



Violations of Animal Welfare Guidelines by NIH-Funded Educational Institutions

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INTRODUCTION

In the U.S., the Animal Welfare Act (AWA) is the only federal law with enforceable standards that governs the treatment of animals in laboratories. However, this law excludes most animals used in experimentation, including mice of the genus *Mus*, rats of the genus *Rattus*, and fishes. The Health Research Extension Act of 1985 (HREA) mandates that institutions that receive funding from the National Institutes of Health (NIH), including universities and medical schools, comply with federal policies and guidelines in their treatment of vertebrate animals.

How well are NIH-funded educational institutions adhering to federal animal welfare guidelines?

While the U.S. Department of Agriculture inspects laboratories to try to ensure AWA compliance, compliance with the HREA is based on a system of trust. Institutions that deviate from federal animal welfare guidelines must self-report such violations to NIH. Through Freedom of Information Act (FOIA) requests, we obtained violation reports submitted to NIH by the top 25 NIH grant-receiving educational institutions. **Final reports dated January 1, 2020, to May 31, 2023, documented 632 violations of federal animal welfare guidelines—including incidents in which animals suffered pain, injury, and death because of neglect, incompetence, and disregard.**

METHODS

We grouped the animal welfare violations into seven categories, classifying each violation under the most applicable category (although many violations could fall under multiple categories).

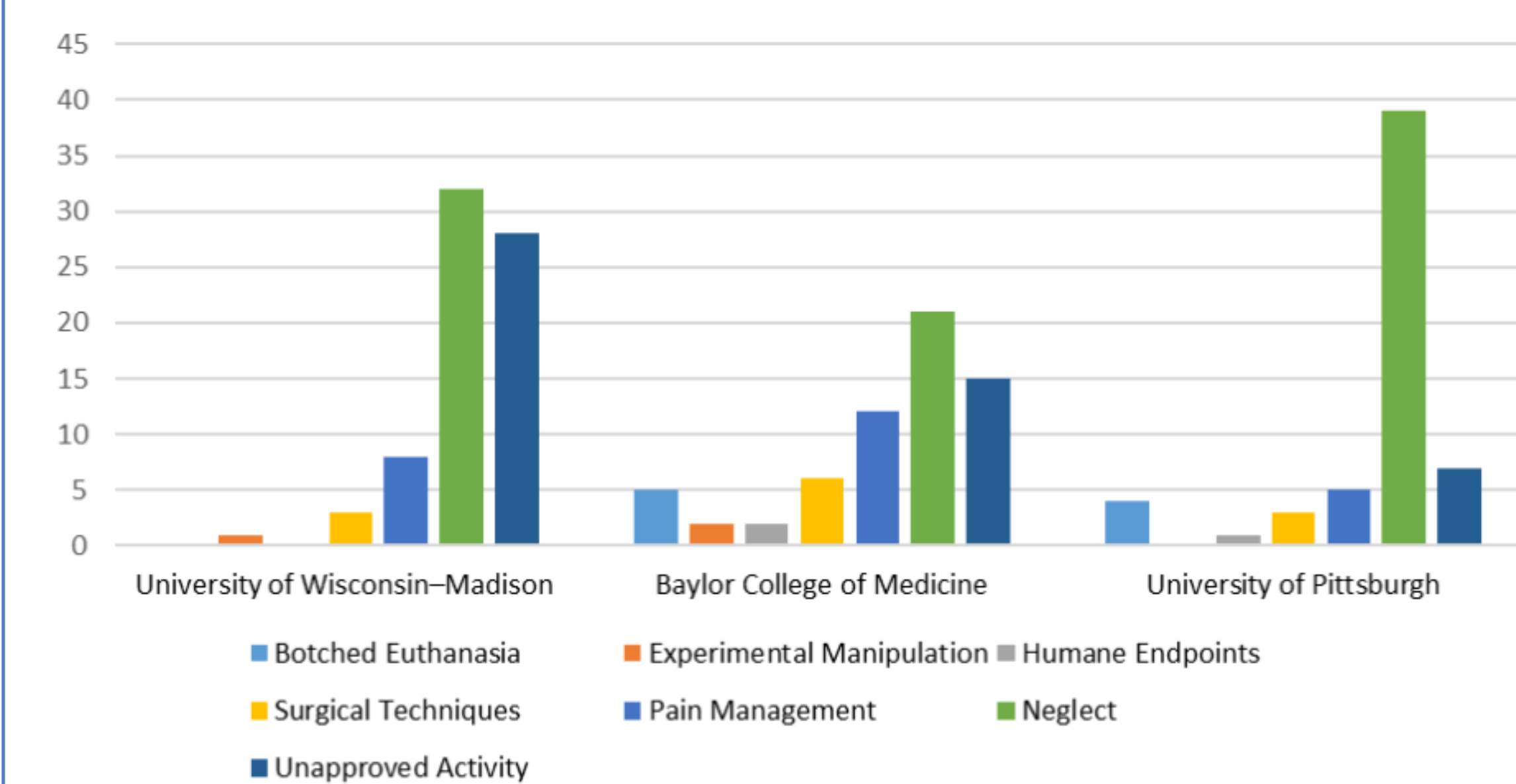
Rank	Violation Category	No. of Violations Across All Institutions	Examples
1	Neglect	265	<p>At Baylor College of Medicine, two mice died after their cage was left on a rack that was sent through the cage washer.</p> <p>At the University of North Carolina at Chapel Hill, unspecified numbers of mice were found dead or very sick when they were left without food in their cages.</p> <p>At the University of Wisconsin–Madison, 35 zebrafish died after a lab member turned off the water flow lines connected to their tank and forgot to turn them back on.</p>
2	Unapproved Activity	167	<p>At the University of Southern California, pigs underwent surgeries in which experimenters knowingly deviated from protocol, creating nine wounds on the neck of each animal when they were approved to create only three.</p> <p>At the University of Washington, four mice died unexpectedly and one was euthanized after they were injected with an experimental agent that was not approved in the protocol.</p>
3	Inadequate Pain Management	71	<p>At the University of Michigan–Ann Arbor, 110 mice underwent a dental pulp exposure procedure but did not receive the required post-operative analgesia.</p> <p>At Baylor College of Medicine, 10 mice underwent retro-orbital blood collection without the required anesthesia.</p>
4	Improper Surgical Techniques	62	<p>At Johns Hopkins University, three rabbit kits developed complications after surgery, apparently due to poor aseptic technique. One was found suffering with an open surgical wound on the scalp, another showed signs of infection, and a third developed neurological symptoms necessitating euthanasia.</p> <p>At the University of Washington, three rats subjected to spinal injury surgeries died during or after the procedure when they were administered a drug that was five times the approved concentration.</p>
5	Botched Euthanasia	42	<p>At the University of Pittsburgh, two newborn mice were found alive in a bin intended for dead animals after carbon dioxide gassing failed to kill the animals and a secondary method of euthanasia was not performed.</p> <p>At the University of Alabama at Birmingham, expired euthanasia solution was used on approximately 1,800 mice.</p>
6	Failure to Comply with Humane Endpoints	19	<p>At Yale University, 30 mice were found with tumors exceeding the size at which the animals were required to be euthanized.</p> <p>At the University of Minnesota, a rat being used in a food-restriction experiment was found dead after exceeding humane endpoints. Rats were required to be euthanized if they dropped below 90% of their non-fasting weight and did not regain adequate weight after five days—but this rat had fallen below the target weight for eight days.</p>
7	Issues Arising from Experimental Manipulation	7	<p>At Emory University, a rhesus macaque being used in an HIV experiment died after suffering a fatal anaphylactic response to an injected agent.</p> <p>At Baylor College of Medicine, a mouse undergoing mammary tumor implant surgery was burned when an electrocautery tool ignited residual oxygen being used for the procedure. The surgery was apparently being performed according to protocol. The mouse was euthanized.</p>

