

The James Webb Space Telescope (JWST) will be the premier infrared astronomical facility after its launch in 2020, and its extragalactic observations will revolutionize our understanding of galaxy evolution by breaking the redshift and sensitivity barriers of existing facilities. I will introduce the JWST Advanced Deep Extragalactic Survey (JADES), a joint program of the NIRCam and NIRSpec GTO teams that will be observed in JWST Cycle 1. The design of JADES relied heavily on mock catalogs that we produced using a novel phenomenological model for the evolution of galaxy properties across cosmic time. I will present our model designed for mock JWST observations, and show its science predictions out to $z \sim 15$ for the JADES survey, including the rest-frame UV galaxy counts beyond the current redshift frontier ($z > 10$), the emergence of the first quenched galaxies at $z > 4$, and constraints on the ionization properties and ISM of early galaxies at $4 < z < 9$. The JWST mock data products are publicly available to facilitate GO Cycle 1 proposal planning, and will serve as a powerful future JWST data analysis tool after launch.