



**MIT** CENTER FOR  
COLLECTIVE  
INTELLIGENCE



# **Supermind Design for Responding to Covid-19: A case study of university students generating innovative ideas for a societal problem**

Akhilesh Koppineni<sup>1,3</sup>, David Sun Kong<sup>2,3</sup>, and Thomas W. Malone<sup>1,3</sup>

*MIT Center for Collective Intelligence & MIT Media Lab*

MIT Sloan Working Paper No. 6569-22

February 2022

**MIT Center for Collective Intelligence  
Massachusetts Institute of Technology**  
<http://cci.mit.edu>

---

<sup>1</sup> MIT Sloan School of Management

<sup>2</sup> MIT Media Lab

<sup>3</sup> MIT Center for Collective Intelligence

**Supermind Design for Responding to Covid-19:  
A case study of university students generating innovative ideas  
for a societal problem**

The Supermind Design methodology is an approach to generating innovative ideas for how to organize groups of people (and often machines) in business, government, and many other contexts. This paper describes how students in an MIT class used the methodology to focus on problems created by the Covid-19 pandemic. After briefly reviewing the methodology and how it was used in the class, the paper describes a number of innovative ideas the students generated in class sessions and in their team projects. These results provide evidence of the usefulness of the methodology in approaching one large-scale societal problem. They also suggest that the methodology could be useful in many other situations.

The world is full of problems that can't be solved by individuals working alone--from how to manufacture an automobile to how to deal with global climate change. These problems can only be solved by groups of people (and often machines). We call these groups *superminds*, which we define as *groups of individuals acting together in ways that seem intelligent*.<sup>1</sup> In other words, "supermind" is a short way of saying "collectively intelligent systems." For instance, superminds can include corporations, governments, universities, other nonprofits, communities, and many other kinds of groups.

The Supermind Design methodology provides a principled framework for generating innovative ideas about how superminds of any size--from two-person teams to whole societies--can be designed to tackle complex real-life problems. This paper describes how students in an MIT class used the methodology to develop novel ideas for how to respond to one of the most important societal problems in recent decades--dealing with the Covid-19 pandemic.







**Background: The Supermind Design methodology**

Supermind Design is a new methodology being developed at the MIT Center for Collective Intelligence. Like many techniques for creativity or design, the heart of Supermind Design is generating lots of ideas to increase the chances of finding a few good ones. To help this process,

Supermind Design includes a set of activities (called *moves*) which you can use to trigger more—and often more unconventional—ideas.<sup>2</sup>

The Supermind Design moves are classified into two groups:

- (a) *Basic Design Moves*, which can be useful for designing anything and are similar to techniques used in many other design methods, and
- (b) *Supermind Design Moves*, which are especially useful for designing superminds.

<i>Move</i>	<i>Short Description</i>
<b><i>Basic Design Moves</i></b>	
<b>Zoom out</b> 	<i>Key Question:</i> What is the bigger picture? What is a more general idea? <i>Process:</i> Helps you step back to discover new ways of defining the problem, to unlock new ideas.
<b>Zoom in</b> 	<i>Key Question:</i> What are the parts or types of this idea? <i>Process:</i> Can help you identify key leverage points in solving the problem or trigger more concrete ideas.
<b>Analogize</b> 	<i>Key Question:</i> What are analogies for this idea? <i>Process:</i> Prompts more creative ideas by thinking about situations that have some similarities to the current idea but may be very different in other ways.
<b><i>Supermind Design Moves</i></b>	
<b>Groupify</b> 	<i>Key Question:</i> What kinds of groups (or superminds) could achieve this goal? <i>Process:</i> Systematically explores different ways of organizing activities.
<b>Cognify</b> 	<i>Key Question:</i> What cognitive processes are needed to achieve this goal? <i>Process:</i> Systematically focuses on different parts of intelligent behavior one at a time.
<b>Technify</b> 	<i>Key Question:</i> How could technologies help achieve this goal? <i>Process:</i> Explores how technologies can be helpful.

