**SCIENTIFIC PROGRAM – MAIN CONFERENCE**

**Location: Armstrong Building (Presentations – Lecture Theatre 2.98, Posters – Room 1.06)**

**Thursday 25th April 2019**

9.00 **ARRIVAL AND REGISTRATION (next to room 1.06 in the corridor space)**

10.00  **LOGISTICS/OPENING REMARKS BY NEWCASTLE UNIVERSITY**

Jon Telling

10.05 **OPENING OF CONFERENCE**

Manish Patel

**Session 1: ExoMars/Mars**

10.15 **MARS SURFACE CAMERAS: PAST, PRESENT, AND FUTURE**

C. Cousins (Invited)

10.45 **MULTISCALE AND MULTISPECTRAL ASSESSMENT OF MINERALOGY WITH THE EXOMARS 2020 ROVER REMOTE SENSING PAYLOAD**

E.J. Allender

11.00 **COMPLEX ORGANICS IN MARTIAN METEORITES**

A. C. O’Brien

11:15 **THE DAILY GRIND: AEOLIAN ABRASION OF SEDIMENTARY ROCKS AS A MECHANISM TO PRODUCE METHANE IN THE MARTIAN ATMOSPHERE**

E. Safi

11.30 **DETERMINATION OF SURVIVABILITY AND BIO-SIGNATURE FORMATION USING LABORATORY SIMULATION EXPERIMENTS**

K. Olsson-Francis

11:45 **POSTERS/LUNCH**

**Session 2: Habitability of Cold and Icy Environments**

13:30 **ICY MOONS – HOW ENCELADUS, EUROPA, AND OTHER ICY WORLDS CHANGED OUR IDEA OF HABITABILITY**

R.S. Taubner (Invited)

14:00 **THE ENERGETIC HABITABILITY OF ENCELADUS MAY BE TENUOUS**

P. M. Higgins

14:15 **FREEZING-INDUCED FRACTIONATION IN SIMULATED ENCELADUS OCEAN BRINES**

M. G. Fox-Powell

14:30 **WET-BASED GLACIATION ON MARS AND ITS ASTROBIOLOGICAL IMPLICATIONS** F. E. G. Butcher

14:45 **CRUSHING AS AN ABIOTIC NUTRIENT AND ENERGY SOURCE IN A SUBGLACIAL LAKE ENVIRONMENT.**

B. Gill Olivas

15:00 **COFFEE**

15:30 **SENSING TECHNOLOGIES FOR MEASURING BIOGEOCHEMICAL ACTIVITY AND RETURNING DATA FROM ICY ENVIRONMENTS**

E. A. Bagshaw

15:45 **THE RED DOTS SEARCH FOR NEARBY EXOPLANETS: IS BARNARD’S STAR B THE CLOSEST EXTRA-SOLAR HABITAT?**

C. Haswell

16:00 **POSTERS**

17:30  **PRE-DINNER TALK – Exploration of Antarctic subglacial lakes**

M. Tranter (Invited)

19:45 **CONFERENCE DINNER – BALTIC (can arrive any time from 19:00)**

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**Fri 26th April 2019**

8.30 **COFFEE**

**Session 3: Methods for in situ and remote sensing of biosignatures and habitability**

9.30 **SUBGLACIAL MOISTNESS ON MARS**

S.J. Conway (Invited)

10.00 **CONSTRAINING THE EFFECTS OF STELLAR FLARES ON EXOPLANET HABITABILITY WITH NGTS**

James A. G. Jackman

10.15 **PYROLYSIS OF FATTY ACIDS IN THE PRESENCE OF IRON OXIDES: IMPLICATIONS FOR LIFE DETECTION MISSIONS TO MARS**

Samuel H. Royle

10:30 **ORGANIC RECORDS OF LIFE ON MARS: THE ROLE OF IRON, BURIAL AND KINETICS** Jonathan S. W. Tan

10:45 **DETECTABILITY OF BIOSIGNATURES IN A LOW-BIOMASS SIMULATION OF MARTIAN SEDIMENTS**

Adam H. Stevens

11:00 **COFFEE**

11:30 **NANO-IMAGING + NANO-CHEMISTRY = UNAMBIGUOUS BIOMARKERS**

J. C. Hood

11:45 **COMBINING MORPHOLOGICAL AND ORGANIC GEOCHEMICAL EVIDENCE FOR THE DETECTION OF FOSSILISED LIFE ON MARS**

Graham Purvis

**Session 4: Applied impact and outreach**

12:00 **EXPANDING WORLDVIEWS: ASTROBIOLOGY, BIG HISTORY, AND THE SOCIAL AND CULTURAL BENEFITS OF THE COSMIC PERSPECTIVE**

I. A. Crawford

12:15 **MISSION TO MARS: DRIVING INTERDISCIPLINARY STEM ENGAGEMENT IN SCHOOLS**

J. Brooke

12:30 **O NA HOKU NO NA KIU O KA LANI: BRIDGING GENOMICS AND CULTURE-BASED SCIENCE EDUCATION THROUGH ASTROBIOLOGY IN HAWAI‘I**

Rebecca Prescott

12:45 **LUNCH AND POSTERS**

**Session 5: Life at the limits**

13:45 **EXCEPTIONAL SERPENTINITE NICKEL CONTENT IN THE UK AND REP. OF IRELAND: POTENTIAL CONSEQUENCES FOR MICROBIAL LIFE**

Eleanor A. Heptinstall

14:00 **WE WILL BIOROCK YOU: EXPERIMENTS ON SPHINGOMONAS DESICCABILIS IN PREPARATION FOR THE INTERNATIONAL SPACE STATION**

Rosa Santomartino

14:15 **HOW DO EXTREMOPHILE BDELLOID ROTIFERS SURVIVE ON LIMITED NUTRIENTS?**

T. McNally

14:30 **TESTING THE POTENTIAL FOR CELL ENTOMBMENT WITHIN LABORATORY-**

**GROWN MARTIAN SALT ANALOGUES**

P. Reekie

14:45 **BACTERIAL ‘TALKING’ IN EXTREME ENVIRONMENTS: A STUDY OF COOPERATIVE BEHAVIOR AMONG MICROBES**

Rebecca Prescott

15:00 **FUNDING OPPORTUNITIES WITH THE UK SPACE AGENCY**

Paul Smith