

# RIDICULED DISCOVERERS, VINDICATED MAVERICKS

2002 William Beaty

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## Weird science versus revolutionary science

While it's true that at least 99% of revolutionary announcements from the fringes of science are just as bogus as they seem, we cannot dismiss every one of them without investigation. If we do, then we'll certainly take our place among the ranks of scoffers who dismissed (or even accidentally helped suppress) a large number of major scientific discoveries throughout history. Beware, for many discoveries such as powered flight and drifting continents today only appear sane and acceptable because we have such powerful *hindsight*. These same advancements were seen as obviously a bunch of disgusting lunatic garbage during the years they were first discovered.

In science, pursuing revolutionary advancements can be like searching for diamonds hidden in sewage. It's a shame that the realms of questionable ideas contain "diamonds" of great value. This makes the judging crazy theories far more difficult. If crazy discoveries were *\*always\** bogus, then we'd have good reason to reject them without thought. However, since the diamonds exist, we must distrust our first impressions. Sometimes the "obvious craziness" turns out to be a genuine cutting-edge discovery. As with the little child questioning the emperor's clothing, sometimes the entire scientific community is misguided and incompetent, and only the lone voice of the "fringe" scientist is telling the truth.

Below is a list of scientists who were reviled for

their crackpottery, only to be later proven correct. Today's science texts are dishonest to the extent that they hide the huge mistakes made by the scientific community. They rarely discuss the acts of intellectual suppression directed at the following researchers by colleague. And... after wide reading, I've never encountered any similar list.[\[1\]](#) This is very telling.

*"When a true genius appears in this world, you may know him by this sign, that the dunces are all in confederacy against him."* - Jonathan Swift

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*"Concepts which have proved useful for ordering things easily assume so great an authority over us, that we forget their terrestrial origin and accept them as unalterable facts. They then become labeled as 'conceptual necessities,' etc. The road of scientific progress is frequently blocked for long periods by such errors." - Einstein*

- [Margulis, Lynn](#) (endosymbiotic organelles)
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- [Wegener, Alfred](#) (continental drift)
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- [Zwicky, Fritz \(existence of dark matter, 1933\)](#)
- [Zweig, George](#) (quark theory)

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*"Men show their character in nothing more clearly than by what they think laughable." -J. W. Goethe*

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Some ridiculed ideas which had no single supporter:

- Ball lightning (lacking a theory, it was long dismissed as retinal afterimages)
- Catastrophism (ridicule of rapid Earth changes, asteroid mass extinctions)
- Child abuse (before 1950, doctors were mystified by "spontaneous" childhood bruising)
- Cooperation or altruism between animals (versus Evolution's required competition)
- Instantaneous meteor noises (evidence rejected because sound should be delayed by distance)
- Mind-body connection (psychoneuroimmunology, doctors ridiculed any emotional basis for disease)
- Perceptrons (later vindicated as Neural Networks)
- Permanent magnet levitation ("Levitron" shouldn't have worked)

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*"The mind likes a strange idea as little as the body likes a strange protein and resists it with similar energy. It would not perhaps be too fanciful to say that a new idea is the most quickly acting antigen known to science. If we watch ourselves honestly we shall often find that we have begun to argue against a new idea even before it has been completely stated." - Wilfred Trotter, 1941*

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*"The study of history is a powerful antidote to contemporary arrogance. It is humbling to discover how many of our glib assumptions, which seem to us novel and plausible, have been tested before, not once but many times and in innumerable guises; and discovered to be, at great human cost, wholly false."*  
-Paul Johnson

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## Links

- [The Plight of the Obscure Innovator in Science](#)
- [Achievements of eccentric loners](#)
- [The Blind Eye of Science](#)
- [Cognitive Processes & Suppression of Ideas](#)
- [Closed-minded Science](#) (main page, many other articles)
- [Neglected Pioneers: Herapath, Waterson](#)
- [Physics: forgotten history](#)
- ["Impossible"](#), another list of vindicated discoveries

