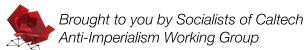
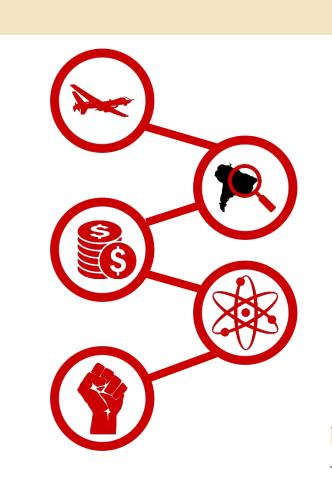


Science and Imperialism January 29, 2021



Outline

- I. Imperialism
- II. How Does Imperialism Work?
- III. Who Benefits from Imperialism?
- IV. Science and Empire
- V. Anti-Imperialism





Imperialism



What is an Empire?

Empire: An empire is a political construct in which one state dominates over another.

Imperialism: the policy of imposing economic and political control over other peoples in a way that undermines their sovereignty and takes away their freedom to make political and economic decisions.

What are typical characteristics of an empire?

- Strong, centralized government/power
- Control over vast territory
- Strong military
- Global trade networks

What are examples of empires?



What is an Empire?

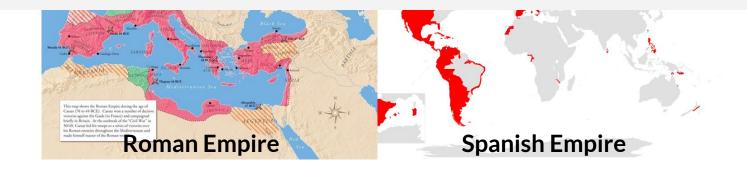




What is an Empire?



Is the US an Empire?





Manifest Destiny

From John O'Sullivan, notable US columnist, in 1854:

"[Texas] comes within the dear and sacred designation of Our Country... other nations have undertaken to intrude themselves ... in a spirit of hostile interference against us, for the avowed object of thwarting our policy and hampering our power, limiting our greatness and checking the **fulfillment of our manifest destiny to overspread the continent allotted by Providence for the free development of our yearly multiplying millions.**"



Manifest Destiny and Caltech

From Robert A. Millikan, former Chairman of Caltech's Executive Council, in 1924:

"California marks now, as England did three centuries ago, the farthest western outpost of Aryan civilization. The problem of the relations of our race to the Asiatic races is the big race problem of the future. California must inevitably contribute largely to the solution of that problem."

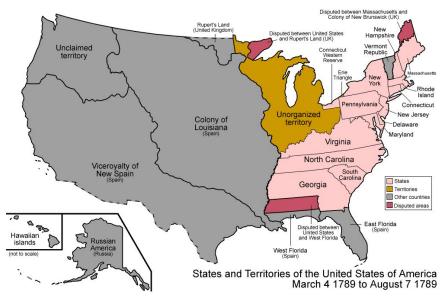


A Land Founded on Genocide

From Thomas Jefferson:

"We shall drive them [the savages] — We shall drive them with the beasts of the forests into the stony mountains," and the country will ultimately be "free of blot or mixture"







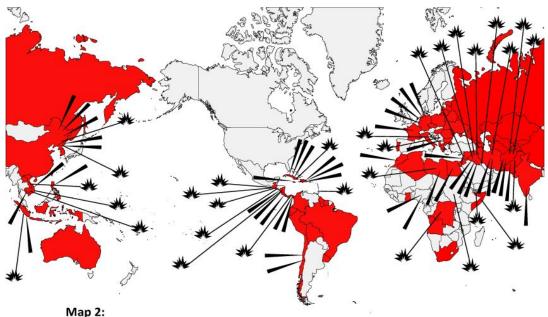
The Monroe Doctrine

From President Monroe, in 1823:

"We owe it, therefore, to candor and to the amicable relations existing between the United States and those powers to declare that we should consider any attempt on their part to extend their system to any portion of this hemisphere as dangerous to our peace and safety. With the existing colonies or dependencies of any European power we have not interfered and shall not interfere. But with the Governments who have declared their independence and maintain it, and whose independence we have, on great consideration and on just principles, acknowledged, we could not view any interposition for the purpose of oppressing them, or controlling in any other manner their destiny, by any European power in any other light than as the manifestation of an unfriendly disposition toward the United States."

