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Discussion Round Tables at the STLE – Wrap Up

Dr. Hannes Grillenberger – Hannes.Grillenberger@Schaeffler.com

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Agenda

1 **Discussion Round Tables in General**

2 Topics and Table Hosts

3 Pictures of the Tables

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Discussion Round Tables in General

General Background of Discussion Round Tables

A scientific brainstorming and networking event is organized on the basis of discussion roundtables (DRTs) by the STLE Rolling Element Bearing Technical Committee, together with other technical committees. This event aims to encourage open discussions between experts of different disciplines on various topics of interest. The format of the DRTs is very fruitful to facilitate a creative atmosphere on complex topics' character and to find technical impulses by brainstorming. The topics are proposed by the table hosts themselves and are based on current interests. A typical property of DRTs is the writable table cloth to inspire the discussion as well as keep notes for subsequent discussions. The benefit of DRTs goes beyond the technical impulses. During the DRTs, the hosts will guide the discussion only and not give a lecture. Active participation, including experience sharing of each participant, is one of the main features of this event, providing a unique opportunity to connect and learn.

Contact information and application for the next DRTs

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The Influence of Electrical Current and Water Intrusion on the Failure Mode of Surface Initiated Damage (SID)

Abstract:

In the case of surface initiated damage mechanisms (SID), such as a gray staining formation, there are existing influence factors which are known and described. There is, for instance, known a high influence by the particular bearing steel and heat treatment, or the surface quality, like the roughness. From different tests, there was observed the electrical current and/or the water intrusion as further potential influence factors on SID which are not described precisely yet. Are there known particular thresholds which are already defined in the view of their SID – risk?

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How Big is the (Tribo-)Mechanical versus Chemical Influence on Bearing Steels (In the Sub-Surface) with Respect to Overall Performance?

Abstract:

Several hypotheses have been formulated on the role of the lubricant and tribochemistry under mixed lubrication and high slip conditions, based on tests of 81212 bearings on FE-8 rigs. Some authors suggest that certain oils will lead to hydrogen ingress and subsequent weakening of the bearing steel – real chemical influence due to certain additives. Others suggest that specific additives and/or reaction layer could induce high surface shear stresses promoting surface micro-cracks – (tribo-)mechanics, e.g. due to difference in friction as function of lubricant.

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How to Eliminate the Root Cause of Wear as well as the Boundary Lubrication Regime

Abstract:

Wear can be generated by different tribo-mechanisms. Is debris particulate contamination in liquid lubricant always bad?

Contact Information:

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Fluid Characterization Beyond Viscosity Measurement in EHD

Abstract:

The pressure viscosity coefficient of a fluid in the EHD contact is either determined by film thickness measurements and subsequent calculation or by measuring viscosity pressure curves semi-statically. Several approaches were made to predict the viscosity based on its molecular structure. Monomeric friction, radius of gyration and free volume are some of the parameters that were looked at. Participants can brainstorm on other model parameters or experimental ways to determine the state of the fluid in the EHD contact.

Contact Information

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How Can We Make Tribology Attractive and of High Quality in Terms of Content, Especially in Teaching?

Abstract:

What are concrete measures to increase the attractivity of engineering studies, especially tribology, for young people and university students? The statistics published by the German Federal Statistical Office in 2018 show a decline in the number of first-year students. This trend will become even more pronounced in the upcoming years and is particularly noticeable in the technical field. This can be explained, among other things, by demographic change and contributes to the fight for talents. In order to maintain innovative strength, it is becoming increasingly important to generate highly qualified workers and inspire them to participate in STEM education. For instance, this can be achieved through interesting and motivating teaching.

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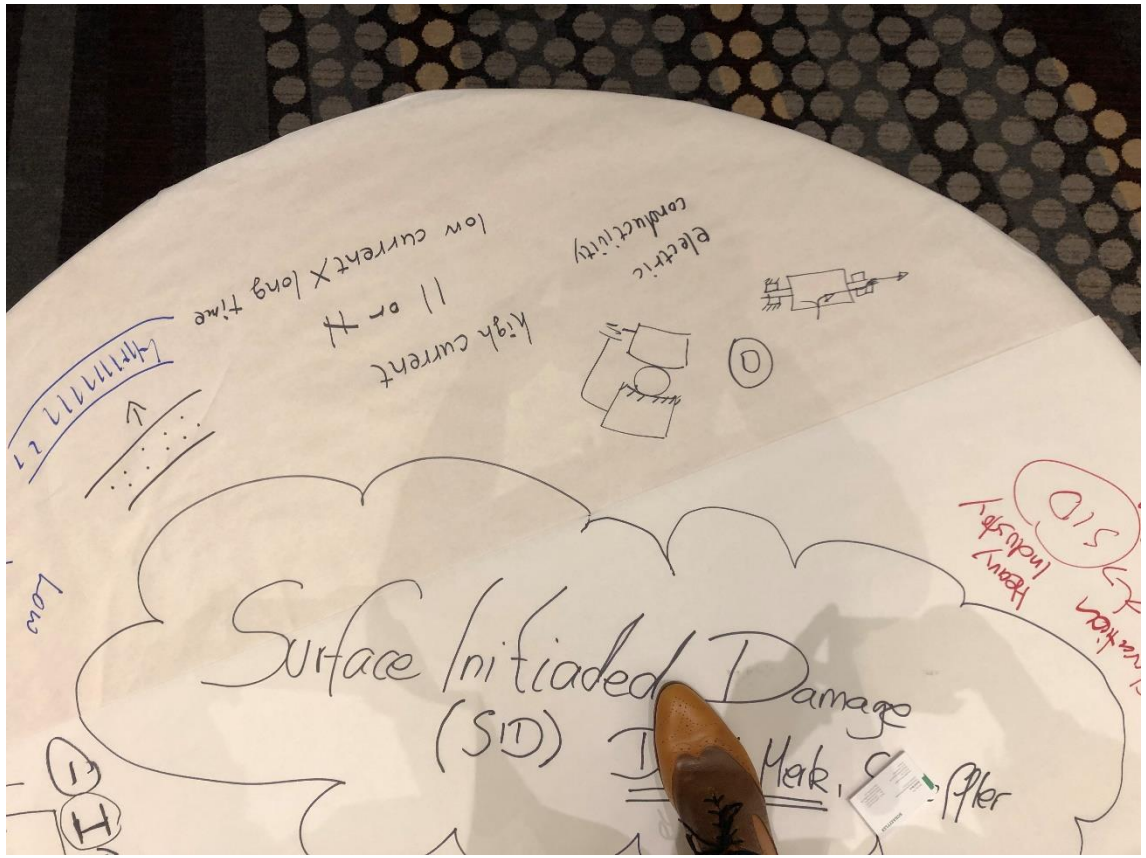

