

Blockchain and/or the Law
Autumn 2018
Wednesdays, 2:00 p.m. – 3:50 p.m.
Room 4-09

Professor Mark Patterson

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This is not a Bitcoin seminar; instead, it will focus more broadly on the blockchain technology and on the opportunities and risks it poses for law, the universe, and everything.

Basic seminar requirements:

Each student has the option of writing response papers and a paper satisfying the writing requirement for three credits or writing only response papers for two credits (but see Further Information below). The writing requirement specifies at least 25 pages with a topic description, outline, draft, and final paper; if you want to write a paper, you must make that decision and choose the topic by the second week of class (see Paper Information below). Those writing papers will also present them to the class in the last weeks of the semester; there will likely be four presentations per class session.

Those of you not writing papers must submit four (probably) response papers, which will make up 70% of your grades. You may choose any four weeks among the twelve weeks after the first week to write response papers (but see Further Information below). Each paper should be 800-1000 words (3-4 double-spaced pages in Times Roman), first *very* briefly summarizing the theses or points of the assigned readings and then providing some interesting observations, questions, or critiques of them. Response papers must be posted by 9:00 p.m. on the Tuesday evenings before class, and each student must read the response papers as well the readings for the class.

Those of you writing papers that meet the writing requirement must submit two (probably) response papers as described above plus the paper.

Active class participation, which will make up 30% of your grade.

Further Information:

If you have already satisfied the writing requirement, you would not have the option of getting the extra credit in the class. What you could do, though, is a one-credit independent study for the paper and meet the no-paper seminar requirements (which means more response papers) to receive three credits.

I don't think this is likely to be a problem, but I am not sure that I would be able to supervise twenty-five papers, so if you really want to write a paper, you should contact me soon—first come, first served.

To ensure that response papers are more-or-less evenly distributed among the weeks of class, I will post sign-up sheets with a limited number of slots for each week. My aim is to have about four or five response papers each week, in part because reading more would be burdensome and probably repetitive.

In past seminars, I have typically had six to ten students write papers. If, say, eight students choose to write papers, then we would have $8 \times 2 + 17 \times 4 = 84$ response papers, or 7 per week. That's too many, so I might have to lower the number of response papers required, depending on how many students write papers. I might even have to have fewer response papers and require a shortish final paper.

Paper Information:

One key thing in writing a student paper is to choose a topic with the right scope: significant enough to be worth writing about, but narrow enough to discuss thoroughly. You should consult with me about possible topics, and a resource that is very helpful not just in choosing a topic but also in writing the paper is Eugene Volokh, [Writing a Student Article](#).

Here is the schedule for the paper requirements:

Paper Requirement	Due Date
decision to write a paper	second week of semester
brief (one-page) topic description	third week of semester
detailed (two- or three-page) outline	sixth week of semester
draft paper (need not be pretty)	ninth week of semester
final paper	last day of semester

A second key thing is to have a thesis (or a claim, as Volokh calls it). In writing a paper for me, you need to make an argument, not just provide a description of something. And you need to have a thesis from the beginning, because it should structure everything you do. The thesis might change as you work on the paper, so you shouldn't be too worried about having the *right* thesis, but you need to include one in the initial topic description and outline, as well as in the draft and final papers. Feel free to talk with me about it.

A helpful resource for finding a topic is the [Research Roadmap](#) section of the [Blockchain for Law Students](#) web site. Another possibility is to look at the book [Blockchain and the Law: The Rule of Code](#), by Primavera De Filippi and Aaron Wright; the book is a little too abstract for our seminar, but it does raise some interesting issues, so it might be helpful.

