

Biometric-privacy debate

Your goal: Debate how biometric data privacy should constrain physiological research and design.

One product: CER contribution arguing for a specific biometric-privacy safeguard in physiological research, plus two questions and a reflection on applying it to your own analysis.

Question: Which specific safeguard should protect a physiological analysis column, and how should that change the report?

Start the work

1. Prepare two questions about biometric privacy and data sharing.
2. Draft a CER position on a privacy safeguard researchers should require.
3. Debate with peers and record a strong opposing view.
4. Relate the safeguard to your own analysis and reporting.
5. Submit two questions, one CER contribution, and a reflection.

Save the same response if the assignment or board is unavailable. Ask for what you need separately for posting, classmate reply, recorded/peer input, actual-column reflection and official work.

Words you will use

physiology

How living bodies function.

biometric data

Body-related measurements or traits. In this lesson the term includes pulse rate; not every measure uniquely identifies someone.

privacy

Decisions and expectations about how information about a person is used and shared.

security

Measures that protect information against unauthorized access, loss or alteration.

informed choice

A voluntary decision made with enough information and understanding.

informed consent

An ongoing process of information, understanding and voluntary agreement to participate. A signature alone is insufficient.

safeguard

A specific rule or action intended to reduce a risk.

data column

A field holding the same kind of information across records, such as pulse rate.

pulse rate / bpm

How often the pulse occurs; beats per minute is its unit.

reaction time / ms

Time between a defined signal and response; milliseconds are thousandths of a second.

raw data

Original recorded information before a summary or transformation.

identifier

Information that can connect a record to a person.

re-identification

Connecting a supposedly unidentified record back to a person using available information.

data minimization

Keeping collection and use limited to information needed for the stated purpose.

access control

Restricting who may read or change information.

retention

How long information is kept.

aggregate

A summary combining multiple records. It is not an automatic privacy guarantee.

CER

Claim, Evidence, Reasoning: a position, its support and the explanation connecting them.

counterargument

A serious reason against a position.

limitation

A boundary on what a safeguard or conclusion can accomplish.

genomic data

Information about DNA, the molecule carrying inherited biological instructions.

controlled access

A process allowing only approved users and uses to reach restricted information.

analysis

Organizing and examining information to answer a question.

reporting

Choosing how to present findings and limitations to an audience.

replication

Repeating an investigation to check whether a finding holds.

mean

The sum of values divided by their count.

standard deviation

A measure of how spread out values are around their mean.

bias

A systematic influence that can distort an estimate or conclusion.

measurement error

A difference between a recorded value and the value being measured; it can be systematic or random.

statistical significance

A result judged against a specified statistical model and threshold; it does not by itself establish importance or causation.

homeostasis

Regulation that helps maintain internal conditions within workable ranges.

E1: privacy, security and informed choice

A locked file can still be used for an inappropriate purpose. Privacy asks which uses and audiences are justified. Security asks how the approved information is protected. Informed choice asks what the person understood and freely agreed to. Address all three when evaluating a safeguard.

HHS describes consent as information, understanding and a voluntary decision. People need opportunities to ask questions. A signature alone does not complete that process. This research guidance supplies ethical principles here; it does not determine which rules cover a classroom activity.

E2: a bounded research benefit and risk

NHGRI explains a tension in genomic research: sharing supports further scientific use, while participants need privacy protection. Combining genomic information with other records can permit re-identification. NIH uses controlled access for sensitive information.

This is a genomic example, not evidence that every pulse-rate value uniquely identifies someone. It supports considering both useful access and safeguards. It does not prove a particular classroom report is safe, that unrestricted sharing saves lives, or that delay always causes harm.

E3: make a safeguard operational

FTC business guidance recommends keeping needed information, limiting access and setting justified retention and disposal rules. We use these as planning principles, not a claim about classroom legal coverage.

