

Preliminary Schedule



	Monday	Tuesday	Tuesday	Thursday	Friday	
	6/4/2018	6/5/2018	6/5/2018	6/7/2018	6/8/2018	
8:00AM	Arrival	Breakfast 8:00-9:00AM	Breakfast 8:00-9:00AM	Breakfast 8:00-9:00AM	Departure	
9:00AM		Talks 9:00AM-10:10AM	Talks 9:00AM-10:10AM	Field Trip 10:00AM-3:00PM		
10:00AM		Coffee Break 10:10AM-10:30AM	Coffee Break 10:10AM-10:30AM			
11:00AM		Talks 10:30AM-11:50AM	Talks 10:30AM-11:50AM			
12:00PM		Lunch 11:50AM-1:00PM	Lunch 11:50AM-1:00PM			
1:00PM		Talks 1:00PM-2:10PM	Talks 1:00PM-2:10PM			
2:00PM		Break 2:10PM-2:30PM	Break 2:10PM-2:30PM			
		Panel 2:30PM-3:30PM	Talks 2:30PM-3:30PM			
3:00PM		Posters 3:30PM-5:30PM	Posters 3:30PM-5:30PM			Early Career Town Hall 3:30-4:00PM
4:00PM						AGC 2019 Planning 4:00-5:00PM
5:00PM						Closing 5:00PM-10:00PM
6:00PM		Dinner 5:00PM - 7:00PM	Dinner 5:30PM - 7:30PM	Dinner 5:30PM - 6:30PM		
7:00PM		Welcome Talks/ PWR Winners 7:00PM-10:00PM	Trivia Night 7:30PM-10:00PM	Outreach Event 6:30PM-10:00PM		
8:00PM						
9:00PM						
10:00PM						

Monday June 4th

8:00AM-5:00PM,

- Arrival and registration, Georgia Tech Hotel

5:00PM-7:00PM

- Dinner at Molecular Science and Engineering Building

7:00PM-10:00PM, Molecular Science and Engineering Room G011

- Welcome
- Announcement of PWR winners, Winning PWR presentation
- Keynote talk: Shawn McGlynn

Tuesday June 5th

8:00AM-9:00AM

- Breakfast at Georgia Tech Hotel

9:00AM-10:10AM, Oral Session I, Global Learning Center

9:00 – 9:10 Warm Up Talk: TBA

9:10 – 9:30 Arthur Adams, “*Characterizing Exoplanet Meteorology*”

9:30 – 9:50 Andrew Lincowski, “*Exoplanet Characterization with JWST: Evolved Climates and Observational Discriminants of the TRAPPIST-1 System*”

9:50 – 10:10 Brandon Carroll, “*Tracing the Origins of Nitrogen Bearing Organics Toward Orion KL with ALMA*”

10:10AM-10:30AM

- Coffee Break

10:30AM-11:50AM, Oral Session II, Global Learning Center

10:30 – 10:50 Ngoc Truong, “*Decomposition of Amino Acids in Water with Application to Enceladus and Europa*”

10:50 – 11:10 Zoe Todd, “*Cometary Delivery of Cyanide to the Early Earth for Prebiotic Synthesis*”

11:10 – 11:30 Amber Britt, “*Simulations of Methane on Mars Using Curiosity Data*”

11:30 – 11:50 Justin Lawrence “*RISE UP: Robotic Exploration beneath the Ross and McMurdo Ice Shelves*”

11:50AM-1:00PM

- Lunch at Global Learning Center

1:00PM-2:10PM, Oral Session III, Global Learning Center

1:00 – 1:10 Warm Up Talk: Zach Duca

1:10 – 1:30 Lara Maldanis, “*Assessing new biogenicity criteria of microfossils with high-resolution imaging techniques*”

1:30 – 1:50 Ebrahim Emami, “*Planetary Image Analysis using Advanced Artificial Intelligence Techniques - An example with crater detection*”

1:50 – 2:10 J. Emilio Enriquez, “*The Breakthrough Listen Search for Intelligent Life: the first SETI results and other future science.*”

2:10PM-2:30PM

- Coffee Break

2:30PM-3:30PM Early Career Scientist Panel

- **Dr. Jennifer Glass** (Earth and Atmospheric Sciences),
- **Dr. Carol Paty** (Earth and Atmospheric Sciences),
- **Dr. Amanda Stockton** (Chemistry and Biochemistry),

3:30PM-5:30PM, Poster Session I

- Molecular Science and Engineering Atrium

5:30PM-7:30PM

- Dinner on your own

7:30PM

- Trivia Night, Ray’s New York Pizza
- Board Games at Georgia Tech Hotel

Wednesday June 6th

8:00AM-9:00AM

- Breakfast at Georgia Tech Hotel

9:00AM-10:10AM, Oral Session IV, Global Learning Center

9:00 – 9:10 Warm Up Talk: Rebecca Rapf

9:10 – 9:30 Mojhgah Haghnegahdar, “*Insights into Atmospheric Methane Sources and Sinks Using Methane Clumped Isotopes*”

