PROBLEM SOLVING INITIATIVE:
ENVIRONMENTAL, SOCIAL AND GOVERNANCE POLICIES:
PATHWAY TO IMPACT?

Wednesdays 3:15 pm - 6:30 pm
Hutchings Hall 120

Fall Term 2022

Faculty:

Timothy L. Dickinson
Professor from Practice
University of Michigan Law School
Hutchins Hall 439
DC Office Tel: 202-551-1858
Cell Phone: 734-604-6264
General office hours: By appointment
timothydickinson@paulhastings.com
cc: kristinroe@paulhastings.com

David Guenther
Clinical Assistant Professor of Law
University of Michigan Law School
Jeffries Hall 3120
Office Tel: 734-763-9331
Cell Phone: 734-730-7074
General office hours: By appointment
dbguenth@umich.edu

David Hess
Professor of Business Law & Business Ethics
Ross School of Business, University of Michigan
4318 Ross
734-763-9779
General office hours:
dwhess@umich.edu

Administrator:

Dorothy Krysowski
Office: Room 3178, Jeffries Hall
Office Tel: 734 763-4869
dkrys@umich.edu
General office hours: Monday through Friday: 8:00 am – 4:30 pm
**Course Description:**

Environmental, Social and Governance (ESG) policies have recently taken center stage in the investment world. The requirements of investor ESG policies vary widely, however, and may be challenging for investee companies to implement. In this course, multi-disciplinary student teams will work with faculty from the Law School and Ross School of Business and outside experts to consider several questions: What are the goals and core components of ESG policies? How is real-world impact assessed and measured? Can we draw any conclusions about the comparative success of different ESG policies in achieving their goals? Can existing institutional ESG policies be harmonized? What work is left to do – and is there a better way?

**Course Objectives:**

By the completion of this course, students will be able to:

- Articulate the role of their discipline in addressing the topic of the course.
- Define and understand the identified problem.
- Describe methods to communicate across disciplines and with key stakeholders to discuss this problem.
- Develop the skills to work collaboratively to create innovative professional perspectives and practices that assist with solving the problem.
- Reflect on the systemic factors that perpetuate and make it difficult to solve the problem.

**Learning Objectives:**

In this course you will be evaluated on both an individual and group level. This course is primarily focused on skills and mindset building in the context of problem solving. These include:

- Collaborating
- Communicating across disciplines
- Communicating ideas to key stakeholders
- Reflecting
- Embracing acceptable risk
- Innovating
- Developing prototypes and failing fast
- Integrating strategies, tactics, and goals
- Articulating your discipline’s contribution to the issue we are working on
- Tolerating ambiguity
- Defining and understanding the problem
- Developing professional perspectives
• Understanding relevant ethical standards and dynamics.

This course requires significant participation and preparation. You will be working with your colleagues in the course to create an innovative intervention to address your specific PSI problem.

In any course in which group work is an integral component students may have concerns about workload distribution within the group. We are hopeful in light of the real world applications of our work in this course, that “free riders” will not be an issue. However, peer assessment will be part of the evaluation of the course. Each student will complete a self and peer assessment form at both the midpoint of the semester and at the end. The assessment form may be found on Canvas.

**Policy on Syllabus & Reading Assignments**

Please note that given the nature of this course, and as the semester progresses, there may be times when we update the syllabus to reflect additional guest speakers and/or changes to the required reading assignments. When we update the syllabus and/or any required reading assignments, we will post the updated materials to Canvas and also circulate an email notifying you of the change. If an assigned reading has (skim) noted after it, it indicates that we recommend you review the assignment to get a sense of why we are including the reading in our syllabus, but we do not want you to spend too much on it. We also include optional reading assignments on the syllabus that are available on Canvas. Optional reading assignments are precisely that: optional. We hope that you find them to be helpful resources, but do not expect you to review them in preparation for class.

**Statement on Inclusive Teaching**

The University of Michigan is committed to inclusive teaching. Inclusive teaching involves deliberately cultivating a learning environment where all students are treated equitably, have equal access to learning, and feel valued and supported in their learning. Such teaching attends to social identities and seeks to change the ways systemic inequities shape dynamics in teaching-learning spaces, affect individuals’ experiences of those spaces, and influence course and curriculum design.

**Participation and Attendance:**

Class attendance and participation is mandatory. Class participation is an essential part of the course, we will spend time in class applying the concepts and research ideas you have gathered – both in small groups and with the entire class. In addition, you will be responsible for preparing for and then engaging with guest speakers.

From August 31 through November 30, class will meet on Wednesdays from 3:15 pm to 6:30 pm in Hutchins Hall 120. Class will not meet on Wednesday, November 23.
Prof. Bridgette Carr and Prof. Ann Verhey-Henke will teach the intensive problem-solving skills module of this course from 3:15-6:30 p.m. in 120 Hutchins Hall during weeks 2, 3, and 4 of the term (i.e. September 7, September 14 and September 21).

This is a one-semester course in Fall 2022 for three (3) credits.

If you expect to miss a class session, please notify the course Faculty and the Administrator beforehand

Mental Health and Wellbeing:

University of Michigan is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. For a listing of other mental health resources available on and off campus, visit: http://umich.edu/~mhealth/.

Disability Statement:

The University of Michigan is committed to providing equal opportunity for participation in all programs, services and activities. Request for accommodations by persons with disabilities may be made by contacting the Services for Students with Disabilities (SSD) Office located at G 664 Haven Hall. The SSD phone number is 734-763-3000. Once your eligibility for an accommodation has been determined, SSD will contact the Law School’s Office of Student Life (734-764-0516, lawstudentlife@umich.edu) with a recommendation, and Student Life will work with you and SSD to finalize and facilitate your accommodations. For more information about this process, please feel welcome to contact the Office of Student Life.

Reading Materials:

Required readings are expected to be completed before the appropriate class (as noted below), and will form the basis for class discussion and class exercises. Additional readings may be assigned from time to time during the semester.

On Canvas: Most readings and ITC forms will be posted on the Canvas site for the course. You will need to login using your uniqname and UMICH (Kerberos) password. If you have difficulties accessing the Canvas site, please contact the Administrator.

Handouts: From time to time, we will hand out hard copies of reading materials in class for the next following session. Accordingly, if you are unable to attend class, please contact a classmate or the Administrator to make sure that you have the necessary materials.

Evaluation and Assessment:
Students will be assigned to group project teams during the course. Student grades will be determined by the quality of team work product, group processes (e.g., ability to meet deadlines, ability to communicate effectively), and individual performance. The substantive criteria we will use for evaluation fall into five major categories with the weights described below. (Note that unanticipated course developments may require some modification in category weighting at the end of the term). An additional sixth category is available to recognize exceptional efforts and contributions.

As part of this course, you will also engage in specific problem-solving content with Bridgette Carr and Ann Verhey-Henke. Your grade in the problem-solving portion of the course will contribute 33% toward the final course grade. The balance of your grade will be calculated as follows:

1. Deliverables and Contribution to Overall Class Plan or Strategy (40%)

*Questions to Consider:* Did the work product demonstrate excellent judgment and superior research, analysis, critical thinking, and problem solving skills? Did the team/individual express thoughts in an organized manner? Did the written and oral work product employ proper grammar, sentence structure, and vocabulary? Did the work respond effectively to potential challenges and positions expressed by others? Did the team/individual contribute significantly to the success of the overall plan or strategy?

2. Team Functioning (10%)

*Questions to Consider:* Did the team display cooperation and effective communication? Did the team function effectively and utilize the skills and knowledge of all team members? Did the team consult with the professors and other knowledgeable experts appropriately? Did the team meet established deadlines?

3. Individual Effort and Interaction with Group (20%)

*Questions to consider:* Did you attend group meetings regularly and arrive on time? Did you contribute meaningfully to group discussions? Were you open to, and respectful of, other points of view? Did you complete group assignments on time? Was the work you prepared for the team high quality? Did you demonstrate a cooperative and supportive attitude? Did you contribute significantly to the success of the project? *Note: The answers to these questions will be determined, in large part, by peer evaluation.*

4. Individual Participation and Professional Relationships/Responsibilities (20%)

*Questions to consider:* Did you participate regularly in class discussions? Were you prepared to discuss developments in your projects in an effective manner with other students? Did you respond courteously and with due consideration to professors, guest speakers, consultants, and classmates? Did you strive for cross-disciplinary cultural competence (i.e., an appreciation for
the language, norms, perspectives, and practices of other disciplines) and understanding of other differences among your classmates? Did you display honesty and integrity?

5. Individual Reflective Learning (10%)
Questions to consider: Can you effectively criticize your own performance? Are you able to identify your strengths and weaknesses in the various areas of project work? Did you gain insights about your future role as a professional? Did you learn about the value and limitations of professionals in addressing societal challenges? Did you do all you could have done to maximize the benefits you obtained from the problem solving course experience?

6. Individual Special Recognition
Question to consider: Are there any aspects of your work in the course that are not otherwise described in the preceding criteria that deserve special recognition?

Grade Assessment Descriptions

The following is a rough guide describing the level of work that corresponds to student grades. The descriptions are necessarily general, but we hope it helps you to understand our grading.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Consistently excellent work in all areas, with at least one outstanding piece of significant work. A student who earns an “A” will take full ownership of the project, be organized and attentive to details, will always allocate sufficient time and effort to carry out tasks responsibly, and will recognize, consider, and appropriately resolve ethical issues. The student will show initiative and creativity in planning and developing solutions, rather than merely carrying out plans outlined by the professor, and will be reflective, professional, and respectful. S/he will have shown considerable progress in mastering the various skills necessary to be an effective problem solver, and will actively prepare, participate, and take initiative in all class sessions and team sessions.</td>
</tr>
<tr>
<td>A-</td>
<td>Mostly excellent work in all areas and some very good work.</td>
</tr>
<tr>
<td>B+</td>
<td>Consistently very good work or a mix of generally very good work, occasional excellent work, and some competent work.</td>
</tr>
<tr>
<td>B</td>
<td>Competent and adequate work with some very good work, but with some weaknesses.</td>
</tr>
<tr>
<td>B-</td>
<td>On the whole, competent work but with some significant lapses or shortcomings.</td>
</tr>
<tr>
<td>C</td>
<td>On the whole, marginally competent work with frequent lapses or shortcomings.</td>
</tr>
</tbody>
</table>
Students enrolled in and registered through schools or colleges that permit pass/fail grading may opt for pass/fail grading in this course. Students who choose the pass/fail option will receive a grade of “pass” if they meet the conditions set forth by their schools or colleges for such grade.

