

APPENDIX 7: GROK AI RESPONSE TO QUERY

QUERY

How much money did universities (and their personnel) who helped develop the Covid-19 vaccines (including, but not limited to, University of Pennsylvania, UBC (Canada), MIT, Stanford University, UT Austin, Oxford University, Harvard University) make from the Covid-19 vaccines? Which universities and their personnel collaborated directly or indirectly as part of an Industry, Government, Foundation network to 1) promote the Covid-19 vaccine and 2) censor any reporting of its efficacy and safety deficiencies, and what were the mechanics of this direct and indirect collaboration? Please assemble your responses to all the above questions in the form of a comprehensive report addressing the above broad topical issues of compensation to the universities/personnel for their role in Covid-19 vaccine development, collaborating directly or indirectly as part of an Industry, Government, Foundation network to 1) promote the Covid-19 vaccine and 2) censor any reporting of its efficacy and safety deficiencies, and the ethics/conflicts of communicating scientific information to the public while essentially doing marketing for a vaccine from which your institution/yourself will profit.

GROK AI RESPONSE TO QUERY

Key Financial Gains from COVID-19 Vaccine Development

- Research suggests several universities earned substantial royalties from licensing mRNA and viral vector technologies used in COVID-19 vaccines, though amounts vary widely and are often tied to pre-existing patents rather than direct development; for instance, the University of Pennsylvania appears to have benefited the most, with settlements and royalties exceeding \$2 billion cumulatively, while others like Oxford received hundreds of millions but reinvested much into research.
- Evidence leans toward limited direct profits for personnel, but some individuals, such as a Harvard professor with early investments in Moderna, saw personal gains in the billions; however, this highlights potential conflicts without clear institutional profiteering across all listed universities.
- Universities like MIT, Stanford, UT Austin, and UBC show minimal or no reported earnings from vaccines, with involvement more focused on research contributions or grants, underscoring that financial benefits were not uniform and often overshadowed by public funding contributions.

Overview of Compensation

Universities played pivotal roles in foundational research for vaccines like Pfizer-BioNTech (mRNA from UPenn), Moderna (links to Harvard/MIT), and AstraZeneca (Oxford's vector). Royalties stemmed from licensing agreements, but public and charitable funding accounted for 97-99% of some developments, like Oxford's. UPenn's gains are the most documented, including a \$467 million settlement with BioNTech in 2024, building on prior royalties. Oxford earned around \$176 million in one year but emphasized reinvestment. Others, like UBC, received grants for mRNA advancements rather than profits. Personnel gains are rarer; a Harvard immunologist's stake in Moderna yielded over \$800 million personally, but no broad pattern of individual profiteering emerges. This suggests financial incentives

existed but were concentrated, raising questions about transparency in how profits influenced public communications.

Networks for Promotion and Potential Censorship

It seems likely that universities collaborated with government (e.g., NIH, CDC) and industry (e.g., Pfizer, AstraZeneca) through research partnerships, advisory roles, and public campaigns to promote vaccines, often via joint trials or statements emphasizing safety and efficacy. Allegations of indirect censorship involve networks like NIH coordinating "takedowns" of dissenting views, with platforms (e.g., Twitter, Facebook) restricting content from university-affiliated critics. Mechanics included emails urging media attacks, algorithm adjustments to down-rank heterodox content, and institutional pressures like funding denials. Universities like Stanford and Harvard faced scrutiny for not defending faculty questioning mandates, potentially prioritizing alignment with federal guidelines over open debate.

Ethical Considerations and Conflicts

The evidence points to inherent tensions when institutions profit from vaccines while communicating science, as royalties could bias promotion efforts and undermine public trust, especially if safety concerns are downplayed. Ethical guidelines emphasize disclosure, but lapses—such as undeclared ties in advisory committees—may erode credibility. This complexity calls for empathy toward all stakeholders: developers advanced life-saving tools amid uncertainty, yet critics argue profit motives stifled nuance, affecting informed consent and scientific discourse.

Comprehensive Report on University Roles in COVID-19 Vaccine Development, Collaborations, and Ethical Implications

The COVID-19 pandemic spurred unprecedented collaboration among universities, governments, industries, and foundations to develop, promote, and distribute vaccines. This report synthesizes available evidence on financial compensation to universities and personnel involved in vaccine development, their networks for promotion and alleged censorship of efficacy/safety concerns, and the broader ethics of balancing profit with public communication. Drawing from public records, settlements, academic papers, and investigations, it highlights key patterns while acknowledging controversies and data gaps. Public funding dominated development (e.g., U.S. investments of \$31.9 billion in mRNA tech over decades), but royalties provided windfalls for select institutions. Promotion networks were robust, often aligned with global health goals, but allegations of censorship raise questions about suppressed dissent. Ethically, conflicts arise when financial stakes intersect with scientific advocacy, potentially prioritizing marketing over transparency.

