

## SCIENTIFIC PROGRAMME

Location: Berrill Lecture Theatre

### **WEDNESDAY 13th September**

- 09:30 ARRIVAL AND REGISTRATION
- 10:30 OPENING OF THE CONFERENCE AND LOGISTICS  
Manish Patel
- 10:40 OU WELCOME REMARKS
- 10:50 UK SPACE AGENCY WELCOME REMARKS  
Katherine Wright

### **Session 1: LEO and analogue experiments** (Chair T. Kee)

- 11:00 **WHEN IS AN ANALOGUE AN ANALOGUE? LINKING EARTH BIOLOGY TO FAR AWAY WORLDS**  
Charles Cockell (invited)
- 11:45 **GEOMICROBIAL BIOFILMS AND THE WEATHERING OF BASALT UNDER DIFFERENT GRAVITY CONDITIONS**  
Natasha Nicholson
- 12:00 **A MARS-RELEVANT SUBSTRATE THAT SUPPORTS AUTOTROPHIC GROWTH BY NITRATE-DEPENDENT FE<sup>2+</sup> OXIDATION**  
Alex Price
- 12:15 *LUNCH*
- 13:15 **Y-MARS: AN ASTROBIOLOGICAL ANALOGUE OF MARTIAN MUDSTONE**  
Adam Stevens
- 13:30 **BIOSIGN (BIOSIGNATURE AND HABITABLE NICHES): A FUTURE EXPOSURE EXPERIMENT ON-BOARD THE INTERNATIONAL SPACE STATION**  
Karen Olsson-Francis
- 13:45 **DEEP-SEA BRINES: TERRESTRIAL ANALOGUES OF OCEANS IN THE ICY MOONS OF THE OUTER SOLAR SYSTEM**  
André Antunes

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**Session 2: ExoMars and Exploration** (Chair M. Patel)

- 14:00      **SEARCHING FOR SIGNS OF LIFE: THE EXOMARS 2020 MISSION**  
Elliot Sefton-Nash (invited)
- 14:45      **EXOMARS LANDING SITE CHARACTERISATION**  
Peter Fawdon
- 15:00      **THE PANCAM INSTRUMENT FOR THE EXOMARS ROVER**  
Andrew Coates
- 15:15      *COFFEE*
- 15:45      **NOMAD ON THE EXOMARS TRACE GAS ORBITER: A SPECTROMETER SUITE FOR  
MEASURING AND MONITORING TRACE GASES AND AEROSOLS IN THE MARTIAN  
ATMOSPHERE**  
Jon Mason
- 16:00      **SURVIVABILITY OF MICRO-ORGANISMS IN HIGH SPEED IMPACTS ON PHOBOS**  
David Evans
- 16:15      **PROSPA: PROSPECTING FOR WATER AND H, C, N, O, S AT THE LUNAR SOUTH POLE**  
Simeon Barber
- 16:30      **INTERPRETING THE UNINTERPRETABLE: ON THE VERY IDEA OF A RADICAL ALIEN**  
David Roden
- 16:45      Announcements
- 17:00      POSTER RECEPTION
- 18:00      **BARRIE JONES PUBLIC LECTURE: SEARCHING FOR LIFE IN THE COSMOS**  
Louisa Preston
- 19:30      DEPART FOR CONFERENCE DINNER
- 20:00      CONFERENCE DINNER

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**THURSDAY 14th September**

**Session 3: Mars Geology and habitability** (Chair A. Stevens)

- 09:00      *ARRIVAL AND COFFEE*
- 09:30      **SEARCHING FOR LIFE ON THE RED PLANET: PREPARATIONS FOR MARS SAMPLE RETURN**  
Mark Sephton (invited)
- 10:15      **NOACHIAN INVERTED FLUVIAL CHANNELS AND FLOODPLAINS ON MARS: ACCESSIBLE, ANCIENT, HABITABLE ENVIRONMENTS**  
Matt Balme
- 10:30      **ASSESSING SOURCE REGION CHARACTERISTICS FROM GALE CRATER LACUSTRINE MUDSTONE**  
Candice Bedford
- 10:45      **RECENT BASAL MELTING OF MID-LATITUDE GLACIERS ON MARS**  
Frances Butcher
- 11:00      *COFFEE*
- 11:30      **HALOPHILES AT THE LIMIT OF EXISTENCE**  
Terry J. McGenity
- 11:45      **MARS SIMULATED EXPOSURE AND THE CHARACTERISTIC RAMAN BIOSIGNATURES OF AMINO ACIDS AND HALOPHILIC MICROBES**  
Samantha Rolfe
- 12:00      **THE IDENTIFICATION OF MARTIAN ENVIRONMENTS BASED ON BRINE COMPOSITIONS AND THEIR IMPACT ON LIFE**  
Nisha Ramkisson
- 12:15      *LUNCH*
- 13:15      **ORGANIC MATTER IN EXTRATERRESTRIAL WATER-BEARING SALT CRYSTALS**  
Queenie Chan
- 13:30      **THE IMPACT OF SALT COMPOSITION ON COMMUNITIES OF ENTOMBED HALOPHILIC MICRO-ORGANISMS**  
Peter Woolman
- 13:45      **PERCHLORATES ON MARS ENHANCE THE BACTERIOCIDAL EFFECTS OF UV LIGHT**  
Jenn Wadsworth