**A Note About the PSI Intensive Training**

Weeks 2, 3 and 4 of the semester are dedicated to developing creative problem-solving tools through a condensed PSI Training led by Bridgette Carr and Ann Verhey-Henke. This training will take place in Room 120 of Hutchins Hall. We will mirror the lessons and skills learned during in our remaining classes with a focus on ESG policies and impact. You will also be required to create and update a process map throughout the semester that you will learn more about during your PSI Training. The information below provides important deadlines you should keep in mind while you complete your process map.

**Capstone Presentation**

Students will be divided into multidisciplinary teams, each representing a different stakeholder interest with respect to ESG policies. Possible stakeholder teams include:

1. Seekers of capital (companies, businesses, issuers);

2. Providers of capital (shareholders, investors); and

3. Regulatory, compliance, and related stakeholders (employees, suppliers, customers, communities).

After learning about issues and challenges of ESG policies, you and your team will choose a specific problematic aspect of ESG policies to focus on from your team’s perspective and work towards developing a mitigating solution. In stage one, each team will articulate an identity and set of particular problems and goals for the team. In stage two, each team will present its perspective to the class, and the teams will negotiate together to attempt to identify a common problem or problems and to formulate a common framework to address them. The capstone presentation on the last day of the course before Thanksgiving will involve presentation of a common proposal, then each team will present its particular considerations as it negotiated with other teams.

The proposed solution can and should combine technological, legal, public policy, social, educational and/or other measures as appropriate for the problem your team aims to tackle. Your
solution should be feasible to implement within three years.

CLASS SCHEDULE AND READINGS

Class 1 (Tuesday, August 31)

Introduction: Environmental, Social and Governance Policies: Pathways to Impact?

Readings:

- United Nations Sustainable Development Goals
- Michael J. Callahan, David F. Larcker, and Brian Tayan, “The General Counsel View of ESG Risk,” Stanford Closer Look Series (September 14, 2021)
- “IFC ESG Guidebook,” International Finance Corporation (2021) [SKIM]

Handouts (in class):

Course Syllabus (also posted on Canvas)

Activity: Please come to class prepared to speak for 2-3 minutes to introduce yourself and explain your background, why you took this course, your understanding of what ESG is, what you see as ESG’s strengths and weaknesses, important current issues relating to ESG, whether you’ve had previous coursework on ESG, and what you would like to take away from the course.

Activity: Team formation.

Assignment: Each student to email Professors Dickinson, Guenther and Hess with top two team preferences. Teams to be assigned before Class 2.

Class 2 (Wednesday, September 7)

PSI Intensive Skills Module (Prof. Bridgette Carr and Prof. Ann Verhey-Henke), 120 Hutchins Hall

Assignment/Activities:
1. We will be using an online tool called MURAL for the entire semester, it allows us to do collaborative problem solving virtually. In order to be ready to go for class this week please watch the recording of the 1 Hour MURAL training before class this week. [https://support.mural.co/en/articles/2113687-introduction-to-mural-live-demo](https://support.mural.co/en/articles/2113687-introduction-to-mural-live-demo)


3. Please come up with 3-5 questions in each of the following categories to ask your faculty members to learn more about your problem statement.
   a. Descriptive (Broad, Open, Evokes Storytelling)
   b. Structural (Specific, In-depth, Use to Categorize)
   c. Contrast (Clarity, Understand Relationships, Understand How Terms Are Used)
During class you will need to share these questions with your colleagues so please have them accessible for class.

**Class 3** (Wednesday, September 14)

PSI Intensive Skills Module (Prof. Bridgette Carr and Prof. Ann Verhey-Henke), 120 Hutchins Hall

**Assignment/Activities:**

1. During our class last week we asked your group to identify some questions to use when interviewing your faculty members. Each individual in your group should answer those same questions for themselves, write down those answers (please limit it to 1 page), print it out and bring that one page to class. All of you bring expertise, information, and assumptions about the problem you are trying to solve-- it is important for us to document those at the beginning of the process!

2. Please bring all of your notes from your faculty interviews to class.

3. Please watch the recording Ann made to walk you and your group through making an Ecosystem Map. After watching please complete the first version of your Ecosystem Map on MURAL.

4. Watch/Read [Collaborating for Change MOOC’s (Links to an external site.)](https://www.collaboratingforchange.org/) Complete the first 4 sections of Module 3 of the MOOC on Social Identities, Power, and Privilege: 1) Social Identities, Power, and Privilege Introduction, 2) Identity in Action, 3) What are Social Identities, and 4) What are Social Identities continued. STOP before Dimensions
of Social Identity section. The MOOC link is also here: 
https://online.umich.edu/courses/community-engagement-collaborating-for-change/(Links to an external site.)

5. Complete the Social Identity Wheel (referenced in the MOOC - "All of us have multiple social identities. What are your identities?"). You will find this worksheet on Canvas. Note: the social identity wheel that you complete is for your own reflection -- you will not be submitting it.

Class 4 (Thursday, September 21)

PSI Intensive Skills Module (Prof. Bridgette Carr and Prof. Ann Verhey-Henke), 120 Hutchins Hall

Assignment/Activities:

1. Working with your group please identify the How Might We statement you want to use for Ideation. Put your chosen statement through the faucet test. Place it on the second row of your MURAL board where indicated. We will use your How Might We statement as the foundation for our last class together.

Deadlines for completing Process Maps:

October 21: For this deadline we will be reviewing two sections of your map Please make sure you have completed the Ecosystem/Stakeholder Mapping and Interview Synthesis sections. You should undertake a new Ecosystem Map and not copy/paste the one you did in the bootcamp. We will be providing you with feedback on those sections the following week. We understand you may not have completed all of your interviews by October 21 however your map should reflect the interviews completed so far.

November 18: We will review two additional sections of your map for this deadline. Please make sure you have completed the Ideate and Prototype sections of your map. We know you may not have all your feedback collected by this point, please just highlight whatever feedback you do have. We will provide you with feedback on those sections the following week.

December 9: We will be reviewing your entire process map. We expect all sections to be completed. (the storyboarding section is not required, it is optional. Some students last semester found it helpful as they prepared for their capstones).

Class 5 (Wednesday, September 28)

Readings: See Readings for August 31 class.
Activity: In the first half of class, Professors Dickinson, Guenther and Hess will present briefly to the class, to be followed by class discussion. In the second half of class, we will break out into stakeholder teams to discuss team identity, problematic aspects from the team’s perspective, potential frameworks to address such problems, and questions for speakers in following classes.

Class 6 (Wednesday, October 5)
Readings: [TBA]
Speaker: Mary Boomgard, Group Managing Director, Environmental Impact Analysis, U.S. International Development Finance Corporation (DFC)
Activity:

Class 7 (Wednesday, October 12)
Readings: [TBA]
Speaker: Melissa Hodgman, Director of Enforcement, U.S. Securities and Exchange Commission
Activity:

Class 8 (Wednesday, October 19)
Readings: [TBA]
Speaker: Jesse Audet, KKR
Activity:

Class 9 (Wednesday, October 26)
Readings: [TBA]
Speaker: [Mary Wroten, Ford Motor Company]
Activity:
**Class 10** (Wednesday, November 2)

**Readings:** [TBA]

**Activity:** All Teams to present research, problems identified, and potential solutions; Teams to discuss, narrow, agree on potential capstone project(s).

**Class 11** (Wednesday, November 9)

**Readings:** [TBA]

**Activity:** [Dry run/Q&A for Capstone Project]

**Class 12** (Wednesday, November 16)

**Activity:** Presentation of Capstone Project(s)

**Class 13** (Wednesday, November 30)

**Activity:** Class dinner, recap and review of PSI. [Details TBA].
Introduction to Cryptoassets, Blockchain, DeFi, and More

Fall Semester 2022-23
First Session, Sept. 01, 2022
Professors Khanna & Bauguess
Overview

- Introductions, Course Structure and Assessment
- What is a Cryptoasset & How Do They Work and Add Value?
  - Underlying technology & how does it work – Blockchain, Distributed Ledgers and more. Examples – Bitcoin, Ethereum, but many more. What incentivizes miners (or verifiers more generally)?
  - Benefits and costs at conceptual level – lower verification costs, quicker verification, benefits of decentralization, and benefits of automation. Typically, fewer intermediaries.
  - But, costs include “last mile” concerns, climate issues with consensus protocols, costs of decentralization, privacy, illicit financing, fraud, et al.
    - Suggests the value of cryptoassets will usually vary across countries and sectors.
    - What other systems/technologies might have similar effects? Comparative inquiry.
  - Is cryptocurrency the only “use” case? Theory suggests many more (in practice?) See GAO, NFTs, Stablecoins, and DeFi.
- Policy & Regulatory Concerns
  - Key areas – financial reg, money laundering, systemic risk, securities reg, commodities reg, privacy, tax, intellectual property, national security, international competition/regulation, ESG & climate, others.
  - Example – Goals of securities regulation and how map on to cryptoassets.
Introductions, Course Structure and Assessment

- **Welcome & Introductions, zoom:** [https://umich.zoom.us/j/95240353713](https://umich.zoom.us/j/95240353713)

- **Office Hours:**
  - Prof. Khanna, Thurs from 1:00pm to 3:00pm EDT
    - Zoom link: [https://umich.zoom.us/j/92477774695](https://umich.zoom.us/j/92477774695)
  - Prof. Bauguess, Thurs from 1:30pm to 3:00pm EDT
    - Zoom link: TBA

- **Readings**
  - No textbook, but sets of readings (on Canvas or materials online).