Specify who may receive which columns, for what purpose and under what conditions. For example, keep an approved analysis file restricted while preparing a separate report for an approved audience. Removing names alone does not address every possible link. A password does not grant permission for a new use. These safeguards reduce different risks; no single rule promises zero risk.

S1: original column example for analysis practice

This is an invented planning case with no participants, measured values or approved protocol. A team proposes reporting a comparison of pulse rate across two conditions. It has a proposed column list, not a supplied real dataset. No data collection is authorized.

Proposed columns: participant code; class period; seat location; condition; trial number; pulse rate (bpm); reaction time (ms). Pulse rate and condition serve the stated comparison. Reaction time is a different outcome with no stated role in this question. Trial number may help track repeated readings; it is not proof of separate participants.

The team proposes sharing a row-level file with everyone in the class. Imagine a recipient knows who sat in a particular seat and period. Those context columns could link a row to that person even without a name. This is a logical fictional linkage example, not an observed breach or a claim that every row is identifiable.

Choose a column and one specific safeguard. Explain the purpose it serves, who receives what, a plausible harm it reduces and an honest remaining limitation. Preserve needed analysis information in the approved restricted setting. Do not delete or edit any actual dataset as part of this paper decision.

C1: opposing positions and the extension

A restricted report can reduce exposure, but another analyst may need some row-level information to check a calculation. Unrestricted sharing could ease checking, but it exposes details to people without a justified purpose. Defend one safeguard and answer the strongest relevant concern.

Use an actual peer argument when available. Otherwise identify this as C1 solo practice. The absence route requires watching the recorded exchange or reading an actual peer CER, then writing your own CER and one honest limitation. If neither is provided, request one before completing that requirement. C1 does not pretend to be a classmate or recording.

For the extension, argue a position you disagree with. If you have no personal preference, choose the opposite of your current CER. Then write two sentences on why a researcher might favor less restrictive access when stricter review could delay potentially lifesaving research. Use E2 as a limited benefit example; it proves no lifesaving outcome or justified emergency here. Explain what purpose, oversight and remaining protection would still be needed. This argument changes no actual permission.

P1: connect the safeguard to your actual analysis

Use the approved dataset locally when available. Name one actual column and its analytical role without copying values, names, codes, locations or participant details into this response. Identify the planned report audience and explain one concrete reporting change. If permission or audience is unknown, record the question for the teacher.

If the dataset is missing, recover it through the teacher or approved saved-work route. For now, use S1, name its pulse-rate or context column and propose a report change. Label this recovery reflection and ask for the actual column before reflecting on it. Do not claim S1 is your collected data or that a report was changed.

For example, sort each S1 column into what the report audience needs and what only an authorized analyst needs in a restricted file. Explain why your own chosen change fits the question and audience. A small-group summary can still disclose information in some contexts; do not label any summary automatically anonymous.

R1: warmups, argument check and restart

For the phone warmup, use these supplied possible categories: pulse rate, step count and precise location. A device may collect them; no claim is made about your phone. Sort all three into fine to share or not fine for a stated audience and purpose. Different justified sorts are acceptable. Do not open a device or provide personal records.

Choose one body-related category you would keep off a named public post, using a fictional person if preferred. Then state who should and should not see an approved class dataset and why. This preserves both opening judgments without assuming data were collected.

Write two specific privacy or sharing questions. Your CER needs one operational safeguard, E1/E2/E3 support, S1 or approved column context, reasoning, an opposing view and one honest limitation. Your reflection names an actual column or clearly labeled recovery column and a concrete report action.

Self-check: explain why a graph without names can still raise a privacy concern. S1 supplies a specific context-linking path. Explain how your safeguard addresses that path and what it leaves unresolved. Do not invent a participant promise or say that every small dataset is easily identified.

Restart at the first unfinished step: two questions, CER, opposing view, column reflection, then submission. Keep all of these in the same response.