I. The Technology Framework

Aug. 29 A. The Distributed Ledger Technology

[Blockchain – A Conceptual Primer](#)

Satoshi Nakamoto, [Bitcoin: A Peer-to-Peer Electronic Cash System](#)

[What is Money?](#)

(If you want more: David Yermack, [Is Bitcoin a Real Currency? An Economic Appraisal](#))

Vili Lehdonvirta & Robleh Ali, [Governance and Regulation](#)

(If you want more, you can look at the book from which this chapter comes: [Distributed Ledger Technology: Beyond Blockchain](#))

Sept. 5 B. Algorithms, Ethereum, and Smart Contracts

[Uniform Electronic Transactions Act](#), section 14

BlockchainHub, [What is a Smart Contract?](#)

[What is Ethereum?](#)

(If you want more: Kevin Werbach & Nicholas Cornell, [Contracts *Ex Machina*](#))

[The Greeter: Your Digital Pal Who's Fun to Be With](#) (This page has some technical content, but I think we can talk through it in class in a way that will both provide some understanding of what is happening and avoid getting bogged down.)

Kevin Delmolino et al., [Step by Step Towards Creating a Safe Smart Contract: Lessons and Insights from a Cryptocurrency Lab](#) (Again, don't get hung up on the technical content. The points are to see that drafting/ programming a smart contract is not easy and to raise the question of who should be doing this: programmers or lawyers.)

Sept. 12 **C. Dispute Resolution in the Blockchain World**

Adam Kolber, [Not-So-Smart Blockchain Contracts and Artificial Responsibility](#)
Prof. Kolber will likely attend the class.

Wulf A. Kaal & Craig Calcaterra, [Crypto Transaction Dispute Resolution](#)

Kirill Bryanov, [Arbitration on a Governed Blockchain: EOS' Crisis of Dispute Resolution](#)

Sept. 19 No class (Yom Kippur)

Sept. 26 **D. The “Market” for Mining**

[The Byzantine Generals' Problem](#)

[Bitcoin Mining Pools](#)

[Ethereum hash rate distribution worldwide in 2016, by mining pool](#)

Falk Schöning, [What blockchain can learn from the net neutrality debate: antitrust and regulatory aspects of “paid prioritization” for a nascent technology](#)

[What is a Finney attack?](#)

(If you want more: [The best way to attack PoW blockchains for profit](#))

[Analyzing the 2013 Bitcoin fork: centralized decision-making saved the day](#)

(If you want more: [Some Miners Generating Invalid Blocks](#))

(If you want even more: [A complete history of Bitcoin's consensus forks](#))

[Proof of Work vs Proof of Stake: Basic Mining Guide](#)

(If you want less: [Making Sense of Proof of Work vs. Proof of Stake](#))

(If you want more: [Proof of Stake FAQs](#))

II. Applications

Oct. 3 **A. Coins, ICOs, Securities**

Katja Langenbucher, Capital markets union and virtual funding: Initial Coin Offerings, Tokens, and Digital Corporations (available in Course Materials on TWEN site) (Although this was written from a European perspective, the general principles are relevant in the U.S. as well.)

Michelle Ann Gitlitz et al., [Potential Pitfalls of the BitLicense](#), New York Law Journal, May 18, 2018

(If you want more: Davis Polk & Wardwell LLP, [New York’s Final “BitLicense” Rule: Overview and Changes from July 2014 Proposal](#) (June 5, 2015))

Securities and Exchange Commission, [Release No. 81207, Report of Investigation Pursuant to Section 21\(a\) of the Securities Exchange Act of 1934: The DAO](#) (July 25, 2017)

[HoweyCoins](#)

This class will include a presentation by Prof. Langenbucher, who is visiting here at FLS this semester.

I. The Technology Framework (cont’d)

Oct. 10 **E. Oracles and the Real World**

Steve Ellis et al., [ChainLink: A Decentralized Oracle Network](#)

This class will involve a presentation by Mark Oblad, Head of Operations at SmartContract, the company that offers ChainLink.

