

## **Workshop Scientific Program**



## **Scoping Workshop for China-UK Cooperation: Developing Collaborations in the Natural and Social Sciences in the Areas of Natural Hazards, Palaeontology and Geofluids (Volatiles)**

**18-22 November 2014**

**Venue – Chengdu Sofis Jinyuan Hotel, No.22, 3rd Section, Renmin Middle Road, Tianfu Square, Chengdu, Sichuan, China 610014**

### **Tuesday, 18<sup>th</sup> November 2014**

Workshop participants arrive from the UK and from across China

**17:00-17:30 Funders Initial Get Together**

NERC, ESRC, NSFC and RCUK China

Pre-meeting to get to know each other and start discussions about the aims and running of the workshop

**18:30-20:00 Dinner (1st Floor Boyue Cafeteria)**

Funders continue discussion of workshop aims and allocation of roles

**20:00-21:00 Workshop Briefing as parallel sessions**

Welcome briefing for UK delegates (2nd Floor Sichuan Hall)

Welcome briefing for China delegates (2nd Floor Chongqing Hall)

### **Wednesday, 19<sup>th</sup> November 2014**

**7:00-9:10 Breakfast (1st Floor Boyue Cafeteria)**

Coffee and Tea will be ready at 8:50 in front of the meeting room

**9:00-9:10 Welcome remarks (2nd Floor Xizang Hall)**

Dr Yupeng Yao, NSFC

Dr Chris Franklin, NERC

Dr Eloise Meller, ESRC

**9:10-9:30 Scene setting**

Explanation to participants of how the workshop will run over the three days.

Dr Liu Yu, NSFC

Dr Lesley Aspinall, NERC

Description of the field trip arrangements for day 4 (Saturday)

Prof Zhang Peizhen

### **Workshop Group Photograph (1st Floor Lobby)**

**9:30 Subject Group Introductions and Presentations:** Natural Hazards, Palaeontology, Geo-fluids (Volatiles).

Each participant gives 10 minute presentation. Questions will be asked later in plenary and breakout discussion sessions.

**Presentations in Natural Hazards (Chaired by Dr Zhang Peizhen) (2nd Floor Xizang Hall)**

- 9:30-9:40 Peizhen Zhang, Coseismic deformation and mechanism of the 2008 Wenchuan earthquake, Sichuan, China
- 9:40-9:50 Professor Peter Sammonds, The mechanics of natural hazards
- 9:50-10:00 Runqiu Huang, Geohazards risk control in strong earthquake areas: lessons from the Wenchuan earthquake.
- 10:00-10:10 Professor Barry Parsons, Earthquakes without Frontiers: a Partnership for Increasing Resilience to Earthquake Hazard on the Continents
- 10:10-10:20 Prof Lena Dominelli, Earthquakes without Frontiers: Transdisciplinary Learning Across Borders
- 10:20-10:30 Zhou Gongdan, Dynamics of debris flows and the risk analysis
- 10:30-10:40 Jianbin Peng, Ground fissures in China--- Distribution, Mechanism and Mitigation
- 10:40-11:00 Tea Break

**Presentations in Palaeontology (Chaired by Dr Zhu Maoyan) (2nd Floor Xizang Hall)**

China participants to give talks at breakout stage; UK participants can expand these talks at breakout stage (day 3).

- 11:00-11:10 Prof Graham Shields-Zhou, Sino-UK collaborative research from the Boring Billion, through Snowball Earth, to the Cambrian Explosion
- 11:10-11:20 Yuan Wang, The Jehol Biota: A Mesozoic Lagerstätte
- 11:20-11:30 Dr Ying Shields-Zhou. Fostering scientific collaborations in 'deep time' Earth System science
- 11:30-11:40 Maoyan Zhu, Understanding the critical transition to modern earth-life system around 600 Myr ago: A international collaboration-based approach
- 11:40-11:50 Dr Robert Newton, Phanerozoic mass extinctions, changing seawater chemistry, and epeiric seas
- 11:50-12:00 Qun Yang, Biotic changes at major climatic events in Earth history

