Working Group	Sub-Group	Co-Chairs		1-Sentence Description
START Working Groups				
Uncovering the Drivers of Galaxy Growth		**Swara Ravindranath**		Study how galaxies, constituents, and their environments evolve over the history of the HWO-observable universe.
Galaxy Growth	The Intergalactic and Circumgalactic Medium			Exploring the IGM and CGM in emission and (primarily) in absorption, with an emphasis on the UV
Galaxy Growth	AGN Over Cosmic Time			Studying the central engines of galaxies and their impacts on galaxy evolution in imaging and spectroscopy as at multiple scales
Galaxy Growth	Ionizing Photons and Their History			Understanding the galaxies and their stars that drove reionization by observing their analogues at lower redshift in the UVOIR
Galaxy Growth	The Dark Sector			Exploring the nature of dark matter and dark energy via their impacts on galaxies and large scale structure
Following the Evolution of the Elements Over Cosmic Time		**Janice Lee**		Trace the rise of the periodic table via studies of the formation, distribution, and evolution of stars, and their deaths.
Evolution of the Elements	Stars, Stellar Populations, and Their Environments			UVOIR spectroscopy and imaging of stars from individuals in the Milky way, to populations in the Local Group, to stellar clusters across the universe
Evolution of the Elements	Transients			Studies of supernovae, merger-driven stellar and stellar remnant explosions, and sources of gravitational wave events
Evolution of the Elements	Star Formation			UVOIR spectroscopy and imaging of star forming regions
Understanding the Solar System in its Galactic Context		**Ty Robinson**	**Evgenya Shkolnik**	Explore UVOIR imaging and spectroscopy of Solar System objects at all scales, along with exoplanet observations to understand the full range of planet possibilities and histories.
Solar System in Context	Characterizing Exoplanets			Observations and characterization of planets that are unlikely to be habitable but are observed by HWO directly or indirectly (i.e., phase curves, transits, eclipses).
Solar System in Context	Solar System Observations			Remote sensing studies, often at high cadence, of solar system planets, their moons, and small bodies using high spatial resolution imaging and UVOIR spectroscopy
Solar System in Context	Demographics & Architectures of Planetary Systems			Synthesize current knowledge of exoplanet occurrence rates and system architectures for the types of stars that HWO will target. Assess the sensitivity and accessible working angles required to constrain the architectures of planetary systems detected by HWO.
Solar System in Context	Birth and Evolution of Planetary Systems			Consider the observational capabilities required to advance understanding of the formation of planetary systems during embedded, protoplanetary, and debris disk stages.
Discovering Living Worlds		**Giada Arney**	**Niki Parenteau**	Explore finding & characterizing potentially habitable exoplanets and searching them for the possibility of life with HWO.
Living Worlds	Biosignature Possibilities			Consider the wide variety of biosignatures that could be detectable with HWO and the conditions under which they might occur.
Living Worlds	Biosignature Interpretation			Understand how potential biosignatures could be assessed and assess the additional information about the planet and planetary system required to interpret biosignatures and rule out false positives.
Living Worlds	Target Stars and Systems			Building on previous work, assemble current knowledge of likely HWO target stars, identify knowledge gaps, and consider the ability of precursor observations, contemporaneous observations with other facilities, and HWO observations to constrain important properties of host stars and their planetary systems.

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Joint Working Groups				
Comparison of Past Studies		**Scott Gaudi**		Examine similarities / difference between HabEx & LUVOIR to identify key areas for science or engineering trades (short duration).
Science Case Simulation		**Natasha Batalha**	**Rachel Osten**	Develop codes to simulate returns from potential HWO science cases, starting with three needed to help design an integrated science modeling framework.
Science Case Simulation	Astrometry			Investigate performing high-precision astrometry with HWO and develop a tool to model astrometry surveys with a wide-field camera.
Science Case Simulation	Exoplanet Direct Imaging Yields			Simulate numbers of different kinds of exoplanets found in various HWO coronagraphic imaging surveys, and work to increase the fidelity of yield modeling codes.
Science Case Simulation	Galaxy Evolution in the UV			Simulate returns from a challenging galaxy evolution science case that uses ultraviolet spectroscopy.
Science Data Simulation		**Tom Greene**	**Jason Tumlinson**	Develop exposure time calculators for fiducial candidate instruments and simulate datasets for analysis.
Science Data Simulation	High-Contrast			
Science Data Simulation	UV			
Science Data Simulation	Wide-Field Imaging			
Artificial Intelligence / Machine Learning		**Megan Ansdell**		Consider how AI / ML can be used on HWO by linking capabilities with needs.
TAG Working Groups				
Science-Engineering Interface		**Patrick Morrissey**	**Breann Sitarski**	Provide key linkages between science & engineering modeling and manage unified input assumptions.
Systems		**Mike Menzel**	**Stuart Shaklan**	Connect science needs with allocations including traditional mission system engineering oversight and supporting efforts like error budgeting and post-processing / ConOps.
Systems	Integrated Modeling			Develop roadmaps for modeling tools & processes and help coordinate the many aspects of end-to-end modeling.
Systems	Starlight Suppression Error Budget			
Systems	High-Contrast Post-Processing & ConOps			
Systems	Starshade Compatibility			
Technology		**Matt Bolcar**	**Feng Zhao**	Develop and maintain technology roadmaps, identify technology gaps, and provide input to modeling work & architecture analyzes.
Technology	Sensing and Control			
Technology	Mirrors			
Technology	Coronagraphs			
Technology	Detectors			
Technology	UV Technology (w/UV detectors)			
Technology	Cross-Cutting			
Servicing		**John Grunsfeld**	**Julie Van Campen**	Study how robotic servicing at L2 can be architected, associated technology needs, and what the observatory needs to do to accommodate in-space servicing.

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Community Working Groups				
DEIA & Mentorship	Later split into two groups		**Evan Scannepicio**	Establish inclusive principles & practices for HWO activities and plan a Mentorship Program.
Communications		**Travis Schirner**	**Amber Straughn**	Plan HWO messaging and develop products for communication with multiple audiences.
GOMAP Synergies for Future Missions		**Jessica Gaskin**	**Jim Oschmann**	Observe and analyze the GOMAP process with an eye to adaptation for future mission concepts.
Ground-based Astronomy in 2030s/2040s				Investigate planned future capabilities to ensure complimentarity of possible HWO capabilities.
Space-based Astronomy in 2030s/2040s				