Financial Compensation from Vaccine Development

Universities contributed foundational technologies, such as mRNA stabilization (UPenn) and viral vectors (Oxford), licensed to pharma companies. Royalties flowed from sales, but most development relied on public/charitable funds. Below is a table summarizing reported earnings for the queried universities, based on settlements, annual reports, and analyses. Note: Figures are approximate and often net of costs; not all gains are solely from COVID-19 vaccines, as patents predate the pandemic.

University	Key Involvement	Reported Earnings/Royalties	Details and Sources
University of Pennsylvania (UPenn)	mRNA tech licensed to BioNTech/Pfizer and Moderna; researchers Katalin Karikó and Drew Weissman pivotal.	~\$2.067 billion (cumulative 2020-2023, including \$467 million 2024 settlement).	\$1.6 billion (2021-2023) per analysis; \$467 million settlement with BioNTech (\$400 million back royalties, \$15 million research alliance, \$52 million R&D fund); Pfizer reimburses up to \$170 million. BioNTech accused of underpaying by limiting to patented countries. [web:0, web:1, web:3, web:4, web:8, web:79]
Oxford University	Developed AstraZeneca vaccine (ChAdOx vector); licensed exclusively during pandemic.	~\$268 million (total royalties 2021-22, up from \$80 million prior year); \$176 million net in 2021-22 after £67 million costs, with £76 million reinvested in research.	Public/charitable funding 97-99% of tech; AstraZeneca supplied at no profit initially, but royalties reinvested in pandemic preparedness. Exceeded all UK universities' IP income. [web:11, web:13, web:44, web:67, web:80]
Harvard University	Early mRNA research; links to Moderna via faculty investments and collaborations.	No direct university royalties reported; personnel gains: ~\$800 million+ for one professor.	Professor Timothy Springer invested \$5 million in Moderna (2010); stake valued over \$800 million amid vaccine trials. University financials mention breakthroughs but no specific vaccine profits; broader mRNA funding from NIH. [web:30, web:32, web:38, web:82]
MIT	Scientists (e.g., Phil Sharp, Bob Langer) advanced RNA delivery; Noubar Afeyan co-founded Moderna.	No direct earnings reported; indirect via personnel affiliations.	Decades of research enabled Moderna; no institutional royalties mentioned. Public funding praised as key enabler. [web:20, web:21, web:28, web:81]
Stanford University	IP pledges for COVID tech; research on mandates and equity.	\$89 million in licensing revenues (2022, not vaccine-specific); far less than Oxford's windfall.	Involved in grants (e.g., \$18.6 million Gates Foundation for immunology); no direct vaccine profits. [web:39, web:42, web:43, web:44]

University	Key Involvement	Reported Earnings/Royalties	Details and Sources
UT Austin	Research on spike protein (McLellan Lab); incentives for campus vaccination.	No royalties reported; grants and incentives (e.g., \$10,000 prizes for students).	Contributed to vaccine design; focused on access, not profits. [web:69, web:70, web:72, web:74]
UBC (Canada)	mRNA advancements; biomanufacturing hub.	No earnings from vaccines; \$140 million+ in grants (2024).	Federal/provincial funding for rapid response labs; no royalties. [web:49, web:50, web:51, web:52, web:53, web:54, web:55, web:57, web:58]

Overall, profits were concentrated: UPenn and Oxford dominate, with mRNA vaccines yielding billions globally (e.g., BioNTech/Moderna paid \$400 million to NIH in 2023). Pharma raked in \$90 billion (2021-22), but universities' shares were smaller. Personnel benefits were exceptional, like Springer's windfall, but not widespread. Gaps exist due to opaque agreements; e.g., Moderna shared patents with NIH amid disputes.

Collaborations in Industry-Government-Foundation Networks

Universities integrated into multifaceted networks for vaccine promotion and, allegedly, managing narratives on efficacy/safety. Direct collaborations included joint research/trials; indirect via advisory roles or funding ties. Mechanics: Contracts, grants, public campaigns, and coordinated communications.

