

Recipes to Regulate **STAR FORMATION** at **ALL SCALES**:
From the **NEARBY UNIVERSE** TO THE **FIRST GALAXIES**

Symposium Schedule



2024 SPRING SYMPOSIUM

Link to the schedule spreadsheet:

<https://docs.google.com/spreadsheets/d/1PbcN5T4SJgrTgxY9C8qbyyOQ7ORiI7HAsalCuHJ5R2U/edit?usp=sharing>

MONDAY, APRIL 15TH

VENUE: INN AT THE COLONNADE

TIME	TITLE	SPEAKER
12:00 PM	Lunch at the "Inn at the Colonnade"	
01:00 PM	Welcome Message	
	Session 1a: Conditions for star formation in galaxies and the role of stellar feedback	
1:15 PM	<i>Star Formation and Turbulence Across Cosmic Time</i>	<i>Blakesley Burkhart (invited)</i>
1:45 PM	<i>The Nature of Star Formation and Radiative Feedback in Dense Compact Starbursts</i>	<i>Shyam Menon</i>
2:00 PM	<i>Using galaxies at cosmic dawn as a laboratory for star formation physics</i>	<i>Rachel Somerville</i>
2:15 PM	<i>Metallicity Dependence of Pressure-Regulated Feedback-Modulated Star Formation: a TIGRESS view</i>	<i>Chang-goo Kim</i>
2:30 PM	<i>Where Does all the Feedback Go?</i>	<i>Bruce Elmegreen</i>
2:45 PM	Coffee Break	
3:15 PM	<i>ALMaQUEST tests the importance of dynamical equilibrium pressure in regulating star formation.</i>	<i>Sara Ellison</i>
3:30 PM	<i>Decoding star formation across times and timescales with JWST and CAMELS</i>	<i>Kartheik Iyer</i>
3:45 PM	<i>Probing stochastic star formation in the first galaxies with JWST</i>	<i>Viola Gelli</i>
4:00 PM	<i>Metallicity of galactic winds</i>	<i>Magdalena Hamel Bravo</i>
4:15 PM	<i>New Insight into Stellar Feedback at Extremely Low Metallicity from the Only HII Region in Leo P</i>	<i>Grace Telford</i>
4:30 PM	Discussion 1	
5:00 PM	Welcome Reception at the "Inn at the Colonnade"	

TIME	TITLE	SPEAKER
8:30 AM	Breakfast	
Session 1b: Conditions for star formation in galaxies and the role of stellar feedback		
9:00 AM	Multi-Scale Star Formation and Feedback in Nearby Galaxies (Session 1b - invited)	Daniela Calzetti (invited)
9:30 AM	Low Metallicity Star Formation in the Local Universe with JWST	Alec Hirschauer
9:45 AM	The 3.3 um PAH emitters population in the PHANGS-JWST galaxies	Jimena Rodriguez
10:00 AM	Spatially resolved star formation of galaxies in Cosmic noon from HST and JWST observations	Lu Shen
10:15 AM	Flash-Talks 1	
	<ul style="list-style-type: none"> • Christina Lindberg: Dust around massive stars is agnostic to galactic environment: New insights from PHAT & BEAST • Alec Martin: Properties of Giant Star-forming Clumps and their Host Galaxies Observed by HST and JWST • Daniel Maschmann: PHANGS-HST catalogs for ~100,000 star clusters and compact associations in 38 galaxies • Chloe Neufeld: The Paschen-alpha Star Forming Sequence at $z \sim 1-2$ • Jorge Pineda: Far-infrared spectral lines as tracers of the impact of stellar feedback • Kaila Ronayne: 7.7μm PAH Star Formation Rate Calibration with JWST MIRI • Guochao Sun: The Unsettled Youth of Galaxies: Understanding Bursty Star Formation in Galaxies at Cosmic Dawn 	
10:30 AM	Mid-Morning Coffee Break	
11:00 AM	Resolving high-redshift star-forming regions at 10-100s pc resolution with JWST	Adelaide Claeysens
11:15 AM	Revealing the parsec-scales details of a $z=6$ star-forming system with NIRCam+NIRSpec	Matteo Messa
11:30 AM	JWST Emission Line Survey: Probing emission-line galaxies in to the Epoch of Reionisation	Corey Pirie
11:45 AM	Do EELGs from low to high-z make or break what we know about Star Formation & ISM conditions?	Ali Ahmad Khostovan

12:00 PM Discussion 2

12:30 PM Lunch Break

Session 2a: The relationship between star formation and chemical evolution

1:30 PM TBD (Session 2a - invited) Danielle Berg (invited)

2:00 PM **Pinning down the multi-phase mixing of metals within star-forming galaxies** Bethan James