## BOOKS

- [Hidden Histories of Science](#), R. Silvers (ed)
- [Fatal Attractions: The Troubles with Science](#), H. Bauer
- [At the Fringes of Science](#), M. Friedlander
- [Great Feuds in Science](#) H. Hellman
- [Great Feuds in Medicine](#) H. Hellman
- [...the Myth of the Scientific Method](#), H. Bauer
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Arrhenius (ion chemistry)

His idea that electrolytes are full of charged atoms was considered crazy. The atomic theory was new at the time, and everyone "knew" that atoms were indivisible (and hence they could not lose or gain any electric charge.) Because of his heretical idea, he only received his university degree by a very narrow margin. [More.](#)

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Hans Alfvén (galaxy-scale plasma dynamics)

Astronomers thought that gravity alone is important in solar systems, in galaxies, etc. Alfvén's idea that plasma physics is of equal or greater importance to gravity was derided for decades.

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John L. Baird (television camera)

When the first television system was demonstrated to the Royal Society (British scientists,) they scoffed and ridiculed it.

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Robert Bakker (fast, warm-blooded dinosaurs)

Everyone knows that dinosaurs are like Gila monsters or big tortoises: large, slow, and intolerant of the cold. And they're all colored olive drab too! :)

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Bardeen & Brattain (transistor)

Not ridiculed, but their boss W. Shockley nixed their

idea, and when they started investigating it, he made them stop. They assembled their point-contact experiment on a wheeled cart and continued, so they could shove it into a closet whenever the Shockley was going to inspect.

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Subrahmanyan Chandrasekhar (black holes in 1930, squashed by Eddington)

Chandra originated Black Hole theory and published several papers. He was attacked viciously by his close colleague Sir Arthur Eddington, and his theory was discredited in the eyes of the research community. They were wrong, and Eddington apparently took such strong action based on an incorrect pet theory of his own. In the end [Chandra](#) could not even pursue a career in England, and he moved his research to the U. of Chicago in 1937, laboring in relative obscurity for decades. Others rediscovered Black Hole theory thirty years later. He won the [1983 Nobel Prize](#) in physics, major recognition only fifty years. Never underestimate the authority-following tendency of the physics community, or the power of ridicule when used by people of stature such as Eddington.

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Chladni (meteorites in 1800)

The scientific community regarded Meteorites in the same way that modern scientists regard UFO abductions and psychic phenomenon: quaint superstitions only believed by peasant folk. All the eyewitness reports were disbelieved. At one point the ridicule became so intense that many museums with meteorites in their geology collections decided to trash those valuable samples. (Sometimes hostile skepticism controls reality, and the strongest

evidence is edited to conform to consensus disbeliefs.) Finally in the early 1800's Ernst Chladni actually sat down and inspected the evidence professionally, and found that claimed meteorites were entirely unlike known earth rocks. His study changed some minds. At the same time some large meteor falls were witnessed by scientists, and the majority who insisted that only ignorant peasants ever saw such things were shamed into silence. The tide of disbelief shifted... yet this important event is not taught to science students, and those ignorant of such history repeat such failures over and over, as with the hostile disbelief regarding Ball Lightning.

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#### Crick and Watson (DNA)

Not ridiculed. But they were instructed to drop their research. They continued it as "bootleg" research.

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#### C.J. Doppler (Doppler effect)

Proposed a theory of the optical Doppler Effect in 1842, but was bitterly opposed for two decades because it did not fit with the accepted physics of the time (it contradicted the Luminiferous Aether theory.) Doppler was finally proven right in 1868 when W. Huggins observed red shifts and blue shifts in stellar spectra. Unfortunately this was fifteen years after Doppler had died.

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#### Robert L. Folk (existence and importance of nanobacteria)

Discovered bacteria with diameters far below 200nm widely present in mineral samples, able to both metabolize metals and to create calcium

encrustations. Proposed their large role in creation of "metamorphic" rock and everyday metal corrosion. These ideas were rejected with hostility because the bacterial diameter is too small to include enough genetic material or ribosomes, and they seem immune to common sterilization techniques.