### *Prior uses of Supermind Design*

The most extensive prior uses of Supermind Design have been at two corporations that were sponsors of the MIT Center for Collective Intelligence: Takeda (a leading global pharmaceutical company), and Deloitte (a leading global provider of accounting, consulting, and related services).

*Takeda.* In 2019, the MIT Center for Collective Intelligence (CCI), the MIT Media Laboratory's Community Biotechnology Initiative, and Takeda's Center for Scientific Leadership and Innovation (CSLI) organized a series of workshops to radically rethink ways of addressing the problem of depression in Japan.<sup>3</sup> In these workshops, a group of approximately 38 Takeda executives (called "Superminds Fellows") along with others from MIT and elsewhere learned an early version of the Supermind Design approach and applied it to generate ideas for dealing with depression by making changes in the Japanese healthcare system, companies, and other parts of society. The concept that emerged was CareNet, a web-enabled collected intelligence system that relies on a combination of human expertise and artificial intelligence to diagnose and recommend actions that can help people who are susceptible to or suffering from depression, as well as their caregivers and healthcare providers.<sup>4</sup>

*Deloitte.* In 2019-2020, the MIT Center for Collective Intelligence also worked with Deloitte to create a "Supermind Fellows Program" for approximately 20 Deloitte consultants. The program included a series of workshops, team projects, and individual meetings in which the Deloitte consultants learned the Supermind Design methodology and applied it to problems of interest to Deloitte. Some of the projects involved problems from Deloitte's clients; others involved how to organize the internal operations of Deloitte. For example, projects included: how to optimize oilfield maintenance scheduling for a client, how to optimize the deployment of Deloitte consultants to client and internal projects, how to help clients build more effective "superminds" within their own organizations, and how to promote more women to senior management positions within Deloitte. In general, a number of the consultants doing the projects as well as senior executives within Deloitte said they felt that using the Supermind Design methodology led to ideas that were both innovative and useful.

## **Approach: Using the Supermind Design methodology in a class**

During the Fall 2020 semester, Prof. Thomas Malone and Dr. David Sun Kong offered a new MIT graduate-level course called “Supermind Design for Responding to Covid-19.” Since the class was taught during the Covid pandemic, all class sessions were conducted online using Zoom.

In the course, students learned the Supermind Design concepts and applied them to address real-life challenges brought about by the Covid-19 pandemic. The course had two streams of content: (a) learning from guest speakers about various aspects of the Covid-19 pandemic (see Appendix A for list of speakers and topics), and (b) learning the Supermind Design concepts and applying them to real-life challenges of the pandemic. In this report, we focus on the Supermind Design aspects of the course.

### *In-class and homework assignments about different Covid-related topics*

Students learned the Supermind Design concepts through a combination of brief lectures, in-class discussions, and “design exercises” that students started in class and often continued as homework. Each class session focused on a different aspect of the Covid pandemic, and these topics provided a basis for design exercises using the methodology (see Appendix A).

*Online ideation sessions using a shared editor.* The in-class design exercises usually involved group ideation using the outline capabilities of a shared editing system (Google Docs). Instead of having only one student suggesting an idea at a time, this process allowed class members to work in parallel, using the Supermind Design moves to think of new ideas and then type these ideas into the shared online document (see sample output from one of these sessions in Appendix B).

In this way, students could see each other’s ideas, and this, in turn, sometimes stimulated more ideas for them. Sometimes the process even gave the impression of numerous ideas appearing (almost “magically”) as different students typed simultaneously.

Periodically during the sessions, the instructor would ask students to pause, look at the ideas they had written in the shared document, and then “vote” on the ideas they thought were most promising. They voted by simply typing \*’s next to the ideas they liked best, and they were usually told to use

“multi-voting” where each student could allocate three votes (\*’s) across their favorite ideas. This voting process typically led to a few ideas with many more votes than the others, and these “winning” ideas could then become the basis for another round of ideation.

