# 8th International Symposium on Submarine Mass Movements and Their Consequences, Victoria, British Columbia, Canada

# **Program**

#### Day 1 - May 7th, 2018

8:00 AM Registration Desk Opens

8:50 AM Call everyone to conference hall

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|          |                               | Theme                         |  |
|----------|-------------------------------|-------------------------------|--|
| 9:00 AM  | Gwyn Lintern                  |                               | Hello and Security Announcement  |
| 9:05 AM  | Philip Hill and Kate<br>Moran | Introductions                 | Welcome  |
| 9:20 AM  | Joshu Mountjoy                | Keynote                       | Keynote: Preconditioning and triggering dynamics of subaqueous landslides.  Observations from New Zealand's active landscape     |
| 10:00 AM | Maarten S.<br>Heijnen         |                               | <u>Upstream-migrating knickpoints: The dominant control on submarine channel evolution?</u>                                      |
| 10:15 AM | Marten<br>Geertsema           | in lakes,<br>s                | Landslide detection in Lakelse Lake, British Columbia  |
| 10:30 AM | BREAK                         | movements in<br>coastal areas |  |
| 10:45 AM | Nicole J. Baeten              | s move<br>d coas              | The impact of submarine mine tailings disposal on the fjord bottom in Frænfjorden,  Norway                                       |
| 11:00 AM | Robert Deering                | aqueous m<br>fjords           | GSL: Morphological characterization of submarine slope failures in a semi-enclosed fiord, Frobisher Bay, eastern Canadian Arctic |
| 11:15 AM | Annie-Pier Trottier           |                               | Poster: Deglacial and postglacial paleoseismological archives in mass-movement deposits of lakes of south-central Québec         |
| 11:17 AM | Cooper D. Stacey              |                               | Poster: Submarine slides in a fjord environment: Douglas Channel, British Columbia   |
| 11:19 AM | Kate Heerema                  | S                             | Poster: Using unprecedented, direct measurements of turbidity currents to understand flow front speed evolution                  |

| 11:21 AM | Kendall C.<br>Mollison  | mass<br>Takes,<br>Dastal  | Poster: Sedimentology, structure, and age of one submarine landside on the continental slope of eastern Australia and an analysis of likely causes of unique sedimentary deposits identified |
|----------|-------------------------|---|--|
| 11:23 AM | Maddalena<br>Sammartini | Subaqueous mass<br>novements in lakes,<br>fjords and coastal<br>areas | Poster: Towards a consistent morphometric characterization of lacustrine landslides  |
| 11:25 AM | Lewis Bailey            | Suba<br>mover<br>fjord  | Poster: Preconditiong and Triggering of Turbidity Currents in Monterey Canyon, <u>California</u>   |
| 11:30 PM | Maddalena<br>Sammartini |   | GSL: Open slope, translational submarine landslide in a tectonically active volcanic continental margin (Licosa submarine landslide, Southern Tyrrhenian Sea)                                |
| 11:45 PM | Davide Gamboa           |   | Morphological trends of submarine landslides in salt basins – examples from the<br>Espírito Santo Basin (SE Brazil)  |
| 12:00 PM | LUNCH                   |   |  |
| 1:00 PM  | Euan Soutter            | ents  | The Halibut Slide - a giant submarine landslide triggered by Paleocene mantle plume activity in the North Atlantic   |
| 1:15 PM  | Michael Riedel          | 1ovem   | GSL: Slope failures along the deformation front of the Cascadia margin: linking slide morphology to subduction zone parameters   |
| 1:30 PM  | Natsumi Okutsu          | ∕lass №   | GSL: Evidence for surface sediment remobilization by earthquakes in the Nankai forearc region from sedimentary records   |
| 1:45 PM  | Amando Lasabuda         | s and N   | <u>Late Cenozoic glacial sediment input to the Arctic Ocean – quantifying the</u> <u>contribution from the Barents Sea sector</u>  |
| 2:00 PM  | J.K. Lackey             | Tectonics and Mass Movements  | GSL Poster: Spatial and temporal cross-cutting relationships between fault structures and slope failures along the outer Kumano Basin and Nankai accretionary wedge, SW Japan                |
| 2:02 PM  | Davide Gamboa           |   | Poster: Drilling through the giant Ruatoria Debris Flow on the Hikurangi Margin, New Zealand: preliminary results from IODP Expedition 372 Site U1520  |
| 2:04 PM  | Harya D. Nugraha        |   | Poster: Tectonic and oceanographic process interactions archived in the Late Cretaceous to Recent stratigraphy, Exmouth Plateau, offshore NW Australia                                       |
| 2:10 PM  | BREAK                   |   |  |