TOP 25 EDUCATIONAL INSTITUTIONS RECEIVING NIH GRANTS IN FY 2022

Funding Rank	Name of Institution	NIH Funding (FY 2022)
1	Johns Hopkins University	\$839,852,301
2	University of California, San Francisco	\$823,760,533
3	University of Pittsburgh	\$675,447,236
4	Duke University	\$672,506,294
5	University of Pennsylvania	\$668,378,172
6	Stanford University	\$651,714,427
7	University of Michigan–Ann Arbor	\$644,315,349
8	Washington University in St. Louis	\$620,587,925
9	Columbia University Health Sciences	\$616,772,648
10	University of California, San Diego	\$595,209,405
11	University of California, Los Angeles	\$594,329,749
12	Yale University	\$591,863,379
13	University of Washington	\$591,635,989
14	University of North Carolina at Chapel Hill	\$588,421,799
15	Emory University	\$559,582,124
16	Icahn School of Medicine at Mount Sinai	\$456,579,197
17	University of Minnesota	\$432,901,452
18	Northwestern University at Chicago	\$394,107,407
19	New York University School of Medicine	\$377,578,534
20	Vanderbilt University Medical Center	\$376,065,941
21	University of Wisconsin–Madison	\$365,151,438
22	Baylor College of Medicine	\$364,921,843
23	University of Southern California	\$325,926,043
24	University of Alabama at Birmingham	\$322,830,823
25	University of Colorado Denver	\$321,115,040

Red text indicates the top three violators.