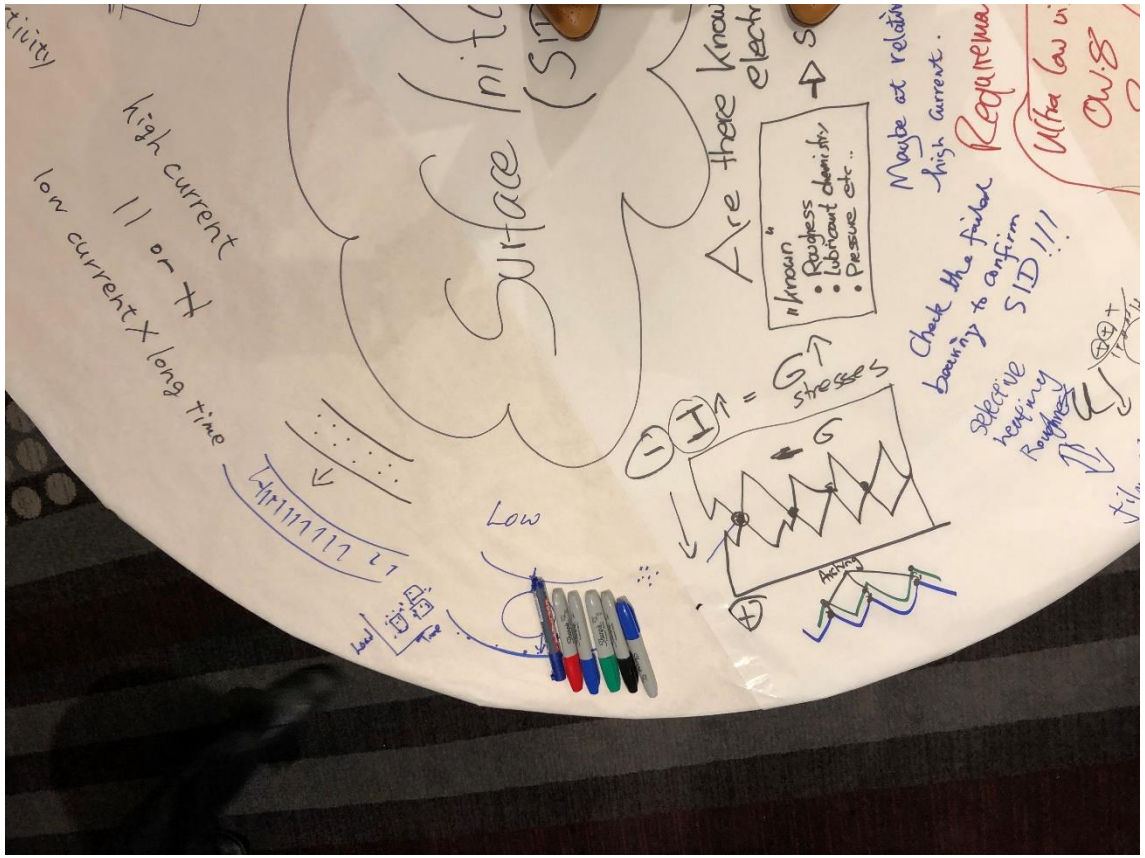

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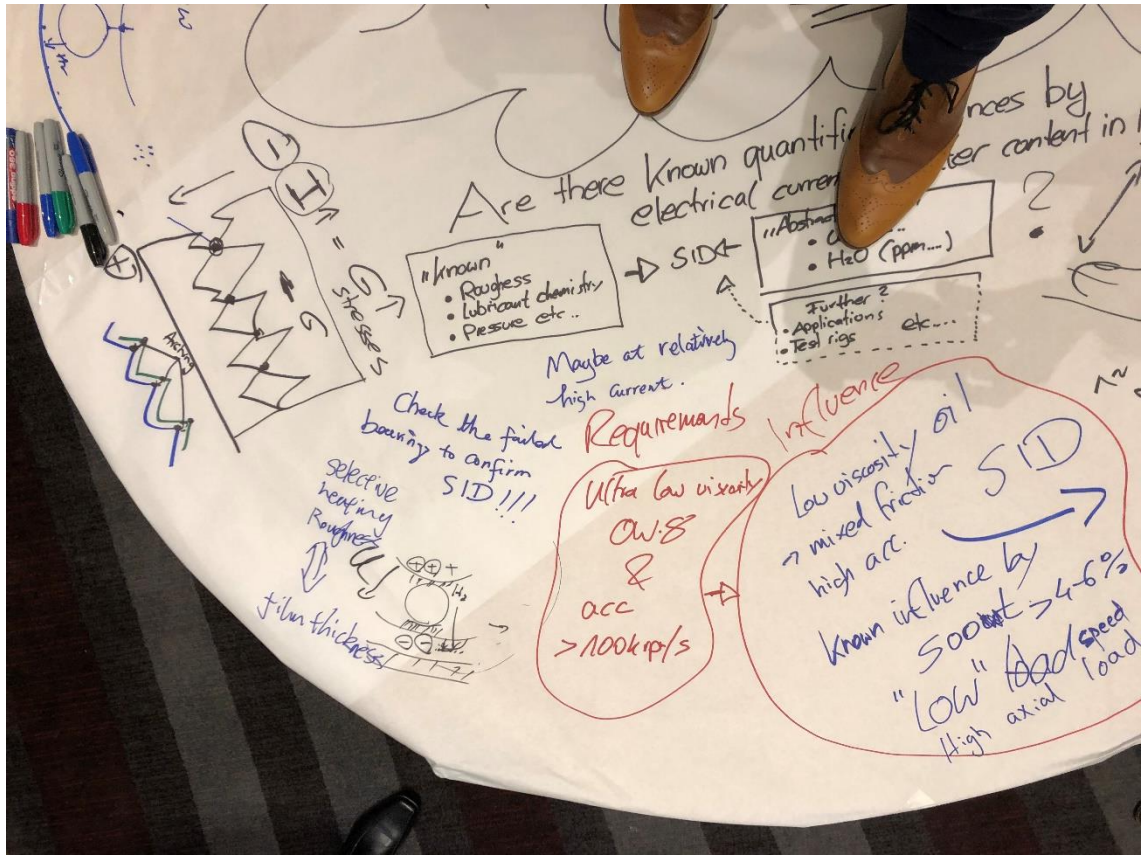

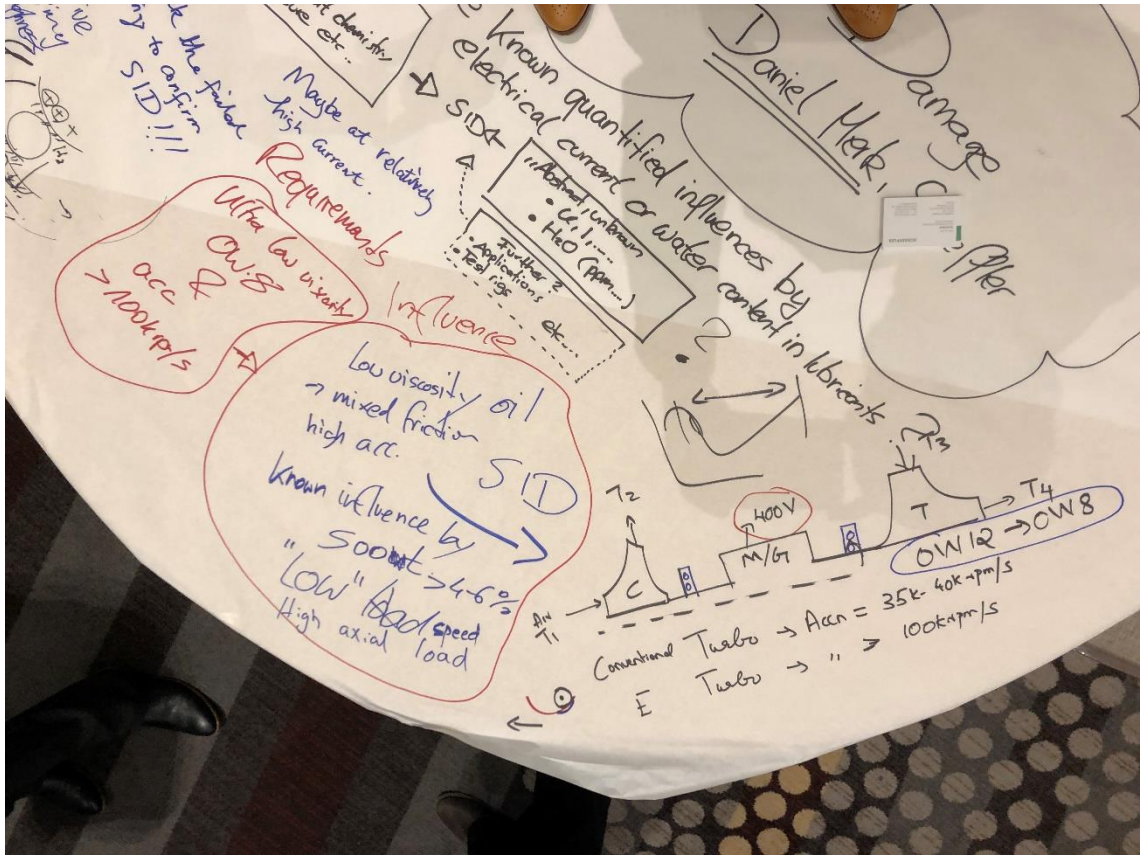

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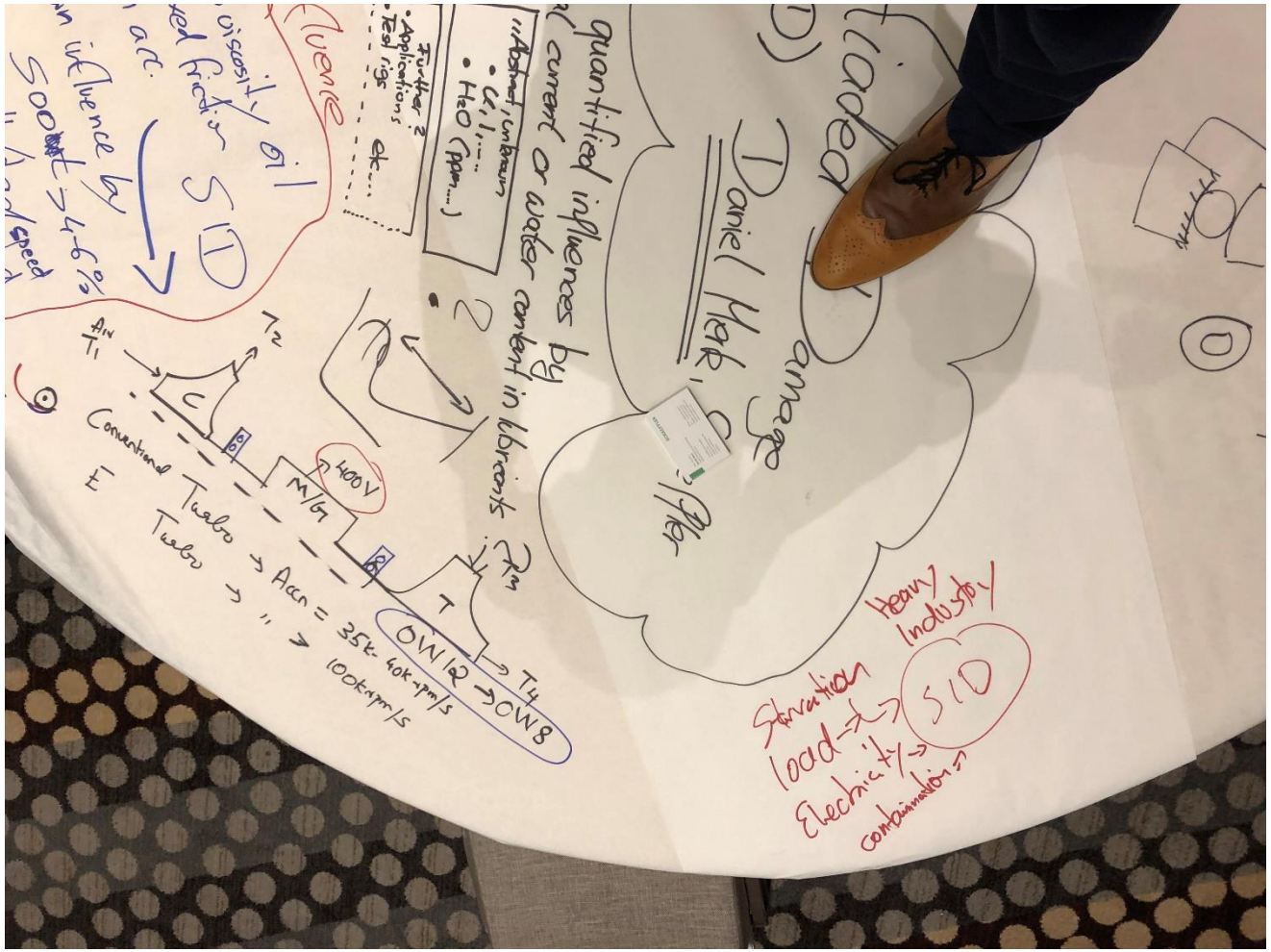