- **Guest speakers** – we will have a number. Most online, but some in person. Next week (Sept. 08) we will have at least two guest speakers: Tyler Page (CEO, Cipher Mining) and Paul Grewal (CLO, Coinbase).

- **Assessment:** Class participation and final project (and presentation). Most likely will have two project groups (~10 students each) with each focusing on one area of law and designing a proposed regulatory reform. Presentations in last session on Dec. 01, 2022.
What is a Cryptoasset? How does it work and add value?

- **What is it?**
  - Cryptoasset – cryptographically secured digital representations of value or contractual rights that use some type of distributed ledger technology (DLT) and can be transferred, stored or traded electronically (FCA, UK).
  - Another phrasing is “digital asset” – anything that is created and stored digitally, is identifiable and discoverable, and has or provides value (usually via tokenization on a blockchain).

- **How does it work?**
  - We will build this out in the next few slides, but in essence relies on verification technologies (e.g., blockchain and DLT) that reduce verification costs and related costs (i.e., reduce transaction costs).

- **How might it add value?**
  - The reduction in verification and other costs may enable more efficient, secure and transparent transactions and activities than existing technologies thereby facilitating the growth of digital commerce and other activities that are sometimes referred to as “Web3”.
How do Cryptoassets Work?: Background

- For a transaction to occur the buyer and seller need to verify that the buyer has and can transfer something of value to the seller who has and can transfer something of value to the buyer. [There are negotiation costs, et al which we ignore for now]. This is a common problem in many transactions.
  - For instance, real estate – efforts must be spent to verify that the seller has title to the property in a way that can be transferred (e.g., what are the boundaries of the property, who else may have an ownership claim, are there encumbrances on the property, what type of title does the seller have) and the buyer has the necessary funds to purchase the property at the negotiated price (e.g., the buyer has funds in a bank account, is pre-approved for a mortgage).
  - We often take these steps for granted but that is because we have title transfer agents, lawyers, brokers, deeds or other records evidencing ownership, etc… . These are not without costs (and are populated with many intermediaries) and in some contexts problems in them can seriously impede real estate markets and lead to corruption (and other concerns).

- Cryptoassets promise to substantially reduce verification costs in ways that rely less on intermediaries (e.g., the “trustless” economy). This may facilitate scaling of existing transactions/activities, plus enable transactions/activities not available with prior verification technologies.
  - Note within this – verification costs are larger in some contexts than others so that the value cryptoassets bring is likely to vary by context, often considerably.
How do Cryptoassets Work?: Example – Bitcoin, Blockchain & DLTs

- We explore cryptoassets starting with two of the best-known examples – Bitcoin and Ethereum – and rely on them to discuss key concepts (e.g., Blockchain, DLTs).

- As we discuss them, we will try to focus on how this technology reduces verification costs (e.g., via more accurate and speedy verification) with fewer intermediaries on whom one must rely (e.g., via decentralization and automation).

  - Note also, that each cryptoasset is somewhat different (sometimes a lot different) to other cryptoassets. They may have different types of consensus mechanisms and protocols, differing degrees of decentralization and automation and many other potential differences.

- As you consider them ask yourself how (and where) will this enable more transactions and activities and how does it compare to existing technologies that we might use instead?

- Also, where might you see policy/regulatory concerns or opportunities for policy to improve upon things.
WHAT IS BITCOIN?

Cash for the Internet

Solved the double spending problem without a central record keeper

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**Bitcoin: A Peer-to-Peer Electronic Cash System**

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

**Abstract.** A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.
What is Money?

1. Medium of Exchange
2. Store of Value
3. Unit of Account

"Lawful money" is defined by 31 USC Sec. 5103 and 12 USC Sec. 411 as "notes" which are "obligations of the United States...receivable by all national and member banks and Federal Reserve Banks"
IS BITCOIN MONEY?

- Medium of Exchange
- Store of Value
- Unit of Account

Not legally recognized by US government but demonstrates many of the economic characteristics...

- Durability
- Portability
- Divisibility
- Uniformity
- Limited Supply
- Acceptability (Legal Tender)
**LIMITED SUPPLY**
- Only 21 million bitcoin (BTC) will ever be created (Currently ~16.7 million BTC in circulation)
- Last bitcoin will be created in 2140

**HIGHLY DIVISIBLE**
- Bitcoins are divisible to 0.00000001 BTC
- Smallest unit is called one ‘Satoshi’

**DECENTRALIZED CREATION**
- Network participants (miners) are randomly awarded BTC for their work to secure the network
- More computing power = more likely to obtain new BTC
DOES BITCOIN HAVE VALUE?

Like this U.S. dollar, it is backed by the perception that it has value.
HOW DOES BITCOIN WORK?
Distributed Ledger Technology (DLT) a.k.a. Blockchain

The blockchain in practice

NODE
A node is simply a computer on the blockchain network that stores the ledger.

LEDGER
A ledger is a list of all the transactions made on the blockchain. Technically, it is made up of a chain of blocks.

DISTRIBUTED
All copies of one document are spread among users and they are constantly and automatically synchronised, hence identical at all times.

HOW DOES THE BLOCKCHAIN WORK?

Immutable transactions

A block is comprised of a group of transactions from the same time period, like a page from a record book.

<table>
<thead>
<tr>
<th>Previous hash</th>
<th>Hash</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>1Z8F</td>
</tr>
<tr>
<td>1Z8F</td>
<td>6BQ1</td>
</tr>
<tr>
<td>6BQ1</td>
<td>3H4Q</td>
</tr>
<tr>
<td>3H4Q</td>
<td>6BQ1</td>
</tr>
</tbody>
</table>

Inside each block:
- Hash
- Previous block's hash
- Transaction data
- Timestamp

Along with its own hash, each block stores the hash of the block before it.

A hash is a unique string of letters and numbers created from text using a mathematical formula. Blocks are therefore “chained” together making the ledger (almost) immutable or unable to be changed. To add a block, it may first need to be mined and then approved by a number of notes through a consensus mechanism.

HOW DOES THE BLOCKCHAIN WORK?

Consensus Mechanisms

No block can be added to the ledger without approval from specified nodes in the network.

Rules regarding how this consent is collected are called consensus mechanisms. Two of the better known are “proof of work” and “proof of stake” with different anticipated climate effects.

https://crypto.com/university/consensus-mechanisms-in-blockchain
WHAT ARE CRYPTOCURRENCIES GOOD FOR?

Just Monopoly Money?

Cryptocurrencies “fuel” the blockchains

- the "cryptocurrency" itself is a crucial part of how a blockchain can replace the principal-agent relationship of a firm with an "open network," in which participants in the network are properly incentivized to power the blockchain’s protocol.

- E.g., Ether (ETH) is the currency of the Etherium blockchain

- The “layers” of the blockchain replicate the functions of the classical firm

https://sinakian.medium.com/what-are-cryptocurrencies-good-for-8a4946ca1366
Blockchain Layers

https://etherplan.com/gallery/the-layers-of-the-blockchain-industry-stack/
USE CASES
Electronic Money Transfer – faster and cheaper

Comparing bank transfers and Bitcoin

- An international bank transfer:
  - YOUR BANK
  - INTERMEDIARY BANKS
  - THEIR BANK
  - On average $20-$60 in fees
  - 5-7 days

- A Bitcoin-based transfer:
  - YOU
  - On average $0.50 in fees to miners
  - < 1 hour

USE CASES

Smart Contracts

- Automatically execute transactions if certain conditions are met without requiring the help of an intermediary company
- Primary innovation of the Etherium blockchain

USE CASES
Beyond cryptocurrencies

Blockchain has many potential non-financial applications

- Coffee supply chain
- Real estate
- Organizational structure
- Carbon credits
- Federal government operations
- Voting
- Pharmaceutical supply chain
- Digital IDs

Source: GAO. | GAO-22-104625

USE CASES - STABLECOINS

Privately created dollars and Central Bank Digital Currency

Central Bank Digital Currencies (CBDC), e.g., digital Yuan or Dollar

Stablecoin using decentralized authorities, e.g., Ethereum blockchain, which depend on ‘proof of work’ or, in the future, ‘proof of stake’
USE CASES
Central Bank Digital Currency (CBDC) Permissioning

In an account-based CBDC (left-hand side), ownership is tied to an identity, and transactions are authorised via identification. In a CBDC based on digital tokens (right-hand side), claims are honoured based solely on demonstrated knowledge, such as a digital signature.

TRADEOFFS OF BLOCKCHAIN TECHNOLOGY

Disadvantages

Transactions are final (no recourse)
Limits government control
- Domestic money laundering and crime concerns
- International embargo concerns (limits ability to freeze assets)
- Energy Use
- Consumer/Investor protections
- scam Initial Coin Offerings (ICO)

Advantages

- Can lower transaction costs for international money transfer
- Stable financial instrument for people in countries with weak monetary policy
- Serves ‘under/unbanked’
- Micro-transactions
- Transparent
THE ANONYMITY TRANSPARENCY TRADEOFF

It's revolutionary

Everyone can see the content of your digital wallet if they have your address

But no one knows that it is your address ... unless you tell them

“Today, federal law enforcement demonstrates once again that we can follow money through the blockchain, and that we will not allow cryptocurrency to be a safe haven for money laundering or a zone of lawlessness within our financial system,”

– Assistant Attorney General Kenneth Polite Jr.
USE CASES - NON-FUNGIBLE TOKENS (NFTs)

- Distinction between an NFT and a Fungible Token – NFT is like baseball card, not $5 bill.

- Built on Eth often – ERC-20 vs. ERC-721 vs. ERC-1155. However, transaction costs are not that low.

