

APPENDIX 10: CONSENSUS 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.

CONSENSUS AI RESPONSE TO QUERY

University Compensation, Collaboration Networks, and Ethics in COVID-19 Vaccine Development: A Comprehensive Review

The development of COVID-19 vaccines involved extensive collaboration between universities, industry, government, and foundations. Direct financial compensation to universities and their personnel is difficult to quantify precisely, but public funding and licensing agreements played a major role, with most profits accruing to private companies. Evidence of coordinated efforts to promote vaccines is clear, but direct evidence of university involvement in censorship is limited.

University Compensation and Profits

- Oxford University: Public and charitable funding accounted for 97–99% of identifiable R&D funding for the Oxford–AstraZeneca vaccine, with at least £104 million identified pre-pandemic and £65.5 million from the UK government during the pandemic. Oxford entered an exclusive licensing agreement with AstraZeneca, which pledged to sell the vaccine at cost during the pandemic, but with a reported 20% profit margin on production costs. Exact royalty or profit-sharing details remain confidential, and university personnel compensation is not publicly disclosed [1620](#).
- Other Universities: Institutions like the University of Pennsylvania, Harvard, MIT, and Stanford contributed foundational research, often funded by public grants. The mRNA technology behind Pfizer/BioNTech and Moderna vaccines originated from academic labs, with universities typically receiving licensing fees and royalties, but specific amounts are not public [7113](#).
- Overall Profits: Most vaccine profits flowed to pharmaceutical companies (e.g., Pfizer, Moderna, AstraZeneca), with universities benefiting mainly from research funding and licensing, not direct sales [11137](#).

Funding and Collaboration Table

University	Funding Source(s)	Role in Vaccine	Compensation
Oxford	UK Gov, EU, Charities	R&D, Trials	Grants, Licensin
UPenn, MIT, Harvard	US Gov, NIH, Foundations	mRNA Research	Grants, Licensin
Stanford, UBC	Public/Private Mix	Research	Grants, Licensin

Figure 1 Funding sources and compensation mechanisms for key universities.

Industry-Government-Foundation Networks

- Collaboration: Public-private partnerships (e.g., Operation Warp Speed, CEPI, COVAX) coordinated funding, R&D, and distribution, involving universities, industry, and governments [123411](#).
- Promotion: These networks promoted vaccine uptake through public health campaigns, regulatory support, and global distribution efforts [31113](#).
- Censorship: Evidence of censorship mainly implicates media and technology companies (e.g., Google, Facebook) in moderating vaccine discourse. There is no direct evidence that universities systematically participated in censoring reports on vaccine efficacy or safety, though some researchers report reputational suppression for dissenting views [9](#).

Ethics and Conflicts of Interest

- Transparency: There is a lack of transparency in funding and licensing agreements, raising concerns about potential conflicts of interest [1620](#).
- Ethical Concerns: The intertwining of public health messaging and financial interests highlights the need for clear disclosure and independent oversight to maintain public trust [111620](#).

Conclusion

Universities played a critical role in COVID-19 vaccine development, primarily funded by public and charitable sources, with most profits accruing to industry. While collaboration networks promoted vaccine uptake, direct evidence of university-led censorship is lacking. Greater transparency and ethical safeguards are needed to address potential conflicts of interest in future public health crises.

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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.

Consensus Meter

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Did universities financially benefit from COVID-19 vaccine patents?

University revenue from COVID-19 vaccines

Comparative analysis of academic institutions' financial gains from COVID-19 vaccine development and patents

[Results](#)

Results

New

1. All
2. University compensation from Covid-19 vaccines
3. Industry-Government-Academia collaboration for vaccine promotion
4. Suppression of reporting on Covid-19 vaccine efficacy and safety
5. Ethics and conflicts of interest in vaccine communication

[1](#)

[A strategic approach to COVID-19 vaccine R&D](#)

[KEY TAKEAWAY](#)·The ACTIV public-private partnership aims to accelerate the development and distribution of multiple COVID-19 vaccines by coordinating safety and efficacy data for multiple candidate vaccines in parallel.

