

# *DO WE HAVE A RIGHT TO MICROBES?*

UO-CHC 441H/431H: Microbes + Social Equity

Lecture 12

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# Learning objectives

- A very rough introduction to rights to natural resources and our own bodies
- Inalienable rights: those which, by nature, cannot be taken away
  - *Ex. life, liberty, the pursuit of happiness, bodily autonomy (maybe), air (maybe), microbes?*
  - *Get it in writing*
- **Discussion:** microbes and social equity: framing the discussion



# RIGHT TO THE ENVIRONMENT



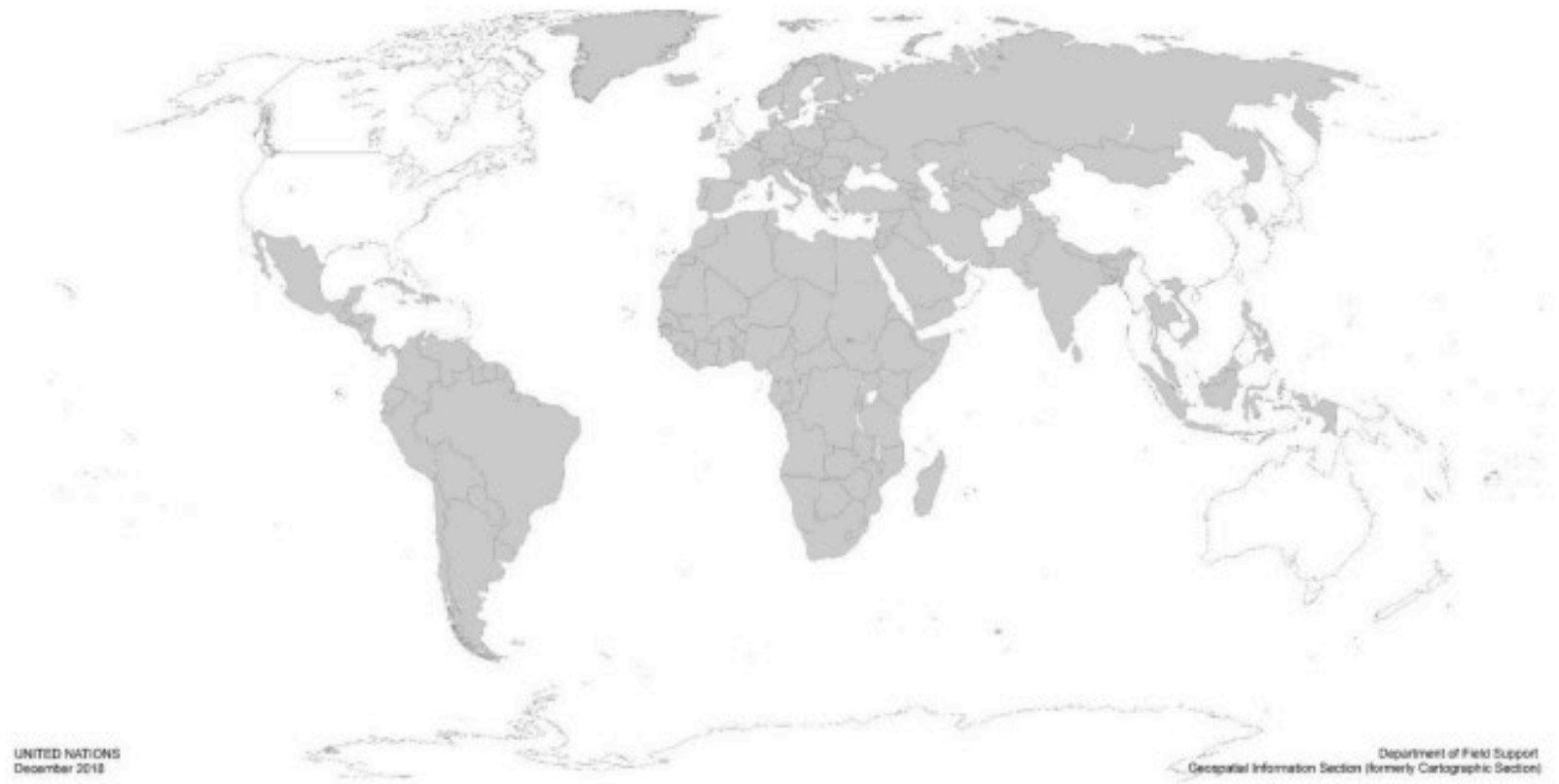
# United Nations resolutions



- Full list of resolution and member state treaties here
  - <http://srenvironment.org/sites/default/files/Reports/2019/UN%20HRC%20Right%20to%20clean%20air.pdf>
- “In total, at least **155 States are legally obligated**, through treaties, constitutions, and legislation, **to respect, protect, and fulfil the right to a healthy environment**. This provides a compelling basis for the United Nations to move expeditiously to provide global recognition of the right to a healthy and sustainable environment, as recommended by both the previous and current Special Rapporteurs on human rights and the environment.”



## Right to a healthy environment



States in grey recognize the right to a healthy environment in their constitutions, legislation, as parties to a regional treaty, or a combination of these instruments.

<http://srenvironment.org/report/the-right-to-breathe-clean-air-2019>



# UN

## Water rights 2010

- Recognized “the right to safe and clean drinking water as a human right.”
  - *US and 40 other states abstained from voting*
- **Sufficient.** ...between **50 and 100 liters** of water per person per day a
- **Safe.** ...free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health.
- **Acceptable.** ...acceptable color, odor and taste for each personal or domestic use. [...] All water facilities and services must be **culturally** appropriate and sensitive to **gender**, **lifecycle** and **privacy** requirements.