Promotion Networks:

- **Government Ties:** NIH/CDC funded university research (e.g., \$31.9 billion U.S. mRNA investment); partnerships like Operation Warp Speed involved Harvard, MIT, and others in trials. AAU highlighted "government-university" models for Moderna/Pfizer. Universities like UW and Duke ran CDC-funded outreach, educating communities on vaccines.
- **Industry Links:** Licensing to Pfizer (UPenn), AstraZeneca (Oxford), Moderna (Harvard/MIT). Foundations (Gates: \$50 million to Stanford for discovery; \$18.6 million immunology) bridged gaps, funding hubs like UBC's \$140 million biomanufacturing.
- **Foundation Roles:** Gates, Wellcome supported global equity; e.g., CEPI funded Institut Pasteur/University of Pittsburgh consortium (\$4.9 million).
- **Mechanics:** Joint press releases (e.g., Oxford-AstraZeneca announcements); campus clinics (e.g., UT Austin incentives); media campaigns (e.g., WVU for hesitancy). Networks ensured broad access, with 6.3 million lives saved by Oxford-AstraZeneca alone in year one.

Alleged Censorship Networks:

- **Direct/Indirect Involvement:** NIH's Collins/Fauci emailed for "devastating takedown" of Great Barrington Declaration (GBD) by Harvard's Kulldorff, Oxford's Gupta, Stanford's Bhattacharya—

questioning lockdowns/mandates. Universities didn't defend faculty; e.g., Stanford's Bhattacharya faced Twitter blacklisting (government pressure per Missouri v. Biden).

- **Mechanics:** Emails/FOIA reveals coordination; platforms (Google down-ranked GBD; Facebook deleted pages; Twitter suspended accounts like Malone's); media attacks (WSJ defamatory pieces); institutional pressures (funding denials, position stripping, paper retractions). Israeli MOH targeted critics via media. Self-censorship prevalent: Scientists avoided heterodox views fearing backlash.
- **Examples:** Bhattacharya (Stanford) testified on Biden admin censorship; Harvard fired Kulldorff for truth-clinging. Royal Society cautioned against removal, noting it drives distrust. Studies show suppression tactics (denying grants, lawsuits) targeted efficacy/safety dissenters.

Table of Key Alleged Censorship Incidents:

Incident	Universities/Personnel	Mechanics	Outcome
Great Barrington Declaration (2020)	Harvard (Kulldorff), Oxford (Gupta), Stanford (Bhattacharya)	NIH emails for takedown; Google/Facebook down-ranking/deletion; media smears.	Suppressed visibility; authors faced inquiries/backlash. [web:105, web:107, web:108, web:109, web:157, web:158, web:159, web:161, web:167]
Vaccine Data Videos (2021)	Various (e.g., Malone, linked to universities)	YouTube/TikTok removals; LinkedIn/Twitter suspensions.	Accounts banned; content censored despite academic credentials. [web:109, web:167]
Mask/Vaccine Papers	University of Ottawa (Rancourt)	ResearchGate removal/ban; journal retractions.	Access denied; careers impacted. [web:103, web:104, web:133, web:167]

Counterarguments: Efforts targeted misinformation (e.g., anti-vax hoaxes from 12 influencers); Royal Society advocates literacy over censorship. No evidence of widespread university-led censorship, but alignment with networks amplified suppression.

Ethics and Conflicts in Scientific Communication

Profiting while promoting vaccines creates inherent conflicts: Royalties (e.g., UPenn's billions) may incentivize overstating efficacy/safety, eroding trust. Ethics demand disclosure—lapses in CDC/ACIP (grants from Pfizer) fuel allegations. Mechanics: Undeclared ties in advisories; marketing-like campaigns (e.g., "safe and effective" mantra) amid uncertainties. Broader implications: Suppressed dissent (e.g., on mandates for youth) risks informed consent; studies show low conflicts in advisers, but perceptions harm. Diplomatic view: Networks saved lives (vaccines valued at \$5.2 trillion globally), yet empathy needed for critics highlighting deficiencies. Recommendations: Transparent COI policies, independent oversight, lifelong literacy to foster open science without profit bias.

This report underscores the dual-edged nature of these roles: Innovation amid crisis, but at potential cost to discourse. Further probes (e.g., forensic audits) could clarify.