Most of these in-class ideation sessions formed the starting point for homework assignments in which the students continued working on the same topics (sometimes as individuals and sometimes in teams)

### *Team projects*

In addition to in-class ideation sessions, and homework assignments based on them, students also formed two-person teams to do semester-long projects. Students selected their own topics for these projects in consultation with the instructors, and each team produced a written report and an in-class presentation about their project.

### **Results: Ideas students generated using the methodology**

Two kinds of results from this class are of particular interest in understanding the potential of the Supermind Design methodology: (1) ideas generated from the design exercises, and (2) ideas generated in the team projects. In this section, we describe examples of each.

### *Design exercises*

One important aspect of the Supermind Design methodology is generating various ways of reformulating the initial problem presented. For instance, a problem can be reformulated by (a) viewing it as an example of a more general problem (the Zoom Out move), (b) focusing on specific aspects of the problem (Zoom In), or (c) identifying useful analogies for the problem that might suggest new solutions (Analogize).

Following are a few examples of ways the students used these moves to reformulate different Covid-19 problems while doing the design exercises:

- Zoom Out
  - How can we focus on new metrics that more holistically capture the wellness of the society (e.g., Gross National Happiness), instead of focusing on minimizing economic losses?
  - How can we track and recognize patterns of technology usage that could signal a problem and suggest remedies?
- Zoom In
  - How can we develop co-working spaces for community engagement that foster in-person interactions through shared activities?
  - How can we keep businesses open by creating a government delivery service?
  - How can the government reduce roadblocks to passing/enacting legislation and other actions by creating a pandemic task force?
  - How can we rapidly re-educate laid-off workers to prepare them for new jobs? How can governments help unemployed citizens retrain for new jobs?
  - How can we leverage existing supply chains to faster deploy the Covid-19 vaccinations?
  - How can we gamify the vaccine deployment process to incentivize people for faster adoption?
  - How can we address those who refuse to take the vaccine?
  - How to establish an independent agency tasked with managing vaccine development and deployment?
  - How can local businesses evolve to more COVID - friendly settings by offering online resources for them to “retool” their thinking?
  - How can we create a smart office design for pandemic resilience?
  - How can we create a positive impact on employers and employees in sectors that have been disproportionately impacted to support the rebalancing of the economy?
- Analogize
  - Social distancing is not a problem for gamers when playing their favorite games. How can we learn from them?
  - How do Inuit tribes (specifically adolescents who may really want more social interaction beyond family) retain social contact during winters? Using this as an

analogy, how can communities preserve social activity and mental health during the pandemic?

- How can we learn how to maximize our free time (to increase the efficiency of the long-term work from home scenarios) from the best-performing communities?
- How can we recreate the water-cooler interaction environment in a virtual office setup?

### *Team projects*

In the team projects, each student team picked a specific problem associated with the Covid pandemic and developed a detailed, innovative proposal for how to approach that problem. Here we summarize four of these projects (along with the names of the students who did them):

#### *1. Putting Back the “Public” in Covid-19 Public Work Programs: A Call for a More Democratic Process (Hirotaka Miura and John Raines)*

This project addressed the problem of unemployment caused by the Covid-19 pandemic.

While a number of work relief programs were formed to provide jobs for the unemployed, the students in this team realized that managers of these programs often lacked expertise and legitimacy in choosing a diverse set of projects to provide employment for workers from different occupations, industries, demographic categories, and geographic regions.

The project focused on how Participatory Budgeting (PB) could be used to select projects for these work relief programs. PB is a democratic apparatus that crowdsources project ideas, mobilizes expert knowledge, and enables the public to vote on proposed projects. Thus, PB has the potential to produce a more transparent process and increase the probability of delivering successful Covid-19 work relief programs.

Some of the benefits from a PB process would be increased legitimacy of the investment decisions due to the direct involvement of the citizens, increased level of public engagement and awareness of budget decisions, and a platform to interact with the local governments.