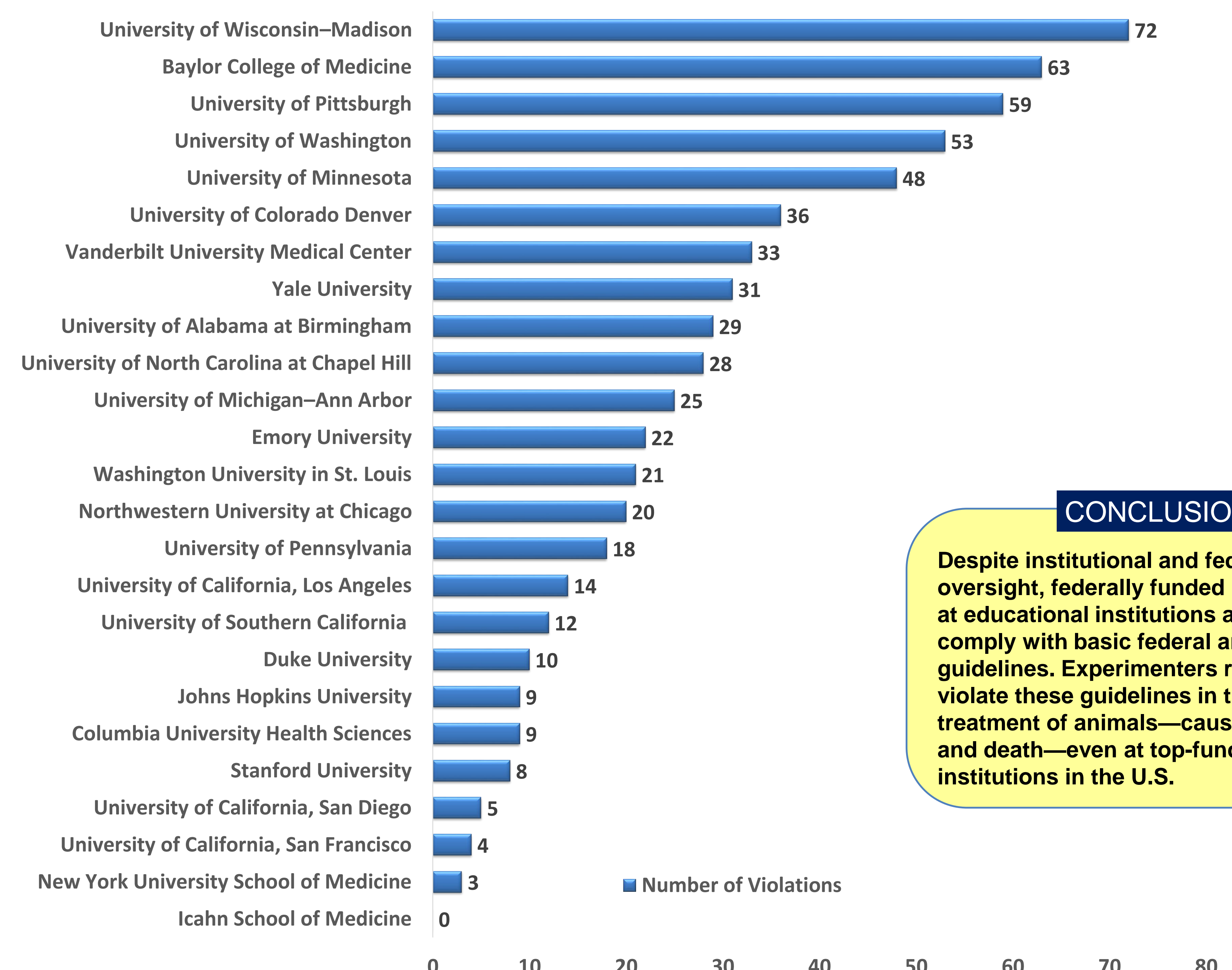
TOP THREE VIOLATORS



SYSTEMIC DISREGARD

- Repeat violations were common at several of the top 25 NIH-funded educational institutions.
- The most common violations across the institutions involved neglect or unapproved activity.
- Due to the self-reporting nature of this “oversight” system, it is likely that more violations occurred than were reported to NIH.

TOTAL NUMBER OF VIOLATIONS PER INSTITUTION



CONCLUSION

Despite institutional and federal oversight, federally funded laboratories at educational institutions are failing to comply with basic federal animal welfare guidelines. Experimenters repeatedly violate these guidelines in their treatment of animals—causing suffering and death—even at top-funded institutions in the U.S.

ACKNOWLEDGEMENTS

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