### Overview Schedule

**Monday, February 12, 2018 - Salvatori Seminar Room**  
South Mudd Building (3rd floor) - Caltech

#### Short Course:  
MarsX - Mars Subsurface Exploration:  
Life and Resources in the Martian Subsurface  
Introductory Lectures - Open to All Interested Students, Researchers and Faculty

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:00 - 8:30</td>
<td>Coffee and Refreshments</td>
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<tr>
<td>8:30 - 8:40</td>
<td>Why MarsX?</td>
<td>Team Leads</td>
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<tr>
<td>8:40 - 9:20</td>
<td>Life in the Subsurface</td>
<td>Penny Boston (NASA Ames)</td>
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<tr>
<td>9:20 - 10:00</td>
<td>The Search for Life on Mars</td>
<td>Roh Bhartia (JPL)</td>
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<tr>
<td>10:00 - 10:30</td>
<td>Break</td>
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<tr>
<td>10:30 - 11:10</td>
<td>Subsurface Sounding on Mars and the Search for Water Ice: What Are the Techniques, What Are We Learning?</td>
<td>Nathaniel Putzig (PSI)</td>
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<tr>
<td>11:10 - 11:50</td>
<td>Drilling: How Do We Access the Subsurface on Mars?</td>
<td>Kris Zacny (Honeybee Robotics)</td>
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<tr>
<td>11:50 - 12:30</td>
<td>Resources &amp; ISRU from the Martian Subsurface</td>
<td>Jerry Sanders (NASA JSC)</td>
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<tr>
<td>12:30 - 1:30</td>
<td>Short Course Ends: Informal Lunch is Provided Outside Salvatori Seminar Room</td>
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#### Invitation-Only Workshop Begins: Overview & Connecting the Dots  
Keck Center - Think Tank, Room 155

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>1:30 - 1:45</td>
<td>Walk to Keck Center, Pick Up Badge and Welcome Packet, Find Seat in the Think Tank</td>
<td>Michele Judd / Tom Prince</td>
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<tr>
<td>1:45 - 2:30</td>
<td>Workshop Logistics and Introduction to KISS</td>
<td>Michele Judd / Tom Prince</td>
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<tr>
<td>2:30 - 3:00</td>
<td>1 min Participant Introductions</td>
<td>Michele Judd / Tom Prince</td>
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<tr>
<td>3:00 - 3:30</td>
<td>Study Vision, Goals, and Agenda for this Workshop</td>
<td>Team Leads</td>
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<tr>
<td>3:30 - 4:00</td>
<td>Break</td>
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<tr>
<td>4:00 - 5:15</td>
<td>Finalize Study Vision and Workshop Goals via Plenary Discussion</td>
<td>All</td>
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<tr>
<td>5:15 - 5:30</td>
<td>Orientation Next Day</td>
<td>Team Leads</td>
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<tr>
<td>5:30 - 7:30</td>
<td>Poster Session, Reception, and Informal Food Truck Dinner at the Keck Center (Dinner Starts at 6:30 pm)</td>
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<td>Time</td>
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<tr>
<td>8:00 - 8:30</td>
<td>Coffee and Refreshments at Keck Center</td>
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<tr>
<td>8:30 - 8:40</td>
<td>Logistics</td>
<td>Michele Judd Team Leads</td>
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<tr>
<td>8:40 - 10:00</td>
<td>Lightning Talks</td>
<td>Speakers</td>
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<tr>
<td>10:00 - 10:30</td>
<td>Plenary Discussion Formation of 3 Breakout Groups ( (i) Life, (ii) Resources, (iii) Planet Evolution)</td>
<td>All</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 - 12:00</td>
<td>Breakout Groups I (What Can We Learn From the Subsurface?)</td>
<td>In Breakout Groups</td>
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<tr>
<td>12:00 - 1:30</td>
<td>Group Picture and Lunch at the Athenaeum</td>
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<tr>
<td>1:30 - 2:15</td>
<td>Breakout Groups II (What Do We Want to Measure?)</td>
<td>In Breakout Groups</td>
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<tr>
<td>2:15 - 3:00</td>
<td>Breakout Groups III (What Subsurface Sites Do We Want to Explore?)</td>
<td>In Breakout Groups</td>
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<tr>
<td>3:00 - 3:30</td>
<td>Break</td>
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<tr>
<td>3:30 - 4:10</td>
<td>Reports from All Three Groups (Each Group 10 min)</td>
<td>Groups</td>
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<tr>
<td>4:10-5:30</td>
<td>Plenary: What Are the Shared Scientific Aspirations for Life, Resources, and Planet Evolution Related to Subsurface Exploration?</td>
<td>All</td>
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<tr>
<td>5:30 - 5:45</td>
<td>Plan for Next Day</td>
<td>Team Leads</td>
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<tr>
<td>6:00</td>
<td>OPTIONAL: No-Host Dinner Organized by Team Leads in Pasadena (Location TBD)</td>
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<tr>
<td>8:00 - 8:30</td>
<td>Coffee and Refreshments at Keck Center</td>
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<tr>
<td>8:30 - 8:40</td>
<td>Summary of Previous Day’s Shared Scientific Aspirations</td>
<td>Team Leads</td>
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<tr>
<td>8:40- 10:00</td>
<td>Lightning Talks</td>
<td>Speakers</td>
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<tr>
<td>10:00- 10:30</td>
<td>Plenary Discussion Formation of 4 Breakout Groups (Architecture, Engineering Constraints &amp; Feasibility of (i) Drilling, (ii) Sounding, (iii) In Situ Analysis Instruments, and (iv) Other Exploration Tools)</td>
<td>All</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 - 12:00</td>
<td>Breakout Groups Meet I</td>
<td>In Breakout Groups</td>
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<tr>
<td>12:00 - 1:30</td>
<td>Lunch on Your Own</td>
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<tr>
<td>1:30 - 2:10</td>
<td>Reports From All 4 Breakout Groups (Each Group 10 min)</td>
<td>Groups</td>
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<tr>
<td>2:10 - 3:00</td>
<td>Plenary Discussion and Formation of Focused Breakout Groups</td>
<td>All</td>
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<tr>
<td>3:00 - 3:30</td>
<td>Break</td>
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<tr>
<td>3:30 - 4:20</td>
<td>Focused Breakout Groups Meet II</td>
<td>In Breakout Groups</td>
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<tr>
<td>4:20- 5:00</td>
<td>Reports From Focused Breakout Groups</td>
<td>Groups</td>
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<tr>
<td>5:00-6:00</td>
<td>Plenary: Engineering — Constraints, Feasibility, &amp; Needed Innovations</td>
<td>All</td>
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<tr>
<td>6:00</td>
<td>Dinner at the Athenaeum</td>
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Thursday, February 15, 2018: Keck Center - Think Tank, Room 155
Real Missions