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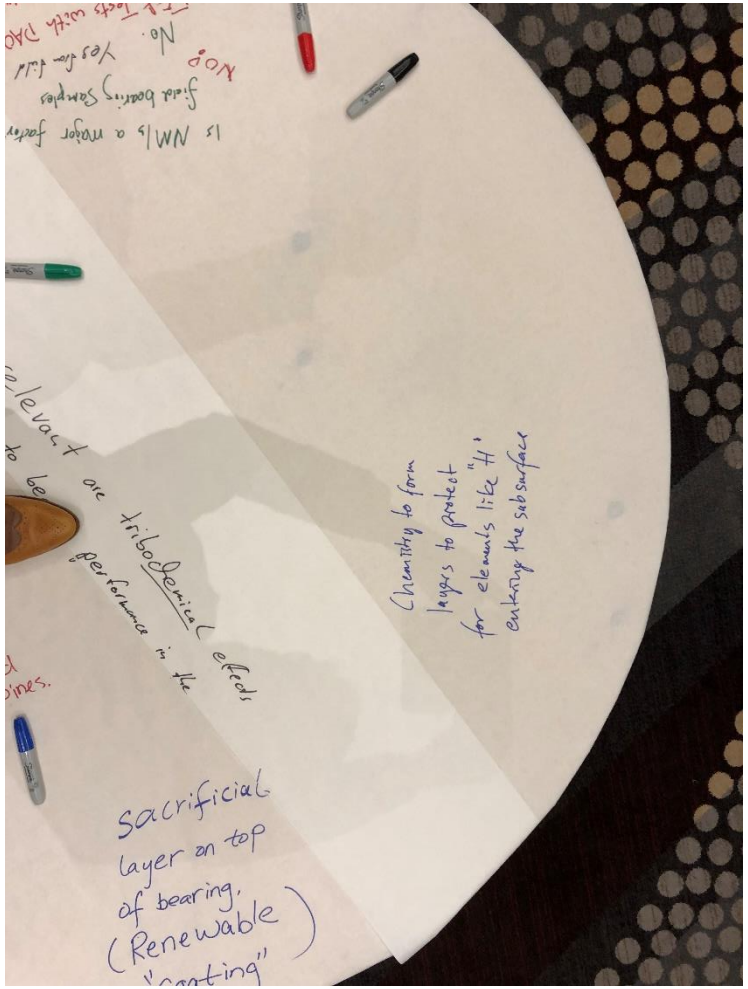

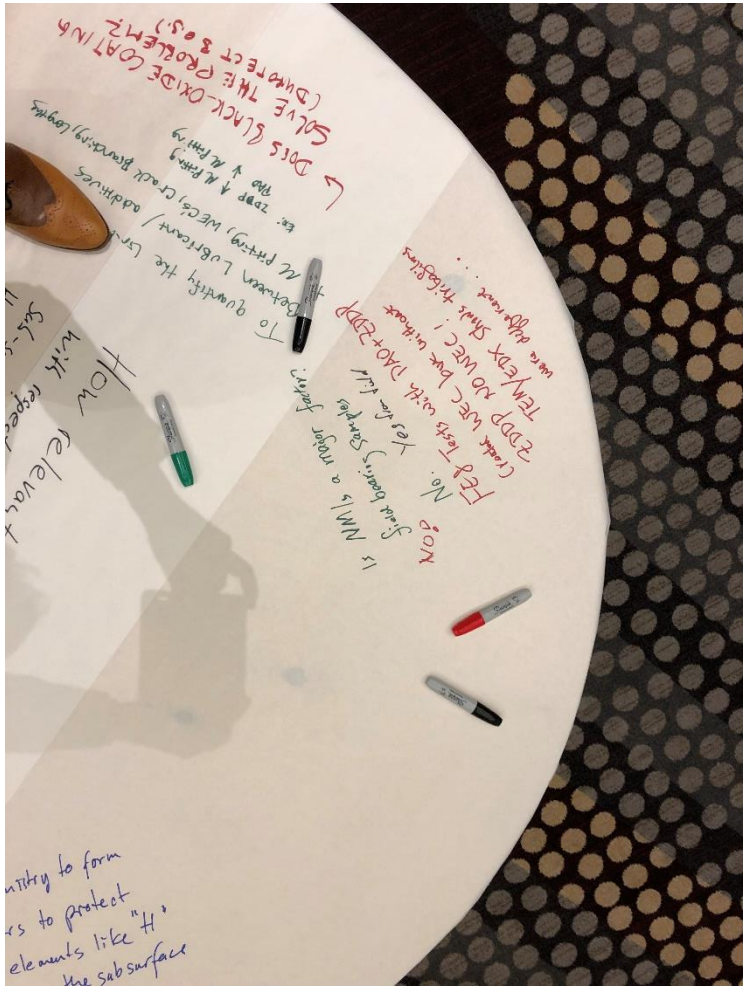

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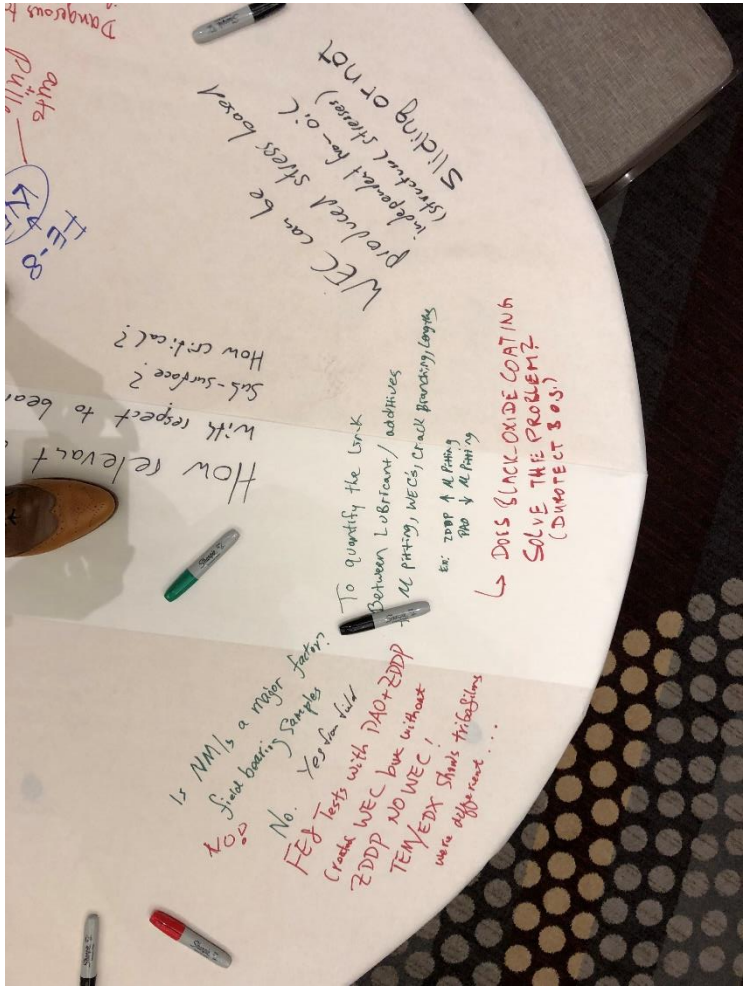