- Can be used in gaming, DeFi (lending, though a bit early right now), status/identity signaling, and music resale royalties.

  - Music resale royalties are an interesting use case that may be important in some jurisdictions and less so in others.
Decentralized Finance (DeFi)

- DeFi – financial services on permissionless blockchain – eg payments, lending, investment, insurance, asset management, etc.
  - Key terms: blockchain, digital assets, wallets, smart contracts, Dapps, DAOs, Stablecoins, Oracles.
  - Much lending is over-collateralized so reduce need to do credit checks, but then need to consider hacks, other risks.
  - Some Key DeFi service categories:
    - Stablecoins
    - Exchanges
    - Credit
    - Derivatives
    - Insurance
    - Asset Management
### Comparing Traditional Finance to DeFi

<table>
<thead>
<tr>
<th></th>
<th>Traditional Finance</th>
<th>DeFi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Custody of Assets</strong></td>
<td>Held by a regulated service provider or custodian on asset owners’ behalf.</td>
<td>Held directly by users in non-custodial wallets or via smart contract-based escrow.</td>
</tr>
<tr>
<td><strong>Units of Account</strong></td>
<td>Typically denominated in fiat currency.</td>
<td>Denominated in digital assets or stablecoins (which may themselves be denominated in fiat money).</td>
</tr>
<tr>
<td><strong>Execution</strong></td>
<td>Intermediaries typically process transactions between parties.</td>
<td>Via smart contracts operating on the user’s assets.</td>
</tr>
<tr>
<td><strong>Clearing and Settlement</strong></td>
<td>Processed by service providers or clearinghouses, typically after a period of time.</td>
<td>Writing transactions to the underlying blockchain completes the settlement process.</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>Specified by the rules of the service provider, marketplace, regulator and/or self-regulatory organization.</td>
<td>Managed by protocol developers or determined by users holding tokens granting voting rights.</td>
</tr>
<tr>
<td><strong>Auditability</strong></td>
<td>Authorized third-party audits of proprietary code or potential for open-source code that is publicly verified.</td>
<td>Open-source code and public ledger allow auditors to verify protocols and activity.</td>
</tr>
<tr>
<td><strong>Collateral Requirements</strong></td>
<td>Transactions may involve no collateral, or collateral less than or equal to the funds provided.</td>
<td>Overcollateralization generally required, due to digital asset volatility and absence of credit scoring.</td>
</tr>
<tr>
<td><strong>Cross-service Interaction</strong></td>
<td>Limited. Movement toward Open Finance via application programming interfaces or dedicated intermediaries.</td>
<td>Any service may integrate with any other service on the same blockchain, and potentially across chains.</td>
</tr>
<tr>
<td><strong>Access and Privacy</strong></td>
<td>Identity checks conducted by service providers. Personal data subject to national privacy laws.</td>
<td>Identity verification requirements under discussion by anti-money laundering regulators. User balances and transaction activity are generally public.</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Vulnerable to hacks and data breaches in software systems controlling assets.</td>
<td>Vulnerable to hacks and other technical and operational risks of smart contracts.</td>
</tr>
<tr>
<td><strong>Investor Protection</strong></td>
<td>Government-mandated disclosure and consumer protections, anti-fraud enforcement, exposure limits, and insurance schemes.</td>
<td>Users assume all risks as a default, although private redress arrangements such as DeFi insurance offer some protection against losses.</td>
</tr>
</tbody>
</table>

See: DeFi, Beyond the Hype https://wifpr.wharton.upenn.edu/wp-content/uploads/2021/05/DeFi-Beyond-the-Hype.pdf.
Enabling more (and newer) transactions or activities with new technologies is great, but as with most things there are costs. These include:

- Hacking risks?
- Concerns with illicit use of funds, money laundering, et al?
- Risks akin to those with the banking system?
- Fraud risks, insider trading, market manipulation
- Tax concerns
- Privacy matters
- Intellectual property concerns,
- National security,
- Climate effects,
- Global regulation

Key questions – do these play out the same way for cryptoassets as they do for other things? Are these the only relevant concerns for cryptoassets or web3?
Consider Federal Securities Regulation

- Traditional concerns – the firms raising capital might do so with insufficient information provided to potential investors resulting in fraud (and related problems) leading to weak stock markets and less funding available for new business and hence poor economic growth.

- Address with: anti-fraud punishments, specific rules, and providing lots of disclosure to the market.
  - The firm itself provides much information but much regulation of intermediaries who work in this field (brokers, investment banks, lawyers, etc.).
  - Why intermediaries – firm may have insufficient funds to pay for harm and these intermediaries have both funds and reputational capital at stake.

- Does this approach make sense for cryptoassets? Is the information considered material the same, are the intermediaries the same, are likely venues for fraud the same? If not, then...?
PROBLEM SOLVING INITIATIVE
ADDRESSING THE CHILD CARE CRISIS
Fall 2022
Wednesdays, 3:15 - 6:30 pm

“I can afford to have a child, I just can’t afford to pay for their care for the first three years of their life.”

- Amy Deveua, Mother in Massachusetts

“My employees have to rely on food stamps and child care assistance themselves, because I can’t pay them a living wage.”

- Deb Vandergaast, Child Care Center Director in Iowa

In the United States, many parents need care for their children while they work. Even before the pandemic began, the country was facing a child care crisis but the pandemic has exacerbated the problem. There are not enough licensed child care programs available for parents needing care for their children, especially for infants and toddlers. For parents who are able to find openings in licensed child care programs, the cost is frequently too expensive for many families, averaging over $10,000 annually per child across the U.S. At the same time, child care businesses are operating at extremely thin margins, and are struggling to stay in business. This is due to a combination of factors including rising operational costs and inability to find qualified staff. In this PSI, multidisciplinary teams will apply problem solving tools to figure out how to address this problem. Specifically, teams will create an innovative program or policy that the state of Michigan or its local governments can implement to attract, train, and/or support child care workers.

Instructors

Tifani Sadek
Clinical Assistant Professor, Michigan Law
Jeffries Hall 3016
tsadek@umich.edu

Annette Sobocinski
Executive Director, Child Care Network
Legal Research 929
ajbauer@umich.edu
**Course Structure:**

This PSI is comprised of six basic parts:
- Week 1: Defining the problem
- Weeks 2-4: Design Thinking Bootcamp
- Weeks 5-7: Ideation
- Week 8: Mid-Semester Check-In
- Weeks 9-12: Fine-Tuning
- Week 13: Capstone Presentation

As noted, weeks 2, 3 and 4 of the semester are dedicated to developing creative problem-solving tools through a training led by Bridgette Carr and Ann Verhey-Henke. This training will take place in Room 250 of Hutchins Hall. Your grade in the bootcamp portion of the course will contribute 33% toward the final course grade. We will mirror the lessons and skills learned during our remaining classes with a focus on the child care crisis. You will also be required to create and update a process map throughout the semester that you will learn more about during your bootcamp training. The syllabus schedule below provides important deadlines you should keep in mind while you complete your process map.

**A note on participation and attendance:** Class attendance is imperative for both your own learning and the learning of your peers. We expect students to attend and engage in every class. However, we want to be flexible and reasonable with student needs and the public health situation. If you are sick, please stay home. If you must miss a class, you should email your professors and your team in advance and establish a plan for making up the work.

**Course Objectives:**

By the end of the semester, we expect students to be able to:
- Define the “child care crisis” and understand its root causes and direct and indirect effects;
- Articulate the role of their discipline in addressing the child care crisis;
- Discuss the child care crisis across disciplines and with key stakeholders;
- Develop skills to work collaboratively to create innovative professional perspectives and practices that contribute to solving the problem; and
- Reflect on the systemic factors that perpetuate and make it difficult to solve the problem.
**Evaluation and Assessment:**

Students will be assigned to group project teams during the course. Student grades will be equally determined by (1) performance in the Design Thinking Bootcamp; (2) the quality of your team’s work product and its group processes (e.g., ability to meet deadlines, ability to communicate effectively); and (3) and individual performance. The substantive criteria we will use for evaluation are described below.

(1) **Design Thinking Bootcamp Grade**: One-Third of Overall Grade

As part of this course, you will also engage in specific problem-solving content with Bridgette Carr and Ann Verhey-Henke. Professors Carr and Verhey-Henke will provide us with a numerical grade for their portion. They will explain their criteria on their first day of class. There are BootCamp activities due throughout the semester; these are included in the schedule below.

(2) **Team Grade**: One-Third of Overall Grade

*Team Deliverables (80% of Team Grade)*: Did the team's work product demonstrate excellent judgment and superior research, analysis, critical thinking, and problem-solving skills? Did the team express its thoughts in an organized manner? Did the team’s written and oral work product employ proper grammar, sentence structure, and vocabulary? Did the team’s work respond effectively to potential challenges and positions expressed by others? Did the team contribute significantly to the success of the overall class plan or strategy?

*Team Functioning (20% of Team Grade)*: Did the team display cooperation and effective communication? Did the team function effectively and utilize the skills and knowledge of all team members? Did the team consult with the professors and other knowledgeable experts appropriately? Did the team meet established deadlines?

(3) **Individual Grade**: One-Third of Overall Grade

*Individual Effort and Interaction with Group (40% of Individual Grade)*: Did you attend group meetings regularly and arrive on time? Did you contribute meaningfully to group discussions? Were you open to, and respectful of, other points of view? Did you complete group assignments on time? Was the work you prepared for the team high quality? Did you demonstrate a cooperative and supportive attitude? Did you contribute significantly to the success of the project? *Note: The answers to these questions will be determined, in large part, by self and peer evaluation, which can be found on Canvas.*
Participation and Professional Relationships/Responsibilities (40% of Individual Grade):
Did you participate regularly in class discussions? Were you prepared to discuss developments in your projects in an effective manner with other students? Did you respond courteously and with due consideration to professors, guest speakers, consultants, and classmates? Did you strive for cross-disciplinary cultural competence (i.e., an appreciation for the language, norms, perspectives, and practices of other disciplines) and understanding of other differences among your classmates? Did you display honesty and integrity?