| 2:25 PM           | Oded Katz        | Tectonics and<br>Mass<br>Movements                             | GSL: The nature of small to medium earthquakes along the Eastern Mediterranean passive continental margins, and their possible relationships to landslides and submarine salt-tectonic-related shallow faults |
|-------------------|------------------|--|---|
| 2.40 DN4          | Dr. Vi Ching Vah | ctor<br>M<br>10ve  | Submarine Tectonic Activities and Canyon Erosion Interactive Slope Instabilities in   |
| 2:40 PIVI         | Dr. Yi-Ching Yeh | Tec  | the Kaoping Slope Area, southwestern offshore Taiwan  |
| 2:55 PM           | David Hodgson    | <b>,</b>   | GSL: Entrainment and abrasion of megaclasts during submarine landsliding and their impact on flow behaviour   |
| 3:10 PM           | Lilian Navarro   | Mass Transport Deposits<br>in Modern and Outcrop Sedimentology | GSL: Stratal architecture and evolution of a slope mass-transport complex, Isaac Formation, Neoproterozoic Windermere Supergroup, southern Canadian Cordillera, British Columbia, Canada                      |
| 3:25 PM           | BREAK            | Mass Transport Deposits<br>ern and Outcrop Sedimer             |   |
| 3:35 PM           | Masayuki         | ans  | GSL Poster: Preferential formation of a slide plane in translational submarine  |
| 3.33 FIVI         | Utsunomiya       | Tra  | landslide deposits in a Pleistocene forearc basin fill exposed in east-central Japan  |
| 3:37 PM           | Yuzuru Yamamoto  | lass<br>'n a   | GSL Poster: Repeated large-scale mass-transport deposits and consequent rapid   |
| 3.37 1 101        | Tuzuru Tumumoto  | N<br>V   | sedimentation in the western part of the Bay of Bengal, India   |
| 3:39 PM           | Cooper D. Stacey | Mo   | Poster: The Kitimat Slide Complex - New perspectives on an old problem  |
| 3:41 PM           | Yuanqin Xu       | i  | Poster: Submarine Landslide Identified in DLW3102 Core of the Northern Continental  |
| 0                 | - Gariqiii Xa    |  | Slope, South China Sea  |
| 3:43 PM           | Harya D. Nugraha | gy   | Poster: Slope degradation and mass-transport complex (MTC) emplacement: new   |
|                   | 7.0.70           | olo<br>mo  | insights from a 3D seismic case study, Exmouth Plateau, offshore NW Australia   |
| 3:45 PM           | Brandi L. Lenz   | Failure Dynamics from<br>Indslide Geomorphology                | Poster: Seismic Imaging of Seafloor Deformation Induced by Impact from Large  |
|                   |                  | mic<br>mo  | Submarine Landslide Blocks, Offshore Oregon   |
| 3:47 PM           | Kuan-Ting Chen   | yna<br>seo   | Poster: Submarine landslides and triggering mechanisms on the continental margin  |
|                   |                  | e Di   | of the northeastern South China Sea   |
| 2.40 DN4          | M. Davin of      | Failure [<br>-andslide   | Poster: Investigation of creeping mechanics of the Tuaheni Landslide Complex (TLC)  |
| 3:49 PIVI         | M. Brunet        | Fai  | in the Hikurangi Margin, New Zealand, using micro-4D-XCT measurements on cores  |
|                   |                  |  | from the IODP Expedition 372  |
| 3:51 PM           | David Huntley    | Tsunami  | GSL Poster: Extending the terrestrial depositional record of marine geohazards in coastal NW British Columbia   |
|                   |                  | Generation from  |   |
| <b>3:53 PM</b> Aa | Aaron Misallef   | Slope Failures   | Poster: Malta's tsunami inundation hazard - A Submarine Landslide and Earthquake  Tsunami Scenario Study  |
|                   |                  |  | Isunanii Scendiio Study   |

| 3:55 PM |               | reduce damage by | Poster: Features of engineering geology and evaluation of regional stability of the submarine canyon in the northern South China Sea |
|---------|---------------|------------------|--|
| 3:57 PM | Huai-Houh Hsu | Aspects of Mass  | Poster: Submarine Sediments' Site Characteristics and Their Slope Stability  Assessments off SW Taiwan                               |

