

**AGCO Seminar**

**Speaker:** Joel Joris Van de Klundert, UAI.

**Title:** Toward Elimination of Infectious Diseases with Mobile Screening Teams: HAT in the DRC.

**Abstract:** In pursuit of Sustainable Development Goal 3 “Ensure healthy lives and promote well-being for all at all ages,” considerable global effort is directed toward elimination of infectious diseases in general and Neglected Tropical Diseases in particular. For various such diseases, the deployment of mobile screening teams forms an important instrument to reduce prevalence toward elimination targets. There is considerable variety in planning methods for the deployment of these mobile teams in practice, but little understanding of their effectiveness. Moreover, there appears to be little understanding of the relationship between the number of mobile teams and progress toward the goals. This research considers capacity planning and deployment of mobile screening teams for one such neglected tropical disease: Human African trypanosomiasis (HAT, or sleeping sickness). We prove that the deployment problem is strongly NP-Hard and propose three approaches to find (near) optimal screening plans. For the purpose of practical implementation in remote rural areas, we also develop four simple policies. The performance of these methods and their robustness is benchmarked for a HAT region in the Democratic Republic of Congo (DRC). Two of the four simple practical policies yield near optimal solutions, one of which also appears robust against parameter impreciseness. We also present a simple approximation of prevalence as a function of screening capacity, which appears rather accurate for the case study. While the results may serve to more effectively allocate funding and deploy mobile screening capacity, they also indicate that mobile screening may not suffice to achieve HAT elimination.

**When:** October 05, 15:00 hrs.

**Where:** Sala de Seminario John Von Neuman, CMM, Beauchef 851, Torre Norte, Piso 7.