9:30 – 9:50 Jonathan Tan “*The Fate of Lipid Biosignatures in a Mars-Analogue Sulfur Stream*”

9:50-10:10 Amanda Garcia “*A novel apatite-based oxygen paleobarometer across the Neoproterozoic-Cambrian transition*”

10:10AM-10:30AM

- Coffee Break

10:30AM-11:50AM Oral Session V, Global Learning Center

10:30 – 10:50 David Fialho “*Glycosylation of a Model Proto-RNA Nucleobase with Non-Ribose Sugars: Implications for the Origin of RNA*”

10:50 – 11:10 Moran Frenkel-Pinter “*Dynamic Polymerization of Prebiotic Depsipeptides Allows Selection of Stable Structures*”

11:10 – 11:30 Niraja Bapat “*Prebiotic heterogeneity and its effect on nonenzymatic replication*”

11:30 – 11:50 Chloe Stanton “*No Laughing Matter: Nitrous Oxide Production by Chemodenitrification in the Ferruginous Proterozoic Ocean*”

11:50AM-1:00PM

- Lunch at Global Learning Center

1:00PM-2:10PM Oral Session VI, Global Learning Center

1:00 – 1:10 Warm Up Talk: Marcus Bray

1:10 – 1:30 Valerio Guido Giaobelli “*Test of genetic code evolution hypotheses: Reverse evolution of specific target proteins by mRNA-display technique*”

1:30 – 1:50 Lara Vimercati “*Microbial Activity and Adaptation in the Highest Reaches of Life: From Community Diversity to Genomics*”

1:50 – 2:10 Michael Morrison “*Transcriptome Profiling of Bacillus subtilis cells on the BRIC-21 and BRIC-23 Missions to the ISS reveals common responses to the human spaceflight environment.*”

2:10PM-2:30PM

- Coffee Break

2:30PM-3:30PM, Oral Session VII, Global Learning Center

2:30 – 2:50 Anna Wang, “*Unusual self-assembly properties of model protocell membranes*”

2:50 – 3:10 Jose Alberto Campillo-Balderas, “*Viruses can be antique, but not primitive*”

3:10 – 3:30 Hikaru Furukawa “*Agency-Steered Ecosystems on Planetary Bodies*”

3:30PM-5:30PM, Molecular Science and Engineering

- Poster Session

3:30PM-5:30PM, Poster Session I

- Molecular Science and Engineering Atrium

5:30PM-8:30PM

- Outreach Event at Ferst Center for the Arts

Thursday June 7th

8:00AM-9:00AM

- Breakfast at Georgia Tech Hotel

10:00AM-3:00PM

- Field Trip to Georgia Aquarium, Boxed Lunch provided

3:30PM-4:00PM

- Early Career Town Hall with Melissa Kirven-Brooks from NAI

4:00PM-5:00PM

- AbGradCon 2019 Planning Meeting

5:00PM-10:00PM

- Closing Banquet and Activities (detailed program TBA)

