Points from large group discussion:

- **Agent-based model** with Monte Carlo simulation
- Grid representation of airport
- **Probabilities** for planes to arrive, people to be handicapped
- Cage model (infirm or wheelchairs)
- Attachment of escorts to wheelchairs?
- Elasticity of demand
- Greedy algorithm
- Simple coarse model
- Restore balance if not enough carts in a concourse during idle period
- Use algorithm for airplane gate assignment
- **Genetic algorithm** to optimize

How optimize strategies for deploying wheelchairs and escorts?

- **Genetic algorithm** (but complicated)
- Have each algorithm represented by a company, and they compete with each other for customers.
- **Simulated annealing**:
  - Start with a **proposed strategy**, and a wide collection of perturbations to that strategy
    - Changing the parameter values, switching the order of some of the steps,...
    - Compare the performance of this perturbed (mutated) strategy with the performance of the previous strategy, and you accept the perturbation with some probability based on this relative performance
      - Most common choice of probability is **Metropolis-Hastings algorithm** but there are other reasonable choices as well.

Graph theory concepts can be used to suggest or build...
heuristic algorithms:
  • Dijkstra's algorithm (finds least cost path efficiently)
  • Max-flow algorithms