US (and US-backed) Interventions





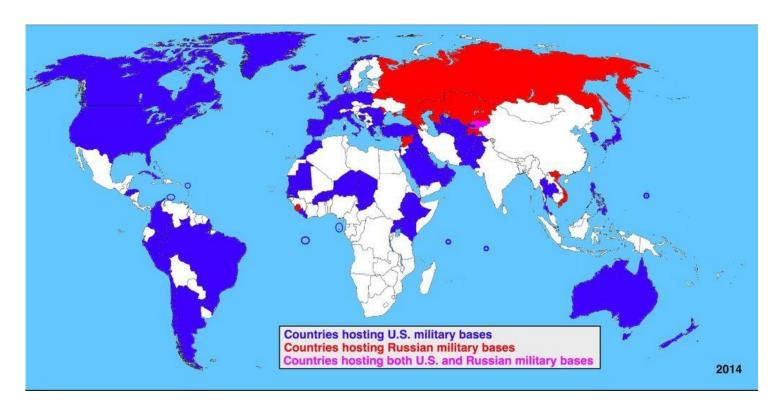
US Military and CIA Interventions since World War II

targeted countries ** US bombings ----- US government assassination plots

Source: William Blum, Killing Hope: U.S. Military and CIA Intervention Since World War II, 2004 and Rogue State, 2005. (https://williamblum.org/books/killing-hope/)
Copyright © 2010 by Richard D. Vogel at combatingglobalization.com
Permission to copy granted.

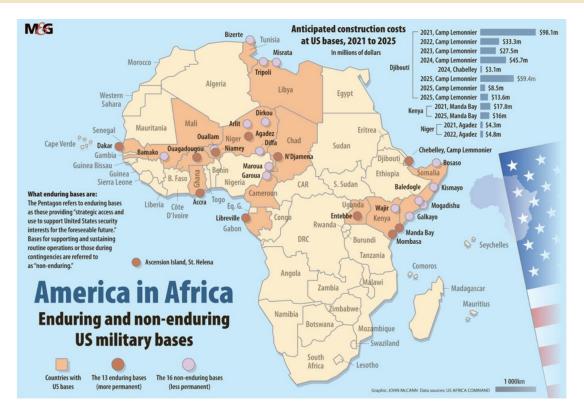


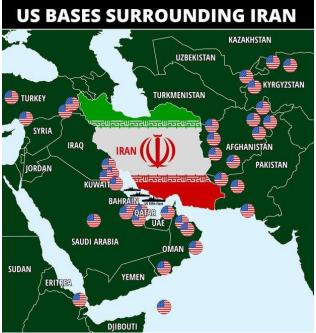
US Global Presence





US Global Presence







The Consequences of Imperialism











Caltech is Complicit.

Caltech students protesting in favor of the Vietnam War:







How Does Imperialism Work?

Example: 2019 US-Backed Coup D'état in Bolivia



Quick History of Bolivia

Republic of Bolivia formed in 1825 after Simón Bolívar's war of independence against the Spanish

1936 coup brings socialist Colonel David Toro Ruilova to power. Overthrown in a coup in 1937 coup after nationalizing US Standard Oil holdings in Bolivia

Bolivian Revolution (1952-1964) brings **Víctor Paz Estenssoro** into power, who ushers in left populist agenda. Overthrown in military coup. Period of military rule ensues (1964-1982) under General Hugo Banzer

Civilian rule restored in early 80s. IMF policies adopted

Hugo Banzer returns in 1997 as a civilian. US pressure to curb coca growing increases rural poverty and sparks social movements. Conflicts over neoliberal economic policies, particularly over natural resource use, putting oil-rich Santa Cruz area in conflict with social movements

Water is contracted to subsidiary of US company Bechtel



Hugo Banzer



President Evo Morales and MAS

In the 90s and early 2000s, Morales was a union leader taking part in mass revolts against the privatization of water, electricity, telecom networks, and hydrocarbons

Served as President of Bolivia from 2006-2019 under the MAS (Movimiento al Socialismo - Movement Towards Socialism)

First Indigenous president of Bolivia. There are 36 Indigenous languages in Bolivia, and 60% of the population identifies as Indigenous

GDP triples, income inequality reduced by \(^2\), and extreme poverty reduced from 38% to 17%



Evo Morales holding the Wiphala flag, representing several Indigenous groups of the Andes

Why Bolivia? - Lithium and "Green Imperialism"

In the imperialist (and specifically neocolonial) power structure, formerly-colonized nations have often been forced to sell their crucial natural resources cheaply to wealthy capitalist nations

Bolivia contains about 20% of the world's known lithium supply. The MAS government has moved to tap these resources, and would not subject the supply directly to market forces. Instead a sweeping project of resource nationalism has been adopted.

Lithium is crucial for development of batteries, including those that power electric vehicles like Teslas

Bolivia's Evo Morales plans lithium mining offensive

The Bolivian government aims to pump massive investments to expand the country's production of lithium, a metal needed for the batteries that power everything from smartphones and laptops to hybrid and electric cars.