- **Physically accessible.** ...within **1,000 meters** of the home and collection time should not exceed **30 minutes**.
- **Affordable.** ... water costs should not exceed **3 per cent** of household income.
- As long as an “effort” is being made, governments not at fault for failing to provide water?
- [https://en.wikipedia.org/wiki/Human\\_right\\_to\\_water\\_and\\_sanitation](https://en.wikipedia.org/wiki/Human_right_to_water_and_sanitation)
- [https://www.un.org/waterforlifedecade/human\\_right\\_to\\_water.shtml](https://www.un.org/waterforlifedecade/human_right_to_water.shtml)



# UN

## The Right to Breathe Clean Air - 2019

- Most UN member states have some legal recognition of right to clean air
- <http://srenvironment.org/report/the-right-to-breathe-clean-air-2019>
- Recommendations for how to implement this
  - *monitoring,*
  - *source assessment,*
  - *public information,*
  - *air quality standards,*
  - *action plan,*
  - *implementation/enforcement*
  - *and evaluation*



# In the US

- Public property rights developed from disagreements with England
  - *Recognized “commons” as public property early on*
- Water, land, air rights not mandated at the federal level
  - *Lots of state legislation*
  - *Some states legally recognize right to these*
  - *Resolution vs action*





# Here in Eugene



- Juliana v. United States
  - Filed 2015
  - <https://www.ourchildrenstrust.org/juliana-v-us>
  
- “Their complaint asserts that, through the government's affirmative actions that cause climate change, it has violated the youngest generation’s constitutional rights to life, liberty, and property, as well as failed to protect essential public trust resources.”
  
- Basically, the government actively violated our inalienable right to the environment



# BODILY AUTONOMY

Who owns your organs?



