As we grow increasingly dependent on air transportation, I believe it’s important for the inventors of tomorrow’s next mode of transportation to understand the limitations of air travel and how the network responds to a failure or more in its components. My research focuses on multi-modal transportation and how we can leverage existing and new modes of transportation to simultaneously alleviate a portion of the load on the current air network, as well as be able to address failures at any level in the network in a prompt and cost-efficient manner. The image above shows the optimal manner in which the US air network could hypothetically react to a loss of just one important connection for a 24 hour period. The response would utilize 36 air routes and raise the passenger capacity on these routes to up to 150% of their nominal traffic. In reality, the response to such an event would likely be less optimal, and the outage period could potentially be longer. All the more reason to consider adopting additional modes of transportation for long-distance travel as we near the end of decade that witnessed the maturation of multiple technologies that have the potential to make this possible.