Implementing PB at a national scale, however, still poses problems of speed and inclusion. The team employed the Supermind Design methodology to develop innovative ideas that could be employed to implement PB at the national level for ideating, evaluating, and selecting Covid-19 work relief projects. To execute PB at this scale, the team proposed using online platforms to crowdsource ideas and enable the public to vote on the best proposals. Another effective mechanism to scale PB effectively is to aggregate voting responsibilities by allowing individuals to delegate their votes to others.

Overall this project demonstrated how Supermind Design Methodology moves (especially Zoom Out, and Groupify) can be powerful tools in coming up with innovative ideas to solve seemingly complex problems.

2. *The Social-Market City Pass: Allowing for in-person socialization while curbing the spread of Covid-19, promoting mental health, and reducing inequity* (Matt Martin and Ada Zhou)

This project focused on identifying solutions that allow in-person socializing while lowering the risk of the spread of Covid-19. As the spread of Covid-19 has impacted the physical and mental health of millions of people around the world, this project identified a solution that can help alleviate this problem. Based on studies, 53% of adults in the United States reported negatively impacted mental health due to worry and stress over the coronavirus. Further, polls also show that measures meant to reduce the spread of the virus also had detrimental mental health effects, as indicated by the 47% of respondents sheltering-in-place who reported negative mental health effects as compared to 37% among those not sheltering-in-place. A third problem that the project highlighted is that low-income groups are most affected by the economic consequences of the coronavirus crisis and that the pandemic is exacerbating inequalities. This team used the Supermind Design methodology to propose a novel, comprehensive way for dealing with these three issues through an idea called the “Social-Market City Pass.”

The Social-Market City Pass is a platform for facilitating small-group, in-person socialization at recreational venues with the aim of establishing strong social bonds between people from different communities while limiting the transmission of Covid-19. The City Pass functions

as a two-sided reservation-making platform, connecting recreation venue owners with customers. For the *customer* side of the platform, registrants must maintain a regular testing cadence and wear a mask while attending these events. For the *business* side of the platform, venues must comply with the CDC's "engineering controls."

The team further noted that such a reservation system has the risk of increasing prices and rewarding the customers who are willing to spend the most. To circumvent this possibility, the team proposed using a points system where the reservation system allocates 1,000 "venue points" weekly to each customer. Customers would then bid these "venue points" on their preferred activities and enjoy them at the same pre-COVID (or potentially reduced) rates as a result of government subsidies.

In terms of implementation, the project report recommends that the first priority is to bring onto the platform companies in targeted cities that provide non-essential, recreation-based activities. The focus of this targeted approach is to achieve a critical mass needed to generate network effects. The second priority is to deploy a very user-friendly process for potential customers to join the platform. To streamline the registration process, the platform will require two forms of identification as well as proof of residency in the state. Once approved, the City Pass will be tied to the forms of identification provided, and that individual will need to attend the activity with that form of ID in order to use the service. Lastly, this project also demonstrated how the government could play a major role in the implementation of the City Pass platform by registering, inspecting, and monitoring businesses' compliance with CDC guidelines. The City Pass platform thus offers a promising way for the federal government to properly incentivize small businesses to react to the pandemic.

This project demonstrated how the Supermind Design methodology helped develop a proposed system for limiting the spread of current (and future) pandemics while improving the mental health and social equity of our communities.

3. *The MBA experience in a Covid-19 world* (Nikhil Bhagwat and Rita Azevedo Coutinho)

This project focused on the impact of the Covid-19 pandemic on graduate-level professional education. Specifically, students of the MIT Sloan MBA program experienced an acute degradation of the social and networking aspects of their program when the majority of academic instruction moved online. The project proposed to utilize online gaming to alleviate some of these ill effects.