Why Bolivia? - Lithium and "Green Imperialism"

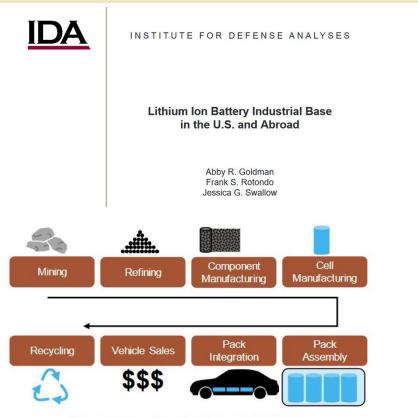


Figure 2. Schematic of the Battery Supply Chain



Caltech invited the IDA to campus last year to talk about US dominance of lithium

They also research 'less-lethal' weapons for police and US military.

One of the IDA trustees (Deborah McWhinney) was on Caltech's Naming Task Force



Why Bolivia? - The Economic Model

From Evo Morales:

"The coup was also directed against our economic model. We demonstrated an economic model that did without the IMF, but that had growth and the reduction of poverty and inequalities. And then came the coup."

and:

"We brought a proposal to the United Nations that water should be a fundamental right for all human beings and not a private business: everyone backed this proposal, and only the United States and Israel abstained."





Why Bolivia? - Indigenous Sovereignty

In 2010, the MAS government reformed Bolivia as a "plurinational state" in which different Indigenous nations have political autonomy

From Evo Morales:

"Our Movement to Socialism is a political instrument for the sovereignty of the peoples, and this political movement for liberation is not only historic, unprecedented, but unique worldwide. For in colonial times our indigenous people were threatened with extermination — not just racism and discrimination, but extermination... After five hundred years of popular indigenous resistance, in 1992, we said: "From the resistance to the seizure of power." And in Bolivia, we kept that promise."

And:

"We would like a plurinational America, because we are so diverse. How good it would be for Europe, for other continents, to recognise that diversity, for that diversity to be recognised by constitutions, by international organisations.





The Pro-Coup Forces

Largely consist of disgruntled middle classes, with a stronghold in Santa Cruz

Far-right groups, like the Pro Santa Cruz Committee and the Santa Cruz Youth Union played key roles with coup leaders having ties to these groups

A combination of Morales running for a fourth term (sanctioned by the Bolivian Supreme Court) and 2019 fires at Chiquitania provided opportunity for right-wing forces to go on the offensive, backed by institutions in the US and US proxies





The Nine-Step Plan for Regime Change

"Like his hero Eduardo Galeano, Vijay Prashad makes the telling of the truth lovable; not an easy trick to pull off, he does it effortlessly." — Roger Waters, Pink Floyd

Vijay Prashad

WASHINGTON BULLETS

A History of the CIA, Coups, and Assassinations

"This book brings to mind the infinite instances in which Washington Bullets have shattered hope." — Evo Morales Ayma, former President of Bolivia



















Step 1: Lobby 'Public' Opinion



US appoints Philip Goldberg as ambassador immediately after MAS election victory

Philip Goldberg was once expelled from Bolivia for fomenting civil unrest

Side note:

Another US ambassador, José Manuel Roche, said in 2002: "Evo Morales is an Andean Bin Laden and the coca growers are the Taliban — so don't vote for him."





Step 2: Appoint the Right Man on the Ground



Goldberg attempts to manufacture opposition against the MAS government

WikiLeaks cables reveal Goldberg reported meeting with individuals conspiring against Morales to the US State Department





Step 3: Make Sure the Generals are Ready



General Williams Kaliman who led Bolivian armed forces and demanded Morales step down was trained in the US

Reforms under Morales prevented police from taking bribes, leading to the Oct 2019 police mutiny



2019 Bolivian Police Mutiny

Step 4: Make the Economy Scream



US declared it would hinder Bolivian access to credit, hindering development projects under Morales

MAS developments were eventually funded by Chinese credit

Bolivia Enters Space Era with Tupac Katari Satellite



La Paz, December 21 (RHC)-- The launch into orbit of the Tupac Katari satellite placed Bolivia on the list of less than 50 countries of the world that already utilize such space technology.

The Bolivian satellite was launched from the Xichang space center, in Southeastern China, where President Evo Morales attended the event as part of an official visit.

Step 5: Diplomatic Isolation



US put pressure on UN not to treat Bolivia with respect

The coup leader, Jeanine Añez, was allowed to speak at the UN General Assembly as the President of Bolivia

Two paths before Latin America: democracy or dictatorship, Bolivian President declares



UN Photo/Rick Bajornas | Jeanine Añez Chávez (on screen), Constitutional President of the Plurinational State of Bolivia, addresses the general debate of the General Assembly's seventy-fifth session.