[Highly Cited](#)

2020·

463 citations

·L. Corey et al.·*Science*

PDF

2

[Accelerated COVID-19 vaccine development: milestones, lessons, and prospects](#)

KEY TAKEAWAY·[The US government-led effort bridging public and private sectors successfully accelerated COVID-19 vaccine development, leading to multiple efficacy-demonstrating candidates being administered globally.](#)

Very Rigorous Journal**Highly Cited**

2021·

194 citations

·K. Bok et al.·*Immunity*

PDF

3

[Clinical development and approval of COVID-19 vaccines](#)

KEY TAKEAWAY·[COVID-19 vaccines were developed and approved quickly, with optimization of regulatory processes, learnings from previous pandemics, and novel vaccine platforms contributing to their success.](#)

2022·

55 citations

·U. Kalinke et al.·*Expert Review of Vaccines*

4

[How Should the World Pay for a Coronavirus Disease \(COVID-19\) Vaccine?](#)

KEY TAKEAWAY·[A Benefit-Based Advance Market Commitment \(BBAMC\) can incentivize and pay for the development of second and third generation COVID-19 vaccines, ensuring equitable access for all populations.](#)

2021

15 citations

·A. Towse et al. · *Value in Health*

PDF

5

[Safety surveillance and challenges in accelerated COVID-19 vaccine development](#)

KEY TAKEAWAY · [Pharmacovigilance plays a crucial role in accelerating COVID-19 vaccine development and ensuring global post-marketing safety surveillance.](#)

[Literature Review](#) **Rigorous Journal**

2022

16 citations

·Abimbola Cole et al. · *Therapeutic Advances in Drug Saf...*

PDF

6

[COVID-19 vaccine: where are we now and where should we go?](#)

KEY TAKEAWAY · [Rapid vaccine development against COVID-19 faces challenges, including virulence, antigen selection, administration, and safety and efficacy.](#)

[Literature Review](#) **Highly Cited**

2021

123 citations

·Saman Soleimanpour et al. · *Expert Review of Vaccines*

7

[A network analysis of COVID-19 mRNA vaccine patents](#)

[KEY TAKEAWAY](#)·Unable to generate a Key Takeaway for this paper.

[Rigorous Journal](#)

2021·

69citations

·Mario Gaviria et al.·*Nature Biotechnology*

PDF

[8](#)

[COVID-19 vaccine research focusses on safety, efficacy, immunoinformatics, and vaccine production and delivery: a bibliometric analysis based on VOSviewer.](#)

[KEY TAKEAWAY](#)·COVID-19 vaccine research focuses on safety, efficacy, immunology, immunoinformatics, production, and delivery, with hotspots including clinical trials and vaccine hesitancy.

2021·

54citations

·Yamin Chen et al.·*Bioscience trends*

PDF

[9](#)

[Censorship and Suppression of Covid-19 Heterodoxy: Tactics and Counter-Tactics](#)

[KEY TAKEAWAY](#)·Censorship and suppression of scientific dissent in COVID-19 policy and measures has negatively impacted medicine, science, and public health, with media organizations playing a central role.

2022·

49citations

·Yaffa Shir-Raz et al.·*Minerva*

PDF

10

[A Review of the Progress and Challenges of Developing a Vaccine for COVID-19](#)

KEY TAKEAWAY·[COVID-19 vaccine development is progressing, with eight vaccine candidates entering Phase 1 clinical trials, but challenges remain in achieving sufficient production capacity to protect vulnerable populations by 2020 and the global population by 2021.](#)

[Literature Review](#)**Highly Cited**

2020·

460citations

·Omna Sharma et al.·*Frontiers in Immunology*

PDF

11

[Global COVID-19 Vaccine Inequity: Failures in the First Year of Distribution and Potential Solutions for the Future](#)

KEY TAKEAWAY·[Global COVID-19 vaccine inequity can be addressed through equitable knowledge sharing and technology transfer, promoting international cooperation for better pandemic preparedness.](#)