2:15 PM **Robust Chemical Enrichment from Optical and Infrared Emission Lines in the Era of JWST and ALMA** Yuguang Chen

2:30 PM **Connecting Mass, Metallicity, and Star-formation Rate for the Lowest Mass Galaxies at Cosmic Noon** Mitchell Revalski

2:45 PM Flash-Talks 2

- **Juan Alfonzo: Katachi (形):** Decoding the Imprints of Past Star Formation on Present Day Morphology in Galaxies
- **Javier Ballesteros-Paredes:** Gravity or turbulence? Understanding the star formation law from molecular clouds to galaxies.
- **Logan Jones:** Wind and Fire: Resolving the multi-phase ISM of M83 with JWST
- **Valentina La Torre:** Star Formation Rate Estimation using Self-Organizing Maps for Large Dataset Surveys
- **Michael Romano:** The imprint of star-formation-driven outflows on the evolution of nearby dwarf galaxies
- **Peter Zeidler:** Star formation at low metallicities – from massive OB stars to YSOs in the SMC star cluster NGC 602

3:00 PM Mid-Afternoon Coffee Break

3:30 PM **Resolved Metallicity and Stellar Population Maps at $z \sim 1-2$: Implications for Stellar Models** Grace Olivier

3:45 PM **Temperature-based gas-phase abundance patterns at Cosmic Noon from ultradeep JWST/NIRSpec spectra** Ryan Sanders

4:00 PM **Accurate metallicities of the ionized gas from low to high redshift with a new approach to photoionization models** Alessandro Marconi

4:15 PM **Interpreting gas metallicity gradients at high- z using cosmological zoom in simulations** Ayan Acharyya

4:30 PM **Does the Fundamental Metallicity Relation Evolve with Redshift** Alex Garcia

4:45-5:15 PM Discussion 3

6:30 PM Baseball Game at Camden Yards

TIME	TITLE	SPEAKER
8:30 AM	Breakfast	
<i>Session 2b: The relationship between star formation and chemical evolution</i>		
9:00 AM	<i>The relationship between star formation and chemical evolution</i>	<i>Chiaki Kobayashi (invited)</i>
9:30 AM	<i>Different regimes of star formation across cosmic time</i>	<i>Florent Renaud</i>
9:45 AM	<i>Near and Far: Modeling Chemical Evolution in the JWST Era</i>	<i>Mia Bovill</i>
10:00 AM	<i>Effects of Population III supernovae on the formation of the first enriched stars</i>	<i>Jennifer Mead</i>
10:15 AM	<i>Flash-Talks 3</i>	
	<ul style="list-style-type: none"> • Valentina Abril Melgarejo: <i>Mapping multi-phase mixing of metals in Star Forming Galaxies</i> • Laura Duffy: <i>Dust Attenuation of Star Forming Regions in Nearby Galaxies and the Swift+MaNGA Value Added Catalog</i> • James Garland: <i>Characterizing Fine Metallicity Fluctuations Across Galactic Structures with SIGNALS</i> • Ava Polzin: <i>Molecular gas in low metallicity galaxies and its implications for star formation</i> • Brian Welch: <i>Physical Conditions of Gravitationally Lensed Galaxies with JWST</i> • Karla Arellano Cordova: <i>Chemical Evolution Near and Far: Abundance Patterns in the JWST Era</i> • Laurie Rousseau-Nepton: <i>SIGNALS: The Star-formation, Ionized Gas, and Nebular Abundances Legacy Survey</i> 	
10:30 AM	Mid-Morning Coffee Break	
11:00 AM	<i>3D imaging spectroscopy and cosmological simulations to trace the chemical history of galaxies</i>	<i>Kathryn Grasha</i>
11:15 AM	<i>Nitrogen-enriched, Highly Pressurized Nebular Clouds Surrounding a Super Star Cluster at Cosmic Noon</i>	<i>Massimo Pascale</i>
11:30 AM	<i>Unveiling Cosmic Dust Chronicles at early epochs with the James Webb Space Telescope</i>	<i>Ambra Nanni</i>
11:45 AM	<i>The impact of star formation and stellar feedback models on the properties of low mass galaxies about Star Formation & ISM conditions?</i>	<i>Anna Engelhardt</i>
12:00 PM	Discussion 4	

12:30 PM

Lunch Break

Session 3a: The CGM and IGM role in shaping star formation activity in galaxies

1:30 PM

The role of CGM and IGM in shaping star formation activity in galaxies

Sanchayeeta Borthakur (invited)