Poster Session I Tuesday June 5th 3:30-5:30

<i>Name</i>	<i>Institution/School</i>	<i>Poster #</i>	<i>Abstract Title</i>
Mahmuda Afrin Badhan	University of Maryland College Park	1	Atmos: A 1-D Coupled Climate-Photochemical Model to Simulate Exoplanet Atmospheres
Seyedsaeid Ahmadvand	University of Nevada, Reno	2	On the Formation of C ₂ H ₅ NO Isomers in the Interstellar Medium
Asim Alenaizan	Georgia Institute of Technology	3	Self-Assembly of Nucleobases Analogues: Quantum Mechanical and Molecular Dynamics Study
Adrim Barry Sosa	University of Florida	4	Subsurface Aquifers and Caves Environments as Models for Astrobiology
Manish Baviskar	Lamar University	5	Geochemical & Geophysical Gradients from a Meteoroid Impact Result in a Unique Pattern of Microbial Distribution.
Jennifer Berry	University of Colorado - Boulder	6	The Influence of Positive Ions During Laboratory Simulations of Titan's Haze Formation
Julie Bevilacqua	Georgetown University	7	Cell Survival in the Antarctic Dry Valleys
Marcus Bray	Georgia Institute of Technology	8	Iron: Primordial Cofactor for the Translation System
Flávia Callefo	Institute of Geosciences - University of Campinas	9	Evaluation of Biogenicity in Rocks Related to Brazilian Pleaeozoic Glacial Events
Kimberly Chen	Georgia Institute of Technology	10	Genetic Basis Underlying De Novo Origins of Multicellularity in Response to Predation
Laura Chimiak	California Institute of Technology	11	Using Isotopes to Constrain Amino Acid Synthesis on Meteorite Parent Bodies
Chase Chivers	Georgia Institute of Technology	12	Lumps, Bumps, and Depressions: Europa's Surface Shallow Hydrology
Luoth Chou	University of Illinois at Chicago	13	Linking Legacy Metabolites to Potential Organic Matter Preservation in an Antarctic Cryoencapsulated Hypersaline Nrine
Wolfgang Francisco Cottom Salas	National Autonomous University of Mexico	14	Coenzymes, Viruses and the RNA World
Quinn Dickinson	Georgia Institute of Technology	15	Multicellularity in Wild Yeast an Adaptive Trait in Environments with Nutrient Fluctuation
Rio Febrian	Saint Louis University	16	The Effects of Salts on Prebiotic Reactions of Peptides
Narangerel Ganbaatar	Tokyo Institute of Technology, Earth-Life Science Institute (ELSI)	17	Nano-Spectroscopic Approaches to Origins of Life at Mineral-Organic Interfaces
Joshua Hedgepeth	University of Western Ontario	18	Impact Craters on Titan: The Search for Life in Titan's Craters
Ricardo Hernandez- Morales	Universidad Nacional Autónoma de México	19	Alarmones as Vestiges of a Bygone RNA World
Jessica Hobson	University of North Carolina, Chapel Hill	20	Stepping Back in Time: Selecting <i>Escherichia coli</i> with an 'Ancestral' Tryptophanyl-tRNA Synthetase
Ankit Jain	CUNY Advanced Science Research Center	21	Co-factor Driven Evolution of Dynamic Peptide Libraries
Tony Jia	Earth-Life Science Institute, Tokyo Institute of Technology	22	Self-Assembled Biomaterial Nanostructures as Catalysts and Biomarkers of "Life"
Sebastian Jian Krause	University of California, Los Angeles	23	Following the Fate of Organic Carbon from Methanogenesis to Anaerobic Oxidation of Methane in the Sulfate-Reduction Zone of a Coastal Wetland System using Labeled Non-Competitive Methanogenic Substrates

Jay A. Kroll	University of Colorado Boulder	24	Sunlight Driven Reactions of SO ₂ with Organic Molecules
Amy LeBleu-DeBartola	University of Central Florida	25	An Investigation of Carbonaceous Chondrite Meteorites via Raman Spectroscopy
Joshua Leehan	University of Florida	26	Cultivation of <i>Bacillus subtilis</i> in Spaceflight Alters the Mutational Spectrum in the rpoB Gene
Dylan Malenfant	McMaster University	27	Guided Polymerization of Mononucleotides by Lipid Bilayers Studied by Molecular Dynamics Simulations
Julia McGonigle	University of Utah	28	Community Composition and Metabolic Characterization of the Bonneville Salt Flats
Santi Mestre Fos	Georgia Institute of Technology	29	rRNA Expansion Segments of the Homo sapiens Ribosome: Structure and Function
Tareq Omairi	The University of Sheffield	30	Investigating the Transfer and Survivability of Bacteria within the Stratosphere using Imaging and Molecular Techniques
Jeff Osterhout	University of California, Los Angeles	31	Exploration of Raman and Carbon Isotopic Biosignatures on Early Earth and Mars
Kenneth Seaton	Georgia Institute of Technology	32	Microfluidic Amine and Amino Acid Pre-Concentration for Improved Limits of Detection
Martin Solano	Center for Chemical Evolution	33	Polymerization and Assembly of Plausible Protopeptides
Nicholas Speller	Georgia Institute of Technology	34	Preliminary Work towards the Development of a Miniaturized, Portable Microfluidic Cell Counter for Icefin
Azarin Yazdani	University of Arkansas	35	Adaptive Evolution of Bacteria to High Concentrations of Magnesium Sulfate with Implication to Europa
German Hernández-Alonso	Universidad Nacional Autónoma de México	36	Cellular RNA-Binding Domains with Distant Homology in Viral Proteomes