S2: async, next-day and official requirements

For asynchronous work, post your written safeguard CER and reply to one actual classmate's reasoning on the assigned board. Identify their claim, then ask a relevant question or explain agreement or disagreement with a reason. Keep private details out. If the board or post is missing, save your contribution and ask how to complete the posting and reply separately.

No homework is due before this class. Prepare the actual approved dataset and a graph plan for Thursday, March 11 when available. Confirm the question, needed columns, units and permitted report audience. This privacy response is not the graph or statistical analysis. Do not collect replacement data.

Ask the teacher for any assigned Problem 2 activity, CER prompt and stopping point. Complete that confirmed branch when available. Original practice does not mark an unseen activity or prior physiology table complete.

The weekly requirements remain a physiology data table, sensor lab, graphing, mean, standard deviation and error work, plus the Problem 2 physiology-data benchmark. The weekly absence route calls for a provided biometric dataset; S1 has no measurements and cannot replace it. Request that assigned dataset.

The unit also requires bias/error analysis, an appropriate labeled graph, justified statistical analysis, a data-based CER conclusion and a limitation with replication. Teacher materials, approved data and test instructions remain necessary. No significance or completed analysis is established here. Ask your teacher which weekly collection, graphing and table deadlines apply.

M1: different worked example, museum loans

A fictional museum wants to publish an object catalog. Its working table also contains the lender's private contact address. The public needs object information; authorized staff need the address to return the loan. No actual museum record is supplied.

Model CER: require a public catalog export that excludes contact-address columns while restricting the return file to authorized staff. E3 supports limiting access to what a task needs. This reduces public exposure of contact details. A critic wants easier coordination; the reply is a staff contact route rather than a public address.

Limitation: staff could still mishandle the restricted file, so security and clear use rules remain necessary. The example shows how a column, purpose, audience and safeguard connect. It does not decide the physiology case or supply clinical evidence.

Try the decision

Which response to S1 stays within the supplied evidence?

- Propose a column-specific access safeguard, explain its purpose and remaining risk, and retain missing permissions.
- Remove names and promise that the shared row-level file is anonymous.
- Treat the genomic example as proof that unrestricted pulse-rate sharing saves lives.

Explain your choice using the reading. Discuss it or say it to yourself. This practice does not add another submission.

Your 80-minute flow

0–10 minutes	Complete the supplied category sort and both opening judgments.
10–25 minutes	Read E1-E3, S1 and M1; write two questions and draft a CER.
25–55 minutes	Debate and record an opposing view, or use labeled C1 practice; revise the CER and limitation.
55–65 minutes	Apply the safeguard to an actual column, or label S1 recovery and hold the actual reflection.
65–77 minutes	Assemble questions, CER and reflection; submit or save and check your async post and reply separately.
77–80 minutes	Explain the name-free graph concern and name one concrete report action.

Your response record

Use these labels on paper or in your document. The space below also works when this page is printed.

Three-category sort and two opening judgments

Sort R1's three categories for a stated purpose and audience. Choose a body-related category to keep off a named public post. State who should and should not see an approved class dataset, with a reason.

Use fictional preferences if needed. No device, personal history or actual participant details are required.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