2:00 PM

The Cool CGM of the Large Magellanic Cloud

Sapna Mishra

2:15 PM

Hot Gas Properties of Local Starburst-Driven Outflows

Sebastian Lopez

2:30 PM

Joint ALMA+JWST analysis of the circumgalactic medium of MACS1931-26

Laya Ghodsi

2:45 PM

Flash-Talks 4

- **Eshita Banerjee:** The Circumgalactic medium of Lyman-alpha emitters at $z \sim 3.3$
- **Alexander Beckett:** Tracing metals in and around galaxies with the MUSE Ultra Deep Field
- **Seery Chen:** Imaging the Circumgalactic Medium with the Dragonfly Spectral Line Mapper
- **Sophia Flury:** Stellar Feedback Clears the Path to Cosmic Reionization
- **Will Liu:** Revealing cosmic systems: exploring giant, optically emitting, circumgalactic nebulae
- **Allison Man:** A kpc-view of the CO, [CI] and dust emission in and around a starbursting AGN-host galaxy at $z \sim 2.6$
- **Grecco Oyarzun:** The baryon cycle in HI-selected galaxies at $z \sim 2$
- **Diane Salim:** Setting analytic prescriptions ablaze: Machine-Learnt Star-formation laws with FIRE-2

3:00 PM

Mid-Afternoon Coffee Break

3:30 PM

Spatial distributions and kinematics of $z \sim 0.35$ star-forming and confirmed LyC (non-) leakers

Floriane Leclercq

3:45 PM

Enrichment of the multi-phase circumgalactic medium in dwarf galaxies from CUBS and MUSEQuBES

Sean Johnson

4:00 PM

The stellar populations of gas-rich absorbing galaxies: the essential link to the baryon cycle

Ramona Augustin

4:15 PM

Galaxy local environments and star formation burstiness in low-mass high- z galaxies

Yoshihisa Asada

4:30 PM

The evolution of intervening metal absorbers at $2 < z < 7$ using E-XQR-30

Alma Sebastian

4:45-5:15 PM

Discussion 5

5:15 PM

SDAS (beer&snacks)

TIME	TITLE	SPEAKER
8:30 AM	Breakfast	
<hr/> Session 3b: The CGM and IGM role in shaping star formation activity in galaxies <hr/>		
9:00 AM	<i>The role of the circumgalactic and intergalactic medium in galaxy formation</i>	Freeke van de Voort (invited)
9:30 AM	<i>Bridging Observations and Simulations of the Resolved CGM with the Dragonfly Spectral Line Mapper</i>	Imad Pasha
9:45 AM	<i>Circumgalactic medium at high-z: connecting cosmological filaments with central galaxies</i>	Da Bi
10:00 AM	<i>Regulating Star Formation with a Hot Circumgalactic Medium</i>	Chris Carr
10:15 AM	Flash-Talks 5	
	<ul style="list-style-type: none"> • Dylan Benton: <i>Density vs. Destiny: the Lifecycle of Star-Forming Gas in FIRE-3</i> • Cody Carr: <i>Testing our ability to measure outflow properties and their impact on star formation with FIRE</i> • Sayak Dutta: <i>MUSEQuBES: A study of gas and metals around low-redshift galaxies</i> • Julianne Goddard: <i>Effects of Active Galactic Nuclei Feedback on Galactic Morphology (Goddard, Shlosman, Romano-Diaz)</i> • Celine Greis: <i>HI's Role in regulating global and local SFR in the Virgo Cluster</i> • Chris Mihos: <i>Star Formation at the Lowest Densities: Starbursts in Diffuse Environments</i> • Keerthi Vasan: <i>Resolved studies of galactic outflows at Cosmic Noon</i> 	
10:30 AM	Mid-Morning Coffee Break	
11:00 AM	<i>Expandable Galactic Atmospheres and the Physics of Galaxy Self-Regulation</i>	Viraj Pandya
11:15 AM	<i>Arkenstone: Simulating CGM-based Star formation Regulation with High Specific Energy</i>	Greg Bryan
11:30 AM	<i>Growing Pains: Disruption from Superbubble Feedback Across $z \sim 3-0$ in Simulated Galaxies</i>	Lori Porter
11:45 AM	<i>The timescales and drivers of Milky Way satellite quenching</i>	Charlotte Christensen
12:00 PM	Discussion 4	
12:30 PM	Lunch Break	
1:30 PM	<i>Overview on Habitable World Observatory</i>	Jason Tumilson