[Highly Cited](#)

2022·

77citations

·Victoria Pilkington et al.·*Frontiers in Public Health*

PDF

12

[The race to a COVID-19 vaccine: opportunities and challenges in development and distribution](#)

KEY TAKEAWAY·[COVID-19 vaccines were developed in less than a year, but challenges remain in vaccine education, distribution, and administration, requiring a multi-faceted approach to disease treatment and prevention.](#)

[Highly Cited](#)

2021

90 citations

·R. Burgos et al.·*Drugs in Context*

PDF

[13](#)

[Accelerating clinical trial development in vaccinology: COVID-19 and beyond](#)

KEY TAKEAWAY·[A public-private partnership, including government and academic involvement, can effectively foster rapid vaccine discovery and development, leading to multiple COVID-19 vaccines in under a year.](#)

2022

9 citations

·L. Corey et al.·*Current Opinion in Immunology*

[14](#)

[Real-World Monitoring of COVID-19 Vaccines: An Industry Expert View on the Successes, Challenges, and Future Opportunities](#)

KEY TAKEAWAY·[COVID-19 vaccine safety and effectiveness can be improved by developing flexible, common protocols, and implementing strategies for low/middle-income countries.](#)

2023

3 citations

·V. Bauchau et al.·*Drug Safety*

PDF

[15](#)

[Vaccines, media and politics: A corpus-assisted discourse study of press representations of the safety and efficacy of COVID-19 vaccines](#)

KEY TAKEAWAY·The safety and efficacy of COVID-19 vaccines are a key ideological battlefield for newspapers from different origins, shaping understanding and shaping international understanding of vaccines.

[Rigorous Journal](#)

2022·

8 citations

·Ming Liu et al.·*PLOS ONE*

PDF

[16](#)

[Who funded the research behind the Oxford–AstraZeneca COVID-19 vaccine?](#)

KEY TAKEAWAY·Public and charitable funding accounted for 97%-99% of the funding for ChAdOx vaccine research at the University of Oxford until autumn 2020, but there was a lack of transparency in research funding reporting.

[Systematic Review](#)[Rigorous Journal](#)

2021·

0 citations

·Samuel Cross et al.·*BMJ Global Health*

PDF

[17](#)

[Exploring public perceptions of the COVID-19 vaccine online from a cultural perspective: Semantic network analysis of two social media platforms in the United States and China](#)

KEY TAKEAWAY·Cultural differences between the US and China influence public perceptions of the COVID-19 vaccine, with Twitter users showing more anti-vaccine attitudes and deference to authorities.

[Observational Study](#)[Highly Cited](#)

2021·

106citations

·C. Luo et al.·*Telematics and Informatics*

18

[COVID-19 vaccination intention in the first year of the pandemic: A systematic review](#)

KEY TAKEAWAY·[Nurses' concerns about vaccine safety and efficacy need to be addressed to increase vaccine acceptance and influence community vaccination decisions.](#)

[Systematic Review](#)**Highly Cited**

2021·

214citations

·Rasmieh M. Al-amer et al.·*Journal of Clinical Nursing*

19

[Advancing the Science of Vaccine Safety During the Coronavirus Disease 2019 \(COVID-19\) Pandemic and Beyond: Launching an International Network of Special Immunization Services](#)

KEY TAKEAWAY·[The International Network of Special Immunization Services aims to study rare adverse events of special interest \(AESIs\) to inform vaccine development and advance vaccine safety science during the COVID-19 pandemic and beyond.](#)

2022·

17citations

·K. Top et al.·*Clinical Infectious Diseases: An...*

PDF

20

[Who funded the research behind the Oxford-AstraZeneca COVID-19 vaccine? - Approximating the funding to the University of Oxford for the research and development of the ChAdOx vaccine technology](#)

KEY TAKEAWAY·Public funding accounted for 97.1-99.0% of the funding for the research and development of ChAdOx and the Oxford-AstraZeneca COVID-19 vaccine, with a severe lack of transparency in research funding reporting mechanisms.

Systematic Review