

VII CONVEGNO DI ASTROBIOLOGIA

PROGRAMMA

LUNEDÌ 12 GIUGNO

12.30 - 14.00: Registrazione all'evento

14.00 - 14.30: Apertura e saluti istituzionali

Prof. Stefano Ubertini - Magnifico Rettore dell'Università degli Studi della Tuscia (UNITUS)

Prof. Paolo Vincenzo Pedone - Presidente del Consiglio Universitario Nazionale (CUN)

Dr. Alessandro Giuffrè - Direttore dell'Istituto di Biologia e Patologia Molecolare (IBPM-CNR)

Prof. Marco Tavani - Presidente dell'Istituto Nazionale di Astrofisica (INAF)

SESSIONE 1: CHIMICA PREBIOTICA E ORIGINE DELLA VITA

14.30 - 15.10: Plenary - **Paola Manini**: "*PAHs and the origin of life: evidence of the catalytic effect in wet-dry prebiotic processes.*"

15.10 - 15.50: Plenary - **Giuseppe Cassone**: "*Computational approaches for the study of prebiotic chemistry.*"

15.50 - 16.10: Oral Communication (OR1) - **Bruno Mattia Bizzarri**: "*Radiative prebiotic multi-component chemistry open new ways for the investigation of alternative nucleic acids.*"

16.10 - 16.30: Coffee break

16.30 - 17.10: Plenary - **Barbara Negri**: "The Search for Life in the Universe: What the Future Holds."

17.10 - 17.30: Oral Communication (OR2) - **Daniele Dondi**: "*Origins of life: a chemistry perspective.*"

17.30 - 17.50: Oral Communication (OR3) - **Angela Cirigliano**: "*Formamide chemistry, cyclic ribonucleotides polymerization and primitive RNA-catalysis: a unique chemical frame for the origin of life.*"

17.50 - 18.10: Oral Communication (OR4) - **Savino Longo**: "*Atmospheric entry of potential life-bearing micrometeoroids into Mars atmosphere.*"

18.10 - 18.30: Oral Communication (OR5) - **Cristina Mazzoni**: *"Lake of Pantelleria: a New Mars like model for prebiotic chemistry and extremophiles."*

MARTEDÌ 13 GIUGNO

SESSIONE 2: ASTROCHIMICA E ASTROFISICA SPERIMENTALE

09.30 - 10.10: Plenary - **Piero Ugliengo**: *"The Role of Computational Chemistry in Astrobiology."*

10.10 - 10.30: Oral Communication (OR6) - **Cristina Puzzarini**: *"Hunting for Prebiotic Molecules in the Interstellar Medium."*

10.30 - 10.50: Oral Communication (OR7) - **Nadia Balucani**: *"Mercaptomethanol formation in cometary/interstellar ice."*

10.50 - 11.10: Coffee break

11.10 - 11.50: Plenary - **Maria Elisabetta Palumbo**: *"Formation and survival of organic compounds in space environment."*

11.50 - 12.10: Oral Communication (OR8) - **Francesca Altieri**: *"Ma_MISS and ExoMars searching for life in the Martian subsoil."*

12.10 - 12.30: Oral Communication (OR9) - **Giacomo Pannacci**: *"Laboratory investigation of the reactions of atomic nitrogen and oxygen with aromatic molecules and implications for the prebiotic chemistry of Titan."*

12.30 - 12.50: Oral Communication (OR10) - **Silvia Alessandrini**: *"In search of P-bearing species in astronomical environments: the reaction between methanimine and the CP radical."*

12.50 - 15.00: Lunch

SESSIONE 3: VITA IN AMBIENTI ESTREMI

15.00 - 15.40: Plenary - **Daniela Billi**: *"Contribute of Astrobiology Experiments on Desert Cyanobacteria to the Search for Life Elsewhere."*

15.40 - 16.10: Oral Communication (OR11) - **Mariano Battistuzzi**: *"Responses of the cyanobacterium Synechococcus sp. PCC7335 to FR light enriched spectra and anoxic atmospheres: implications for exoplanet habitability and astrobiotechnological applications."*

16.10 - 16.30: Oral Communication (OR12) - **Roberta Iacono**: *"Exploring the Heat-loving World of Extremophiles: unveiling Carbohydrate Active Enzymes from microbial communities thriving in Pisciarelli Solfatara."*

16.30 - 16.50: Coffee break

16.50 - 17.30: Plenary - **Paola Di Donato**: "*Astrobiology relevance of extremophiles: microorganisms at the boundaries of life on earth and in the space.*"

17.30 - 17.50: Oral Communication (OR13) - **Federica De Lise**: "*Life in extreme environments and limits of life: translational recoding in the hyperthermophilic archaeon Saccharolobus solfataricus.*"

17.50 - 18.10: Oral Communication (OR14) - **Marco Mangiagalli**: "*Role of glycoside hydrolases in the Antarctic bacterium Marinomonas sp. efl.*"

18.10 - 18.30: Oral Communication (OR15) - **Marzia Calvanese**: "*Pseudoalteromonas haloplanktis TAC125 as the model for studying microbial life in the solar system.*"

