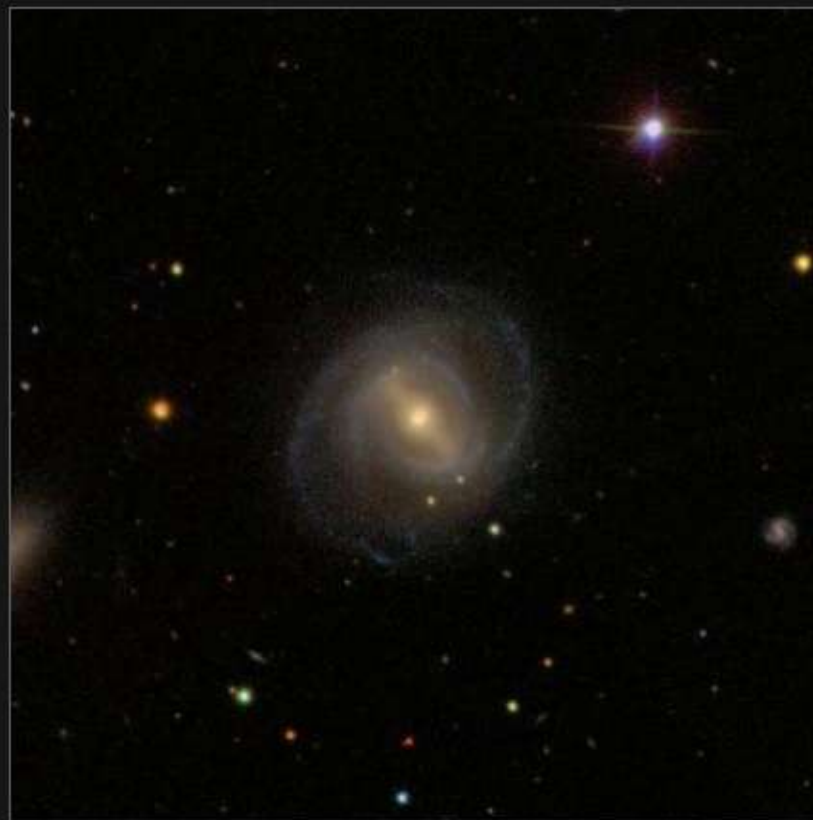
Timothy Gowers

GALAXY ZOO.org

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Galaxy Analysis

Welcome to Galaxy Zoo's view of the Universe. If you're here you should already have seen the [Tutorial](#), but feel free to go and remind yourself. There's no need to agonise for too long over any one image, just make your best guess in each case.


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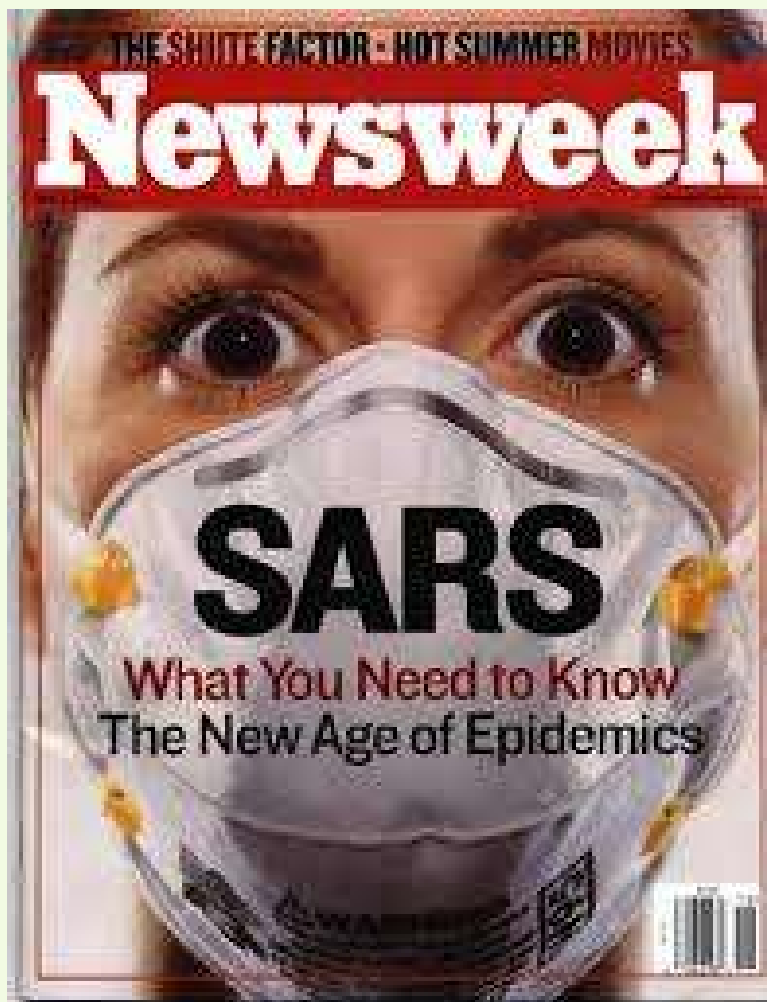