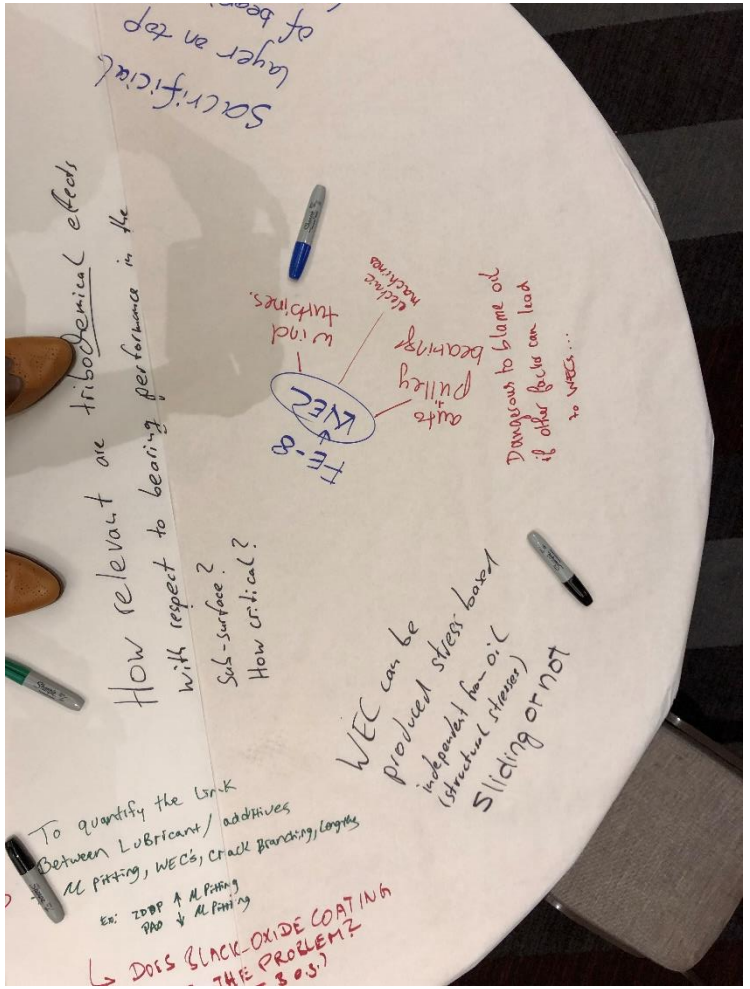

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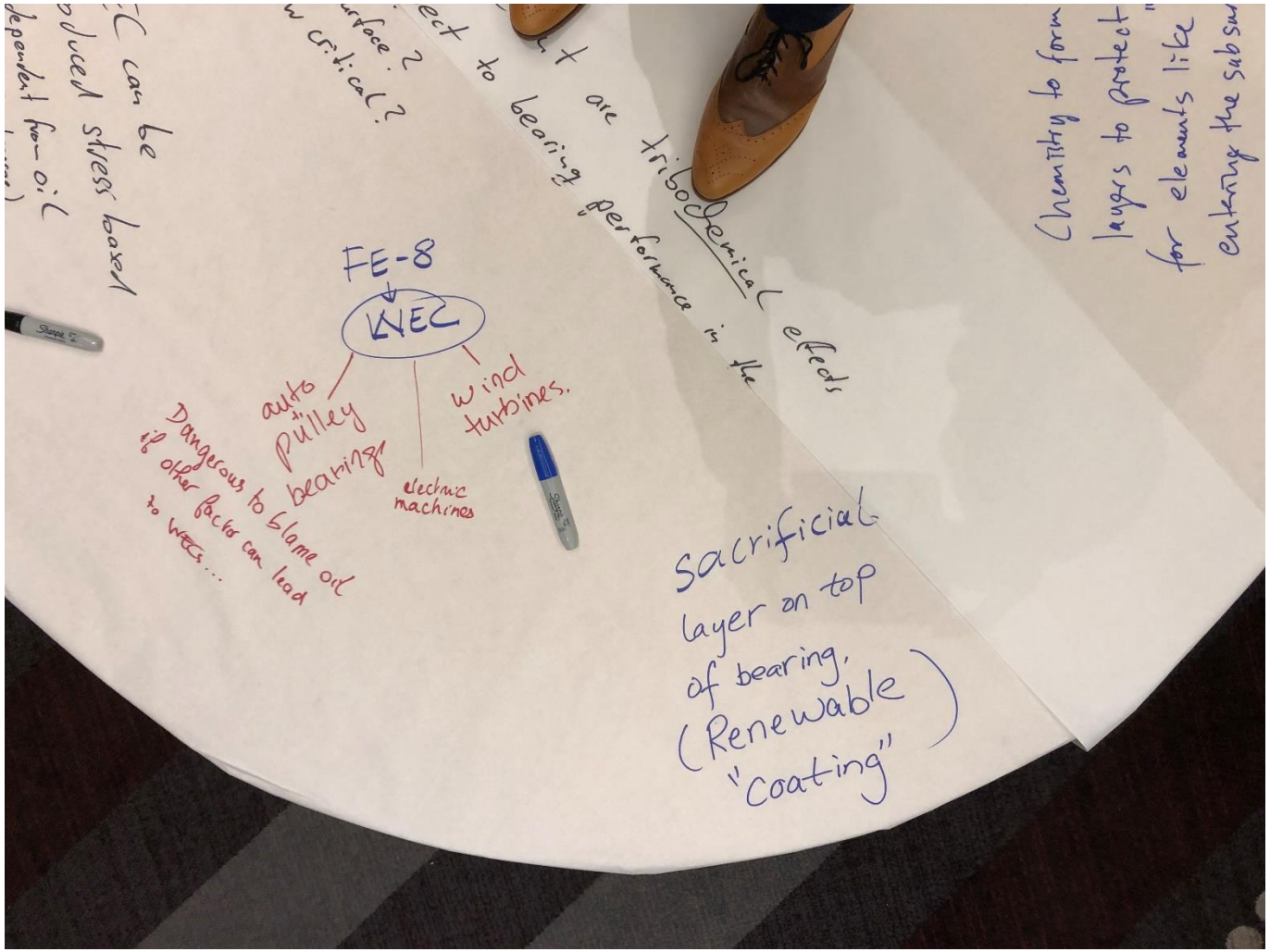

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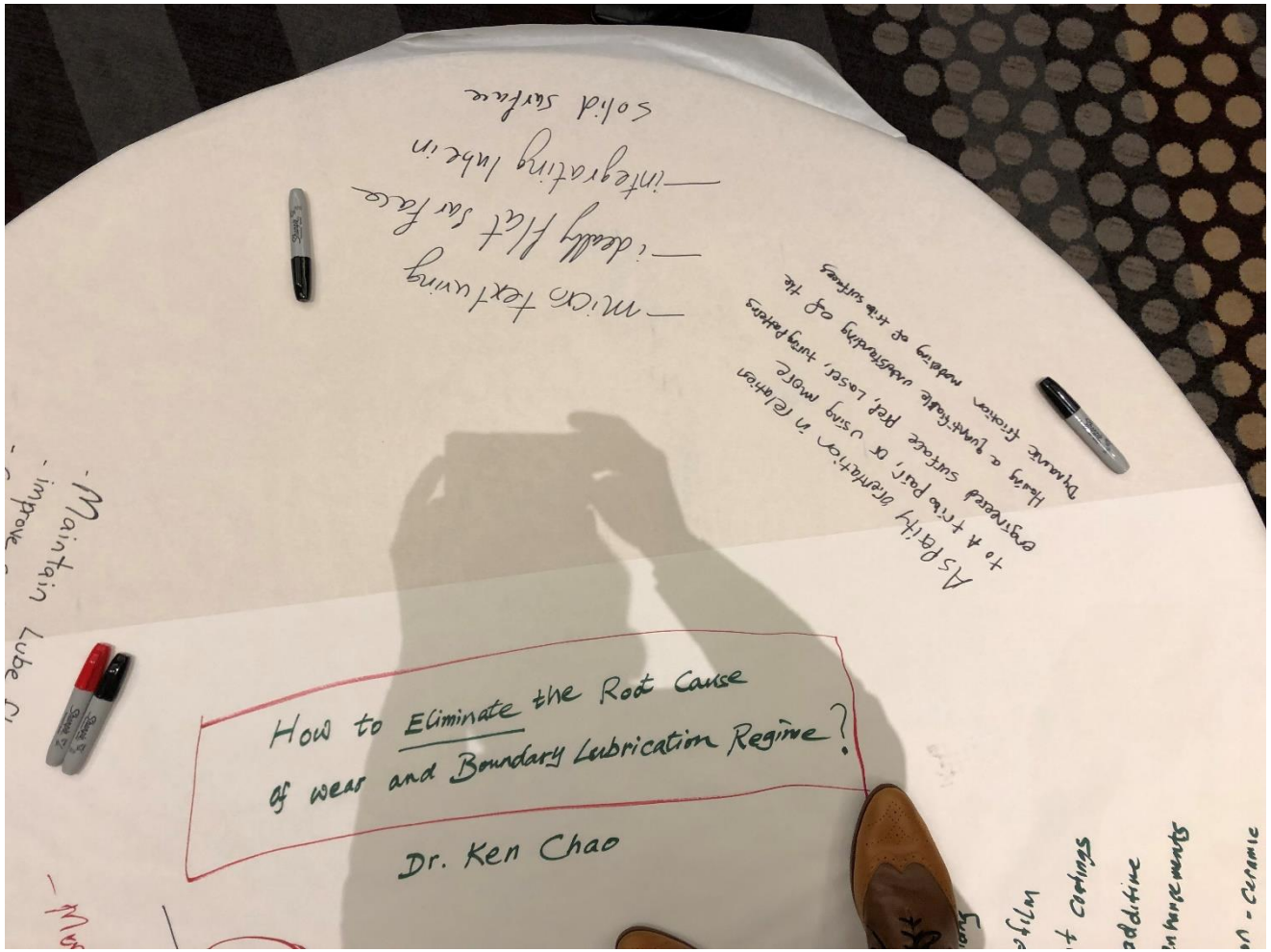