MERCOLEDÌ 14 GIUGNO

SESSIONE 4: INTERAZIONE TRA GEOSFERA E BIOSFERA NEL PRESENTE E DURANTE L'EVOLUZIONE DEL PIANETA TERRA

09.30 - 10.10: Plenary - **Stefano Amalfitano**: "*Microbial community structure and methane-related processes in an East African soda lake (Sonachi, Kenya).*"

10.10 - 10.30: Oral Communication (OR16) - **Alberto Brovarone**: "*Energy from the depths.*"

10.30 - 10.50: Oral Communication (OR18) - **Giovanni Covone**: "*Stellar metallicity: a key parameter for the search of Life in the Universe.*"

10.50 - 11.10: Coffee break

11.10 - 11.50: Plenary - **Andrea Franzetti**: "*Surviving on the ice: diversity and ecosystem functions of cryoconite bacterial communities.*"

11.50 - 12.10: Oral Communication (OR19) - **Deborah Bastoni**: "*Metal availability influences microbial cofactor usage.*"

12.10 - 12.30: Oral Communication (OR20) - **Stavro Ivanovski**: "*Modelling habitability of Archean Earth in terms of Earth-like planet Surface Temperature Model (ESTM) simulations.*"

12.30 - 12.50: Oral Communication (OR21) - **Mattia Esposito**: "*Biomining in the Cosmos: A Promising Frontier in Sustainable Resource Utilization.*"

12.50 - 15.00: Lunch

SESSIONE 5: ABITABILITA' E IDENTIFICAZIONE DELLE BIOFIRME NELLO SPAZIO

15.00 - 15.40: Plenary - **Michele Maris**: *"Modelling refraction in habitable exoplanets: The ARTECS/Refract Project."*

15:40 - 16.10: Oral Communication (OR22) - **Erica Bisesi**: *"Impact of vegetation on the habitability of Earth-like exoplanets."*

16.10 - 16.30: Oral Communication (OR23) - **Claudio Maccone**: *"Evo-SETI: A Mathematical Model for Life Evolution on Earth and Exoplanets."*

16.30 - 16.50: Coffee break

16.50 - 17.30: Plenary - **John Robert Brucato**: "Challenges to detect organics on Mars."

17.30 - 17.50: Oral Communication (OR24) - **Maria Antonia Delli Gatti**: "Astrobiology and complexity: life beyond the dichotomy of contingency and necessity."

17.50 - 18.50: Poster Session

20.00 – Dinner

GIOVEDÌ 15 GIUGNO

SESSIONE 6: TECNOLOGIE HARDWARE E SOFTWARE PER L'ASTROBIOLOGIA

09.00 - 09.30: Plenary - **Giovanni Valentini**: *"The Road-Map of Italian Space Agency for Astrobiology and novel technological tools."*

09.30 - 10.00: Plenary - **Michele Balsamo**: *"Space hardware for Astro and Exo biology experiments."*

10.00 - 10.30: Plenary - **Mara Mirasoli**: *"Chemiluminescence-based Lab-on-chip devices for astrobiology investigations."*

10:30 - 10:50: Coffee break

10:50 - 11:20: Plenary - **Andrea Cusano**: *"Lab on Fiber Technology: Pitfalls and Challenges Towards Advanced Multifunctional Optodes for Life Science." Applications.*

11:20 - 11:50: Plenary - **Giuseppe Coppola**: *"Microfluidics labs: miniaturized and lightweight platforms for space applications."*

11:50 - 13.00: Flash communications

- **Eleonora Mancin**: *"Investigation of alternative PNA's building blocks by multi-Component chemistry"*

- **Davide Corso:** *"GeoMosaic: A flexible metagenomic pipeline combining biological and geochemical data to outline biosphere and geosphere interactions"*
- **Bernardo Barosa:** *"Ironborn: The relationships between Fe availability and the Biosphere"*
- **Martina Cascone:** *"Hydrogenotrophs diversity and distribution in subsurface extreme environments, with implications for Underground Hydrogen Storage"*
- **Shoval Gilboa:** *"One-pot synthesis of RNA building-blocks from prebiotic substances via combined heterogeneous catalysis and photocatalysis"*
- **Feliciana Oliva:** *"Microbial diversity and geochemical characteristics of Campania thermal springs"*
- **Beatriz Gallego Fernandez:** *"Responses of a desert cyanobacterium to prolonged exposure to perchlorate: implications for the habitability of Mars and In-Situ Resource Utilization"*
- **Nunzia Nappi:** *"Acidophilic microalgae cocultures - a microbial diversity study"*

13.00 - 15:00: Lunch

15.00 - 16.00: Assemblea Soci

16.00 - 17.00: Tavola rotonda e chiusura Congresso

- **Marco Moracci** - *Moderatore* - Università degli studi di Napoli, Federico II
- **Beatrice Cobucci Ponzano** - Consiglio Nazionale di Ricerca / IBBR Napoli
- **Maurizio Balistreri** - Università degli studi della Toscana
- **Giovanni Valentini** - Agenzia Spaziale Italiana
- **Michele Balsamo** – Kayser Italia SRL