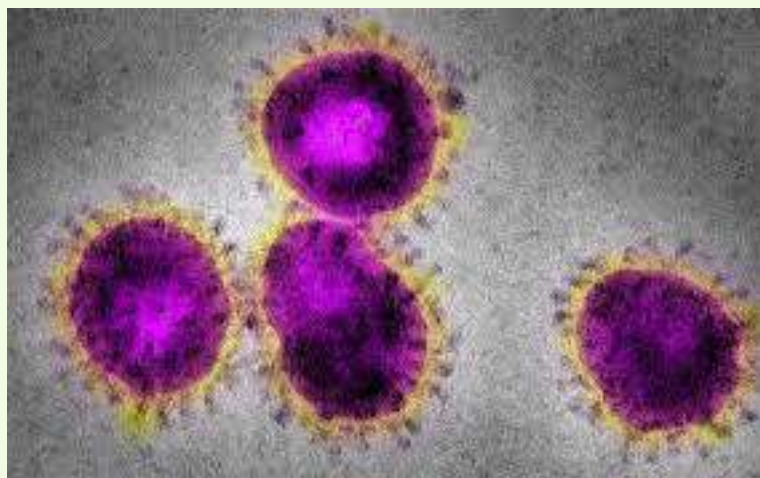
— Hanny van Arkel











How science tracked down the SARS virus

In just six months since a deadly virus of unknown origin began infecting people in China, researchers have pin-pointed the pathogen, mapped its genetic blueprint and identified a key protein used by the virus to infect host cells. A drug is now being developed that may combat the killer

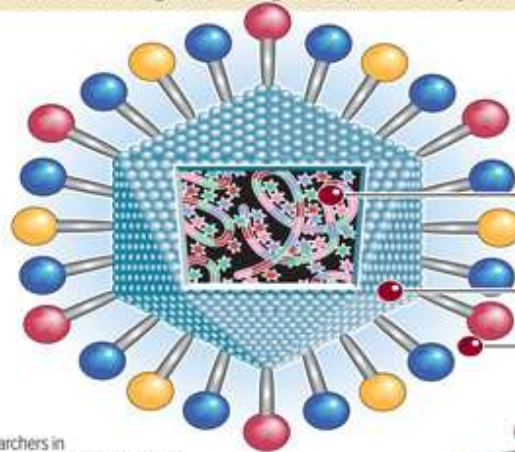


Nov 2002: Several hundred cases of severe atypical pneumonia of unknown origin reported in China's Guangdong province



Feb 2003: World Health Organization doctor Carlo Urbani first identifies fatal disease as Severe Acute Respiratory Syndrome (SARS) while treating U.S. businessman in Vietnam

Mar: After similar cases are detected in Hong Kong and Canada WHO issues global warning. Dr. Urbani dies of SARS in Thailand on March 29

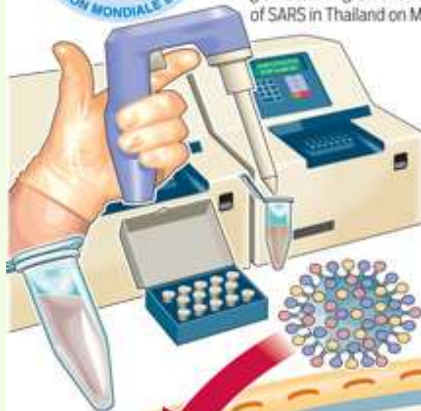


Late March: Laboratories in America, Canada, Germany and Hong Kong isolate novel coronavirus from SARS patients