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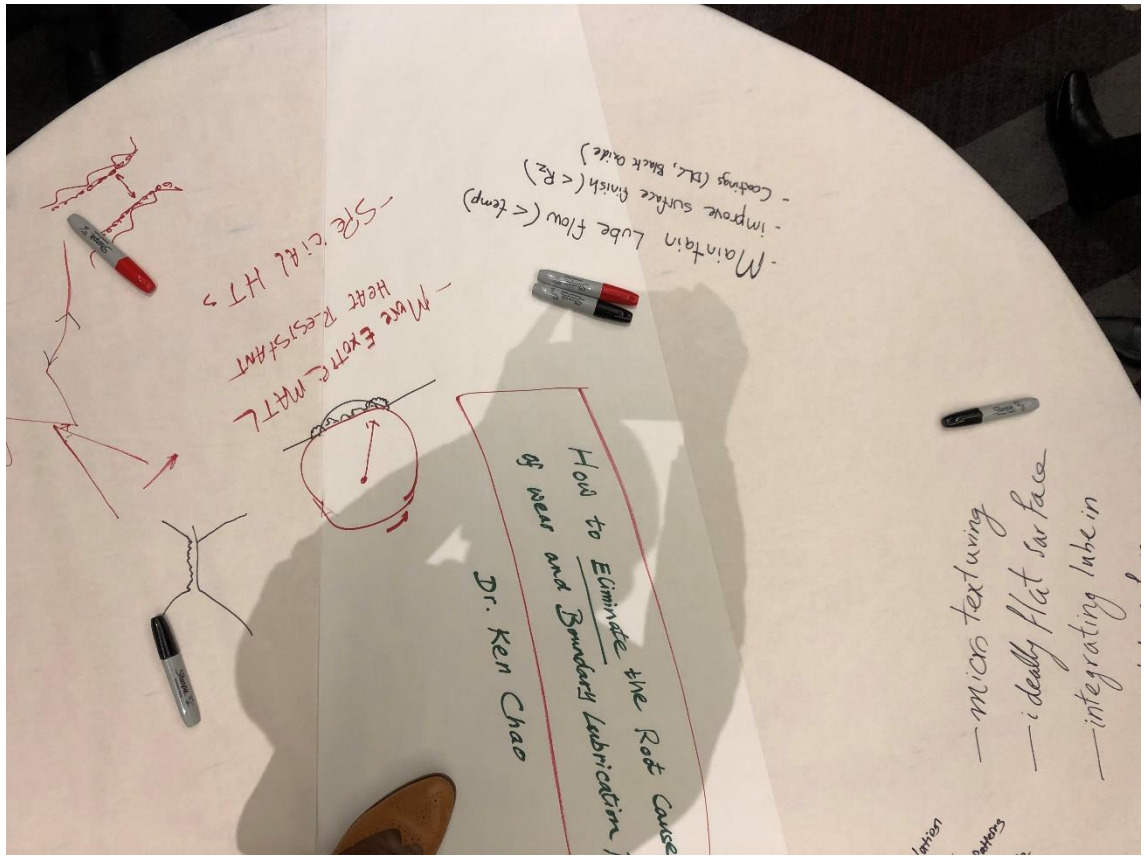

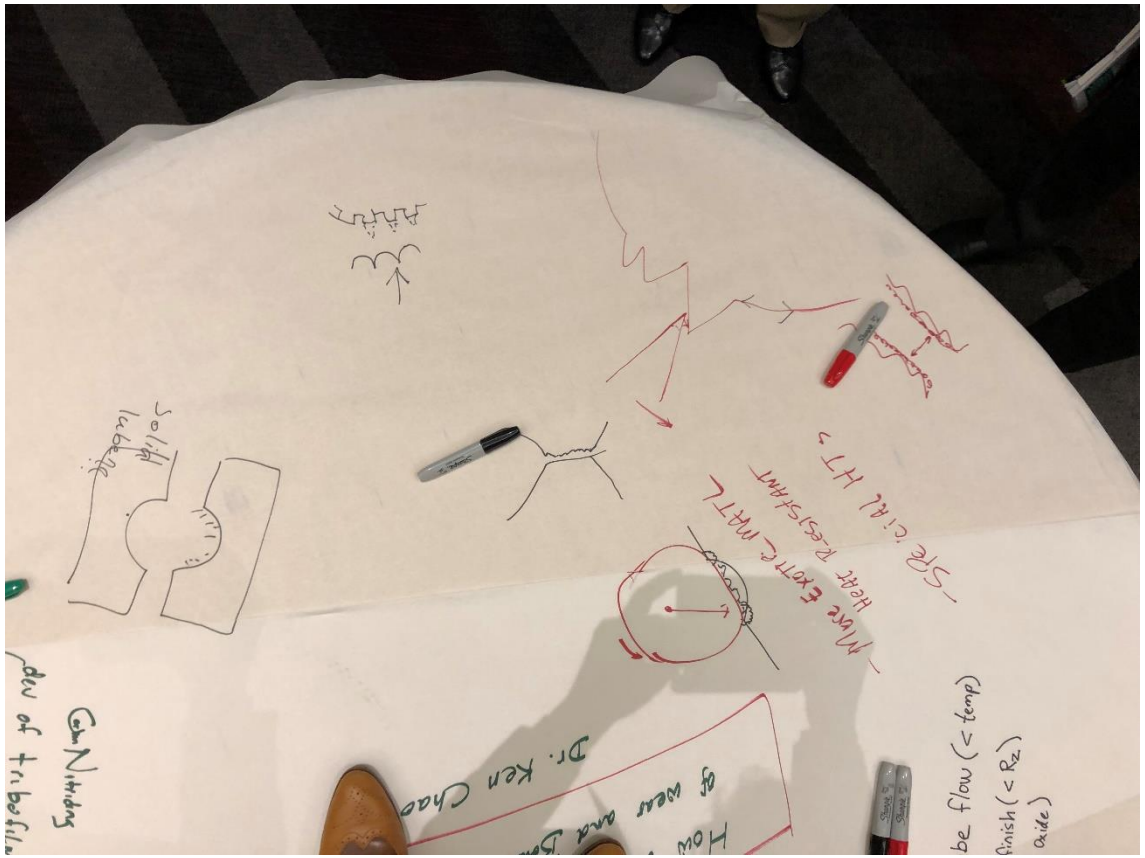

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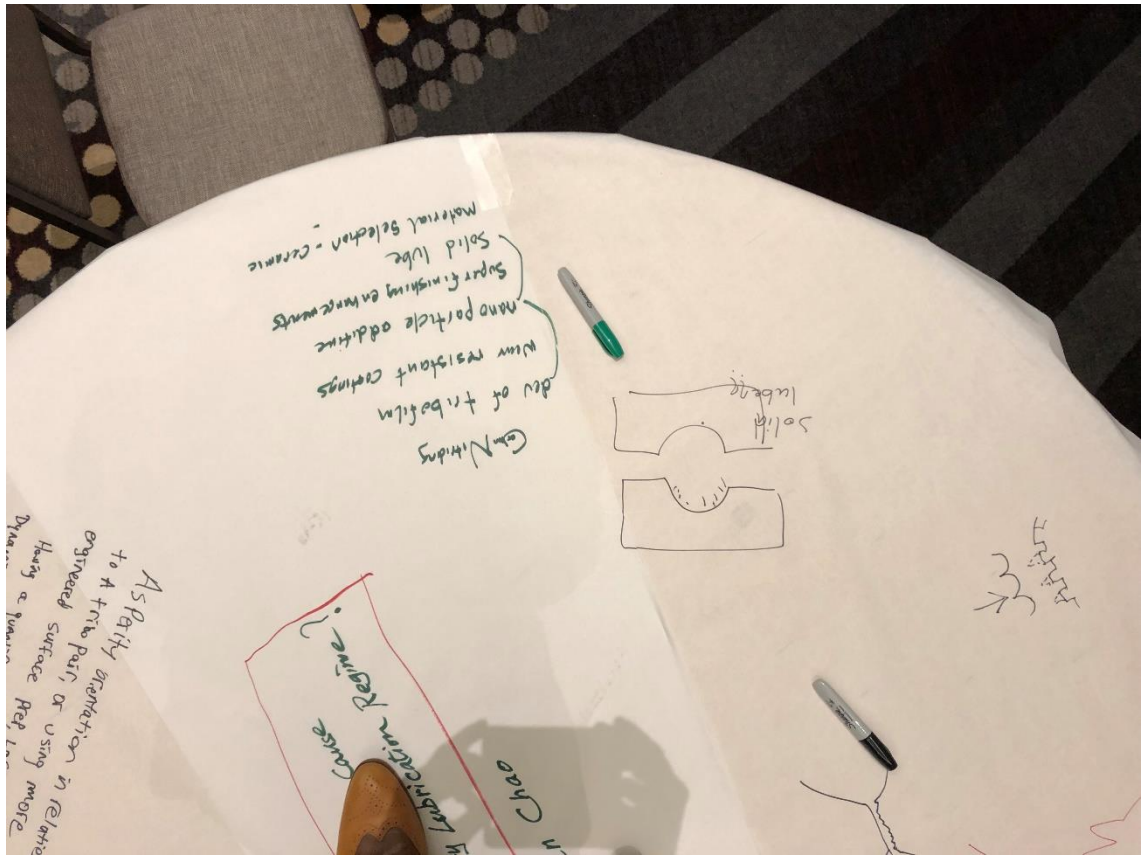