Step 6: Organize Mass Protests



Luis Fernando Camacho was the fascist contesting the election against Morales. He is a wealthy businessman from Santa Cruz

Protests against Morales were from the Santa Cruz Citizens Committee and led by Camacho and other fascist sympathizers



Luis Fernando Camacho



Step 7: Green Light



Misleading Organization of American States (OAS) report claiming fraud in the election sent a signal to coup forces that they can act against Morales with the backing of the US. These claims were based on votes from MAS's rural base being counted later, exactly foreshadowing Trump's claims of fraud in the 2020 US election

60% of OAS funding comes from the US and the OAS is a tool of US imperialism. OAS has similarly interfered in the 2000 and 2011 Haitian elections

The Center for Economic and Policy Research (CEPR) and the MIT Data and Science Lab found that the OAS report was wildly unfounded based on publicly-available data

USAID made similar statements casting doubt on the Bolivian election



PRESS RELEASE BOLIVIA LATIN AMERICA AND THE CARIBBEAN US FOREIGN POLICY WORLD

OAS Should Retract Its Press Release on Bolivian Election, CEPR Co-Director Says

CEPR Report Here

MIT Research Described Here



Step 8: A Study of Assassination



Several massacres and attacked on elected officials occurred in Bolivia following the coup

Patricia Arce, mayor of Vinto, was attacked by coup forces. Her hair was cut, gasoline was poured on her, and she was paraded through the town



Patricia Arce, a victim of the coup forces

Step 9: Deny



US media, **including left media**, denied that a coup had taken place, concern-trolled about "free and fair elections," or criticized Morales without context



Rep. Alexandria Ocasio-Cortez taking a photo with some Bolivian coup sympathizers

DECEMBER 10, 2019

How the Global North's Left Media Helped Pave the Way for Bolivia's Right-Wing Coup

LUCAS KOERNER



In our brave new age of hybrid warfare, corporate media play the role of ideological heavy artillery within the arsenal of Western imperialist powers. Day in and day out, "reputable" establishment outlets bombard progressive and/or anti-imperialist governments in the Global South with endless salvos of smears and libelous misrepresentations (e.g., **FAIR.org**, 5/23/18, 8/23/18, 4/11/19, 7/25/19).

Read Here



Consequences of the US-backed Coup

Coordinated attacks, killings, targeting of elected officials and state-run media outlets and community radio stations

Burning of the Wiphala flag, which represents various Andean Indigenous communities along with other anti-Indigenous violence and propaganda

Cutting or **discontinuation of social programs** and cash transfer schemes

Adoption of IMF-backed policies, including drastically reducing state involvement in managing of its economy and resources

Expulsion of hundreds of Cuban doctors and halting of healthcare projects that started under Morales and a refusal to sign law that would force private clinics to treat COVID-19 patients paid for by the government

Drastic reduction in cooperation with China and Russia. Rejection of the Russian Sputnik V vaccine.

'The Bible Has Returned To The Palace' - Bolivia's New President

Monday, January 27 2020
Share this story: f 🤟 0

beaming smile.



"The Bible has returned to the palace," declared Jeanine Añez as she walked amid a horde of allies and news media cameras into the presidential palace where Morales had jettisoned the Bible from official government ceremonies and replaced it with acts honoring the Andean earth deity called the Pachamama. Añez, the conservative evangelical senator, from a region where people often scoff at Pachamama beliefs, thrust the Bible above her head and flashed a



US Imperialism Defeated: The Return of MAS





Coup government tried to delay new elections using COVID-19 as a pretense. This led to massive protests and blockades from the country's social movements and worker and farmer unions. Eventually the elections were held in October and MAS won in a landslide, avoiding a runoff election.



Imperialists are Sore Losers

How it Started:





How it Ended:





The Imperialist Lexicon Requires Vigilance

Once again cast doubt on election



Would you ever call a Vice President or member of Cabinet a "hand-picked candidate?"





Who Benefits from Imperialism?



Who Benefits

Mostly large (esp. monopoly) corporations

- US-based multinationals that reap "super-profits" from foreign investments
- Large banks and financial institutions
- Arms manufacturers, military contractors

US economy as a whole, relative to countries in the **Global South**, **Third World**, **or periphery**





Corporate-Backed Regime Change

Iran, **1953**: Prime Minister Mossadegh elected to nationalize Anglo-Iranian Oil Company

Overthrown in CIA- and MI6-backed coup after doing so



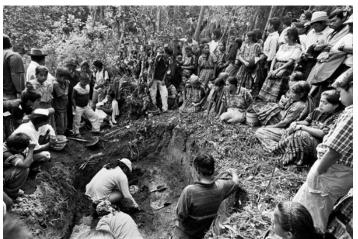


Corporate-Backed Regime Change

Guatemala, 1954: CIA backed coup against elected president Jacobo Arbenz whose land reforms threatened United Fruit Company profits

Maya genocide under resulting military dictatorship







Corporate-Backed Regime Change

Venezuela, 2002: US-backed attempted to depose Hugo Chávez, who was repeatedly elected to nationalize oil industry

Another attempt has been ongoing since
January 2019! Biden administration still
recognizes Juan Guaidó as "interim president"
even though he won zero (0) votes for that
office and is no longer even a legislator



Pence Pledged U.S. Backing Before Venezuela Opposition Leader's Move

Trump administration's secret plan offering support for opposition leader Juan Guaidó was preconceived and tightly coordinated





Why So Lucrative?