**12:00-14:00 Lunch (1st Floor Boyue Cafeteria)**

Tea and Coffee will be ready at 13:50

**Presentations in Natural Hazards (Chaired by Dr Zhang Peizhen) (2nd Floor Xizang Hall)**

- 14:00-14:10 Xingmin Meng, Formation of Large Scale Landslides Associated with Neotectonic Activities in Southern Gansu, China
- 14:10-14:20 Dr Andrew Gibson, Characterization of Landslide Sources and Pathways using Remote Sensing
- 14:20-14:30 Jianqi Zhuang, Landslide in loess plateau: characters, challenge, and primary work
- 14:30-14:40 Prof Nigel Wright, Modelling and Vulnerability Assessment for Water and Debris Flows
- 14:40-14:50 Honglin He, Active faulting on Daliangshan fault zone in late Quaternary and its implication
- 14:50-15:00 Professor Song Wu, Improve emergency decision-making processes during a crisis through micro level simulation
- 15:00-15:10 Yong Li, Active tectonics and geomorphic growth in the Longmen Shan and western Sichuan basin, China.
- 15:10-15:20 Yuntao Tian, 3D thermo-kinematic modelling of the Longmen Shan faults
- 15:20-15:30 Dr Tom Dijkstra, Living with geohazards in dynamic landscapes
- 15:30-15:40 Feng Xijie, Active tectonic of Weihe basin
- 15:40-16:00 Tea Break
- 16:00-16:10 Prof Zhenhong Li, Imaging Geodesy for Geohazards
- 16:10-16:20 Hu Wang, Paleoseismic behavior of the Longmen Shan Fault Zone associated with the 2008 Wenchuan earthquake
- 16:20-16:30 Prof Alex Densmore, Landslides and earthquake disaster risk reduction

**Presentations in Geo-fluids (Chaired by Dr Zheng Yongfei) (2nd Floor Xizang Hall)**

- 16:30-16:40 Prof Chris Ballentine, The Origin, Location and Evolution of Volatiles in Earth's Mantle  
16:40-16:50 Yongfei Zheng, Geochemistry of continental subduction-zone fluids  
16:50-17:00 Prof John Brodholt, {TBD}  
17:00-17:10 Huaiwei Ni, H<sub>2</sub>O and CO<sub>2</sub> in silicate melts: speciation, solubility, and impacts  
17:10-17:20 Dr. Ivan Savov, Tracing volatiles in the crust and mantle  
17:20-17:30 Qin Wang, Magmatism-induced dehydration and lithospheric thickening of the North China Craton in the Cenozoic  
17:30-17:40 Dr James Hammond, Geophysically constraining melt storage beneath volcanic settings  
17:40-17:50 Xiaozhi Yang, C-O-H fluids and OH solubility in olivine under mantle conditions  
17:50-18:00 Hejiu Hui, Water in the Moon and the implication

18:30-20:00 **Dinner (1st Floor Boyue Cafeteria)**

**Thursday, 20<sup>th</sup> November 2014**

7:00-8:30 **Breakfast (1st Floor Boyue Cafeteria)**

Tea and Coffee will be ready at 8:50

**Presentations in Palaeontology (Chaired by Dr Zhu Maoyan) (2nd Floor Xizang Hall)**

- 9:00-9:10 Xulong Lai, Volcanism, climate changes and mass extinction during the Permian- Triassic period  
9:10-9:20 Prof Norman MacLeod, Ancient Extinctions Research (1980 - Present) as a Model for Organizing Large-Scale, Interdisciplinary, Earth Science Research Projects  
9:20-9:30 Zhifei Zhang, Origin and life styles of early Lophotrochozoa (brachiopods, entoprocts and phoronids ): insights from the early Cambrian Fossil-Lagerstätte of South China  
9:30-9:40 Dr Stuart Daines, Earth system models for the Phanerozoic carbon cycle and Neoproterozoic oxygenation: Integrating tectonics and evolution  
9:40-9:50 Qiangkun Zhu, Oxygenation of Ediacaran ocean: a case study from Yangtze basin

**Presentations in Natural Hazards (Chaired by Dr Zhang Peizhen) (2nd Floor Xizang Hall)**

- 9:50-10:00 Yu Huang, Hazard analysis of seismic soil liquefaction  
10:00-10:10 Prof John Rees, {multi-hazard risks}  
10:10-10:20 Guiwu Su, Multi-scale Earthquake Resilience of Chinese Mainland: Trans-disciplinary understanding & local context-based applications  
10:20-10:30 Dr Nibedita S Ray Bennett, Hyper-Risk in China: Increasing Social and economic Resilience to Multiple Natural Disasters  
  
10:30-10:50 Tea Break  
  
10:50-11:00 Wenguo Weng, Study on seismic fatality vulnerability of China by constructing an Chinese casualty database  
11:00-11:10 Dr Lili Yang, {emergency response management}  
11:10-11:20 Prof Lee Miles, {TBD}  
11:20-11:30 Dr Mark Naylor, Quantifying hazard in the era of big data  
11:30-12:40 Chen Sheng, Effective and efficient mitigation and recovery: an empirical study on the impacts of earthquake and the performance of post-disaster  
11:40-11:50 Prof John Ludden, The British Geological Survey, understanding the subsurface and making differences to lives and livelihoods (Gateway to the Earth: BGS Science Strategy)  
  
12:00-14:00 Lunch **(1st Floor Boyue Cafeteria)**

Tea and Coffee will be ready at 13:50

**14:00-15:00 Scoping key science themes and collaboration: breakout groups**

Natural Hazards,  
Palaeontology,  
Geo-fluids

**(2nd Floor Xizang Hall, Sichuan Hall, Chongqing Hall)**

Aim: for all participants to have an initial discussion in small groups (10 people) of the key science questions, challenges and opportunities for UK-China collaboration. This is an initial discussion to identify the high level research themes, especially for Hazards.

