Braidotti, L., Bertagna S., Dodero, M., Piu, M., Marinò A. & Bucci, V. (2022). *Identification of measures to contain the outbreaks on passenger ships using pedestrian simulations.* Procedia Computer Science, 200, 2022, p. 1565-1574. Doi: 10.1016/jprocs.2022.01.357

Purpose – To discuss, simulate, and figure out ways to minimize and contain disease outbreaks.

The paper starts with some background information, specifically the Diamond Princess outbreak and how it caused the “No Sail Order”. Next it goes over the rules and regulations that cruise liners had to follow once they were allowed to set sail again. Then the paper goes over the many factors to take into consideration when it comes to spreading disease such as: crowd density, proximity, members per activity, the layout/feng shui of the interiors, and lastly the most important factor, the HVAC systems. The parts of a cruise vessel are then divided into their infection safety levels, low, medium, high. Things like elevators and public common areas are medium risk, while liminal spaces like corridors and stairways are low risk due to the fact that any interaction between members are likely to be very minimal as these spaces exist purely to get from one place to another, when you enter a hallway your next goal is to leave it on the other side, high risk areas are the medical and quarantine areas. With all of this in mind we can now take to the simulation, using a software known as Legion they proceed to simulate crowd behavior on a cruise ship. The paper then goes on about the simulation, it specifically focuses on the most critical medium risk space, the restaurant at the rear of the ship.

I think the quality of the source is pretty good, they went very in depth about a lot of the simulation and spread factors, but they only really focused on one part of the ship when I honestly think they should have done more. Almost all of the ship is a medium zone and they only fixed one.