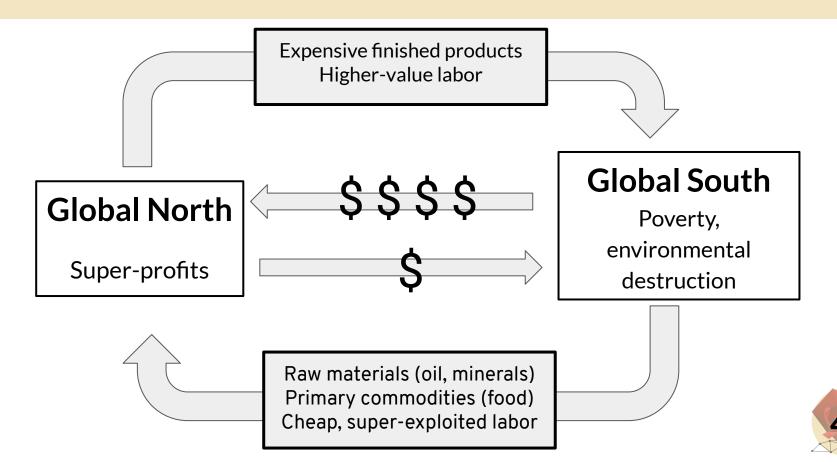
Global division of labor: much cheaper in Global South than North

Requires abject poverty and exploitation of workers in "developing" (really *underdeveloped*) world

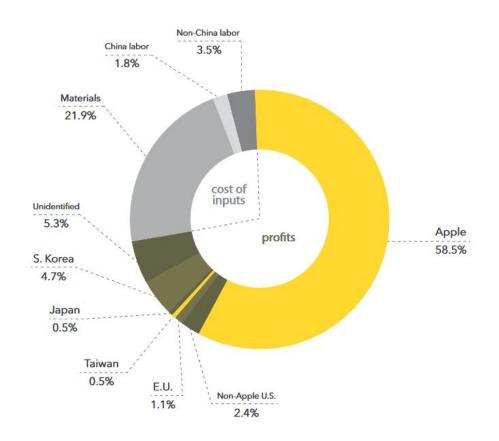
Legacy of historical and ongoing **colonialism** as well as modern-day **neocolonialism**



Imperialist "Superprofits"



Example: iPhone Value Chain





How is this Enforced?

Global finance: Wall St banks, World Bank, IMF force Global South states to sell off industries/resources and decimate labor rights in order to pay off debt, which drives them further into debt

"Free trade agreements" like NAFTA and TPP allow Western states to dictate unequal terms of exchange

All ultimately backed up by threat of (mostly US) military force



STRUCTURAL ADJUSTMENT



Who Profits from Imperialist War?

"With the scorched-earth campaign against Korea from 1950 to 1953 ... weapons manufacturers determined that making products for the Defense Department was more profitable than entering civilian markets."

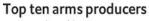
- Patrick Higgins



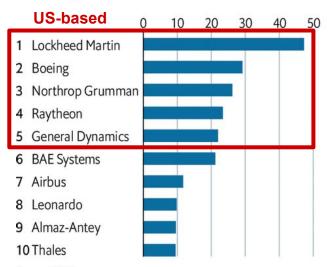
US Dominates Global Arms Sales



The Economist, 2019

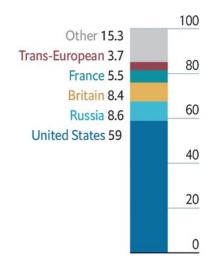


Arms sales, \$bn



Share of sales by top 100 companies

By country where firms are based, %



Source: SIPRI

The Economist



Private Military Contractors

War destroys previously existing, often socialized infrastructure

Must be rebuilt to get production up and running again ... at a profit!

Examples: Halliburton, Bechtel in Iraq

Top 10 U.S. Contractors in Iraq and Afghanistan





Dick Cheney, former Vice President of the US and former CEO of Halliburton



Note: Numbers rounded to nearest million

Source: Based on contracting data obtained from the Pentagon, USAID and other sources.

What About Everyone Else?

Vast majority of the appropriated wealth stays in the hands of a few

Some of it passes on to workers via wages and social spending: just enough to keep most complacent and pro-empire

"The Empire, as I have always said, is a bread and butter question. If you want to avoid civil war, you must become imperialists." - Cecil Rhodes









Science and Empire



How Does Empire Shape Science?