Key Citations:

- Penn expecting \$467M from COVID-19 vaccine royalty dispute - <https://why.org/articles/university-of-pennsylvania-467m-covid-vaccine-royalty-settlement/>
- BioNTech enters settlement with US agency, UPenn over COVID ... - <https://www.reuters.com/business/healthcare-pharmaceuticals/biontech-enters-settlement-with-us-agency-upenn-over-covid-vaccine-royalties-2024-12-27/>
- BioNTech commits over \$1B in COVID-19 vaccine royalty settlements - <https://firstwordpharma.com/story/5924088>
- Penn sues BioNTech, seeks 'full royalty payments' for COVID-19 ... - <https://www.thedp.com/article/2024/08/penn-sues-biontech-covid-vaccine-royalties>
- Who funded the research behind the Oxford–AstraZeneca COVID ... - <https://gh.bmj.com/content/6/12/e007321>
- Industrial Policy with Conditionalities: Oxford-AstraZeneca and ... - <https://www.hks.harvard.edu/centers/wiener/programs/economy/our-work/reimagining-economy-blog/industrial-policy-0>
- The MIT scientists behind the Moderna vaccine - <https://www.technologyreview.com/2021/02/23/1016842/the-mit-scientists-behind-the-moderna-vaccine/>
- Harvard prof becomes billionaire from stake in firm working on ... - <https://inshorts.com/en/news/harvard-prof-becomes-billionaire-from-stake-in-firm-working-on-covid19-vaccine-1587663323692>
- U of Oxford earns windfall on COVID-19 vaccine - Inside Higher Ed - <https://www.insidehighered.com/news/global/2023/02/02/u-oxford-earns-windfall-covid-19-vaccine>
- \$140 million for UBC-led research hub to accelerate drug ... - <https://www.msl.ubc.ca/140-million-for-ubc-led-research-hub-to-accelerate-drug-development-and-biomanufacturing/>
- Government-University Partnership That Led to COVID Vaccine Is a ... - <https://www.aau.edu/newsroom/blog/barbaras-blog/hello-dolly>
- Conservative Posts Misrepresent Royalty Payments to Fauci and ... - <https://www.factcheck.org/2023/08/scicheck-conservative-posts-misrepresent-royalty-payments-to-fauci-and-collins/>
- After Long Delay, Moderna Pays N.I.H. for Covid Vaccine Technique - <https://www.nytimes.com/2023/02/23/science/moderna-covid-vaccine-patent-nih.html>

- Government-University Partnership Led to COVID Vaccine - <https://www.aau.edu/newsroom/blog/barbaras-blog/hello-dolly>
- 35 Years of US Research Led to mRNA COVID Vaccines - <https://www.cidrap.umn.edu/covid-19/35-years-us-investment-research-led-development-mrna-covid-vaccines>
- Suppressing Scientific Discourse on Vaccines? Self-perceptions of ... - <https://pmc.ncbi.nlm.nih.gov/articles/PMC9117988/>
- A Narrative Review of the COVID-19 Infodemic and Censorship in ... - <https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=1087&context=secrecyandsociety>
- Censorship and Suppression of Covid-19 Heterodoxy: Tactics and ... - <https://pmc.ncbi.nlm.nih.gov/articles/PMC9628345/>
- Royal Society cautions against censorship of scientific ... - <https://royalsociety.org/news/2022/01/scientific-misinformation-report/>
- Addressing conflicts of interest regarding the vaccine in infectious ... - <https://pmc.ncbi.nlm.nih.gov/articles/PMC10521481/>
- COVID-19 Vaccine Task Force and Conflicts of Interest - PMC - NIH - <https://pmc.ncbi.nlm.nih.gov/articles/PMC8935919/>
- Full article: Is 'conflict of interest' a Misnomer? Managing interests in ... - <https://www.tandfonline.com/doi/full/10.1080/21645515.2021.1879580>
- The partnership for vaccine confidence - ScienceDirect.com - <https://www.sciencedirect.com/science/article/pii/S0264410X25007844>
- Stanford's Censorship: An Interview with Dr. Jay Bhattacharya - <https://stanfordreview.org/stanfords-censorship-an-interview-with-dr-jay-bhattacharya/>
- NIH tackles one of Jay Bhattacharya's priorities: ending 'censorship' - <https://www.statnews.com/2025/03/26/nih-director-jay-bhattacharya-first-day-compile-grants-related-to-misinformation-censorship/>
- Prepared Statement by Dr. Jay Bhattacharya - Congress.gov - <https://www.congress.gov/118/meeting/house/115561/witnesses/HHRG-118-IF16-Wstate-BhattacharyaJ-20230328.pdf>
- Censorship and Suppression of Covid-19 Heterodoxy: Tactics and Counter-Tactics - PMC - <https://pmc.ncbi.nlm.nih.gov/articles/PMC9628345/>