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Galvani (bioelectricity)

"They call me the frogs' dance instructor."

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William Harvey (circulation of blood)

His discovery of blood circulation caused the scientific community of the time to ostracize him.

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Krebs (ATP energy, Krebs cycle)

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Galileo (supported the Copernican viewpoint)

It was not the church authorities who refused to look through his telescope. It was his fellow scientists! They thought that using a telescope was a waste of time, since even if they did see evidence for Galileo's claims, it could only be because Galileo had bewitched them.

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Karl F. Gauss (nonEuclidean geometry)

Kept secret his discovery of non-Euclidean geometry for thirty years because of fear of ridicule. Lobachevsky later published similar work and WAS

ridiculed. After Gauss' death his work was finally published, but even then it took decades for Noneuclidean Geometry to overturn the Greek mathematically "pure" view of geometry, and to win acceptance among the professionals.

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#### Binning/Roher/Gimzewski (scanning-tunneling microscope)

Invented in 1982, other surface scientists refused to believe that atom-scale resolution was possible, and demonstrations of the STM in 1985 were still met by hostility, shouts, and laughter from the specialists in the microscopy field. Its discoverers won the Nobel prize in 1986, which went far in forcing an unusually rapid change in the attitude of colleagues.

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#### R. Goddard (rocket-powered space ships)

Goddard was relatively obscure until late 1944, when those disgusting Jules-Verne fantasies, the rocket-powered space ships, started raining down on London during WWII. (By analogy, imagine the consternation of the scientific community if Iraq responded to Desert Storm with fleets of glowing antigravity disks shooting mind-control rays, or with psychokinesis attacks by ranks of professional psychics, or with troops of trained Yetis!)

"The whole procedure [of shooting rockets into space]...presents difficulties of so fundamental a nature, that we are forced to dismiss the notion as essentially impracticable, in spite of the author's insistent appeal to put aside prejudice and to recollect the supposed impossibility of heavier-than-air flight before it was actually accomplished."

-Sir Richard van der Riet Wooley, British astronomer, reviewing P.E. Cleator's "Rockets in

Space", NATURE, March 14, 1936

"This foolish idea of shooting at the moon is an example of the absurd lengths to which vicious specialisation will carry scientists." -A.W. Bickerton, physicist, NZ, 1926

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Goethe (Land color theory)

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T. Gold (deep non-biological petroleum deposits)

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T. Gold (deep mine microbes)

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J. Lister (sterilizing)

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T. Maiman (Laser)

Not ridiculed, but his boss said now to his 'optical maser' idea. He received funding only after threatening to quit and pursue the laser in his garage. Even so, it was a battle, and his funding was pulled twice.

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Lynn Margulis (endosymbiotic organelles)

In 1970 Margulis was not only denied funding but also subjected to intense scorn by reviewers at the NSF. "I was flatly turned down," Margulis said, and the grants officers added "that I should never apply again." Textbooks today quote her discovery as fact; that plant and animal cells are really communities of cooperating bacteria. But they make no mention of the barriers erected by the biological community

against these new ideas. Even today Margulis' ideas about cooperation in Evolution are not widely accepted, and are only making slow headway against the assumption that Evolution exclusively involves absolute selfishness and pure competition.

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Julius R. Mayer (The Law of Conservation of Energy)

Mayer's original paper was contemptuously rejected by the leading physics journals of the time.

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B. Marshall (ulcers caused by bacteria, helicobacter pylori)

Stomach ulcers are caused by acid. All physicians knew this. Marshall needed about ?? years to convince the medical establishment to change their beliefs and accept that their confident knowledge was wrong; was nothing but a widespread believe, and that ulcers are actually a bacterial disease.

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B. McClintock (mobile genetic elements, "jumping genes", transposons)

Won the Nobel in 1984 after enduring [32 years being ridiculed and ignored](#)

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J. Newlands (pre-Mendeleev periodic table)

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George S. Ohm (Ohm's Law)

Ohm's initial publication was met with ridicule and dismissal. His work was called "a tissue of naked

fantasy." Approx. ten years passed before scientists began to recognize its great importance.