RNA – viral ribonucleic acid carries genetic blueprint (genome)

Capsid – protein shell protects RNA

Glycoproteins – bind to host cell and are involved in capsid formation and budding



May 1: Researchers in United States, Netherlands, Britain and Germany publish genome of SARS virus and establish it is a new coronavirus

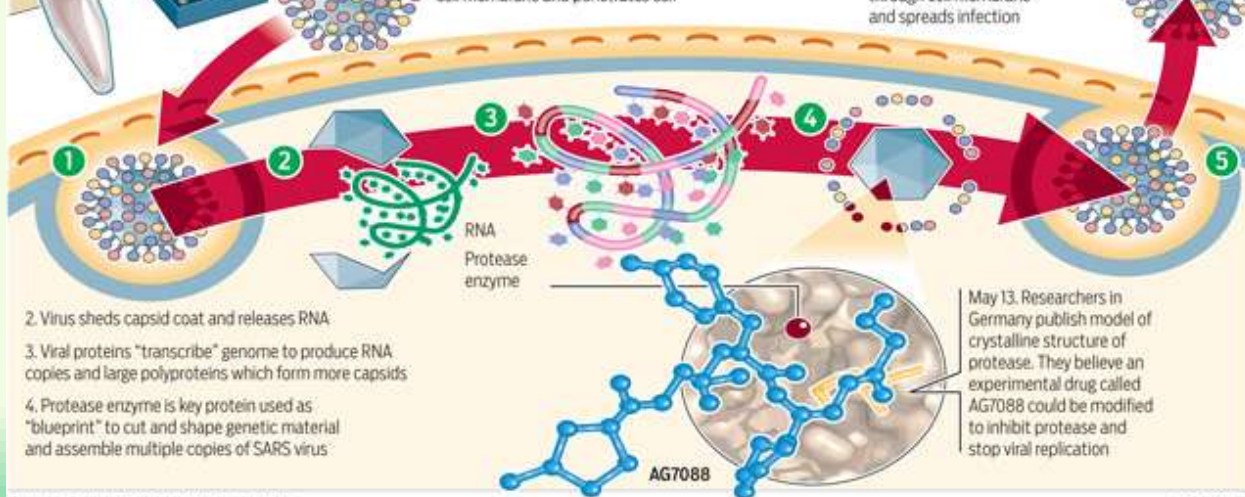


Genetic fingerprint reveals RNA has 29,727 nucleotides that code for proteins and enzymes

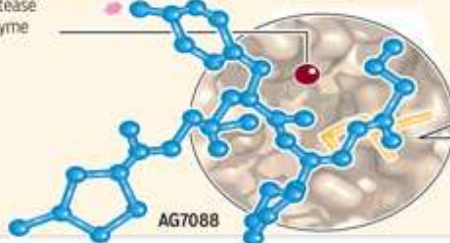


1. Virus binds to receptors on host cell membrane and penetrates cell

5. Each new virus buds through cell membrane and spreads infection



May 13: Researchers in Germany publish model of crystalline structure of protease. They believe an experimental drug called AG7088 could be modified to inhibit protease and stop viral replication