# Bodily rights started in philosophy, property rights, and who owns dead bodies

**Table 2** The major components of bundles of rights to biological material

The right	Corresponding right(s) in Honoré's and Becker's typologies
1. Right to security in life. The right of a person to keep a part of her body, and not have it removed or destroyed.	Honoré 1, 2, 6, 8. Becker 1, 2, 9, 10.
2. Right to security after death. The right of a person that a part of her body is buried or disposed of in the way that she wishes.	Honoré 7, 8. Becker 8, 10.
3. Right to donate for removal in life. The right of a person to give up a part of her body without remuneration, to be removed in her lifetime.	Honoré 5. Becker 7.
4. Right to donate for posthumous removal. The right of a person to give up a part of her body without remuneration, to be removed after her death.	Honoré 5. Becker 7.
5. Right to sell for removal in life. The right of a person to give up a part of her body against remuneration, to be removed in her lifetime.	Honoré 5. Becker 7.
6. Right to sell for posthumous removal. The right of a person to give up a part of her body against remuneration, to be removed after her death.	Honoré 5. Becker 7.
7. Right to income. The right to receive the profits obtainable from the use of a biological material (such as the profits from a cell line). (This differs from a right to sell in referring to the profits obtained at points in time after the initial removal of the material.)	Honoré 4. Becker 4.

■ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2565785/pdf/209.pdf>



# Do we own our bodies?

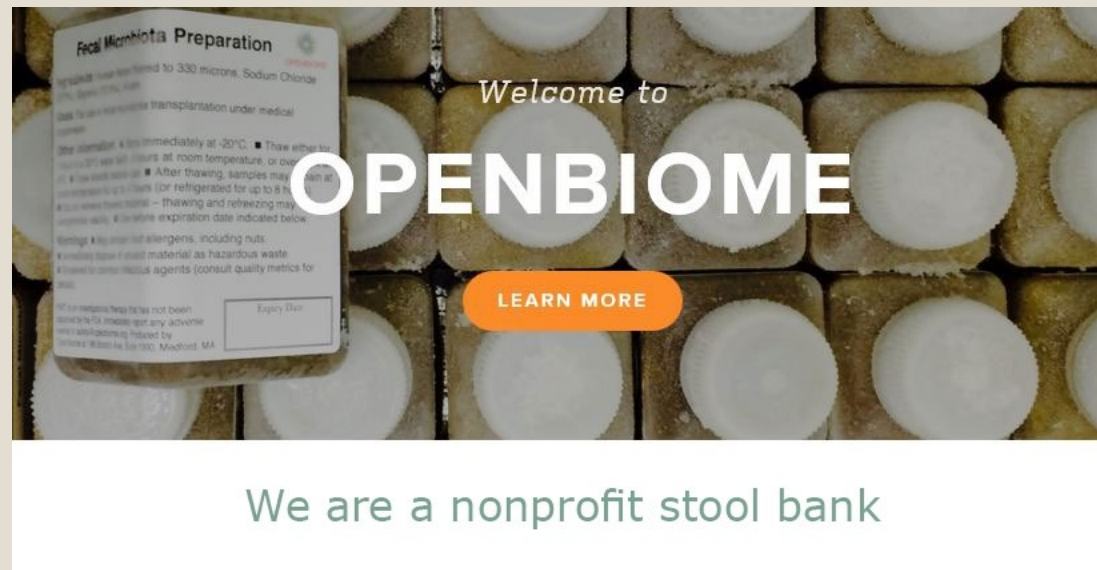
- We have an 'inalienable right to life'
- Can't remove biological from a living or dead body without consent
- Conscription (drafting) to armed services
- Anti-abortion laws
- Self care during pregnancy
- Can't sell our organs
- Can't commit suicide
- Very interesting thesis:  
[https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=3066&context=fss\\_papers](https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=3066&context=fss_papers)



# WHO OWNS YOUR MICROBES?



# Fecal microbiota banks



- “biobanking” – collections of biological material
  - *Research*
  - *Medical therapy*
  - *Large-scale research for mining of info/microbes/metabolites*