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>8:00 - 8:30</td>
<td>Coffee and Refreshments at Keck Center</td>
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<tr>
<td>8:30 - 8:40</td>
<td>Plan for the Day</td>
<td>Team Leads</td>
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<tr>
<td>8:40 - 10:00</td>
<td>Lightning Talks</td>
<td>Speakers</td>
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<tr>
<td>10:00 - 10:30</td>
<td>Plenary Discussion</td>
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<td></td>
<td>Formation of 3 Breakout Groups (to Collect Mission Ideas)</td>
<td>All</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 - 12:00</td>
<td>Breakout Groups Meet I</td>
<td>In Breakout Groups</td>
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<tr>
<td>12:00 - 1:30</td>
<td>Lunch on Your Own</td>
<td></td>
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<tr>
<td>1:30 - 2:00</td>
<td>Pitch Best Mission Ideas (Each Group 10 min)</td>
<td>Groups</td>
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<tr>
<td>2:10 - 3:00</td>
<td>Plenary Discussion: Select Best Mission Ideas</td>
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<td></td>
<td>Formation of Focused Breakout Groups to Further Study Selected Missions</td>
<td>All</td>
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<tr>
<td>3:00 - 3:30</td>
<td>Break</td>
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<tr>
<td>3:30 - 4:30</td>
<td>Focused Breakout Groups Meet II to Explore Selected Mission Ideas</td>
<td>In Breakout Groups</td>
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<tr>
<td>4:30 - 5:00</td>
<td>Reports From Focused Breakout Groups</td>
<td>Groups</td>
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<tr>
<td>5:00 - 6:00</td>
<td>Plenary: From Mission Ideas to Success</td>
<td>All</td>
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<tr>
<td>6:00</td>
<td>Dinner at the Athenaeum</td>
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## Friday, February 16, 2018: Keck Center - Think Tank, Room 155
### The Road to Success: Strategy & Plan to Move Forward

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<thead>
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<tr>
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<td>Coffee and Refreshments at Keck Center</td>
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<tr>
<td>8:30 - 9:00</td>
<td>Summary of Mission Ideas/Previous Day</td>
<td>Team Leads</td>
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<tr>
<td>9:00 - 10:30</td>
<td>Breakout Groups: <em>Roadmap and Strategy to Success</em> (e.g., Meetings (MEPAG, COSPAR, AGU (Session?)), Funding Opportunities, International Collaboration, Private Sector, Technology Transfer, Connection to Human Exploration, ...)</td>
<td>In Breakout Groups</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Break</td>
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<tr>
<td>11:00 - 12:00</td>
<td>Last Panel Discussion &amp; Summary of Last Breakout Groups Session</td>
<td>All</td>
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<tr>
<td>12:00 - 12:30</td>
<td>Workshop Closeout</td>
<td>Team Leads / Michele Judd</td>
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<tr>
<td>12:30</td>
<td>Workshop Concludes</td>
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