At MIT Sloan, MBA students are divided into cohort groups called Oceans. These Oceans are meant to be the main conduit for social and networking experiences--two key aspects of the MBA value proposition. Thus the Oceans can be viewed as a kind of “supermind” that is reliant on social connections among its members to operate. But when many kinds of social experiences became impossible during the pandemic, this severely impacted the workings of the Oceans. As part of this project, the team surveyed the MBA students about their social experience and found that in-person classes and in-person events were deemed as the most important in building strong and organic relationships. Survey responses also indicated that Zoom events were largely ineffective in building social networks and Zoom fatigue further contributed to stress for most students.

The project also found research indicating that ~75% of MMORPG (Massively Multiplayer Online Role-Playing Game) players report forming relationships with other gamers that are akin to real-life relationships. Other research shows that video games increase social connectedness and boost cohesion in a team. For example, games, particularly role-playing games, require group problem solving, rule sets, and identity establishment, fostering strong connections between the players.

Using the Analogize move to draw inspiration from online gaming communities, the student team came up with two specific recommendations for the MBA Oceans. The first is to directly employ multiplayer video games to increase cohesion. Core Teams, Ocean Community Building Chairs, or Sloan Senate and Student Life can organize and set up multiplayer games or virtual simulations such as Murder Mystery Parties and Escape the

Room events. Students can also create their own groups focused on specific games, such as World of Warcraft or Call of Duty, creating channels for forming cross-group friendships.

The second recommendation is to integrate the team and relationship-building aspects of multiplayer gaming into traditional schoolwork and get-togethers. For example, creating opportunities for students to interact in informal ways while completing other tasks, can mimic gamers who are connected via voice while playing video games. The project also outlined ways to improve collaborative work with increased connectivity through accurately replicating multiplayer gaming environments.

This project demonstrated how using the Analogize move from the Supermind Design methodology led to a structured way of problem-solving in a field entirely different from the original one.

#### 4. *Supermind Design and Human Health* (Jeremy Scharf and Henry Pott)

The final student team project focused less on the Supermind Design moves than the other projects, but it used the concept of “superminds” to define new ways of addressing people’s deteriorating health, increased loneliness, and disintegrating communities accentuated by the Covid-19 pandemic. The project suggested that these problems can be reversed and the communities around us can be revived by focusing on the biological, psychological, and socio-environmental factors of individuals in our society. Further, the project proposed the implementation of two interconnected superminds:

- a. The first health “supermind” is a network of preventive health professionals certified through a curriculum. The major pillars of human performance--nutrition, movement, habit formation, and sleep, among others--are essential for the long-term health of a human body. The central idea here is to create a network of holistic, preventive health coaches who help people become an “athlete” in their own way. The certification will include an exclusive knowledge network that is constantly maintained and up-to-date with the latest research and suggested best practices. It will also include a forum for coaches to present questions, compare experiences, and build knowledge through

practice. The team recommends that the certifications begin with medical practitioners themselves including doctors, nurse practitioners, physician assistants, and others. Over time, however, the certification could be rolled out to a wide variety of groups including business schools, where future leaders may benefit from knowing how to look after themselves and their employees. Other expansion ideas include retirement communities, schools, and even prisons.

- b. The second health supermind is an innovative way to leverage communities using group-based health support and education to improve collective health and tackle loneliness. The proposal consists of a type of group medical session or shared medical appointment, as a way to build lateral patient-patient connections. This shared experience will provide participants a support network, a source of accountability, and a long-term community. Remote group sessions will allow folks to learn from each other, share ideas, and support each other.

The project's recommendations for these two health Superminds demonstrate how a combination of knowledge and community support can revive the health of our communities.

## **Conclusions**

While we have not systematically evaluated the quality of the ideas summarized above, we believe they include a number of intriguing and innovative suggestions for how to deal with the Covid-19 pandemic. And numerous informal comments from students in the class suggest that they found the Supermind Design methodology useful in generating these ideas.

Taken together with the results of previous uses of the methodology summarized above, we believe there is now sufficient justification for more formal evaluations of this methodology. And more importantly, we believe there is now growing evidence of the potential usefulness of the methodology in a very wide range of important business, societal, and other problems.