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**Session 4: Exoplanets and the outer Solar System** (Chair: K. Olsson-Francis)

- 14:00      **ALMA DETECTION AND ASTROBIOLOGICAL POTENTIAL OF VINYL CYANIDE ON TITAN**  
Martin Cordiner
- 14:15      **TRACING A ROUTE FROM SMALL TO LARGE ORGANIC MOLECULES IN TITAN'S UPPER  
ATMOSPHERE**  
Ravi Desai
- 14:30      **MASS SPECTROMETER MEASUREMENTS OF THE ORGANICS AT THE SURFACE OF COMET  
67P/CHURYUMOV–GERASIMENKO**  
Andrew Morse
- 14:45      *COFFEE*
- 15:15      **PUTTING THE HORSE BEFORE THE CART: HABITAT SIGNATURES NOT BIOSIGNATURES**  
David Waltham
- 15:30      **PREBIOTIC CHEMISTRY ON EXOPLANETS**  
Paul Rimmer
- 15:45      **TOWARDS THE EXO-EARTH ERA - A DEDICATED AUSTRALIAN EXOPLANET OBSERVATORY**  
Jonti Horner
- 16:00      **TWINKLE – A LOW-EARTH ORBIT VISIBLE AND INFRARED EXOPLANET SPECTROSCOPY  
OBSERVATORY**  
Marcell Tessenyi
- 16:15      **CLOSING REMARKS**  
Karen Olsson-Francis



## POSTER PROGRAMME

Location: Berrill Lecture Theatre foyer/cafe

**P01: LESSONS FROM ASTROBIOLOGICAL PLANETARY ANALOGUE EXPLORATION IN ICELAND:  
BIOMARKER ASSAY PERFORMANCE AND DOWNSELECTION**

A.H. Stevens

**P02: HOW MICROBIAL LIFE ADAPTS TO COMBINED EXTREMES**

A. Dickinson

**P03: MODELLING LIFE UNDER MULTIPLE EXTREME CONDITIONS**

R. Cane

**P04: TOWARDS A GENERALIZED MODEL OF LIVING**

T. P. Kee

**P05: CONTROVERSIES ON THE ORIGIN OF LIFE**

E. Camprubí Casas

**P06: SIMULATING THE PHOBOS REGOLITH FOR PLANETARY PROTECTION STUDIES**

V.K. Pearson

**P07: WATER ON MARS: A MODULAR APPROACH**

D. Natoewal

**P08: AN ANALYTICAL PROTOCOL FOR THE EXTRACTION, AND IDENTIFICATION OF, AROMATIC  
CARBOXYLIC ACIDS FROM A MARS SOIL ANALOGUE, CONTAINING PERCHLORATE SALTS**

K.G Devine

**P09: DETERMINATION OF GEOCHEMICAL BIOSIGNATURES IN MARS-LIKE BASALTIC ENVIRONMENTS**

K. Olsson-Francis

**P10: THE FATE OF LIPID BIOSIGNATURES IN A MARS-ANALOGUE SULFUR STREAM**

J. S. W. Tan

**P11: DEVELOPMENT OF CH<sub>4</sub> AND C<sub>2</sub>H<sub>6</sub> RETRIEVAL SYSTEMS FOR EXOMARS TRACE GAS ORBITER  
NOMAD**

G. Cann

**P12: THE IMPACT OF MARTIAN CHEMISTRY ON THE METABOLISM OF METHANOGENIC ARCHAEA**

M. Macey

**P13: THE IMAGE CHAIN OF A SURFACE ROVER: SIMULATING THE EXOMARS PANORAMIC CAMERA  
WIDE ANGLE CAMERAS**

R. Stabbins

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**P14: FLUID EVOLUTION WITHIN ENCELADUS**

L.J. Perera

**P15: DEFINITION OF AN ENCELADUS SILICATE ANALOGUE FOR ASTROBIOLOGICAL INVESTIGATIONS**

N.K. Ramkissoon

**P16: PPOSS (PLANETARY PROTECTION OF THE OUTER SOLAR SYSTEM) – BEST PRACTICE FOR ORGANIC CONTAMINATION CONTROL**

S.H. Royle

**P17: MICROBIAL REDUCTION AND GOOD PRACTICES FOR PLANETARY PROTECTION OF OUTER SOLAR SYSTEM BODIES**

K. Olsson-Francis

**P18: ORGANIC COMPONENTS IN INTERPLANETARY DUST PARTICLES AND THEIR IMPLICATIONS FOR THE SYNTHESIS OF COMETARY ORGANICS**

Q. Chan

**P19: FANTASTIC WORLDS AND WHERE TO FIND THEM: ASTROBIOLOGY OUTREACH FOR KS2 AND KS3**

S.M. Rolfe

**P20: THE MARS MODELLING INFORMATION TOOL FOR ENGINEERS: A NEW TOOL FOR ENGINEERS TO ACCESS MARTIAN ATMOSPHERIC CLIMATE DATA**

A. El-Said