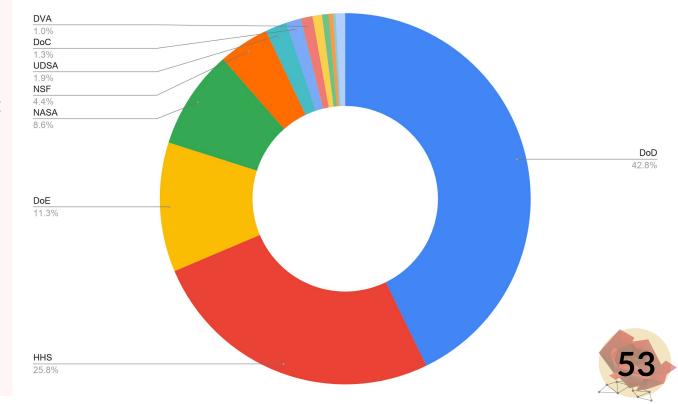
- I. How is science funded?
- II. What fields and goals are prioritized? What questions are asked?
- III. How is the international scientific community impacted?
- IV. How do scientists directly take part in imperialism?



How Does Empire Shape Science?

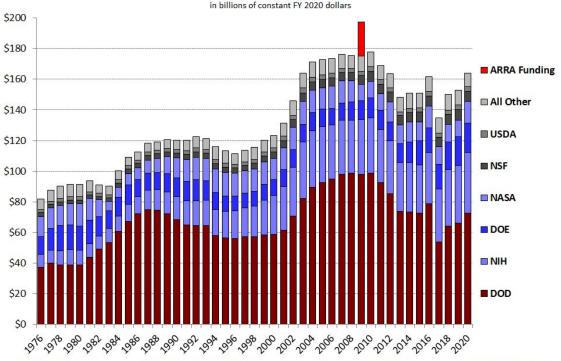
The bulk of federal research and development dollars goes to the Department of Defense

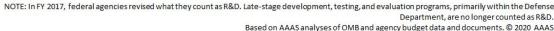
Federal Research and Development Funding Requests by Agency, FY2020



Empire Requires Scientific Funding

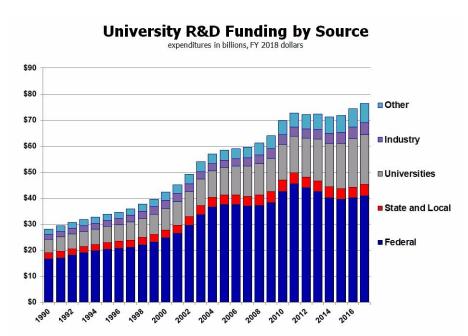
Trends in R&D by Agency







Empire Requires Scientific Funding



Source: NSF, National Center for Science and Engineering Statistics, *Higher Education R&D* series, based on national survey data. Includes Recovery Act funding. © 2018 AAAS

2015/2016 HONOR ROLL OF DONORS

Annual Gifts

\$6000 or more

Mr. Ian Agol, SURF '91

Mrs. Hannah Bradley

Mr. George L. Cassat

Ms. Maria Chan*

Dr. Jane C. Chen*

Mr. and Mrs. Kevin L. Crook*

Mr. Vivek R. Dave, SURF '87*

Mr. Kevin M. Franklin, SURF '98

Mrs. John D. Gee*

Dr. and Mrs. Daniel C. Harris*

Dr. and Mrs. Taylor W. Lawrence, SURF '85*

Mr. and Mrs. Robert C. Loschke*

Mr. Jackson Rhoades*

Mr. and Mrs. David P. Rossum*

Mr. Samuel N. Vodopia and Ms. Carol Hasson*

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Corporate Donors

The Aerospace Corporation *

Northrop Grumman Corporation

Foundation Donors

Fishbein Family Foundation

Pesenti Family Foundation*

The Rose Hills Foundation*

Matching Gifts

AbbVie, Inc.

Chevron Corporation

Fluor Daniel Northwest Inc.

General Electric Company

Google, Inc.