Individual Reflective Learning (20% of Individual Grade): Can you effectively criticize your own performance? Are you able to identify your strengths and weaknesses in the various areas of project work and problem solving? Did you gain insights about your future role as a professional? Did you learn about the value and limitations of professionals in addressing societal challenges? Did you do all you could have done to maximize the benefits you obtained from the problem-solving course experience?

BONUS Individual Special Recognition: Are there any aspects of your work in the course that are not otherwise described in the preceding criteria that deserve special recognition?

Grade Assessment Descriptions

The following is a rough guide describing the level of work that corresponds to student grades. The descriptions are necessarily general, but we hope it helps you to understand our grading.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Consistently excellent work in all areas, with at least one outstanding piece of significant work. A student who earns an “A” will take full ownership of the project, be organized and attentive to details, will always allocate sufficient time and effort to carry out tasks responsibly, and will recognize, consider, and appropriately resolve ethical issues. The student will show initiative and creativity in planning and developing solutions, rather than merely carrying out plans outlined by the professor, and will be reflective, professional, and respectful. They will have shown considerable progress in mastering the various skills necessary to be an effective problem solver, and will actively prepare, participate, and take initiative in all class sessions and team sessions.</td>
</tr>
<tr>
<td>Grade</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>A-</td>
<td>Mostly excellent work in all areas and some very good work.</td>
</tr>
<tr>
<td>B+</td>
<td>Consistently very good work or a mix of generally very good work, occasional excellent work, and some competent work.</td>
</tr>
<tr>
<td>B</td>
<td>Competent and adequate work with some very good work, but with some weaknesses.</td>
</tr>
<tr>
<td>B-</td>
<td>On the whole, competent work but with some significant lapses or shortcomings.</td>
</tr>
<tr>
<td>C</td>
<td>On the whole, marginally competent work with frequent lapses or shortcomings.</td>
</tr>
<tr>
<td>C- or below</td>
<td>Serious difficulties with performance; failing to meet responsibilities.</td>
</tr>
</tbody>
</table>

*Students enrolled in and registered through schools or colleges that permit pass/fail grading may opt for pass/fail grading in this course. Students who choose the pass/fail option will receive a grade of "pass" if they meet the conditions set forth by their schools or colleges for such grade.*

**Accessibility Statement**

We want to provide equal opportunity for participation in this course regardless of disability status. Some aspects of this course, the projects, the in-class activities, and the way the course is usually taught may be modified to accommodate any such disability. Request for such accommodations begins by contacting the Services for Students with Disabilities (SSD) Office located at G664 Haven Hall. The SSD phone number is 734-763-3000. Once your eligibility for an accommodation has been determined, SSD will contact the Law School’s Office of Student Life with a recommendation, and Student Life will work with you and SSD to finalize and facilitate your accommodations.

If you are pregnant, a parenting student, or primarily responsible for providing care for a loved one or family member, and you are in need of accommodations, please let us
know. You may also reach out to mcasp.org and CEW+ for resources and community support.

**Mental Health and Wellbeing:**

The University of Michigan is committed to advancing the mental health and wellbeing of its students. If you are feeling depressed, overwhelmed, or in need of support, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays. For a listing of mental health resources available on and off campus, visit: http://umich.edu/~mhealth/.

**Course Schedule:**

For a project-oriented course like this to be successful, we must adopt a flexible approach to the syllabus. We have sketched out plans for most sessions, but we want you, the students, to help shape this course and agenda. To that end and to give us flexibility, all of the assigned materials will be posted on Canvas. In order to be fair to you, we will post them at least a week in advance.

**Class 1**
- **Date:** August 31
- **Location:** 116 Hutchins Hall
- **Topic:** Introductions to Each Other and the Child Care Crisis

**Class 2**
- **Date:** September 7
- **Location:** 250 Hutchins Hall
- **Topic:** PSI Boot Camp I with Bridgette Carr and Ann Verhey-Henke

**Class 3**
- **Date:** September 14
- **Location:** 250 Hutchins Hall
- **Topic:** PSI Boot Camp II with Bridgette Carr and Ann Verhey-Henke

**Class 4**
- **Date:** September 21
- **Location:** 250 Hutchins Hall
- **Topic:** PSI Boot Camp III with Bridgette Carr and Ann Verhey-Henke
Class 5
Date: September 28
Location: 116 Hutchins Hall
Topic: Class Discussion of Reading Assignments (1 hour)
Group Time (2.5 hours)

Class 6
Date: October 5
Location: 116 Hutchins Hall
Topic: Stakeholder Discussion: Public Policy Panel [subject to confirming dates/times]
- Lisa Brewer-Walraven - Director, Child Development and Care, Michigan Department of Education
- Emily Laidlaw - Director of Licensing, Child Care Licensing, State of Michigan
- Joan Blough - Senior Director, Child Care Innovation Fund, Early Childhood Investment Corporation

Class 7
Date: October 12
Location: 116 Hutchins Hall
Topic: Stakeholder Discussion: Child Care Directors and/or Teachers [tentative]

Class 8
Date: October 19
Location: 116 Hutchins Hall
Topic: Mid-Point Presentations and Feedback

BootCamp Activity Due by October 21: For this deadline we will be reviewing two sections of your map Please make sure you have completed the Ecosystem/Stakeholder Mapping and Interview Synthesis sections. You should undertake a new Ecosystem Map and not copy/paste the one you did in the bootcamp. We will be providing you with feedback on those sections the following week. We understand you may not have completed all of your interviews by October 21 however your map should reflect the interviews completed so far.
Class 9
Date: October 26
Location: 116 Hutchins Hall
Topic: TBD

Class 10
Date: November 2
Location: 116 Hutchins Hall
Topic: TBD

Class 11
Date: November 9
Location: 116 Hutchins Hall
Topic: TBD

Class 12
Date: November 16
Location: 116 Hutchins Hall
Topic: TBD

BootCamp Activity Due by November 18: We will review two additional sections of your map for this deadline. Please make sure you have completed the Ideate and Prototype sections of your map. We know you may not have all your feedback collected by this point, please just highlight whatever feedback you do have. We will provide you with feedback on those sections the following week.

Note: No class on November 23 due to the holiday

Class 13
Date: November 30
Location: 116 Hutchins Hall
Topic: Capstone Presentation and Debriefing

BootCamp Activity Due by December 9: We will be reviewing your entire process map. We expect all sections to be completed. (the storyboarding section is not required, it is optional. Some students last semester found it helpful as they prepared for their capstones).
“Slavery, its Legacies, and the Built Environment”

Instructors
Phillip Bernstein, Yale School of Architecture
Luis C.deBaca, Michigan Law School; Yale Gilder Lehrman Center Affiliated Scholar
Doriane Andrade-Meyer, Fellow, Yale Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition

Contact
philip.bernstein@yale.edu 203.645.1364
ldebaca@umich.edu 703.470.1171
doriane.meyer@yale.edu 203-432-3339

Class Meetings
Time/Date: Weds 3:15-6:30 pm (including class time and team work time)

Locations: Michigan Law School -- Room 1070, Jeffries Hall;
Yale School of Architecture -- Room 322/Large Conference Room, Rudolph Hall (3rd Floor)

Course Site: This course will be maintained on the Yale CANVAS site. Preliminary materials will be posted on the UM CANVAS platform, but we will migrate the class to the Yale site as invited guests after add/drop period.

Start date: this class will start on Wednesday, August 31 (on the schedule of the Yale School of Architecture and Michigan Law School).

Modality: absent any COVID-related changes, this class will be taught in person, synchronously, with one exception: as this course has several institutional hosts with slightly different fall calendars, some class sessions may take place without all members of the class. In such instances, those who cannot join are expected to watch the class recordings as well as maintaining contact and momentum with their project teams. Visitors to class will attend as allowed by the pandemic policies of the respective schools.

Travel: We will likely do one trip from Ann Arbor to New Haven so that the class can meet as a whole, in order to facilitate the type of group work that is the hallmark of the Problem Solving Initiative. Tentative dates for travel include the weekend of September 17th and 18th, 2022.

Office Hours
By appointment

BRIEF DESCRIPTION
The built environment continues to bear the stamp of historical slaveries and their legacies, and is supported by contemporary forms of forced labor. Sustainability is addressed as a purely technical environmental problem without involving affected communities. Architectural practice is hampered by assumptions of value-neutral design and urban planning and decades of risk-shifting.
The Yale School of Architecture, the Michigan Law School, Yale’s Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition, and the Yale Law School are partnering to confront this problem with the support of a grant from the Niarchos Fund for interdisciplinary experiential learning. We are abandoning the practice model of the architect as a designer separate from politics, economics, and the mechanics of construction by incorporating law students and those from other professional and academic disciplines into an equity-based process.

Through this partnership, a multi-year series of seminars and studios will seek to introduce both an aesthetic and practice sensibility around racism and exploitation to create truly sustainable buildings. In the Fall of 2021 first year, the classes centered on a potential National Slavery Memorial to be located at sites of the slave trade on the waterfront of Washington, DC. This year’s class will begin to examine The Planter as a means of organizing global capital and extractive profit, leaving legacies not only in racism and social exclusion, but also that range from materials supply chains to museum collections.

This seminar, taught concurrently at Michigan and Yale, will teach such skills as project leadership and management, interviewing experts in other professions and disciplines, supply chain management, historical research methods and analysis, negotiation, and project presentation skills as practiced within the construction industry. As part of the Michigan Problem Solving Initiative, this course satisfies the ABA requirements for experiential learning.

EXPANDED DESCRIPTION

The built environment continues to bear the stamp of historical slaveries and their legacies, and is supported by contemporary forms of forced labor. Sustainability is addressed as a purely technical environmental problem without involving affected communities and issues of social equity are only now coming to the fore. Architectural practice is hampered by assumptions of value-neutral design and urban planning and decades of risk-shifting.