# Debate around owning poop

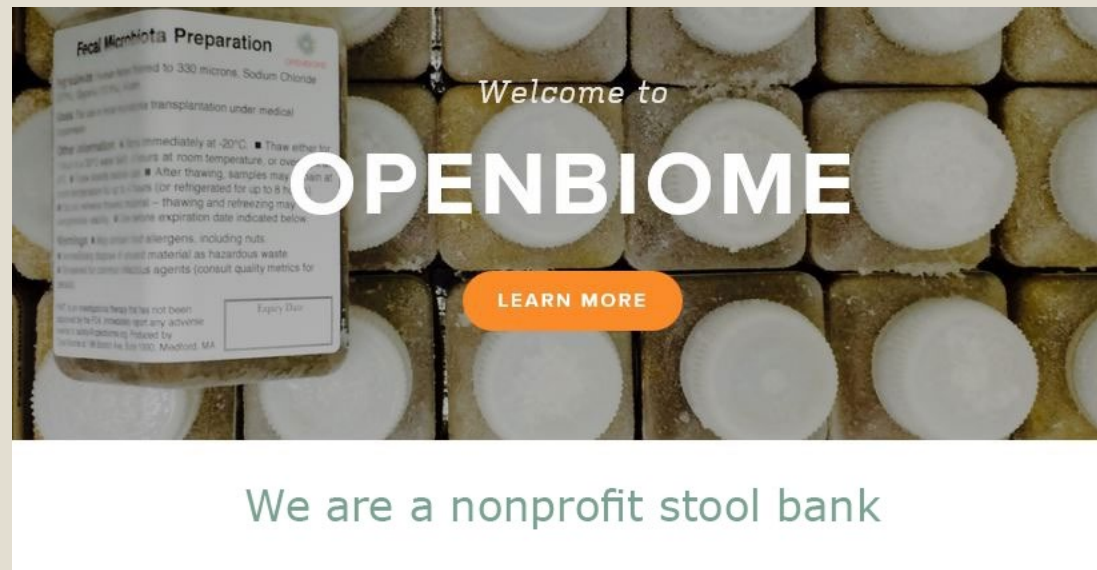
## ■ Hawkins and O'Doherty, 2011

**Table 1 ELSI Issues Raised by Microbiome Research relative to Biobank and Related Studies**

ELSI Consideration	Nature of concern	New issues introduced by HMB research
Privacy and Confidentiality	<ul style="list-style-type: none"> <li>- Discrimination and stigmatisation</li> <li>• <i>For example, predisposition and susceptibility testing</i></li> </ul>	<ul style="list-style-type: none"> <li>- Increased scope of disease predisposition testing</li> <li>- Microbial fingerprints</li> <li>- Potential knowledge of past exposures</li> </ul>
Consent	<ul style="list-style-type: none"> <li>- Respecting autonomy</li> <li>- Invasiveness of sample collection</li> <li>• <i>E.g., research participation of minors (e.g. newborn blood spot collection)</i></li> </ul>	<ul style="list-style-type: none"> <li>- Cultural and personal acceptability of research</li> <li>- <i>E.g., Vaginal and fecal sample collection</i></li> </ul>
Ownership	<ul style="list-style-type: none"> <li>- Human dignity</li> <li>- Benefit sharing</li> <li>• <i>E.g., ownership of blood/tissue samples and cell lines</i></li> </ul>	<ul style="list-style-type: none"> <li>- Samples traditionally considered waste, such as fecal matter</li> <li>- <i>E.g., fecal transplant</i></li> </ul>
Return of Results	<ul style="list-style-type: none"> <li>- Clinical validity</li> <li>- 'right to know' versus 'right not to know'</li> </ul>	<ul style="list-style-type: none"> <li>- Additional treatment and screening possibilities</li> </ul>
Biobank Governance	<ul style="list-style-type: none"> <li>- Public trust and consideration of societal viewpoints</li> <li>• <i>E.g., ensuring minority viewpoints are considered</i></li> </ul>	<ul style="list-style-type: none"> <li>- Infectious disease</li> </ul>
Justice	<ul style="list-style-type: none"> <li>- Resource allocation</li> <li>• <i>For example, payment and health insurance coverage of genetic tests and pharmacogenomics</i></li> </ul>	<ul style="list-style-type: none"> <li>- Global health</li> </ul>