Session 4a: The role of AGN feedback in regulating star formation

2:00 PM	<i>The role of AGN feedback in regulating star formation</i>	<i>Giovanni Cresci (invited)</i>
2:30 PM	<i>Extended Dusty Star Formation Halfway Back to Cosmic Noon</i>	<i>Jason Young</i>
2:45 PM	<i>Insights into $z>6$ SFHs and early cosmic chemical evolution from $z>3$ massive quiescent galaxies</i>	<i>Themiya Nanayakkara</i>
3:00 PM	<i>Mid-Afternoon Coffee Break</i>	
3:30 PM	Flash-Talks 6 <ul style="list-style-type: none">• Xiaoyang Chen: Failed AGN feedback? -- Molecular reservoirs are not severely affected by extreme AGN ionized-wind• Allison Erena• Mason Footh: Dual AGN fractions in galaxy mergers and implications for SMBH growth• Francesco Salvestrini: The coevolution of star formation and SMBH accretion at Cosmic noon• Yang Sun: Evolution of Gas Flows along the Starburst to Post-Starburst to Quiescent Galaxy Sequence• Arjun Suresh: Radio-AGN activity is not a direct function of host galaxy star formation rate• Shenli Tang: Rich and diverse molecular gas environment of dual quasars viewed by ALMA	
3:45 PM	<i>The impacts of AGN feedback in a local galaxy: the case of NGC7469 from the eyes of JWST-NIRSpec</i>	<i>Marina Bianchin</i>
4:00 PM	<i>NIRCam Observations of NGC 4258 - A Nearby Galaxy to Study Star Formation History on Multiple Scales</i>	<i>Isha Nayak</i>
4:15 PM	<i>The molecular view of AGN feedback at cosmic noon: do AGN gas-deplete their hosts?</i>	<i>Elena Bertola</i>
4:30 PM	<i>MIRI-MRS Insights: Unraveling the Kinematics of LIRGs at $z\sim 0.6$</i>	<i>Miriam Eleazer</i>
4:45-5:15 PM	<i>Discussion 6</i>	
6:30 PM	<i>Social Dinner (Inn at the Colonnade)</i>	

FRIDAY, APRIL 19TH

VENUE: MULLER AUDITORIUM, STSCI

TIME	TITLE	SPEAKER
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8:30 AM *Breakfast*

Session 4b: The role of AGN feedback in regulating star formation

9:00 AM	<i>The role of AGN feedback in regulating star formation</i>	<i>Daniel Anglés-Alcázar (invited)</i>
9:30 AM	<i>The Role of AGN Feedback in the CAMELS Simulations in Regulating SFR and SMBH Seeding</i>	<i>Megan Tillman</i>
9:45 AM	<i>Modelling the impact of AGN-driven winds on galaxy sizes</i>	<i>Rachel Cochrane</i>
10:00 AM	<i>The z=0 Distribution of Star Formation in TNG100 Galaxies: Intrinsic and Environmental Factors</i>	<i>Bryanne McDonough</i>
10:15 AM	<i>Flash-Talks 7</i>	
	<ul style="list-style-type: none"> • <i>Kristen Garofali: Detecting Accreting Black Holes in Dwarf Galaxies: Emission Line Diagnostics for the JWST Era</i> • <i>Felix Mirabel: Black-hole positive feedback and galaxy formation in the early universe</i> • <i>Osase Omoruyi: Powerful AGN Feedback Tied to Beads-on-a-String Star Formation in a Dynamically Active Galaxy Cluster</i> • <i>Sachithra Weerasooriya: The Curious Case of Centaurus A</i> • <i>Michaela Hirschmann (virtual): Which processes can quench star formation in massive, high-redshift galaxies?</i> • <i>Giulia Tozzi (virtual): Fast & Furious: ionised winds faster in type-2 than in type-1 AGN at z~2</i> 	
10:30 AM	<i>Mid-Morning Coffee Break</i>	
11:00 AM	<i>Galaxy Quenching at the High Redshift Frontier with JWST</i>	<i>Asa Bluck</i>
11:15 AM	<i>Quenching via Tidal Removal of Cold Gas from Intermediate redshift Massive Post-starburst Galaxies</i>	<i>Vincenzo d'Onofrio</i>
11:30 AM	<i>AGN Feedback in Quiescent Galaxies at Cosmic Noon Traced by Ionized Gas Emission</i>	<i>Letizia Bugiani</i>
11:45 M	<i>Discussion 7</i>	
12:30 PM	<i>Lunch Break</i>	
<u>1:00 PM-2:30PM</u>	<u>WORKSHOP</u>	
	<u><i>Exploring the PHANGS-HST+JWST+ALMA+MUSE Treasury of Nearby Galaxies</i></u>	<u><i>David Thilker</i></u>
	<u><i>Derivation of ISM properties</i></u>	<u><i>Ryan Sanders</i></u>
2:30 PM	<i>Coffee Break</i>	
<u>2:45PM-3:45PM</u>	<u>WORKSHOP</u>	
	<u><i>Hubble Advanced Science Products</i></u>	<u><i>Travis Fischer</i></u>
<u>3:45PM-4:30PM</u>	<u>WORKSHOP</u>	
	<u><i>Exploring ILLUSTRIS-TNG simulations to derive observationally-comparable Star formation rates and metallicities</i></u>	<u><i>Bryanne McDonough</i></u>