The Yale School of Architecture, the Michigan Law School, Yale’s Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition, and the Yale Law School are partnering to confront this problem with the support of a grant from the Niarchos Fund for interdisciplinary experiential learning. We are abandoning the practice model of the architect as a designer separate from politics and the mechanics of construction by incorporating law students and those from other professional and academic disciplines into an equity-based process.

Through a multi-year series of seminars and studios, we seek to introduce both an aesthetic and practice sensibility/standard around racism and exploitation to create truly sustainable buildings. In 2021-2022, the classes centered on a potential National Slavery Memorial to be located south of the Lincoln Memorial, in West Potomac Park in Washington, DC. The course produced a framework document for the project focusing on several aspects of the problem: history; architectural precedent; law and land-use policy; and exploitation-free project delivery and reparative community engagement methods The framework document formed the basis for the next semester, wherein an Advanced Studio class at the Yale School of Architecture was supported by a small consultancy of continuing student (as an Advanced PSI class) to advance the output of the broader class. This Fall, we will be presenting the final projects of the Studio and the 2021-22 PSIs to the National Park Service, who are the custodians of the proposed Memorial site.

This course, taught concurrently at Michigan and Yale, will teach such skills as project leadership and management, interviewing experts in other professions and disciplines, supply chain management, historical research methods and analysis, negotiation, and project presentation skills as practiced within the
construction industry. As part of the Michigan Problem Solving Initiative, this course satisfies the ABA requirements for experiential learning.

This seminar will build on the historic moment of the last few years, which has seen communities insisting on an honest accounting of chattel slavery and its legacies and governments increasingly confronting abuses in supply chains that bear uncanny resemblances to pre-Emancipation analogues or continue patterns established during colonial exploitation of the Global South.

We will operationalize recent anti-slavery statutory and regulatory changes in the United States, the United Kingdom, and Australia that extend enforcement of laws against forced and child labor into company’s supply chains. We will examine legacies of U.S. chattel slavery in the built environment at the building, project, neighborhood, and urban scale. Drawing on law, design, construction, and sustainability practices, we seek to for the first time incorporate an anti-slavery ethos into the architectural design and specifications process. Through these combined historical and modern lenses, we will interrogate common building materials both at commodity (e.g., rubber, cotton, timber) and composite (e.g., steel, glass, bricks) levels.

Multidisciplinary teams of students from Yale and Michigan will create a Report that will form the basis of an Advanced Studio at the Yale School of Architecture and an integrated practice consultancy at the other institutions in Spring semester of 2022, as the Studio, under the leadership of Professor Mabel O. Wilson, carries out focused design and conceptual work to interrogate Plantation Logic in the context of a particular area of Long Island that was cleared and worked in the 17th and 18th Century by indentured or enslaved people and continues to be worked by guestworker programs that also have restrictions on movement and rights. 

**LEARNING OBJECTIVES & PROBLEM SOLVING TAKEAWAYS**

This course has several learning objectives:

1. Students will contextualize slavery and forced labor in the modern and historical practice and understand slavery’s relationship to the building materials supply chain and design and construction processes across several materials that are ubiquitous in the built environment.
2. Students will map related historical and legal aspects of extractive practices in cultural institutions, such as appropriation of images, art, and cultural heritage.
3. Students will define the levels of influence possible to reform the supply chain (such as information, policy, funding, enforcement, design standards, material protocols and specifications, and purchasing).
4. Students will analyze design projects for potential slavery-produced material flows and thereby will develop new tools for fighting slavery in the supply chain.

We will explore, *inter alia*, issues of:

- law (policy, regulatory, standards that could constrain or eliminate modern slavery);
- supply chain management (structural, operational and financial aspects of supply and demand that can be leveraged for control);
- design decisions (how design strategy and approach can direct/redirect/refocus demand for non-slavery-produced products);
- ethics (understanding, but not being limited to, professional ethics standards, and incorporating a broader ethical lens to confront inequities in practice and outcomes);
- and procurement and construction execution (how a design is translated from intention through procurement of material and labor that is instantiated into a finished building).
We will harness history, memory, and public policy as we confront ongoing assumptions and legacies of The Plantation’s exploitative/extractive means of production that are “baked in” to a globalized construction industry through design, professional exclusion, forced labor (historical and current), construction materials, or public policy. Examining these questions in concert will yield insight into the relationships between policy, law enforcement and design/construction practice necessary to retrospectively understand the presence of slavery, involuntary servitude, and legacies of exclusion in the spaces we inhabit, and to prospectively eliminate forced labor from the built environment.

This seminar is an opportunity to build USEFUL AND PRACTICAL SKILLS embraced by architects, lawyers, businesses, and environmental activists. It will introduce students to the basics of legal argument and analyzing applied human rights concepts; identifying and using industrial and logistics processes that effectuate a workers’ rights ethos; and incorporating tools of ethical sourcing and social sustainability into the design process. Additional skills will include team leadership and project management across disciplines and professions, and technology-assisted project management across geographic location. Oral presentations will be in a cross-disciplinary style (Pecha Kucha) that will sharpen communications skills. Students will learn to apply such tools as (inter alia) labor policy, design strategy, art law, and design and construction processes in service of a project that will challenge how arts institutions and other powerful entities are conceived and operate. It is our hope that the class will not only advance the practice of the various professions with practical tools, but will move us toward a new understanding of globalization, slavery, and potentially an aesthetics of freedom.

There are also OVERARCHING PROBLEM-SOLVING TAKEAWAYS from the course: we expect that by the end of the semester, students will also be able to:

- articulate the role of their discipline in addressing the topic of the course;
- describe and use methods to communicate across disciplines and with key stakeholders to discuss this problem;
- develop skills to work collaboratively to create innovative professional perspectives and practices that assist with solving the problem, including by interviewing experts and community stakeholders;
- reflect on the systemic factors that perpetuate and make it difficult to solve the problem; and
- have a basic understanding of some of the key legal and ethical issues arising in connection with legacies of slavery in the built environment.

TERMINOLOGY

A note on terminology. This seminar will not only confront legacies of chattel slavery in the United States and other Common Law countries in the Atlantic world and post-Emancipation abuses through colonization, but will explore materials and conditions on current construction sites in relation to the persistence of slavery and involuntary servitude -- terms set forth in the 13th Amendment to the US Constitution.

In May 1865, Frederick Douglass cautioned the American Anti-Slavery Society to remain vigilant after the Civil War despite the abolition of chattel slavery by predicting that the “old snake” would come forth in a new skin. Slavery, peonage, and involuntary servitude were common terms for cases of extralegal enslavement in the post-Emancipation era through the 1990s. While in the last twenty years, “human trafficking” or “trafficking in persons” became dominant, common understanding of those terms in the US shifted to an emphasis on sexual exploitation rather than forced labor. Recent years have seen a resurgence of the use of “slavery” or “modern slavery,” especially in Commonwealth Countries.

These concepts are challenging and emotional. But, they must be interrogated, analyzed, and applied in order for the protections of the 13th Amendment and promise of Emancipation to be anything other than a
historical artifact; this course will seek to respectfully harness the power of these emotive terms and experiences of those who lived through them in service of forward-looking problem solving. Accordingly, for this class the many ways of naming compelled service will be used as being roughly synonymous; we expect that the course will regularly and respectfully discuss different terms (and the tensions and structures that they reflect); definitional trade-offs; and assessments of such issues as race, gender, citizenship, rule of law, worker’s rights, victims’ rights, colonialism, migration, globalization, and federalism.

**COURSE STRUCTURE**

This will be a hands-on, experiential seminar with a strong skills-building component, an exploration of professional ethics, and concrete outputs, hosted by two cohort institutions. While offered through the Yale School of Architecture and the Yale Law School, it is part of the University of Michigan Law School’s interdisciplinary Problem Solving Initiative, [https://problemsolving.law.umich.edu/](https://problemsolving.law.umich.edu/), which satisfies the American Bar Association’s experiential learning requirement.

The course participants will optimally be from the respective Universities’ professional schools and other academic disciplines, including but not limited to Law, Architecture, History, Business/Management, African American Studies, American Culture, Sociology, and Environmental Studies (this list is not meant to be exclusive; students from other disciplines are very welcome). In keeping with Yale School of Architecture practice, a Yale College undergraduate might participate. Reflecting the emerging reality in architectural and legal practice of multi-site teamwork, classes will meet simultaneously in Ann Arbor and New Haven, connected through ZOOM. The Yale CANVAS site will support the course, with access for Michigan participants. The class will likely also use design or project software such as as MIRO or Slack during the semester.

The primary research work product created by the students will be a Report that will provide background and analysis in anticipation of design work to be performed by advanced studio students at Yale Architecture in the spring term. The Report will be comprised of four elements: historical context; legal and policy considerations; analysis of selected construction materials; and a survey of the plantation and related exploitative labor systems that can inform their work. Teams will present their groups’ findings at the final class session to a jury panel of stakeholders and experts; the Report should be a coherent whole rather than four independent parts.

The class will be organized into teams by assignment, with members from different disciplines and across the two Universities. Each of the groups will be responsible for an aspect of the Report, and will research and study the history, law, and professional practice related to their issue and the building materials that we will explore. This interactive, co-productive process will take the entire semester. The majority of the work on this project will be done outside of class time on your own initiative, although each class session will include time (ranging from one to two hours) reserved for teams to work collaboratively. For all of the teams, your primary "stakeholder" will be Professor Mabel Wilson, who will teach the spring design studio at YSoA and be informed by the outcomes of your work. Yale History Professor [David Blight](https://problemsolving.law.umich.edu/) will also play a role in the course, as a critical guide through slavery studies and historical process.