Poster Session II Wednesday June 6th 3:30-5:30

<i>Name</i>	<i>Institution/School</i>	<i>Poster #</i>	<i>Abstract title</i>
Rodrigo Abans	Brazilian Synchrotron Light Laboratory (LNLS)	37	Effect of CO ₂ Atmosphere in the Microbial Diversity and Carbonate Precipitation of an Hypersaline Mat
Richard Archer	University of Colorado at Boulder	38	Constraining Degradation of Biosignatures Within a Fossilized Jurassic Redox Gradient in a Mars Analogue Sediment from Painted Desert, Arizona
Carla Bautista-Rodríguez	Institut de biologie intégrative et des systèmes (IBIS), Université Laval	39	Hybridization as an Adaptive Force in Response to Extreme UV Conditions
Sandra Blair	University of Colorado Boulder	40	The Disentangled Effects of Salt on Prebiotic Lipid Monolayer Stability
Thomas Cantrell	Georgia Institute of Technology	41	In Situ Culturing with Isolation-Chip Technology in Hydrogeothermal Springs
Alejandro Cisneros	Universidad Nacional Autónoma de México	42	The Role of Paralogous Duplications in Early Protein Evolution
Zachary Duca	Georgia Institute of Technology	43	Quantitative, Compositional Analysis of Trace Amino Acids in Europa Analogues with a Modular μ CE-LIF System
Dedra Eichstedt	Georgia Institute of Technology	44	Chiral Analysis of Exogenous Amino Acids using Microcapillary Electrophoresis Mass Spectrometry
Katherine Fullerton	University of Tennessee	45	Biology Meets Subduction: Subduction-Related Geochemistry is a Driver of Microbial Community Dynamics in Costa Rica

Dylan Gagler	Arizona State University	46	Investigating the Network Topology of Geobiochemical Systems
Daniela Kroiss	The Graduate Center of the City University of New York	47	ATP-Hydrolyzing Peptide Coacervates
Adriana Lozoya Colinas	Georgia Institute of Technology	48	Viscosity-Mediated Replication of an RNA Duplex containing a Ribozyme Motif
Aaron McKee	Georgia Institute of Technology	49	A Possible Path to Prebiotic Peptides involving Minerals and Ester-Mediated Amide Bond Formation
Kathleen Miller	University of Florida	50	Carnobacterium Response to Pressure Extremes: Growth, DNA Methylation, and Global Gene Transcription
Ryo Mizuuchi	Portland State University	51	A Major Primitive Evolutionary Transition: Cooperation between Distinct RNA Replicators
Sheri Motamedi	University of Utah	52	Exploration of Novel Subsurface Microbial Communities within Seafloor Mantle Rocks
Israel Muñoz	Universidad Nacional Autónoma de México	53	Early Evolution of Methanogenic Routes
Angeera Naser	NASA Glenn Research Center	54	Ontology, Astrobiology, and the Periodic Table of Life
Chiamaka Obianyor	Georgia Tech	55	The use of Environmental Cycles to Lend Insight into Viscosity Mediated Replication
Martina Preiner	Heinrich-Heine-University	56	Awaruite and CO ₂ Reduction in Early Biochemical Evolution
Rebecca Rapf	Lawrence Berkeley National Lab	57	Building Complexity via the Aqueous Photochemistry of Simple Lipids
Tyler Roche	Georgia Institute of Technology	58	The Condensation of a Model Proto-RNA Nucleobase with Ribulose: a Prebiotic Pathway to RNA
Juan Rosas Bonilla	Yale University	59	Rapid Crustal Growth and Recycling in the Early Earth: Implications for Hadean and Archean Geodynamics
Alma Carolina Sanchez Rocha	Universidad Nacional Autónoma de México	60	Simple Sequences in Early Evolution of Life
Vismay Shah	McMaster University	61	Spatial Model for an RNA World
Anna Simpson	University of Washington, Seattle	62	Characterization of Shifts in Microbial Community Structure between Snow-Covered and Exposed Sediments
Elizabeth Spiers	Georgia Institute of Technology	63	Time, Heat, and Geochemistry: Foundations for Modeling an Ocean World
Scot Sutton	Georgia Institute of Technology	64	Field Exploration and Life Detection Sampling via Planetary Analogue Research (FELDSPAR): Microbial Trends Observed at an Alluvial Plain
Nadia Szeinbaum	Georgia Institute of Technology	65	Metaproteomics Reveals a Novel Betaproteobacterium with Roles in Metal and Nitrogen Cycling in the Deep Subsurface
George Tan	Georgia Institute of Technology	66	Differences in Bacterial Diversity by Spatial Distance in Homogenous Icelandic Mars Analog Environments
Jennifer Thweatt	Pennsylvania State University	67	Characterization of Light-Harvesting Complexes From a New Purple Sulfur Bacterium Isolated From Yellowstone
Vyacheslav Tretyachenko	Charles University	68	Exploring the Unevolved Protein Space
Alberto Velázquez Salazar	Universidad Nacional Autónoma de México	69	The Importance of the Imidazole Group in the Evolution of Biological Catalysis
Lena Vincent	Wisconsin Institute for Discovery	70	Repurposing Artificial Ecosystem Selection to Study the Chemical Origins of Life
Nicole Wagner	Georgetown University	71	Biosignature Detection in Mars Analog Lava Tubes
Ellen De Almeida	Universidade Federal do Rio de Janeiro	72	Atmospheric Parameters and Ages of M Dwarfs in the Solar Neighborhood