

**Project 1 - Vaccine Distribution System**  
Initial Submission - Brief Project Proposal  
Due at noon on Monday, April 5  
A.Hornof - April 1, 2021

### **The Point of the Project**

The point of the project is for you to get some experience building a new system that has some parallels with new systems that are currently being built and used for the Covid vaccine distribution. The point of the initial submission is to help you get started designing systems that satisfy real-world. One of the first challenges is figuring out what to build.

Project 1 embraces the usual teaching and learning goals, which include getting experience

1. Working on a team to develop systems.
2. Building a system that has different parts built by different people, and are then integrated.

But the project also provides students with a unique opportunity to develop software that somewhat resembles new real-world systems that are currently being developed across the planet in response to a global pandemic. We can hope that this will be a once-in-a-lifetime opportunity.

If you read any of the the Resources below, you will quickly realize that vaccine distribution is a very complex problem. But it is also a problem that is being solved right now.

### **The First Deliverable**

A proposal of two alternative systems that students could build for Project 1. The proposal should relate directly to the real-world problems as they are described in the Resources below. This is an idea-generation exercise. You are not committing to building anything that you propose.

Each of the two proposals should include four sections:

1. A very short description of each system, to summarize what will be built.
2. A system architecture. This includes a description of (a) the major components of the system, (b) the function of each component, and (c) how the major components will interact.
3. A short description of the technology that you could use to build the system.
4. A proposal for how the technical work could be divided among group members.

## **Submit by Monday at Noon**

Each group should submit two alternative proposals by Monday at noon. The two proposals should be in a single PDF. The total document should be about 5 pages long, single-spaced. Each architecture should ideally have a diagram, even if it is hand-drawn and neatly scanned. Cite all of the resources that you use in your proposal.

All group members should carefully read "Produce Good Writing" which is in the Syllabus under "2. Your Responsibilities", and then proofread the document, and incorporate corrections and edits. One group member should submit the single PDF by noon on Monday, April 5, and include all authors in alphabetical order by last name.

## **Some Guidance**

Do not try to solve the entire set of challenges associated with vaccine distribution. Pick a subset of the systems that are needed, and just propose the subsystems needed to solve those challenges. Try to demonstrate an understanding of the problem from a real-world perspective.

## **Some Resources**

The architecture of mass vaccination

<https://www.bloomberg.com/news/features/2021-01-22/the-architecture-of-covid-vaccine-distribution>

Vaccine Administration Management System (VAMS) Program

<https://www.cdc.gov/vaccines/covid-19/reporting/vams/program-information.html>

Prepmod is a vaccine distribution system used by multiple U.S. states.

<https://www.health.nd.gov/prepmod>

<https://www.doh.wa.gov/Emergencies/COVID19/HealthcareProviders/VaccineInformationforHealthcareProviders/ToolkitandResources/PrepMod>

Oregon Vaccine Distribution

<https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/VACCINES/IMMUNIZATION/IMMUNIZATIONPROVIDERRESOURCES/Pages/COVIDvaccine.aspx>

Some of the Data Management Problems

<https://hln.com/data-management-for-large-scale-covid-19-immunization-this-is-all-not-as-simple-as-it-seems/>

Additional resources can be found by searching on "RFP" which is "request for proposals" for vaccine distribution systems.