# Who owns the patent?

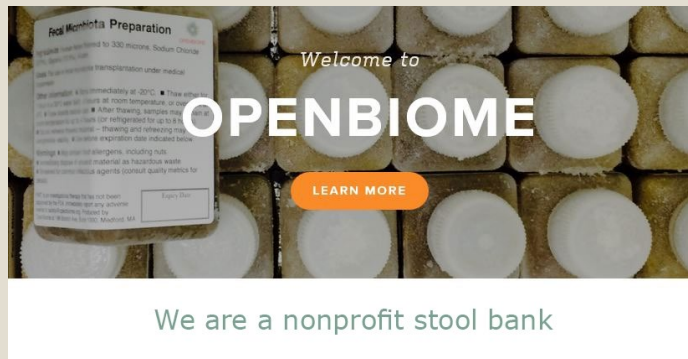


- Can't patent microbes unless they are genetically-modified
- Can patent methods, or biochemicals in some cases
- If openbiome (or other) creates the newest antibiotic using your poop, do you own it?





# Who owns the patent?



- Non-profit is the way to get around having that conversation
  - *Ex Henrietta Lacks' cells used in almost all biomedical research, available at cost*



# DO WE HAVE A RIGHT TO MICROBES

Discussion



# Framing the discussion on microbes and social equity

- We know microbes affect health
  - *We need to show that there are microbe-related health disparities that contribute to social inequity*
- Microbes are not technically required for us to live
  - *Quality of life*
  - *Happiness*



# HOMEWORK

And beyond



# Homework

## ■ Readings (pick 1):

- *Bjorkman\_2006\_bodily rights*
- *Hawkins\_2011\_who owns your poop*

**Assignment (12 pts):** Write a minimum three-quarter-page, single-spaced essay on the importance of microbes in urban systems and why this is a public health/social equity issue.

**Sunday 7/14 at 12 pm – high noon! I need time to grade before Monday**

Include > 3 citations, and line numbers.

You may choose any relevant, credible scientific article, review, or reference.



# Next week: Monday

- In-class writing session in which we create an outline and discuss what we want the flow to be, based on things we've written.
- **Final project (10 pts):** each team will present an overview of their topic to the class, leaving time for questions and discussion. **Due in class 7/16 on Tuesday**
- **Final project (15 pts):** Each team will combine the relevant written essays into one document per team to generate each section of the paper. **Due 7/17 on Wednesday at 5 pm.** You may submit a google doc link through Canvas. I will make suggestion edits and upload an edited copy to canvas for documentation.



# Next week: Tuesday - Thursday

## ■ Tuesday

- *Class presentations and discussions*
- *Reminder, draft essay due 5 pm Wed.*

## ■ Wednesday

- *In-class writing session in which we work on our written group essays.*
- *Reminder, draft essay due 5 pm Wed.*

## ■ Thursday

- *In-class writing session in which we combine our group essays into a single manuscript.*
- ***Final project (10 pts):** review and edit the combined manuscript which will be available as a google doc. Make edits in suggestion mode. All edits must be completed by **end of day 7/19**. Instructor will submit to a journal on 7/20.*



# Focused groups for final paper

- 1-3 students per topic, depending on how narrow/broad
- Combine the relevant essay portions from the previously written essays,
  - *Add/edit/review section as needed*
  - *Don't need to include all the text or equal portions from each essay*
- I recommend creating a shared google doc within focused group, share with me
  - *For citations (Name, Year) and reference list (Name, Year, link to article)*
  - *I will compile references in paperpile*



# Focused groups for final paper, microbes, social health, social equity – this was live edited in class and students volunteered to write topics

- Intro: what does ‘microbes and social equity’ mean?
- Vertical transmission
  - *In utero, stress and immune response*
  - *Birth mode*
  - *Breastmilk*
- Early life exposure
  - *Breastmilk (allergies)*
  - *Tolerance to microbes, developing immune system*
- Diet and access to fiber
  - *Obesity, schools*
  - *Schizophrenia, homelessness*
- Built Environment, city-scale water and air quality
  - *Housing quality*
  - *Zoning*
- Summary –
- Economics and ROI (throughout) -
- Theory, philosophical (throughout)