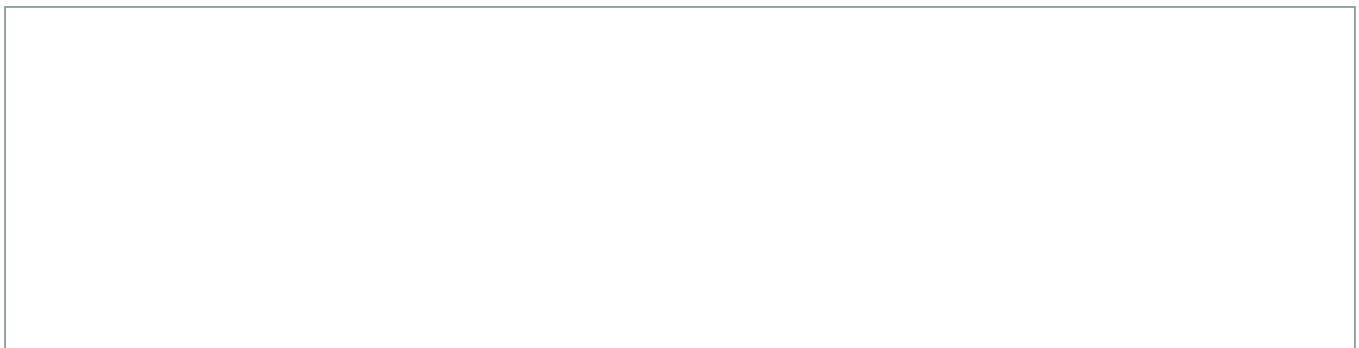


Two biometric-privacy questions

Write two specific questions about privacy and sharing that help decide a safeguard for S1 or your approved analysis.

Ask about a named column, purpose, audience or permitted use. Supply two questions, not one.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Specific safeguard CER and opposing view

Argue for one operational safeguard. Use E1/E2/E3 and a named column context, explain a plausible harm, answer a strong opposing view and state one honest limitation.

Use actual peer input if available, otherwise label C1 solo practice. Ask for the required recording or actual peer contribution before saying you watched or read it. Optional extension uses C1's two-sentence benefit-limit task.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Actual-column reporting reflection

Name one actual analysis column and its role without copying its values. Explain how your safeguard changes the report and who can see it. If data are missing, label the S1 recovery and request the data before writing the actual reflection.

Use P1. Do not edit or share a real file. Distinguish a proposed report change from a completed change.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Name-free graph check and exit action

Explain one concrete privacy risk that removing names does not resolve. Name one report action you will take or propose, with its limit. Record missing board, peer, data and official requirements.

Use the S1 context-linking example and R1. Do not invent promises, identifiable people or completed work.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Check your product

- Two questions address specific privacy or sharing decisions.
- The CER names a concrete safeguard, evidence, reasoning, an opposing view and a limitation.
- The reflection connects to an actual analysis column or labels recovery and names the actual input still needed.
- One report action addresses a stated risk without claiming zero risk or permission.
- Describe actual peer work, recording, dataset, graph and official work accurately.

Keep the limit: Original privacy-analysis practice. No real dataset, permission, breach, lifesaving outcome, statistical result or official completion is supplied. It cannot support conclusions beyond these stated limits.

Turn in your work

Submit two questions, one CER contribution and a reflection through the linked BI assignment. The async route requires your post and a reply to one actual classmate. Keep warmup, check and next-action notes with this record. After uploading, check that Schoology shows Submitted.

Save the same response if the assignment or board is unavailable. Ask for what you need separately for posting, classmate reply, recorded/peer input, actual-column reflection and official work.

[Open this assignment in Schoology.](#)

Carry forward

Choose a purpose, a permitted audience and a concrete safeguard before sharing a physiological report.

Prepare the actual dataset and graph plan for March 11 when available. Ask for missing actual data, permission and official instructions before doing that work. Which graph would show the comparison your dataset can actually support?

Sources and resources

[Open today's page](#)

HHS · Informed Consent FAQs

HHS Office for Human Research Protections; general principles, not classroom legal determination

<https://www.hhs.gov/ohrp/regulations-and-policy/guidance/faq/informed-consent/index.html>

NHGRI · Privacy in Genomics, Privacy in Research

National Human Genome Research Institute; genomic example, not pulse-rate identification evidence

<https://www.genome.gov/about-genomics/policy-issues/Privacy>.

FTC · Protecting Personal Information: A Guide for Business, section 2

Federal Trade Commission; business guidance used as a planning comparison

<https://www.ftc.gov/business-guidance/resources/protecting-personal-information-guide-business>