COURSE SYLLABUS

Ethics in Biopharmaceutical Patent and Regulatory Law
Spring 2018, Biotechnology GU4161

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Course Objective

This course – the first of its kind at Columbia – introduces students to a vital subfield of ethics focusing on patent and regulatory law in the biotech and pharmaceutical sectors. The course combines lectures, structured debate and research to best present this fascinating and nuanced subject. Successful completion of Biotechnology Law (GU4160) is a course prerequisite, since properly exploring this branch of bioethics requires an in-depth understanding of biotech and pharmaceutical patent and regulatory law.

Course Overview

Over the past few decades, ethics disputes over biotech and pharmaceutical patent and regulatory law have become ubiquitous. The news has been filled with stories of public outrage over everything from human gene patents to unaffordable biologic drugs, and from questionable clinical trial practices to so called "pay-for-delay" settlement agreements between generic and brand name drug companies. These issues, and many more, show just how often biotech and pharmaceutical patent and regulatory laws conflict with society's sense of right and wrong.

Legislatures, courts and industry leaders alike continue to address these controversies through law, policy and practice as best they can. Yet, these efforts often lead to disastrous results that adversely affect people worldwide.

Understanding these important ethics issues naturally requires familiarity with the underlying science and law. However, identifying, understanding, debating and resolving ethics issues – particularly those at the crossroads of such complex fields – also requires practice. This course offers precisely that.

Toward that end, the course combines three approaches: (i) traditional lectures with questions and discussion as needed; (ii) student research papers (i.e., "position" papers); and (iii) structured student-on-student "debates."

In the four-page research papers, each student will engage in written role-playing by separately advocating *both sides* of a suitable bioethics issue of her/his choice. Each "side" will be advocated *as a defined figure* (e.g., a CEO, NGO leader, or government official) likely to take that side of the issue. Developing this skill greatly strengthens the student's ability to identify and compensate for weaknesses in a given position on an issue.

The debates will also stress role-playing, and will be akin to interactive panel discussions and news interviews conducted between opposing parties. For example, in a debate, one student would assume the role of a biotech company's CEO, and the other would play the director of a patient advocacy group opposed to the company's allegedly unethical patent and pricing strategies. These exercises differ in format, tone and purpose from "traditional" debates where, typically, the emphasis is on scoring as many "points" as possible within a given time limit. Here, our goal is to be as persuasive as possible given the scenario at hand – a task often best accomplished by slowly and artfully presenting one or two key issues.

Additionally, students will *switch positions* mid-debate so that they can reap the benefits of arguing both sides of each issue.

The use of debates and position-based research papers will arm qualified students with vital skills throughout their careers in science, industry, venture capital and government. These include the ability to spot and understand patent and regulatory bioethics issues, lead others in navigating them and, when necessary, persuade others of the merits of one position over another.

There are two brief multiple-choice exams, each worth 25% of the course grade. The two research papers are each worth 25% of the course grade. Class participation, particularly in debates, is required. This participation will not be graded, although there will be a grade deduction of up to 10% in the unlikely event of non-participation.

Class Schedule

The class schedule is provided below. Within reason, the material to be covered is subject to change, particularly to accommodate changes in the law and the addition of relevant topics based on student demand. Likewise, the timing of each class relative to its corresponding debate is also subject to change.

Class 1 – January 17, 2018

Course overview. A brief survey of bioethics and the unique place in this field occupied by controversies relating to biopharmaceutical patent and regulatory law.

Lecture 1 – The practice of "compassionate use" by a drug company, whereby the company provides its investigational new drug to a critically ill patient outside the context of a clinical trial, *before* the FDA approves the company's NDA or BLA for the drug. This practice's potential risks and benefits for drug companies, compassionate use recipients, and target patient populations.

Class 2 – January 24, 2018

Debate 1 – Compassionate use.

Lecture 2 – Litigious corporate behavior in the agricultural biotech industry, and the ethical tension between legitimately defending one's own patent rights and pursuing individual farmers and merchants suspected of unintentional infringement. The matter of Monsanto's right to assert its Roundup Ready® seed patents against unintentionally infringing organic farmers.