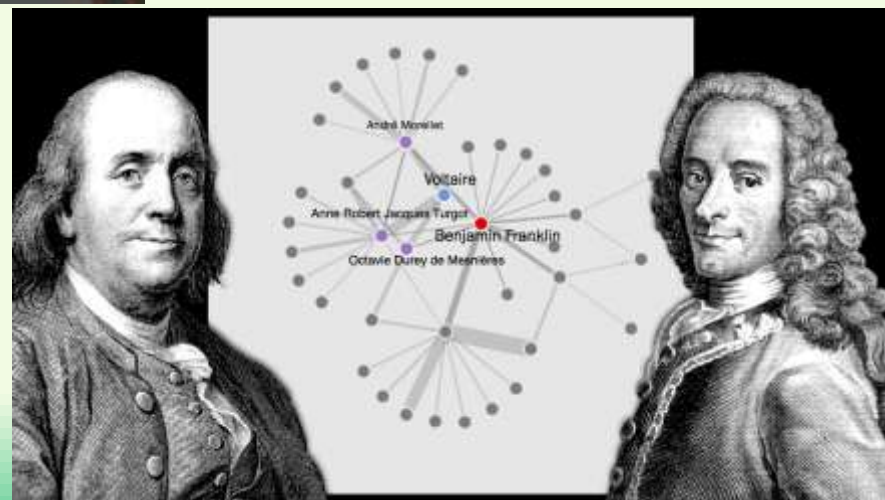


Sources: Science, World Health Organization

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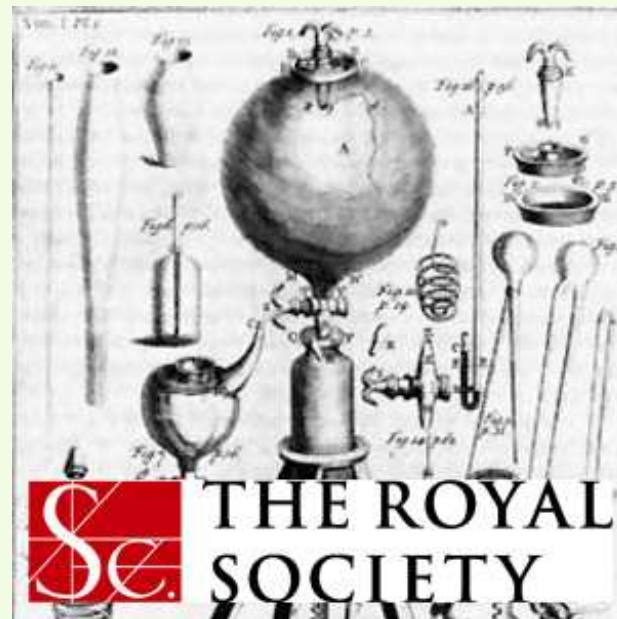
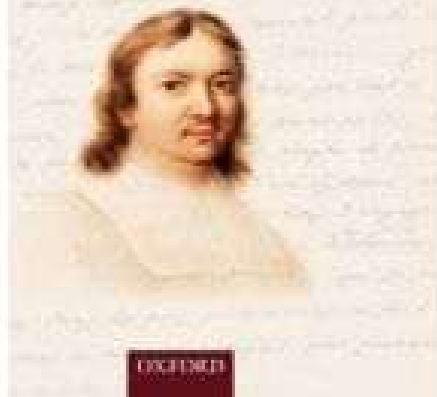