**4:00 PM** Poster session starts and registration desk closes

**6:30 PM** Poster session ends

# Day 2 - May 8th, 2018

8:30 AM Registration Desk Opens

8:50 AM Call everyone to conference hall

| 9:00 AM  | Lorena<br>Moscardelli | Introduction                       | S4SLIDE S4SLIDE   |
|----------|-----------------------|------------------------------------|---|
| 9:20 AM  | Matthieu<br>Cartignay | Keynote                            | Keynote: New insights from international efforts to monitor active turbidity currents at global test sites  |
| 10:00 AM | Shun Nomura           | for<br>S                           | GSL: Sediment mass movement of a particle-laden turbidity current based on ultrasound velocity profiling and the distribution of sediment concentration |
| 10:15 AM | Todd Mudge            | hods<br>mas                        | <u>Turbidity Flow Detection and Coherent Doppler Velocity Unwrapping at The Delta</u> <u>Dynamics Laboratory</u>  |
| 10:30 AM | David C. Mosher       | on and met<br>submarine<br>vements | Poster: Ultra-high Resolution Seismic Reflection Imaging of Submarine Landslides: the Geoforce Boomer/Sparker Sub-bottom profiler                       |
| 10:32 AM | W. B. Cheng           |                                    | Poster: Geophysical Investigation of Shallow Subsurface Fracture Distribution on the<br>Accretionary Prism off Southwest Taiwan                         |
| 10:34 AM | Alison L. Bird        | ent:<br>itori                      | Poster: The use of Virtual Reality Technology in the Examination of Three-<br>Dimensional Submarine Landslide Data                                      |
| 10:36 AM | BREAK                 |                                    |   |

| Alexandre        |   | GSL: New evidence for a major late Quaternary submarine landslide on the external                 |
|------------------|---|---|
| Normandeau       |   | western levee of Laurentian Fan   |
| Dovital Dookman  |   | Micropaleontological and taphonomic characteristics of mass-transport deposits in                 |
| Revital Bookman  | lies  | the northern Gulf of Eilat/Aqaba  |
| Maartan Vannasta | tuc   | GSL: Geohazard assessment related to submarine instabilities in Bjørnafjorden,                    |
| Maarten vanneste | ~ ,   | Norway  |
| David Cox        | avid Cox  | Slip Sliding Away: Enigma of Large Sandy Rafts within a Gas Bearing Mass Transport                |
|                  |   | Complex, Offshore NW Greenland  |
| Jan Blahut       |   | Poster: Monitoring the dynamics of a giant landslide on El Hierro, Canary Islands,                |
|                  |   | <u>Spain</u>  |
| Lara E Dároz     | tidi  | Poster: Mass transport deposits in the Arctic Ocean: Recent mass movements on the                 |
| Laia F. Felez    | Laia F. Pelez   | Lomonosov Ridge and in Amundsen Basin_  |
| Picardo Loón     | 2   | GSL Poster: Submarine landslide catalogue onshore/offshore harmonization: Spain                   |
| Nicardo Leon     |   | as a case study   |
| Jauma Honart     |   | Poster: Hydrogeological evolution of a Trough Mouth Fan in the western Barents Sea                |
| Jaume Llopart    |   | and implications for continental slope stability  |
|                  | Normandeau Revital Bookman Maarten Vanneste David Cox Jan Blahut Lara F. Pérez Ricardo León | Normandeau  Revital Bookman  Maarten Vanneste  David Cox  Jan Blahut  Lara F. Pérez  Ricardo León |