Class 3 – January 31, 2018

Debate 2 – Agricultural patent enforcement.

Lecture 3 – Ethically flawed informed consent procedures in foreign clinical trials. The question of which informed consent standard should apply to a U.S. drug company conducting a trial in a developing country. The case of *Abdullahi v. Pfizer* and Pfizer's catastrophic Nigerian Trovan® trial in 1996.

Class 4 – February 7, 2018

Debate 3 – Informed consent procedures in foreign clinical trials.

Lecture 4 – The U.S. Supreme Court's *Mayo v. Prometheus* decision and its effect on the law of patent-eligible methods. The decision's potential effects on developing diagnostic and therapeutic methods in this country that might now be considered merely "natural phenomena" (e.g., cancer and other diagnostic tests based on newly discovered biological markers, and personalized medicine based on individually determined optimal drug doses). The case of *Ariosa v. Sequenom* and the patent-ineligibility of methods for detecting paternal cffDNA in a woman's serum or plasma.

Class 5 – February 14, 2018

Debate 4 – Patent-eligibility of diagnostic methods.

Lecture 5 – Compulsory licenses and parallel imports, and the degree to which they should be permitted in response to humanitarian crises, i.e., the ethical considerations of choosing between a government's need to protect its citizens from grave harm and industry's need for a functioning patent system. The AIDS crisis, and South Africa's introduction of Section 15C into its Medicines and Related Substances Control Act (MRSCA). Article 31(k) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), and the ethically proper scope of parallel importation via back-to-back compulsory licenses.

Class 6 – February 21, 2018

Debate 5 – Compulsory licenses and parallel imports.

Exam 1

Class 7 – February 28, 2018

Students briefly present their first research papers.

Lecture 6 – The ethics of using trade secret protection with respect to the genetic information of another. Myriad Genetics' reliance on trade secret protection in maintaining a proprietary database of correlations between specific BRCA1/2 gene mutations and cancer prognoses, and this business model's implications for healthcare transparency and the patient's right to understand her own prognosis and its underlying genetic basis.

Class 8 – March 7, 2018

Debate 6 – Keeping genetic information as a trade secret.

Lecture 7 – The controversial practice of "product hopping" in the pharmaceutical industry used to prolong market dominance for a drug beyond the expiration of its earliest filed patents. The case of *New York v. Actavis*, and the anti-trust implications of Actavis' plan to thwart generic competition by prematurely withdrawing its Alzheimer's drug Namenda IR from the market and replacing it with its newer product Namenda XR.

Class 9 – March 21, 2018

Debate 7 – Product hopping.

Lecture 8 – The new practice of publicly challenging a pharmaceutical company's patents via *inter partes* review while, at the same time, financially benefitting from "shorting" that company's stock. The case of hedge fund manager Kyle Bass and his Coalition for Affordable Drugs.

Class 10 – March 28, 2018

Debate 8 – Pharmaceutical stock shorting via IPR patent challenges.

Lecture 9 – Reverse payment (i.e., "pay-for-delay") agreements entered into to settle Hatch-Waxman litigations between generic and brand-name drug companies, and their effects on drug companies, patients, insurers and the government, particularly regarding drug costs. The U.S. Supreme Court's decision in *FTC v. Actavis* and its ramifications for healthcare accessibility.

Class 11 – April 4, 2018

Debate 9 – Reverse payment agreements.

Lecture 10 – The Biologics Price Competition and Innovation Act ("Biosimilars Act"), and ethics issues surrounding the 12-year market exclusivity period for new biologic products and that period's effect on biologic drug prices and innovation. Attempting to reconcile the 12-year exclusivity period for biologics with the five-year NCE exclusivity granted for small molecule drugs under the Hatch-Waxman Act.

Class 12 – April 11, 2018

Debate 10 – The Biosimilars Act's 12-year market exclusivity period.