II. Applications (cont'd)

Oct. 17 B. Blockchains as Information Repositories

[What is the Difference Between a Blockchain and a Database?](#)

Andries Van Humbeeck, [The Blockchain-GDPR Paradox](#) (Nov. 21, 2017)

Dave Birch, [Mutable and Immutable Blockchains](#) (Sept. 26, 2016)

(If you want more: Forrester Research, [Don't Dismiss Accenture's Blockchain Redaction Solution — You May Need It One Day](#))

(If you want even more: [U.S. Patent No. 9,967,088](#))

Roman Matzutt et al., [A Quantitative Analysis of the Impact of Arbitrary Blockchain Content on Bitcoin](#) (You don't need to follow the technical content here; I've included the article only to help distinguish between the information-storing role of blockchains and Bitcoin itself, and to raise some interesting legal issues.

Oct. 24 C. Supply Chains

IBM Institute for Business Value, Trust in trade: Toward stronger supply chains (available in Course Materials on TWEN site)

Brandon Quitten, [5 Blockchain Projects Revolutionizing the Supply Chain Management Industry](#) (Aug. 23, 2018)

In addition to the summary in the link above, you should read (or skim—some are long) information about at least one or two of the projects discussed there:

1. [VeChain, Development Plan and Whitepaper](#) or [The VeChain Whitepaper: What You Need to Know](#);
2. [Waltonchain White Paper \(V 1.0.4\)](#);
3. [Ambrosus Whitepaper](#);
4. [OriginTrail, First Purpose Built Protocol for Supply Chains Based on Blockchain](#); or
5. [WaBi \(蛙币\) — A Crypto Token for Safe Consumer Products](#).

This class will include a presentation by Catherine Malkova of IBM.

Oct. 31 **D. Permissioned Blockchains**

Jackson Parsons, [Blockchain Types Explained: It's More Than Public vs Private](#)

David Floyd, [Banks Claim They're Building Blockchains. They're Not](#)

Duncan Jones, [How to Secure 'Permissioned' Blockchains](#)

[5 Predictions About Blockchain And Compliance](#)

[Who has the power in enterprise blockchains?](#)

OECD, [Blockchain Technology and Competition Policy - Issues paper by the Secretariat](#) (8 June 2018)

Nov. 7 **E. Blockchain Anonymity/Pseudonymity**

[Is Bitcoin Anonymous? NO! It's Pseudonymous](#)

[Bitcoin Transactions Aren't as Anonymous as Everyone Hoped](#)

[6 Ways To Guarantee Anonymity When Making Bitcoin Transactions](#)

(More: [Staying Anonymous on the Blockchain: Concerns and Techniques](#))

Kang et al., [Why Do People Seek Anonymity on the Internet?: Informing Policy and Design](#)

David G. Post, [Pooling Intellectual Capital: Thoughts on Anonymity, Pseudonymity, and Limited Liability in Cyberspace](#)

(More: [Online anonymity: A gateway to freedom or abuse?](#))

Nov. 14 **F. Cryptoanarchy**

[A Hundred Years of Crypto Anarchy](#)

Timothy C. May, [The Crypto Anarchist Manifesto](#)

[A Lodging of Wayfaring Men](#) (in Chapter 3, pages 144-154)

Jedediah Purdy, [The God of the Digerati](#), *The American Prospect* (Mar.-Apr. 1998)

Jamie Bartlett, [Forget far-right populism – crypto-anarchists are the new masters](#), *The Guardian* (June 4, 2017)

III. Student Presentations

Nov. 20

Topics:

1. Contractual Intent and Smart Contracts
2. Abandoned Coin Accounts
3. Standardized Smart Contracts in Energy Trading

(These are my short titles, and the authors no doubt have chosen other titles.)

Nov. 28

Topics:

1. Who/What Is a GDPR Data “Controller” on the Blockchain?
2. Can Blockchain Protocols Help Interpret Smart Contracts?
3. A GDPR Exception for Blockchain?
4. Solving a Blockchain Financial Crisis

(These are my short titles, and the authors no doubt have chosen other titles.)