#### 12:00 PM LUNCH

| 1:00 PM   | Michael Clare    | Panel      | International Submarine Landslide Database   |
|-----------|------------------|------------|--|
|           |                  |            |  |
| 1:30 PM   | Nana Kamiya      | Studies    | GSL: Formation of excess fluid pressure, sediment fluidization and mass-transport deposits in the Plio-Pleistocene Boso forearc basin, central Japan                                 |
| 1:45 PM   | Jenna C. Hill    | Case Stu   | GSL: Subsurface controls on the development of the Cape Fear Slide Complex, central US Atlantic Margin   |
| 2:00 PM   | Mario Andres     |            | Poster: Systematic Lithologic Characterization of Neogene Mass-Transport Deposits,   |
| 2:00 PIVI | Gutierrez        | nary       | Mississippi Canyon of the Northern Gulf of Mexico, USA   |
| 2:02 PM   | Ricardo Léon     | ilqi:      | Poster: Morphometrical Insights of the Spanish Submarine Landslides  |
| 2:04 PM   | Tugdual Gauchery | Multidisci | Poster: Triggering factors and stratigraphic reconstruction of multi-stage failures in the southeastern slope of the Gela Basin in the Strait of Sicily (Central Mediterranean Sea). |

| 2:06 PM | Sebastian Krastel       |                                    | Poster: High resolution seismic stratigraphic of sediment transport events in the   |
|---------|-------------------------|------------------------------------|---|
|         |                         |                                    | <u>eastern Laurentian Fan</u>   |
| 2:08 PM | Ian Hargeaves           | se                                 | Display: Ocean Sonics acoustic measurements on submarine mass movements   |
| 2:10 PM | BREAK                   | ase Studies                        |   |
| 2:25 PM | Revital Bookman         | Multidisciplinary Case             | Insights on the evolution of a recent slide complex: A case study of the Goliath Slide, offshore southern Israel  |
| 2:40 PM | Morelia Urlaub          | discipl                            | GSL: Combining in situ monitoring using seabed instruments and numerical modelling to assess the transient stability of underwater slopes                                 |
| 2:55 PM | Thomas T.C.T.<br>Hubble | Multi                              | GSL: Submarine landslides offshore Yamba, NSW, Australia: an analysis of their timing, downslope motion and possible causes   |
| 3:10 PM | Nan Wu                  |                                    | Poster: Petrophysical properties of mass transport complexes (MTCs) in the Gulf of Mexico   |
| 3:12 PM | Rachel Barrett          |                                    | Poster: Towards semi-automatic delineation of submarine landslides  |
| 3:14 PM | Natasha Chapplow        | Analysis                           | Poster: How the temperature of a turbidity current varies as its flow evolves: Realtime data during two powerful turbidity current events in Monterey Canyon,  California |
| 3:16 PM | Jaume Llopart           | istical                            | Poster: Hydrogeological evolution as a pre-conditioning factor for slope failure in a back-arc volcanic setting, W off Martinique Island                                  |
| 3:20 PM | BREAK                   | Numerical and Statistical Analysis |   |
| 3:35 PM | Michael Clare           | merica                             | GSL: A consistent global approach for the morphometric characterization of subaqueous landslides  |
| 3:50 PM | Dr. Yi An               |                                    | GSL: A two-dimensional layer-averaged numerical model for submarine gravity currents  |
| 4:05 PM | Jannis Kuhlmann         | v and rates                        | GSL: Seismic and lithofacies characterization of a gravity core transect down the submarine Tuaheni Landslide Complex, northeastern New Zealand                           |
| 4:20 PM | Luis Somoza             | ydr                                | GSL: Giant mass-transport deposits in the southern Scotia Sea (Antarctica)  |
| 4:35 PM | Derek E. Sawyer         | Fluid Flow and<br>Gas Hydrates     | Poster: Interplay of Salt Tectonics, Gas Hydrates, and Submarine Landslides in the Hypersaline Orca Basin Brine Pool, Gulf of Mexico, Continental Slope                   |

| 4.27 DM       | 4:37 PM Songbo Long | Poster: 3D Finite Element Modeling for Possible Creeping Behavior and Instability of |
|---------------|---------------------|--|
| 4:37 PIVI   5 | Songbo Long         | Gas Hydrate-related Slipstream Submarine Slide, offshore Vancouver Island, Canada    |