Lockheed Martin Corporation

Microsoft Corporation

PG&E Corporation



Funding Leads to Influence

Science must demonstrate its usefulness to US empire:

The broad research area disciplines include, but are not limited to:

- Aeronautical and Astronautical Engineering
- Biomedical Engineering
- Chemical Engineering
- Chemistry
- Civil Engineering
- · Cognitive, Neural, And Behavioral Sciences
- Computer and Computational Sciences
- Electrical Engineering
- Geosciences (Includes Terrain, Water, And Air)

- · Materials Science and Engineering
- Mathematics
- · Mechanical Engineering
- Naval Architecture and Ocean Engineering (Includes Undersea Systems)
- Oceanography (Includes Ocean Acoustics, Remote Sensing, And Marine Meteorology)
- Physics (Including Optics)
- Space Physics

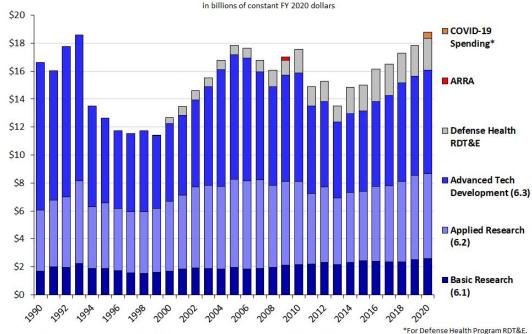
The Government may revise the aforementioned disciplines annually to ensure relevancy to the Defense mission is maintained. For the most relevant research areas please review the tri-services BAAs.



Funding Leads to Influence

Science that fulfills the needs of empire is prioritized. Other science receives less support.

DOD Science & Technology and Medical Research, FY 1990-2020



Source: DOD documents and data. Medical Research is appropriated outside RDT&E funding title; appropriated as applied research pre-1999. © 2020 AAAS

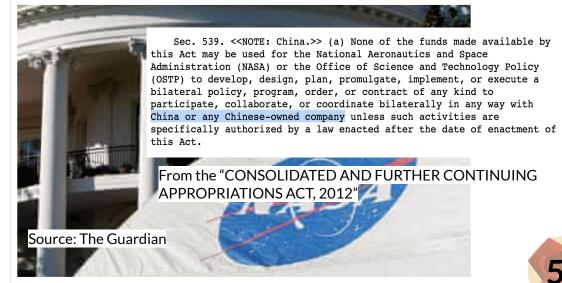


Science as a Weapon

The withholding of information, collaboration, and other resources is used as a weapon against those who pose a threat to US domination.

US scientists boycott Nasa conference over China ban

Nasa facing backlash from US researchers due to rejection of Chinese nationals from conference



▲ A law passed in March prohibits anyone from China from setting foot in a Nasa building. Photograph: Pablo Martinez Monsivais/AP

Science as a Weapon

Due to sanctions and draconian immigration policy, it is increasingly difficult for Iranian citizens to participate in the scientific community.

UMass Amherst Tells Iranian Students They Need Not Apply To Certain Programs

Iranian students blocked from UK Stem courses due to US sanctions

US-owned education firm Kaplan says residents of Iran cannot study science, technology, engineering and maths in Britain

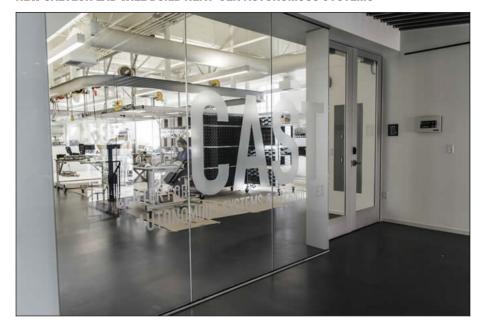


Scientists Take Part Directly

"'Making smart investments in autonomy is an imperative for the aerospace and defense industry,' said Dr. Taylor W. Lawrence, a Raytheon Company vice president and president of its Missile Systems business."

RAYTHEON SPONSORS FUTURISTIC RESEARCH CENTER

NEW CALTECH LAB WILL BUILD NEXT-GEN AUTONOMOUS SYSTEMS



The California Institute of Technology has opened the Center for Autonomous Systems and Technology in Pasadena, California. Raytheon is lead sponsor the new center that will advance research on drones, robots and machine learning.



Scientists Take Part Directly





Science and Technology Enable US Imperialism

AIDED BY PALANTIR, THE LAPD USES PREDICTIVE POLICING TO MONITOR SPECIFIC PEOPLE AND NEIGHBORHOODS

Raytheon's profits boom alongside civilian deaths in Yemen

Company's stock soars as bystanders are killed by Raytheon rockets



U.S. Immigration and Customs Enforcement

Google Is Helping the Pentagon Build AI for Drones

Amazon Teams Up With Government to Deploy Dangerous New Facial Recognition Technology





Microsoft Employees Question C.E.O. Over Company's Contract With ICE



Anti-Imperialism



Anti-Imperialist Struggle











The First Step: Interrogating Our Role

Now that we have a better understanding of the larger system, it's helpful to see how we fit into it as individuals.

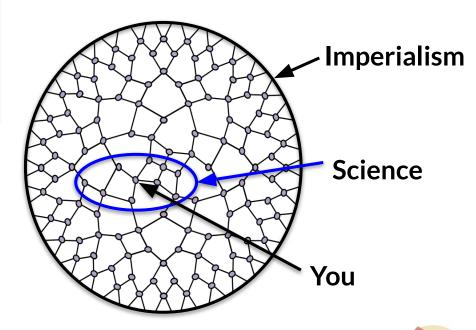
We should continue to be critical of our actions and take some time to think about how they might contribute to US imperialism.