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Fernando Nottebohm

Mammal brains never grow new neurons after birth? We're given a set number of brain cells, and we can only kill them but not make new ones? After twenty years as a ridiculed minority, Nottebohm's work with songbird brains was finally taken seriously, and the biologists of today now recognize that the age-old dogma was wrong: brains DO regenerate neurons after all. The information has not yet reached most of the biological community, nor the general public.

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L. Pasteur (germ theory of disease)

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>Prusiner, Stanley (existence of prions, 1982)

Prusiner endured derision from colleagues for his prion theory explaining Mad Cow Disease, but was vindicated by winning the Nobel.

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Stanford R. Ovshinsky (amorphous semiconductor devices)

Physicists "knew" that chips and transistors could only be made from expensive slices of ultra-pure single-crystal semiconductor. Ovshinsky's breakthrough invention of glasslike semiconductors was attacked by physicists and then ignored for more than a decade. (When evidence contradicts consensus belief, inspecting that evidence somehow becomes a waste of time.) Ovshinsky was bankrupt

and destitute when finally the Japanese took interest and funded his work. The result: the new science of amorphous semiconductor physics, as well as inexpensive thin-film semiconductor technology (in particular the amorphous solar cell, photocopier components, and writeable CDROMS sold by Sharp Inc.) made millions for Japan rather than for the US.

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Ignaz Semmelweis (surgeons wash hands, puerperal fever )

Semmelweis brought the medical community the idea that they were killing large numbers of new mothers by working with festering wounds in surgery, then immediately assisting with births without even washing hands. Such a truth was far too shameful for a community of experts to accept, so he was ignored. Semmelweis finally ended up in a mental hospital, and his ideas caught fire after he had died.

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N. Tesla (Earth electrical resonance, now called "Schumann" resonance)

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N. Tesla (brushless AC motor)

An AC motor which lacks brushes was thought to be an instance of a Perpetual Motion Machine.

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Jacobus Henricus van't Hoff (theory of 3D molecules)

As a relative newcomer and unknown, he was attacked and ridiculed for proposing that a 3D tetrahedral structure would explain many problems in chemistry. His foes rapidly went silent, and

finally his ridiculous cardboard models won the first nobel prize in chemistry (1901.)

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Alfred Wegener (continental drift)

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Peyton Rous (viruses cause cancer)

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Warren S. Warren (flaws in MRI theory)

Warren and his team at Princeton tracked down a Magnetic Resonance anomaly and found a new facet to MRI theory: spin interactions between distant molecules, including deterministic Chaos effects. Colleagues knew he was wrong, and warned him that his crazy results were endangering his career. Princeton held a "roast", a mean-spirited bogus presentation mocking his work. Warren then began encountering funding cancellations. After approx. seven years, the tide of ridicule turned and Warren was vindicated. His discoveries are even leading to new MRI techniques. See: SCIENCE NEWS, Jan 20 2001, V159 N3, ["spin Control"](#) (cover story)

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Wright bros (flying machines)

After their Kitty Hawk success, The Wrights flew their machine in open fields next to a busy rail line in Dayton Ohio for almost an entire year. American authorities refused to come to the demos, and Scientific American Magazine published stories about "The Lying Brothers." Even the local Dayton newspapers never sent a reporter (but they did complain about all the letters they were receiving from local "crazies" who reported the many flights.) Finally the Wrights packed up and moved to

Europe, where they caused an overnight sensation and sold aircraft contracts to France, Germany, Britain, etc.

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#### George Zweig (quark theory)

Zweig published quark theory at CERN in 1964 (calling them 'aces'), but everyone knows that no particle can have  $1/3$  electric charge. Rather than receiving recognition, he encountered stiff barriers and was accused of being a charlatan.

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#### Fritz Zwicky (Dark Matter)

Known in the astro research community as "Crazy Fritz," Zwicky investigated orbit statistics of galactic clusters in 1933 and concluded that the majority of mass had an invisible unknown source. He was ignored, dismissed as an eccentric.