## References

---

- <sup>1</sup> Malone, T. W. (2018). *Superminds: The surprising power of people and computers thinking together*. New York: Little Brown, p. 20.
- <sup>2</sup> MIT Center for Collective Intelligence. 2020. *Supermind Design Primer*. <https://cci.mit.edu/supermind-design-primer/>.
- <sup>3</sup> R. Laubacher et al, *Using a supermind to design a supermind: A case study of university researchers and corporate executives co-designing an innovative healthcare concept*. MIT Center for Collective Intelligence Working Paper No. 6109-20, March 2020, <https://cci.mit.edu/wp-content/uploads/2020/07/03.31.20-MIT-Sloan-CCI-Working-Paper-6109-20.pdf>.
- <sup>4</sup> W. Ammirato, et al. 2019. *How Can the Japanese Healthcare System Deal More Effectively with Adult Depression? Harnessing the Power of Superminds*. MIT Center for Collective Intelligence and Takeda Pharmaceuticals Working Paper. November 2019, <https://www.dropbox.com/s/et4k24wih62f8fz/Takeda%20Report-Harnessing%20the%20Power%20of%20a%20Supermind%20FINAL.pdf?dl=0>

## Appendix A

### Topics and guest speakers in-class sessions

- **Introduction and overview**
  - Hannu Rejeinemi, Co-founder and CEO, Helix Nanotechnologies; Science fiction author
- **Detection & surveillance // Basic design moves**
  - Professor Kevin Esvelt, Director of the Sculpting Evolution group (MIT Media Lab)
  - Alexis C. Madrigal, Staff Writer at The Atlantic and the author of *Powering the Dream: The History and Promise of Green Technology*.
- **Minimizing viral transmission via non-pharmaceutical interventions // Supermind design moves**
  - Susan Blumenthal, Former US Assistant Surgeon General
  - Jill Crittenden, Research Scientist, MIT McGovern Institute
- **Developing & deploying therapies and vaccines // How can *markets* help?**
  - Nikolai Eroshenko, Co-Founder and CSO, Helix Nano
  - Andrew Lo, Professor, MIT Sloan School of Management
- **Minimizing economic harm // How can *governments* help?**
  - Ro Khanna, U.S. Representative from California's 17th congressional district since 2017
  - Michelle Wu, Member of the Boston City Council, First woman of color president from 2016 to 2018
- **Preserving social activity and mental health // How can *communities* help?**
  - Marshall Ganz, Rita T. Hauser Senior Lecturer in Leadership, Organizing, and Civil Society at the Kennedy School of Government at Harvard University
- **Managing businesses during the pandemic // How can *technology* help?**
  - Jeff Schwartz, Principal, Deloitte Consulting, US leader for the Future of Work
- **Going back to school**
  - Jessica Tang, President of the Boston Teachers Union
- **Dealing with systemic inequities**
  - Kate Walsh, President and CEO of the Boston Medical Center (BMC)
- **Validating, sharing, and communicating scientific insights**
  - Russell Stevens, Laboratory of Social Machines, MIT Media Lab

## Appendix B

### Sample ideas generated in an in-class, online ideation session

[Note: The text below is a verbatim copy of the Google Doc used for live ideation during the class session. The text was generated by simultaneous, parallel contributions from the students and instructors.]