Scientists are Entangled in Imperialism

It's practically impossible to not be complicit in this system, especially at a place like Caltech. Nonetheless, we are not powerless.







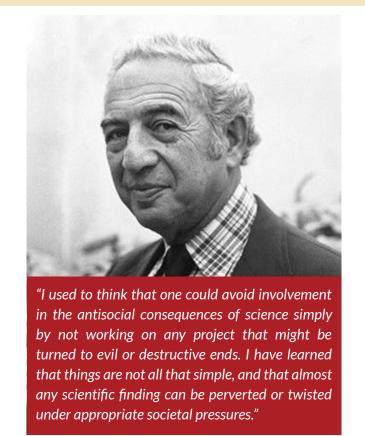
Empire Takes Advantage of Indifference

This guy is **Arthur Galston** - Worked at Caltech!

Researched triiodobenzoic acid to encourage soybean flowering

Biowarfare scientists used his work to develop Agent Orange, which cripples agricultural systems

Worked to get the US to stop using Agent Orange



Individualism is Insufficient

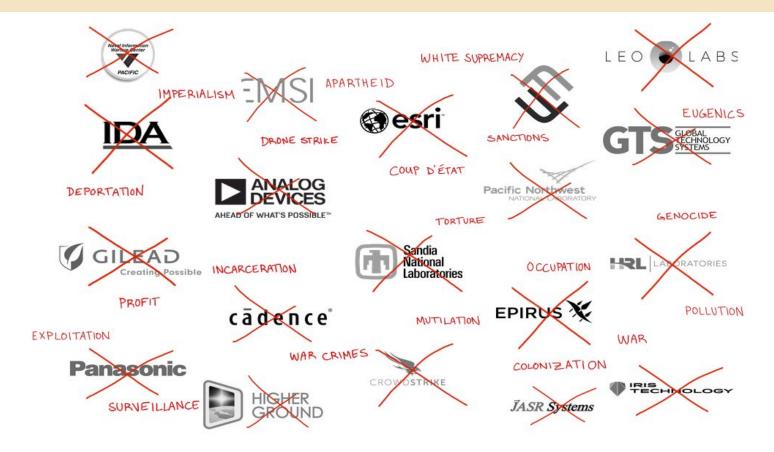
Of course you should practice what you preach...

But don't miss the root cause of the problem

Systemic problems require systemic solutions



Choosing Less Bad Workplaces





There is Power in Collective Action

From Alphabet/Google engineers and other employees strike up a new union:

"Alphabet/Google employees have also been at odds with management over business decisions that they deemed were unethical, such as developing artificial intelligence capabilities for the U.S. Department of Defense and providing its technology to U.S. Customers and Border Protection."

The New Hork Times

PLAY THE (

Hundreds of Google Employees Unionize, Culminating Years of Activism

The creation of the union, a rarity in Silicon Valley, follows years of increasing outspokenness by Google workers. Executives have struggled to handle the change.





Speaking Out in Our Workplaces

APS NEWS

APS Presidential Letter Condemning Violence Against Physicists

December 11, 2020

Dear APS Member,

The recent assassination of an Iranian nuclear physicist recalls a string of similar killings of Iranian physicists nearly a decade ago. Then as now, there is broad speculation that the purpose is global political advantage, not merely by removing a leading physicist working for the Iranian Revolutionary Guard, nor even by stoking fears in other physicists within the Iranian science and engineering community; but also by changing the climate for international treaty negotiations.

No matter what the strategic motive or the geopolitical effect of this killing, the American Physical Society is deeply troubled by tactics of violence and terror, including assassination, against members of our physics community. The APS Statement of the International Nature of Physics and International Cooperation affirms that science transcends national boundaries. We call on all governments to condemn the use of violence against scientists.

Sincerely,

Philip H. Bucksbaum 2020 President American Physical Society POLITI

Top Iranian nuclear scientist assassinated

PUBLISHED FRI, NOV 27 2020-10:59 AM EST | UPDATED SAT, NOV 28 2020-8:41 AM EST





Mohsen Fakhrizadeh, assassinated top Iranian nuclear scientist



The Struggle Outside the Workplace: Internationalist Solidarity











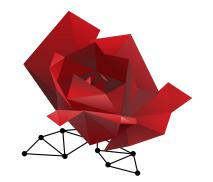
Our Responsibility

Recognizing our role and social prestige

Science is a social endeavor and is subject to social (imperial) forces

We have a responsibility to organize our workplace

A better science is possible but we must work for it.











Interested in Anti-Imperialism?



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