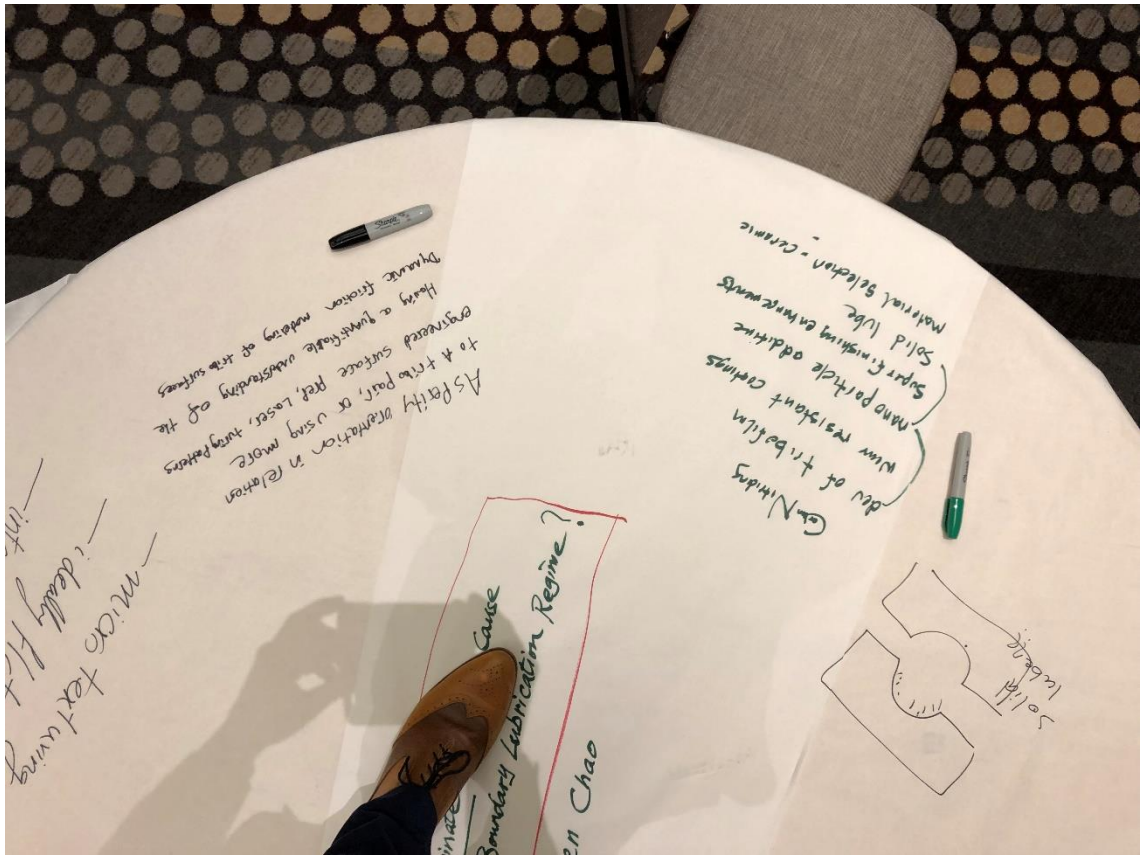

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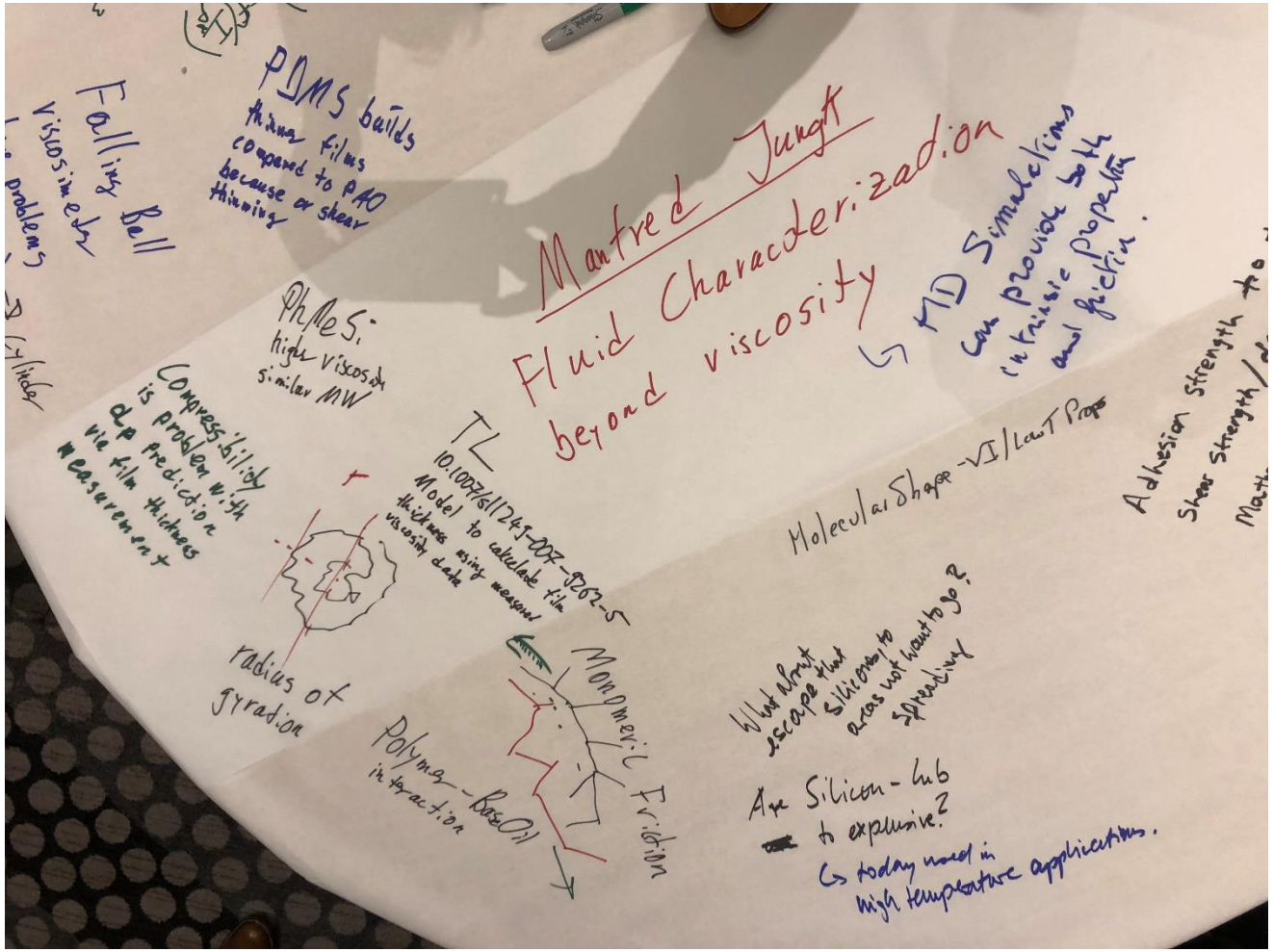