- All participants divided into 5 pre-organised groups.
- Groups to list out (flip-charts) key science questions, challenges and opportunities for UK-China collaboration in each area: Natural Hazards, Palaeontology, Geo-fluids (Volatiles).

Each group will self-nominate a rapporteur to capture the discussion and feedback.

**15:00-15:40 Scoping key IRNH science themes: feedback from breakout groups**

Each breakout session's rapporteur will report back in plenary session the key science questions identified for Hazards (approximately 5 minutes per group). The Palaeontology and Geo-fluids (Volatiles) key science questions will be held back for day 3.

A general discussion will follow to draw out common Hazards themes and cross-cutting issues.

15:40-16:00 Tea Break

**16:00-16:45 Identifying key IRNH science themes: marketplace**

Individuals from different groups move around flip charts to allow them to see the notes of the discussions of the other groups and add comments on post it notes.

Participants to be given 5 "sticky dots" half way through session and asked to pick their top 5 themes/issues.

**16:45-17:15 Identifying key IRNH science themes: review of marketplace**

Aim: to review other groups' discussion results, incorporate comments from post-it notes, cluster the challenges as themes and then prioritise the top 4-5 themes.

**17:15-18:00 Identifying key IRNH science themes: feedback from marketplace**

Each group to feedback their discussion via their rapporteur and these will be clustered into the top science themes (4-5) overall to be taken up for further discussion.

**18:30 Dinner hosted by NSFC (2nd Floor Tianxiang Banquet Hall)**

**Friday, 21<sup>st</sup> November 2014**

**7:00-9:10 Breakfast (1st Floor Boyue Cafeteria)**

Tea and Coffee will be ready at 8:50

9:00-9:15 **Sign up**

For theme breakout groups for Hazards to discuss delivery of themes from last session of day 2; or sign up for Fluids group; or Palaeontology group – see below.

9:15-10:30 **Choice of parallel sessions:  
(2nd Floor Xizang Hall, Sichuan Hall, Chongqing Hall)**

**1) Scoping key IRNH science themes and collaboration: breakout groups**

Aim: to discuss in breakout groups how the UK and China can work together to address the themes identified for Hazards. To discuss the detail under each theme, and importantly, the best delivery route.

- There will be a breakout group for each priority theme identified on the previous day. Each participant will choose the theme (one only) they would like to discuss but each group must include at least one Chinese delegate and at least one UK delegate.
- There will be a short introduction from a volunteer rapporteur to facilitate the discussion and agree the scope of the individual theme.
- There will be an open discussion in each group looking at interesting and planned areas of research working, a summary of the key challenges and opportunities for UK-China collaboration, and possible delivery routes.

**2) Identifying themes in Fluids research under existing programmes for potential China-UK collaboration**

Aim: to discuss in this group how the UK and China can work together to link themes in existing newly started fluids projects.

Agenda for talks to be agreed by group participants.

**3) Identifying potential future themes in Palaeo research to stimulate potential future China-UK collaboration**

Aim: to discuss in this group how the UK and China can work together to define themes of mutual future interest.

Agenda for talks to be agreed by group participants.

10:30-10:50 Tea Break

10:50-12:00 **Parallel sessions continued**

12:00-14:00 Lunch **(1st Floor Boyue Cafeteria)**

Tea and Coffee will be ready at 13:50

14:00-14:30 **Plenary Session (2nd Floor Xizang Hall)**

Rapporteurs to report group discussion results (10 minutes for each group)

- 14:00-14:10 Hazards
- 14:10-14:20 Palaeontology
- 14:20-14:30 Geo-fluids

14:30-15:30 **General discussion and feedback (2nd Floor Xizang Hall)**

15:30-16:00 Tea Break

16:00-17:00 **Closing Session (2nd Floor Xizang Hall)**

Conclusion speech by Prof John Ludden

Conclusion Speech by Dr Lu Rongkai,

18:30-20:00 **Dinner (1st Floor Boyue Cafeteria)**

**Saturday, 22<sup>nd</sup> November 2014**

Field visit to the relics of 2008 Wenchuan earthquake

7:00-8:00 **Breakfast (1st Floor Boyue Cafeteria)**

8:00 **(1st Floor Lobby) Fieldtrip to Beichuan**

18:30-20:00 **Dinner (1st Floor Boyue Cafeteria)**

**Saturday, 23<sup>rd</sup> November 2014**

7:00-8:00 **Breakfast (1st Floor Boyue Cafeteria)**

**Departure**