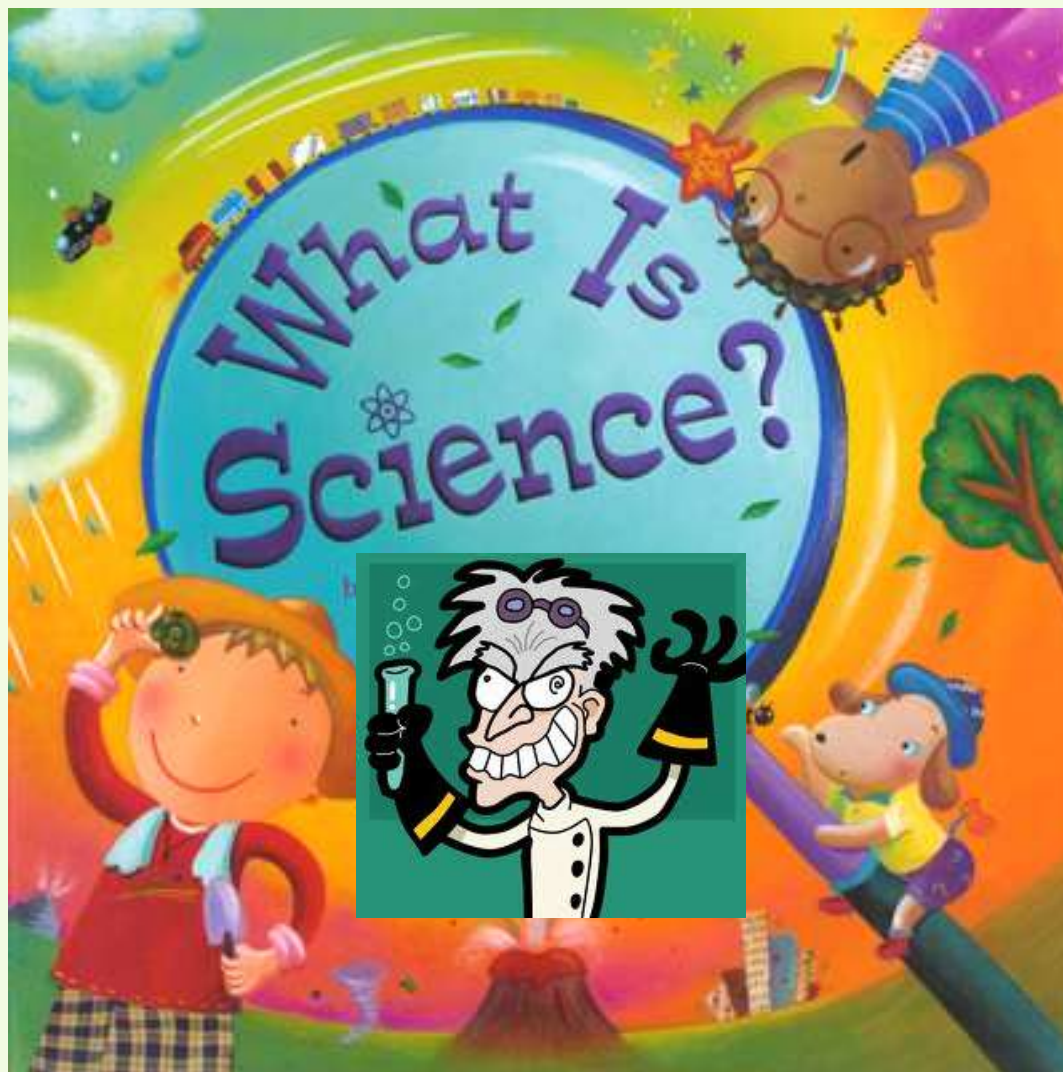






Henry Oldenburg
SHAPING THE ROYAL SOCIETY
Marie Bow Hall





Knjiga predstavlja dober prerez čez štiri ključne družbene razsežnosti sodobne znanosti, ki jih predstavljajo pravila njenega delovanja, vpetost v institucijo univerzitetne (akademske) znanosti, odnos do tehnoloških aplikacij in umestitev v svet interneta. Posebnost knjige je, da prikazuje medsebojne interakcije teh razsežnosti, pri čemer je izpostavljena tudi analiza delovanja interneta in njegovega pomena za znanost, kar je novost tudi v svetovnem merilu. Zelo podpiram Dolenčevo osrednje sporočilo, da lahko institucije, ki imajo opravka z znanostjo, ustrezno in za družbo koristno delujejo le, če vztrajajo na lastnih kriterijih odličnosti, medtem ko preoblikovanje znanosti in univerze po njim eksternih načelih, npr. po načelih tržne ekonomije, le slabi njihovo simbolno avtoriteto in notranjo moč.

prof. dr. Andrej Ule

Vprašanje »Kaj je znanost?« presega polje filozofije znanosti in spoznavne teorije. Tudi dosežki znanosti ne morejo zadovoljivo podati celotne razsežnosti omenjene problematike. Sašo Dolenc vprašanje o bistvu znanosti postavi v nov kontekst, ki zajema tako okvire družbenega učinkovanja znanstvenih spoznanj kot tudi pogoje njihove produkcije in reprodukcije. Informacijska tehnologija, ki narekuje spremembe v obeh vidikih, odpira spremenjen pogled na zgodovino znanosti in hkrati terja nov razmislek o njenem današnjem pojmovanju.

prof. dr. Dean Komeč



KAJ JE ZNANOST?

Sašo Dolenc

Sašo Dolenc

KAJ JE ZNANOST?

Poročilo o stanju vednosti v dobi interneta



SH

KVARKADABRA

