

## 2019 NOAA/AOML/HRD Hurricane Field Program - IFEX

### END STAGE EXPERIMENT *Science Goals & Observational Applications*

---

#### **Extratropical Transition Experiment:** Sim Aberson (PI)

Goal: More than half of all tropical cyclones in the Atlantic undergo extratropical transition, the process by which they change from a warm-core entity to a potentially large, powerful, and axisymmetric cyclone in the middle and northern latitudes. The transformation can also lead to large impacts both upstream and downstream of the tropical cyclone itself. The processes by which the transformation occurs is poorly understood and, more importantly, poorly forecast, as are the harmful impacts. The goal of this experiment is to gain greater understanding of the extratropical-transition process with the ultimate goal of improving forecasts of these potentially high-impact events (*IFEX Goals 1, 2, 3*). See the 2019 HRD HFP web page for additional details: <http://www.aoml.noaa.gov/hrd/HFP2019/index.html>

Observational Applications: The observational data obtained will be incorporated into operational numerical weather prediction systems to test their impact on improving forecasts of track, intensity, and structure. It will also be assimilated into high-resolution models to test sophisticated data-assimilation techniques, and, with model forecasts, to do case studies. The data will also be used to verify forecast models at the observation time. The ultimate application is to improve forecasts of these potentially high-impact weather events.