Aviation's impact to climate change is significant; without mitigation, this impact is expected to grow as the industry recovers from the global pandemic. Climate change has a correspondingly large impact on aviation; changing weather patterns can affect aircraft performance, infrastructure, and operations. Over the coming decades, the decarbonization of the aviation sector will present numerous technological, policy, and environmental challenges, while extreme weather will create challenges and new requirements for aviation safety and growth.

On January 20, 2022, SJSU and its Mineta Transportation Institute will host a virtual forum on Aviation and Climate Change to discuss these issues. The forum will bring together Silicon Valley leaders in academia, government, and industry to showcase the regional capabilities available to address climate change and aviation challenges, and to encourage the public-private partnerships and collaborations needed to do so.

1 Phenomenology
Aviation currently produces 12 percent of transportation CO2, as well as contrails and other emissions (e.g., nitrogen oxides and sulphates) that contribute to climate change. Shifting weather patterns owing to climate change – increases in temperature, precipitation, storm frequency, sea level, and wind distribution and intensity – have significant implications for aviation. This session discusses these phenomena and trends.

2 Strategic Frameworks
Research, policy, and economic perspectives contribute to our understanding of the challenges associated with aviation and climate change. This session describes specific strategies in each area.

3 Technology Advances
Technology advances hold the promise to reduce overall emissions and counter weather disruptions. These include developments in new fuels, more efficient aircraft, ground operations, and airspace management, and improved weather prediction capabilities.