

Synthetic Biology: Caught between Property Rights, the Public Domain, and the Commons

Arti Rai and James Boyle

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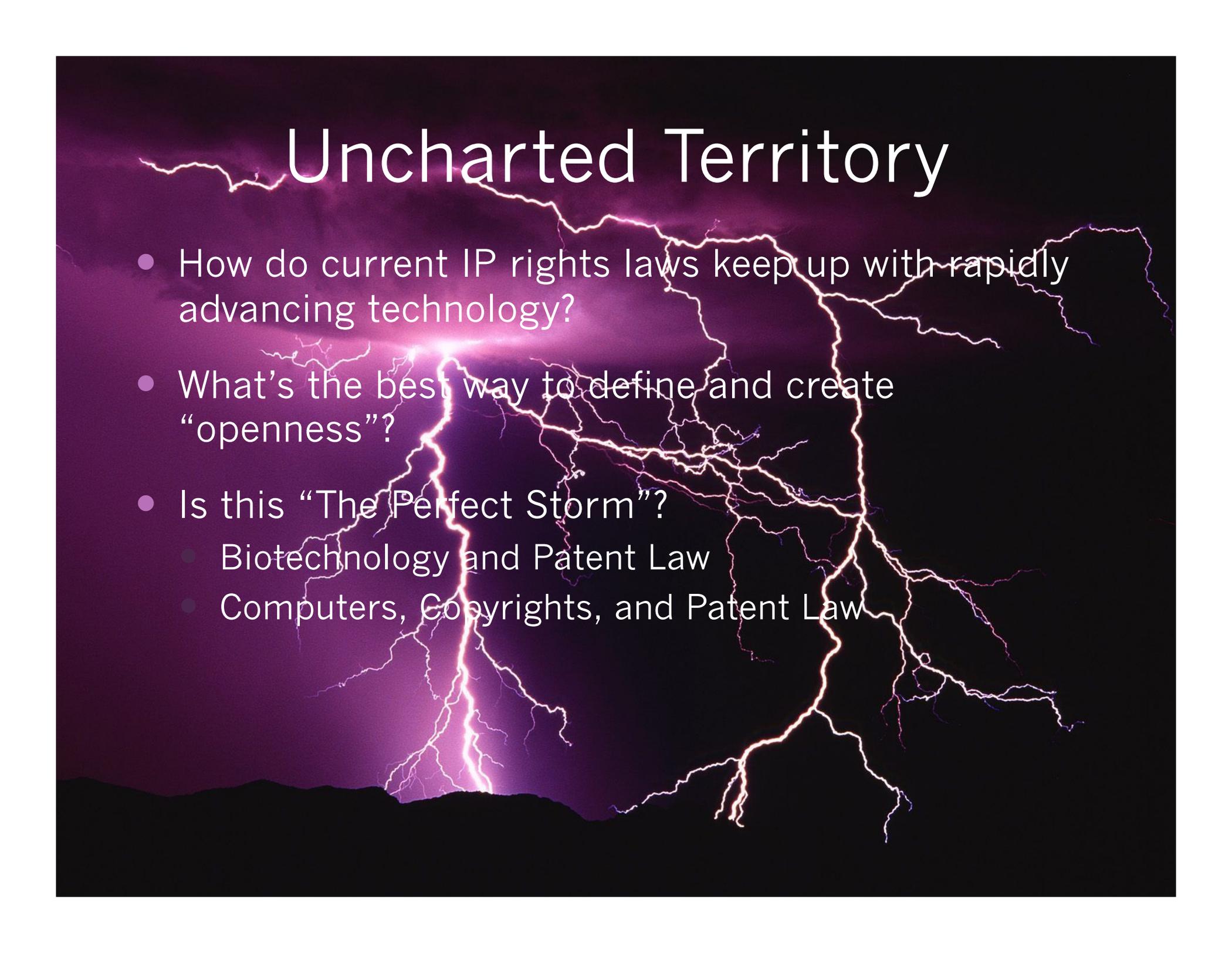
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Background

- Synthetic biology outputs are valuable products
- Existing part registries
- Law needs to be defined as soon as possible

Uncharted Territory



- How do current IP rights laws keep up with rapidly advancing technology?
- What's the best way to define and create "openness"?
- Is this "The Perfect Storm"?
 - Biotechnology and Patent Law
 - Computers, Copyrights, and Patent Law

Specific Issues

- US Dept. of Health and Human Services - “Molecular Computing Elements, Gates and Flip-Flops”
 - Broad patents on foundations = stifling to research
- Monoclonal antibodies and recombination techniques
 - What if similar foundational tools are developed now?
- Patent thickets vs. patent pools

End Goal

- A perfect Synthetic Biology commons would...
 - Encourage innovation
 - Encourage collaboration
 - Not discourage competition
 - Be inexpensive
 - Have a solid legal basis

Possible Commons Bases

Method	Protection	Pros	Cons
Patents	20 years of invention protection	- Clear basis for copyleft licenses	- Expensive - Rely on non-assertion
Copyrights	Exclusive right to copy and improve	- Clear basis for copyleft licenses - Inexpensive	- US legal basis unclear - Theoretical arguments
Contracts	Varying	- Inexpensive	- Copyleft license requirements strict - Leaks possible
Sui generis	“custom made” legislation	- Problem specific	- Legislation slow and difficult

Conclusions and Significance

- Commons can't get in the way of “patented therapy development”
 - Pharmaceutical development and clinical trial costs
 - Property rights necessary to foot the bill
- A public domain strategy is a good start
 - Reduces patentability of foundational technology and parts

Limitations

- Never chose a final position on commons design
- How do you obtain consent from all parties involved?
- Whose responsibility is it to design this commons?

Discussion Questions

- Would the presence or lack of a commons influence your decision to participate in synthetic biology research?
- Do you think biotech companies would support the idea of a synthetic biology commons?