Most of the weekly class sessions will include assigned readings and lectures from one of us or from a guest lecturer. Each week you will be required to submit a question created to prompt class discussion or a short paragraph of analysis. These will be due at midnight the night before our class meets and will serve as an ongoing conversation and a foundation for our class discussions. The readings, guest speakers, and lectures will not always directly relate to issues that you are addressing with your particular part of the Framework Document, but will be the substantive through-line of the course, providing critical information.
about slavery and its legacies, architectural and building practices, and legal and regulatory issues that may arise.

You should expect additional light readings (from periodicals or newspapers) throughout the semester that will highlight aspects of particular buildings or memorials or reflect breaking news. The second portion of each class session will be reserved for work time in which the teams can meet, brainstorm, and get input from us.

The semester will unfold in roughly three chapters, with the first part of the class devoted to problem definition and creation of an interdisciplinary understanding across law, history, and architecture. The second portion of the class will set forth legal and regulatory frameworks, and design/construction practices. The final section of the course will examine forced labor threats and solutions in modern supply chains, and question ethical and moral obligations of the various professions represented in the class.

At mid-Term, the student teams will give short presentations to the class as to how their project is developing and receive critique from the Professors. At the end of the semester, the class will culminate in a final examination session in which the teams will present their final projects to a jury panel of experts, as would be the case in an architecture studio. Presentations will be in the Pecha Kucha mode (20 slides, 20 seconds per slide).

**COURSE REQUIREMENTS**

**Use of CANVAS**

All assignments should be submitted via CANVAS, which will ensure that you receive credit for getting your work in. The CANVAS site is being hosted by Yale; U-M students will receive guest access early in the semester. Filing deadlines are a fact of life in the professions, and the system will not accept any submissions after the closing time on the assignments – typically 11:59 the night before class. If there are any issues, please let us know immediately. If we do accept submissions after the system closes, they will not receive full credit for the assignment.

**Class Participation**

Your active participation in every class meeting is the most important component of the course. We expect you to read the assigned works, submit discussion reflections, and arrive in class with questions, comments, and opinions about what you read and what you think. Everybody needs to participate in the conversation portion of the class.

The teamwork portion of each session is even more critical, as it is when you will build collaborative skills in project design/management, legal analysis, research, and context. Accordingly, students are required to attend every class meeting, with the exception of illness or personal emergency. Please contact us as soon as possible if you will need to miss class. The PSI program has adopted mid-course evaluations as an important aspect of the collaborative work; all students will be asked to honestly undertake both peer and self-assessments at several points during the semester.

As this class is applied and experiential, it is important that each student regularly attend the course and be prepared to participate every day. Rather than legal texts, the readings are largely journal articles, reports, industry publications, transcripts, press accounts, images, video, and documents, as well as some caselaw and legislation. You will need to carefully consider the context that shaped each reading and understand the social, legal, and regulatory regimes in which they occurred.
Each week you will be required to submit a question created to prompt class discussion or a short paragraph of analysis. These will be due at midnight the night before our class meets and will serve as a foundation for our class discussions.

Writing

All writing should be submitted via CANVAS on the specified due date; double-spaced in 12 point Times New Roman font. And please use Oxford (serial) commas; this class will involve legal issues, and commas have meaning. O’Connor v. Oakhurst Dairy, 851 F.3d 69 (1st Cir. 2017).

Academic Honesty

We take academic honesty very seriously. All written work must be the original creation of the student. Nothing may be copied from other publications, the internet, or another student’s work. For Yale’s policies on academic honesty see: http://yalecollege.yale.edu/content/academic-honesty. For the University of Michigan’s policies, see http://guides.lib.umich.edu/c.php?g=283392&p=1887232.

Diversity, Equity and Inclusion

All students are welcome and valued in this course, and we strive to be inclusive of a diversity of voices and perspectives in the classroom and in course materials. This is a course about confronting and eradicating historical and ongoing legacies of slavery and racism in the built environment, a goal which we believe cannot be achieved without equitable and inclusive practice, teams, and solutions. We have made diversity, equity and inclusion a priority in this class, but of course there is always room for improvement; please do not hesitate to speak with us about any concerns.

Safety and Self-Care

All participants in this class should be aware that we will have frank discussions about slavery in its myriad forms in this course. Due to the nature of both legal (chattel) slavery and post-Emancipation manifestations, some of the material will reflect such emotional issues as violence, sexual assault or harassment, official oppression, racism, and social exclusion. Some of the readings may be uncomfortable or difficult.

We are committed to advancing the mental health and wellbeing of students in this seminar. Throughout the semester we will remain available for individual conversations about the course topics. If you are feeling overwhelmed, depressed, and/or in need of support beyond what you feel we can provide through conversation, services are available.

For U-M help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus.

For Yale help, contact Mental Health and Counseling (MHC) at (203) 432-0290 during business hours and Acute Care 203-432-0123 for overnight concerns.

Disability Statement

We are committed to providing equal opportunity for participation in all programs, services and activities. We will work with the respective University’s accommodations experts to respond to any needs.
For Yale requests, contact Student Accessibility Services (SAS) located at 35 Broadway (rear), Room 222. The SAS phone number is 203-432-2324.

For U of M, contact the Services for Students with Disabilities (SSD) Office located at G 664 Haven Hall. The SSD phone number is 734-763-3000.

EVALUATION AND GRADING

This course will be graded in accordance with policies of the respective institutions, and comprised of the following components:

- Completeness and engagement of reading responses: 30%
- Class participation: 20%
- Peer Assessment: 10%
- Final reflection on Learning Objectives and Problem-Solving Takeaways: 5%
- Final project: 35%

For Yale University, in the Yale School of Architecture grades will be Pass, Low Pass, and Fail. A cumulative score of 75% or above will result in a grade of “Pass,” 70%-74% is “Low Pass” and below 70% will result in a grade of “Fail.” Grades for Yale Law School will follow the same template, with the addition of the grade of “Honors” for work accumulating a score of 90% or above.

For The University of Michigan, grades will be assigned with the same components, but on an A-F scale. U-M students enrolled in and registered through schools or colleges that permit pass/fail grading may opt for pass/fail grading in this course. Students who choose the pass/fail option will receive a grade of "pass" if they meet the conditions set forth by their schools or colleges for such grade.

Self and Peer Assessments

This course requires significant participation and preparation. You will be working with your colleagues in the course to create an innovative intervention to address the identified problem. Your work will be evaluated by both instructors, other faculty members, and other relevant stakeholders, as well as each other. In any course in which group work is an integral component of the course, students may have concerns about workload distribution within the group. We are hopeful in light of the real-world applications of our work in this course, that “free riders” will not be an issue. However, peer assessment will be part of the evaluation of the course. Each student will complete a self and peer assessment form at both the midpoint of the semester and at the end. We will post the assessment form on Canvas and discuss it as the class forms teams.

READING MATERIALS

Materials to purchase or acquire from Library:

Frederick Douglass, *Narrative of the Life of Frederick Douglass, an American Slave, Written by Himself* (Boston, 1845)(relevant throughout; will be discussed in class in Week 4)

**Materials for Use Throughout Course (will post on Canvas):**

Executive Order 13126, *Prohibition of Acquisition of Products Produced by Forced or Indentured Child Labor* (June 12, 1999)

Executive Order 13627, *Strengthening Protections Against Trafficking In Persons In Federal Contracts* (September 25, 2012)

Federal Acquisition Regulation, subpart 22.17 Combating Trafficking in Persons, and associated clause at FAR 52.222-50, Combating Trafficking in Persons

Trade Facilitation and Trade Enforcement Act, P.L. 114-125 (February 24, 2016)

United Kingdom Modern Slavery Act of 2015

The Architect’s Handbook of Professional Practice, 15th Edition

Anti-Slavery Useable Past digital archive (narratives, and collections pertaining to The Congo)
https://www.antislavery.ac.uk/

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**CALENDAR OF ASSIGNMENTS**

**WEEK ONE: (Aug. 31) WHAT IS SLAVERY?**

*Or, The American History of Building and Embodied Suffering*

This class will serve as an introduction to the course: defining terms, concepts, and organizing questions. We will look at the antebellum chattel slavery system and its persistent legacies. We will examine architects and slavery, including architecture and construction in support of chattel slavery and as architecture’s commemorative functions, unpacking the idea of the built environment as a moral location. If every project can be read as a manifestation of larger context, existing assumptions about the built environment and the legal, business, and social realities around projects must be interrogated around then-existing and ongoing legacies of slavery.

**Assignment:**
Prior to class, take the survey at the website slaveryfootprint.org. Please come to class prepared to discuss your results and your views regarding the survey.

**Readings:**

*Smith* pp. 3-51 (will be posted in CANVAS for convenience).

J.L. Power, *Proceedings of the Mississippi State Convention [of Succession], Held January 7th to 26th, A. D. 1861* (Jackson, 1861), available online at https://docsouth.unc.edu/imls/missconv/missconv.html

Phillip Kennicott, “A Powerful New Memorial to U-Va.’s Enslaved Workers Reclaims Lost Lives and Forgotten Narratives,” WASH. POST, August 13, 2020

*United States v. Bradley*, 309 F.3d 145 (1st Cir. 2004)
**Guest:**

David Blight, Stirling Professor of History and Director, Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition, Yale University.

**WEEK TWO (Sept. 7): WHAT IS ARCHITECTURE?**

*Or, the Legacy of Risk and Externalities of Exclusion*

This week we will interrogate the concept of architecture as not just design instructions and aesthetics or as a transmitter of values, but also how buildings get made – and for what purposes. What do we know about materials and how they are chosen? What can we know about them? What should we know about them? We will begin the discussion of the legal and regulatory regimes – both private and public. We will examine the resistance and agency that communities have shown, not only in relation to the system of slavery, but in relation to the buildings and landscape in which they lived.

**Readings:**


Bernstein, Phillip G - Chapter 9.1 - Project Delivery Methods (pp. 508-519)
Deutsch, Randy - Chapter 9.3 - Integrated Project Delivery Overview (pp. 530-540)
Bernstein, Philip G. - Chapter 9.7- Emerging Issues in Project Delivery (pp. 577-583)

Rebekah Yousaf, *Examining Slavery’s Architectural Finishes: The Importance of Interdisciplinary Investigations of Humble Spaces* (2018), available online at https://repository.upenn.edu/hp_theses/655


**Guest:**

Mabel O. Wilson, Nancy and George Rupp Professor of Architecture, Planning and Preservation, Columbia University.