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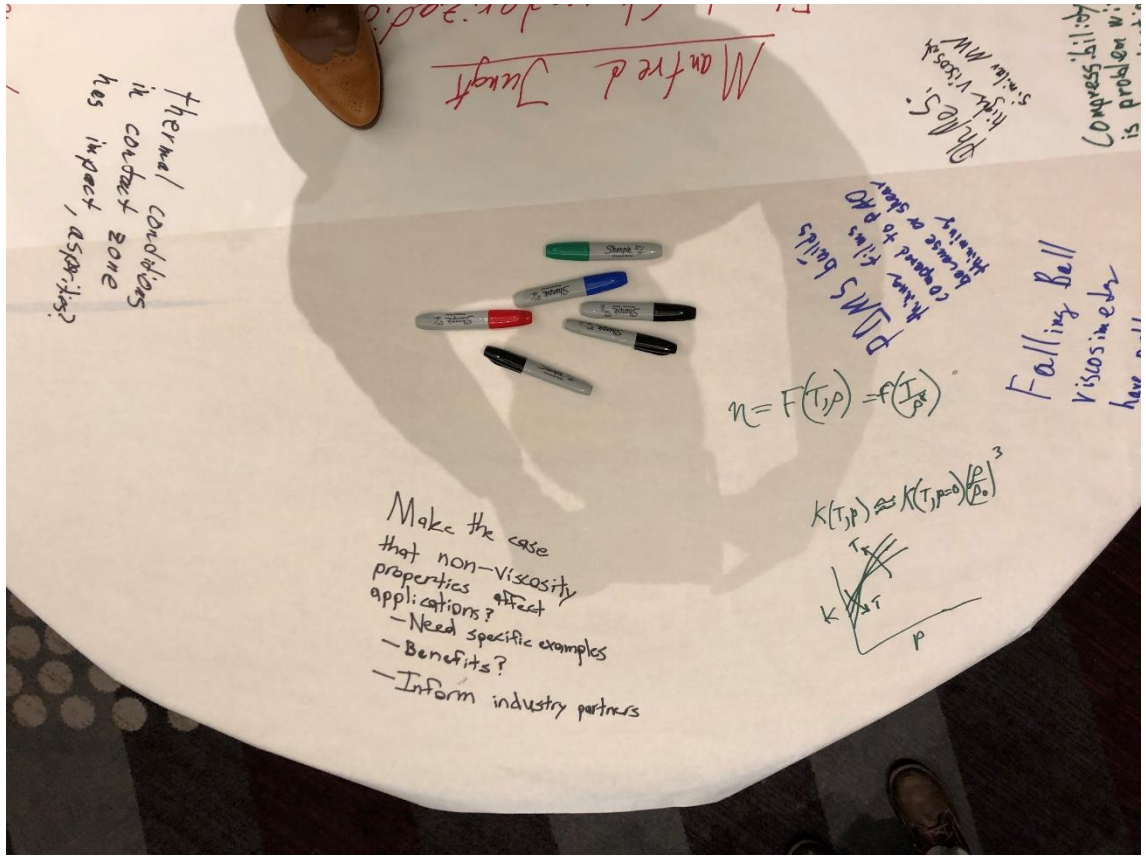

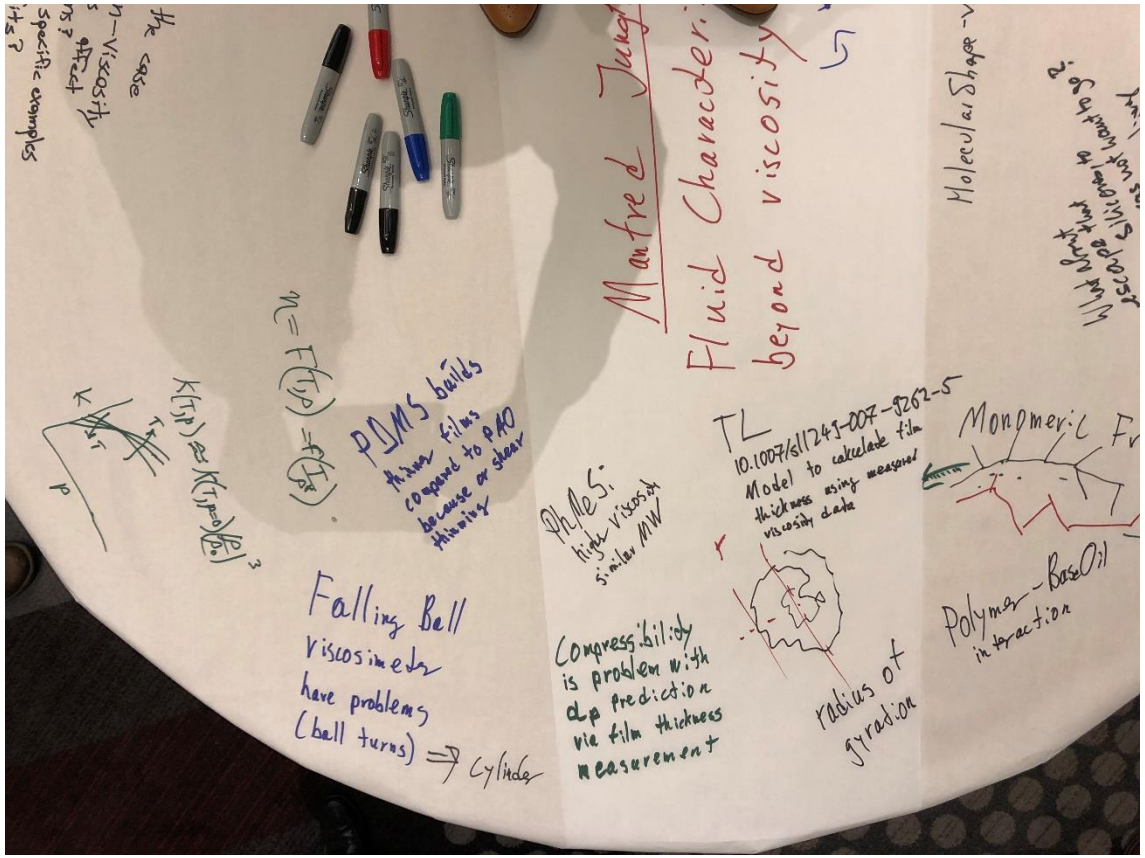

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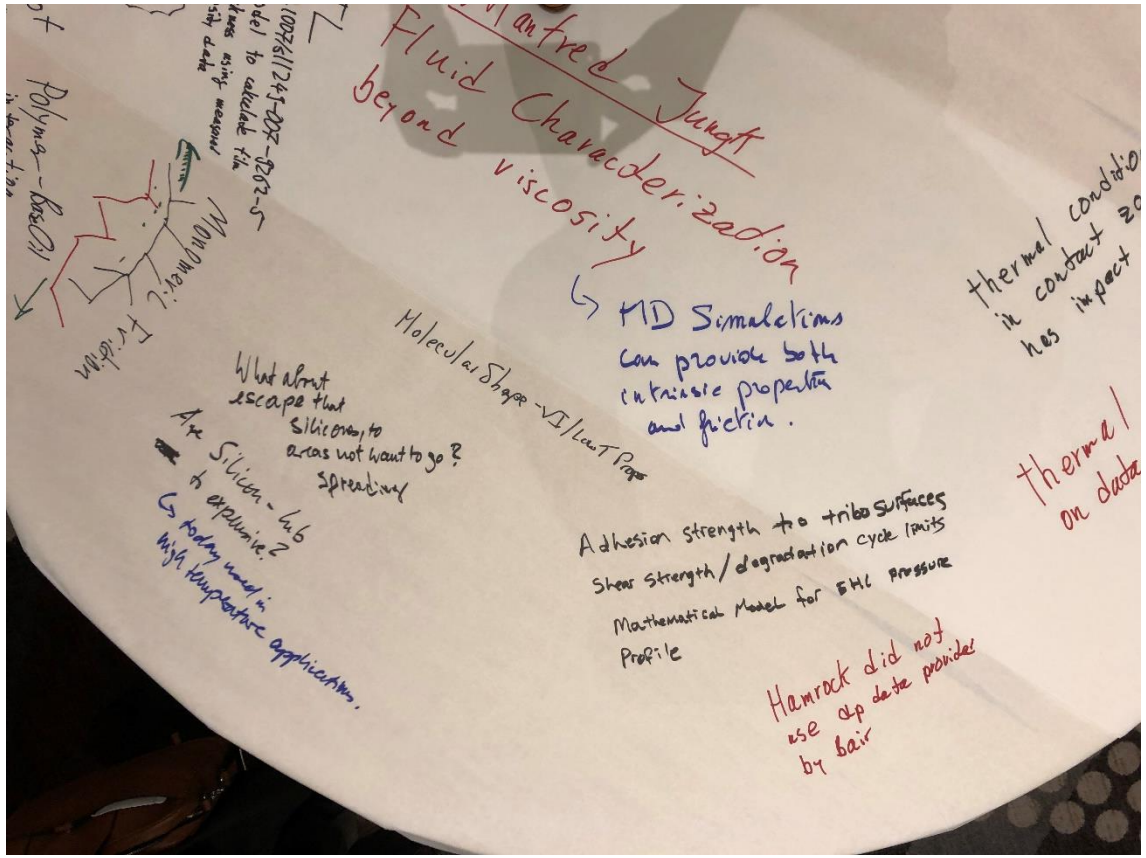