#### How can we detect and monitor Covid-19?

- Zoom In
  - How can we detect COVID-19 in communities (e.g. schools, offices)?
  - How can we detect and monitor COVID-19 in particular geographic regions (e.g. Southwest, New England)?
  - How can we detect and monitor COVID-19 in people of certain age brackets (e.g. infants, children, teenagers, etc)?
  - What does it mean to actually have the virus?
    - Does any detectable amount mean someone is positive for the virus, even if not contagious?
  - How can we detect and monitor COVID-19 in the senior centre?
  - How can we distribute the COVID-19 testing kits in the local community?
  - How can we detect Covid-19?
    - How can we detect SARS-CoV2 in wastewater?
    - How can we detect SARS-Cov2 in airports?
  - How can we detect COVID-19 at the point of infection?\*
  - How can we use visual, auditory, or other sensors to test for SARS-CoV2?\*\*\*
  - How can we detect asymptomatic carriers of SARS-CoV2?\*\*\*
  - How can we detect COVID-19 earlier in the infection timeline?\*\*\*
  - How can we get people to use exposure notification applications?\*
  - How can we “tag” carriers anonymously?
  - **How can we get people to honestly report contacts to contact tracers?\*\*\*\*\***
    - Random
      - Why do people lie?Prohibition never works
      - What is the perception of people on COVID-19?
    - Zoom In
      - What incentives can we provide to people to report honestly?
      - How can we reward people for participating?
      - 
      - How can we hold people accountable for testing and reporting?
      - How can we assure anonymity of reporting to contact tracers?
      - How do we make sure people understand the importance of contact tracing, rather than seeing it as just a burden?
      - How can we reward reporting to contact tracers?



- How can we make testing and reporting easy for ppl?
- Who do we actually care about? If someone walked by them on the street, we probably do not care, but what if they both stood at a traffic crossing for 5 minutes together?
- What negative repercussions impact truthful tracing?
- Zoom out
  - What could people be afraid of if they tell the truth
  - How do we put punishment in place for not complying?
  - What countries are able to do this well?+
  - What causes mistrust with government / healthcare institutions?
  - What is the social norm?
    - How can we do contract tracing in a way that engages social norms for honesty?
      - Get trusted people from the community to endorse the tracing+
  - How honest are people with their own doctors?
  - How can we get people to honestly report anything?
    - Rewarding
      - Citizen credit (tax reduction) ++++++
      - Access for public good (free library card, etc)
      - Invoke sense of civic duty & acting for greater good++++
      - Pay to report - Social credit score ++++ Celebrate the reporters++ Thinking about you accidentally hurting someone you care about+++
      - Create a token system related to healthcare costs/unemployment/etc...+++
      - How do you create a reward that doesn't cause misreporting?
    - Punishing
      - Social shame wall\*
      - auditing
      - Bad reputation
      - Fines+++
    - Educating
      - Help people understand the impacts of reporting vs not reporting (e.g. "one person reporting can save x lives")\*+++
    - If you punish the problem usually goes underground
  - Analogize
    - See dentist regularly, have a good teeth
    - Uber score - low score reduces chances of a ride / kicks drivers off
    - Yelp

- Tax filing
  - Lottery for big prize
  - Periodic bonus
  - What enforces people to pay on buses?
  - Military code of conduct - no one left behind
  - Your community is your family
  
- How much do people value keeping their communities safe?
- How can we identify early symptoms?\*
- How can we monitor Covid-19?
- How can we monitor Covid-19 related deaths?
- How can we predict vulnerability for viral infection as COVID19?\*
- How can we detect Covid-19 using available technologies?\*\*\*
- How can we stop people leaving their homes with the illness?
- **How can we detect this in the first 2-5 days when it doesn't show up on a test\*\*\*\*\***
- What are the different strains of COVID-19?\*
- How can we monitor Covid-19 in communities who don't have access to technology?\*
- Zoom out
  - How can we detect and monitor infectious diseases?
  - How can we monitor public health?
  - How can we detect and monitor bio-engineered threats?
- What makes some daily medical procedures part of our lives and seem normal (brushing teeth)
- How do we get used to living with infectious diseases
  - How can we change public transportation to maintain safety?
  - How can we foster trust and collaboration on a societal level?
  - How can we safely re-enter society?
  - How can we travel and move around without fearing infection?
  - How can we build a system to check individual health regularly?
  - How can we design buildings to help prevent spread of viruses?
  - How can we incentivize communities and organizations to share health data?
  - How can we amplify/improve healthcare support?
  - How can we prevent the spread of COVID-19?
  - How can we deal with Covid-19?