Exam 2

Class 13 – April 18, 2018

Students briefly present their second research papers.

Lecture 11 – Emerging ethics issues in biopharmaceutical patent and regulatory law [tbd].

Class 14 – April 25, 2018

Debate 11 – Emerging ethics issues in biopharmaceutical patent and regulatory law [tbd].

Preliminary Reading List

A. Caplan and K. Moch, "Rescue Me: The Challenge Of Compassionate Use In The Social Media Era", Health Affairs Blog (2014)
http://healthaffairs.org/blog/2014/08/27/rescue-me-the-challenge-of-compassionate-use-in-the-social-media-era/

C. Klugman, "Cost of Compassionate Use is Simply Too High", Bioethics Research Library of Georgetown University (2015)
https://bioethics.georgetown.edu/2015/05/cost-of-compassionate-use-is-simply-too-high/

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http://www.pubpat.org/assets/files/seed/OrganicSeedSCTPetition.pdf

C. Silver, "Monsanto versus the people", Al Jazeera (2013)
http://www.aljazeera.com/indepth/opinion/2013/01/201311071754973439.html

G. Annas, "Globalized Clinical Trials and Informed Consent", N.E.J.M. 360:20 (2009)
http://www.ncbi.nlm.nih.gov/pubmed/19439740

M. Afolabi, et al., "Informed consent comprehension in African research settings", Tropical Medicine and International Health, Vol. 19, No. 6, pp. 625-642 (2014)
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Abdullahi v. Pfizer, 562 F.3d 163 (2d Cir. 2009)
https://casetext.com/case/abdullahi-v-pfizer-inc

Mayo v. Prometheus, 132 S. Ct. 1289 (2012)
https://www.law.cornell.edu/supremecourt/text/10-1150

S. Roberg-Perez, "The Continuing Saga Of Mayo v. Prometheus", Law360 (2014)
http://www.law360.com/articles/510097/the-continuing-saga-of-mayo-v-prometheus

Ariosa v. Sequenom, 788 F.3d 1371 (Fed. Cir. 2015)
http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/14-1139.Opinion.6-10-2015.1.PDF

E. Marandett, "Ariosa v. Sequenom Signals Trouble Ahead For Life Sciences", Law360 (2015)
http://www.law360.com/articles/718236/ariosa-v-sequenom-signals-trouble-ahead-for-life-sciences

J.H. Reichman, "Compulsory licensing of patented pharmaceutical inventions: evaluating the options", J. Law Med. Ethics (2010)
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2893582/

W. Fisher III and C. Rigamonti, "The South Africa AIDS Controversy: A Case Study in Patent Law and Policy", The Law and Business of Patents, Harvard Law Review (2005)
http://cyber.law.harvard.edu/people/tfisher/South%20Africa.pdf

R. Cook-Deegan, et al., "The Next Controversy in Genetic Testing: Clinical Data as Trade Secrets?", European J. of Human Genetics (2012)
http://www.nature.com/ejhg/journal/v21/n6/full/ejhg2012217a.html

New York v. Actavis, No. 14-4624 (2nd Cir., May 22, 2015)
http://www.ag.ny.gov/sites/default/files/pdfs/bureaus/antitrust/NY_v.Actavis-CA2_public_opinion.pdf

M.S. Royall, et al., "Antitrust Scrutiny of Pharmaceutical 'Product Hopping'", Antitrust (2013)
http://www.gibsondunn.com/publications/Documents/RoyallAntitrustScrutinyABA.pdf

J. Walker and R. Copeland, "New Hedge Fund Strategy: Dispute the Patent, Short the Stock", The Wall Street Journal (2014)
http://www.wsj.com/articles/hedge-fund-manager-kyle-bass-challenges-jazz-pharmaceuticals-patent-1428417408

FTC v. Actavis, 570 U.S. 756 (2013)
https://www.law.cornell.edu/supremecourt/text/12-416

H. Grabowski, "Follow-on biologics: data exclusivity and the balance between innovation and competition", Nature Reviews Drug Discovery (2008)
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