**WEEK THREE (Sept. 14): WHAT ARE THE MATERIAL FLOWS OF BUILDINGS?**

*Or, Industry Processes and Procurement, and can we Continue to Design and Procure at Arms’ Length?*

Design and construction are traditionally defined as the creation of intent (by a designer) translated into physical form in construction (execution). In the bridge between these strategies lie a series of inter-related decisions that are ultimately manifest physically by the operationalization of construction, combining logics, labor, and materials. That process occurs in a hierarchy of decisions, contractual arrangements, procurement strategies, market contexts, and the global supply chain for materials. Where is the responsibility for historical or current inequities in current models of design, procurement, and construction, particularly when liability and assignment of risk is unclear?
Decisions made early in a design process may have far-reaching implications for modern forms of slavery: a concrete frame building might include aggregate processed by children in India; use of rubber sheathing may support forced labor that echoes historical abuses in the Congo. This session will examine the supply chain dynamics of design-to-construction, and define inflection points where decisions that insatiate slavery may occur. We will examine materials’ journey from designer’s choice to commodity to product to component part of a project. We will consider the extent to which our understanding (or lack thereof) of a material might implicate ethical and moral considerations.

**Reading:**


International Anti-Slavery Museum, “Alice Seeley Harris BRUTAL EXPOSURE: THE CONGO” (Liverpool, 2015) (in Canvas) – **Content Warning: this pdf. contains very troubling photographs of survivors of Belgian atrocities in support of colonial-era rubber extraction.**


**Guest:**

Janelle Schmidt, Clemson University School of Architecture

**WEEKEND TRIP TO NEW HAVEN (Sept. 17)**

**Workshop/In-person convening, Yale School of Architecture**

In this session, we will workshop materials supply chains – one of the the key research questions that the teams will carry forward to the end of the semester for the final, culminating in the Research Report framework document presentations. This session will make up for the lack of class on October 19.

**Guest:**

Nancy Alexander, Lumenance Consulting, LLC

**WEEK FOUR (SEPT. 21): RESISTANCE, ACTIVISM – AND WORKERS’ VOICE?**

Human Rights are not just to be provided by states, protected by advocacy groups, or insisted upon by consumers, but should reflect the experiences and needs of survivors. We will center our inquiry on survivors’ assessment of various systems of enslavement and globalized employment, as they insist on agency in many different forms.
**Assignment:**
Prior to class, watch the documentary film “The Workers’ Cup,” linked on CANVAS

**Readings:**
Frederick Douglass, *Narrative of the Life of Frederick Douglass, an American Slave, Written by Himself* (Boston, 1845)


**WEEK FIVE (SEPT 28): WHAT ARE OUR LEGAL CONTEXTS AND CONSTRAINTS?**

How do anti-slavery or anti-racist goals trickle down to projects? What does that mean for a professional? A client? A firm? A regulator? What lessons can we draw from other attempts to interrogate supply chain, community awareness, and creation of technical standards?

Projects exist in many different contexts, and while many focus on the physical space (and hopefully, the historical and social contexts) the legal and regulatory frameworks surrounding a project are themselves a kind of environment. Projects must take into account such aspects as building codes and regulations, land use, and anti-slavery protections in federal laws and regulations. Sustainability requirements for federal projects forced changes in the disaggregated building supply chain. What lessons might be learned from the Green Building strategy with regard to eliminating slave labor in a project?

**Video (in class): Masterminds of Construction (5 minutes)**

**Readings:**


United States Customs & Border Protection, “*Forced Labor*”, available online at https://www.cbp.gov/trade/programs-administration/forced-labor

Southern Poverty Law Center, “*Close to Slavery: Guestworker Programs in the United States*” (February 2013), available online at https://www.splcenter.org/20130218/close-slavery-guestworker-programs-united-states'

WEEK SIX (OCT 5): RETHINKING THE PLANTATION AND EXTRACTION AS WE RETHINK MONUMENTS & MEMORIALIZATION

Will the current moment of attention to monuments and memorialization lead to an examination of the driving economic, legal, and political forces? Who benefitted from the creation of global capitalism, and who continues to benefit? What “first-mover advantages” accrued to colonial and mercantile powers from the extraction of people and commodities? What cultural and social legacies of enslavement and colonization remain, and how are institutions seeking to confront such legacies?

Readings:
Smith, Chapter 2

https://www.ashmolean.org/article/a-nice-cup-of-tea ;

Media coverage of Monticello governance issues (will be posted on CANVAS).

Guests:
Mabel O. Wilson, Nancy and George Rupp Professor of Architecture, Planning and Preservation, Columbia University.

David Blight, Director, Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition, Yale University.

WEEK SEVEN (Oct 12) INDUSTRY DELIVERY STRUCTURES

Construction is an output of economic and material flows actuated by the desire of clients to convert large sums of capital into physical form in the service of their operations and objectives. As obvious from earlier discussions of project delivery models, however, the systems of procurement, pricing, and managing the necessary supply chain transactions and value conversions are frequently based on lowest-first-cost optimization designed to reduce the uncertainty of pricing, often at the cost of enslaved labor in materials and on the project site, where architects acting as agents of their clients have little reach into the complex systems that converge to deliver projects. In this session we will examine how capital is converted through the pricing and procurement process into the built environment, how owners create the context that, in its most charitable interpretation, allows enslaved labor to be instantiated into projects, and where there are opportunities to intervene in the conversion of labor to material and building. Can labor be de-commoditized in construction in a way that immunizes it from embodied suffering?

Readings:


WEEK EIGHT (Oct 19) – No Class Session (YSOA Mid-year Reviews)

Comments on the materials will still be due on Tuesday evening as with other weeks.

Reading:
Smith, Chapter 3

Video (at home):
Short (45 minute) film “Journey to Freedom” available online at https://www.youtube.com/watch?v=dCUltykfPYQ (and hopefully on CANVAS)

Podcast:
Laura Murphy, “Modern Slave Narratives” National Humanities Center, available online at https://nationalhumanitiescenter.org/murphy-modern-slave-narratives/

WEEK NINE (Oct 26): SYSTEMS OF CONTROL, LEVERS OF ENGAGEMENT

Like chattel slavery, forced labor in the modern era takes place in a context of global capitalism and interconnected markets. But unlike its progenitor, modern slavery occurs in a world where slavery is illegal. Mere illegality, however, has not prevented this practice. In this class, we will examine ways in which human rights activists seek to identify and prevent forced labor in an analogous supply chain (agriculture). We will look at some of the most common drivers of forced labor in the construction and construction materials industries, especially unscrupulous recruiting, debt bondage, corruption, and abuse of migrants and other vulnerable and excluded communities.

Online assignment:
Review materials at https://www.stronger2gether.org/construction/

Readings:
The Building Responsibly Principles and Guidance Notes, available online at https://www.building-responsibly.org/resources

Federal Acquisition Regulation, subpart 22.17 Combating Trafficking in Persons, and associated clause at FAR 52.222-50, Combating Trafficking in Persons

**Guests:**

Representative TBD from Building Responsibly

Anna Patrick, U.S. Department of State, Office to Monitor/Combat Trafficking in Persons

Representative TBD from Office of Building Operations, U.S. Department of State

**WEEK TEN (Nov. 2): MATERIAL PROGRESS REVIEWS**

The **class will present** initial work on their materials for the Report, at the stage of outlines and key concepts. The class as a whole will give feedback on the presentations, and workshop how each team’s work will fit into the Framework as a whole. Readings will continue to center our inquiry.

**Reading:**

*Smith*, to end


**Video (at home):**


**WEEK ELEVEN (Nov. 9): Materials Supply Chains**

Just as with the personal Slavery Footprint we calculated at the beginning of class, consumers and governments are increasingly holding companies accountable for abuses in their supply chains. We will look at the US legal and regulatory response to slave-made products, as well as first engagements by U.S. design/construction professionals as they seek to confront forced labor through such efforts as the LEED process or through awareness-raising.

**Readings:**


U.S. Green Building Council, LEED Pilot Credits for Social Equity (Fall 2020)

**Guest:**
Janelle Schmidt, Clemson University School of Architecture
Representatives TBD from Buro Happold and KieranTimberlake

**WEEK TWELVE (Nov. 15): WHO DRAWS MATTERS**

*Or, Principles of Ethical Practice*

What are principles of ethical professionalism that don’t simply sink to the “thou shalt not” levels of baseline professional ethics rules? What social equity approaches should rise to an obligation? What can be taken on as a differentiator in tough markets? What alternative value conversations are necessary with clients so that they can take on this ethos in their selection processes?

How have barriers to Black homeownership and exclusionary city planning undercut the development of a relevant architecture? How have barriers to entry into the architecture profession hampered the inclusion of authentic cultural contributions? Do BIPOC architects and others have to be superstars just to maintain a baseline practice? How should the architecture and construction sector confront those legacies -- in firms, buildings, neighborhoods and on campuses?

Bernstein, Phillip G., “The Evolution of Responsible Control and Professional Care” in ARCHITECTURE DESIGN DATA: PRACTICE COMPETENCY IN THE ERA OF COMPUTATION (Birkhauser, 2018)


**Guest:**
Representatives TBD from Coalition of Immokolee Workers, Fair Food Program, and/or Worker-Led Social Responsibility Network

**WEEK OF NOV. 21 – No Class Session (Thanksgiving/Winter Break)**

**WEEK THIRTEEN (NOV 30): FINAL REVIEW AND PRESENTATION OF PROJECTS**

**Assignment:**
Final reflection on learning objectives and problem solving takeaways

**In Class:**
Presentation of findings to multi-disciplinary jury panel of experts