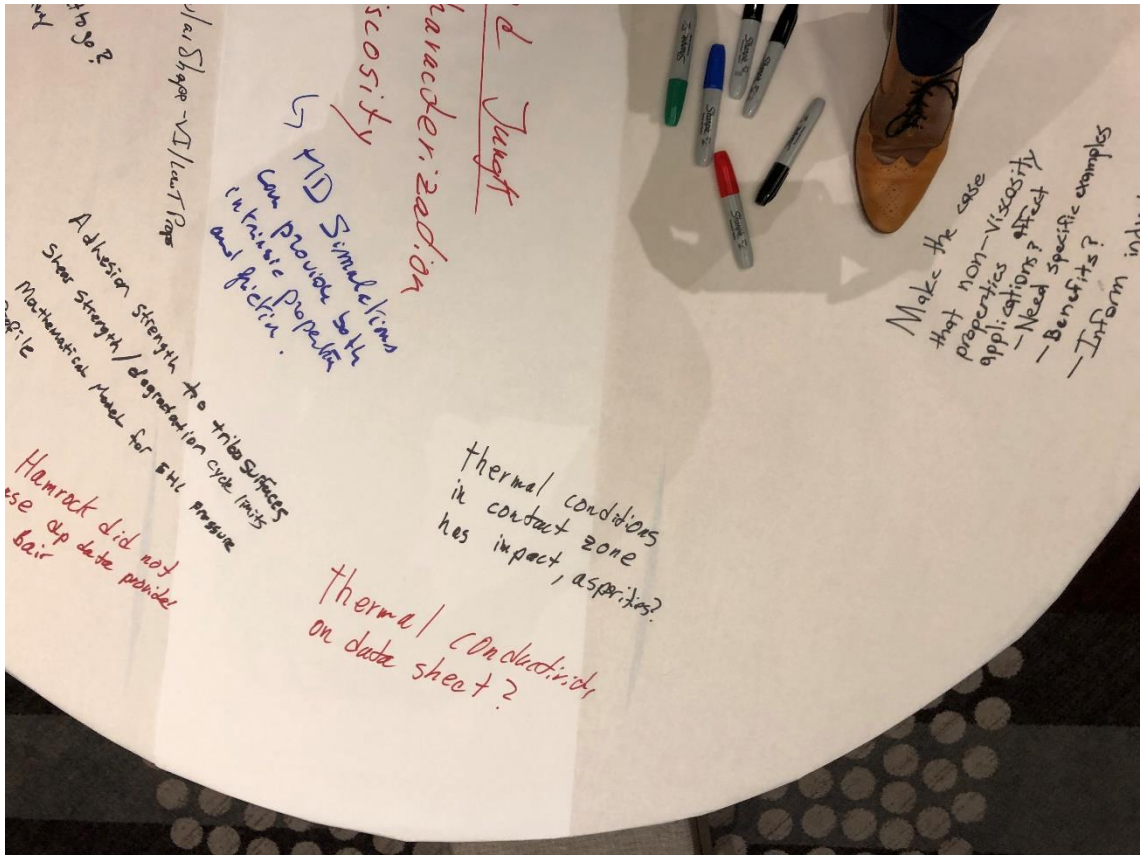

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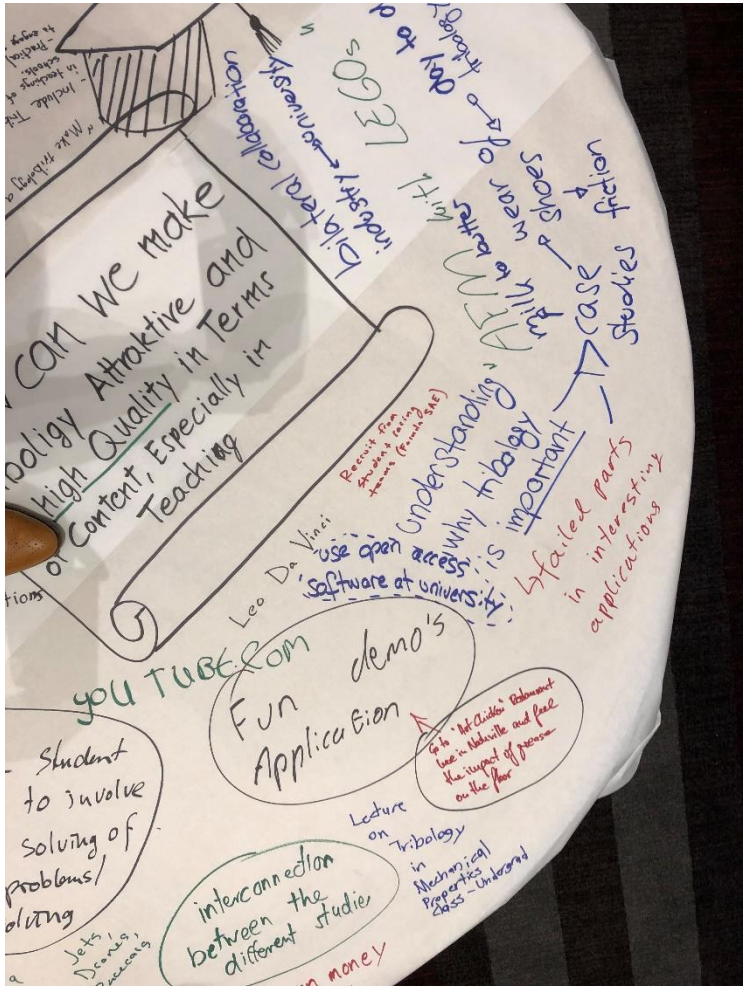

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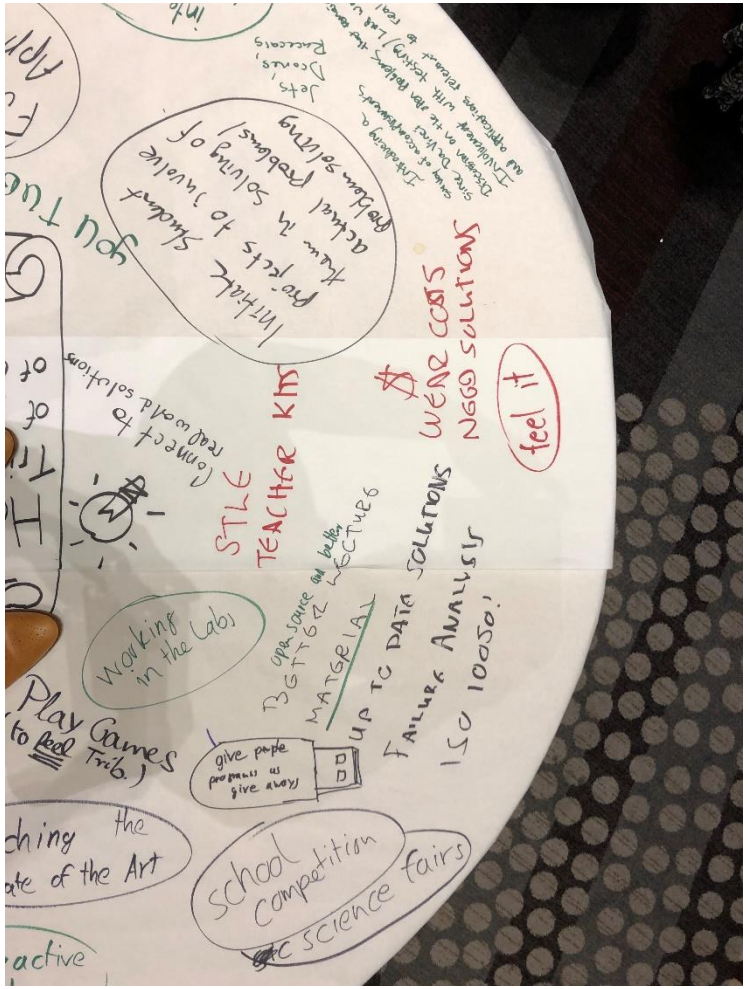

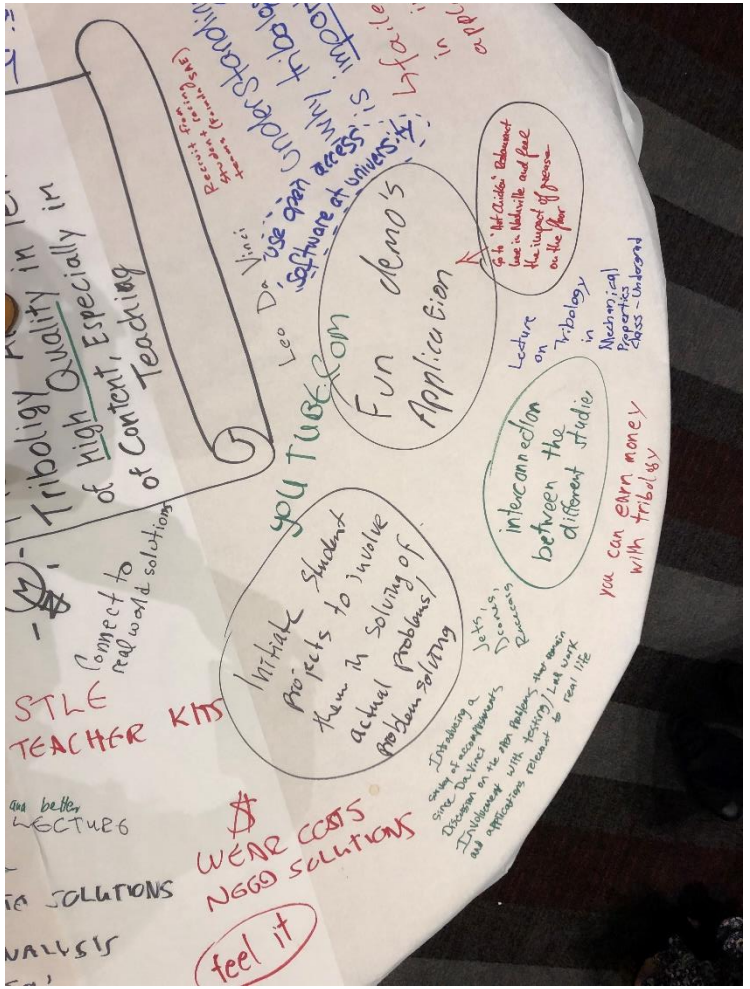

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