4:40 PM Day 2 Presentations End

**6:30 PM** Guests start to arrive at Museum

**7:00 PM** Dinner Service **9:30 PM** Guests Depart

# Day 3 - May 9th, 2018

8:30 AM Registration Desk Opens

8:50 AM Call everyone to conference hall

| 9:00 AM  | Daniele Casalbore | -  | GSL: Failure dynamics of landslide scars on the lower continental slope of the Tyrrhenian Calabrian margin: insights from an integrated morpho-bathymetric and seismic analysis. |
|----------|-------------------|--|--|
| 9:15 AM  | Irena Schulten    | Landslide<br>3y  | GSL: Surficial sediment failures due to the 1929 Grand Banks Earthquake, St Pierre Slope   |
| 9:30 AM  | Jacques Locat     | mc<br>olog   | GSL: Failure and post-failure analysis of submarine mass movements using geomorphology and geomechanical concepts  |
| 9:45 AM  | Omri Gadol        | eomor  | Mass Transport Complexes role in the evolution of continental slopes: a multiscale case study offshore Israel  |
| 10:00 AM | BREAK             | Failure Dyr<br>Go                                      |  |
| 10:30 AM | Pi-Chun Huang     | ш  | A mass failure in the northern flank of the Kueishantao Island off northeastern  Taiwan: debris avalanches and related structures in the offshore downslope                      |
| 10:45 AM | Gwyn Lintern      | ubmarine Mass ovement in Margin onstruction d Economic | GSL: Providing Multidisciplinary Science Advice for Coastal Planning in Kitimat Arm, British Columbia  |
| 11:00 AM | Benjamin Bellwald |  | GSL: Shear margin moraine, mass transport deposits and soft beds revealed by high-<br>resolution P-Cable three-dimensional seismic data in the Hoop area, Barents Sea            |

| 11:15 AM |                 | _ SS a | 1 :                                 | GSL: Slope Failure and Mass Transport Processes along the Queen Charlotte Fault: Southeastern Alaska           |
|----------|-----------------|--------|-------------------------------------|--|
| 11:30 PM | Daniel Brothers | Subm   | Man<br>Constr<br>and Ecc<br>Signifi | GSL: Slope Failure and Mass Transport Processes Along the Queen Charlotte Fault Zone; Western British Columbia |

#### 11:45 PM LUNCH

| 12:45 PM | To be annouced    | Panel                                  | Costs, Hazard Analysis, and Mitigation of Submarine Landslides                         |
|----------|-------------------|--|--|
|          |                   |  |  |
| 1:15 PM  | Michael Steventon | Submarine Mass                         | Strain distribution within mass-transport complexes: seismic characterisation and      |
|          |                   | Movement in                            | structural restoration, offshore Uruguay   |
| 1:30 PM  | S. Krastel        | Margin<br>Construction and             | GSL: Mass wasting along the NW-African continental margin                              |
|          |                   | Economic                               |  |
| 1:45 PM  | BREAK             | Significance                           |  |
|          |                   |  |  |
| 2:00 PM  | Andrée Blais-     | es                                     | A compilation of subaerial landslides deposited in Douglas Channel and Howe Sound      |
|          | Stevens           | ī.<br>III                              | fjords, British Columbia and their potential geohazard implications                    |
| 2:15 PM  | Ceren Ozer        | Tsunami Generation from Slope Failures | Preparation of High Resolution Tsunami Inundation Maps for Selected Test Sites in      |
|          | Sozdinler         |  | Marmara Sea, Turkey due to Possible Submarine Landslides                               |
| 2:30 PM  | David Huntley     | n Sl                                   | <u>Tsunami Generation from slope failures near in Kitimat fjord, northwest British</u> |
|          | ,                 | ron                                    | <u>Columbia</u>  |
| 2:45 PM  | BREAK             | ion f                                  |  |
| 2.431101 | DREAK             | erat                                   |  |
| 3:00 PM  | Dominique Turmel  | 3en(                                   | GSL: Tsunami modelling of the 7250 cal years BP Betsiamites submarine landslide        |
| 3:15 PM  | Veneste or David  | ni C                                   | CSL: Modelling the 1020 Crand Banks slump and landslide tsupami                        |
|          | Mosher            | ınaı                                   | GSL: Modelling the 1929 Grand Banks slump and landslide tsunami                        |
| 3:30 PM  | Reginald          | Tsu                                    | GSL: SPLASH: semi-empirical prediction of landslide-generated displacement wave        |
|          | Hermanns          |  | run-up heights   |
| 3:45 PM  | Jacques Locat     |  | Closing Address  |
| 3:55 PM  | David Mosher and  | Closing                                | Concluding remarks and acknowledgments   |
|          | Gwyn Lintern      |  | constanting remarks and acknowledgments  |

# **4:00 PM** Symposium ends