# Strands of Soil Physics, Soil Mechanics and Agricultural Engineering. (Z06-warkentin174021-Oral)

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## Abstract:

These separate disciplines, all dealing with physical behavior and water in soils, developed as applications for different soil uses. The questions posed are how did they interact, on what topics and why at specific times. Soil mechanics was developed as applied mechanics in the 1930s and the theoretical background for behavior developed after the 1950s when research increased. Agricultural engineering developed with mechanization in the 20th century, originally as farm mechanics and later as part of engineering. Soil physics is the oldest discipline with experiments by land owners common from the 1700s, and scientifically designed field and laboratory experiments after 1850. The most recent node of contact for all three disciplines is application of unsaturated water flow information on the field scale e.g. in nuclear waste fuel storage sites. Tillage, compaction, roads, swelling soils, explaining soil behavior, reclamation, and environmental quality are some nodes of contact. The strands came together through transfer of ideas, through teaching and through solution of problems.

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