# COLLOQUIUM
# Mathematics Department

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**제목** Mathematical Modeling of infectious diseases with multidisciplinary approach

Mathematical biology is an ever more important field in the understanding of biological processes.  One of its growing subfields is mathematical modeling of infectious diseases and the evolution of pathogens, which is associated with predicting health policy effectiveness and best practices. Health policies must be developed to maximize the benefit to the public and to balance health, social, and economic considerations.  Achieving this aim requires combining molecular, individual, population, and national scales with evolutionary perspectives to understand the importance of trade-offs between disease control and the risk of pathogen replacement. On a molecular scale, my work focuses on the impact of disease interventions on the evolution of pathogens. On an individual scale, I determine how medical decisions are influenced by individual perceptions and motivations. On a population scale, I assess ways to promote population adherence to the group-optimal control strategies using a game-theoretic approach.  On a national scale, I determine and compare the impact of different control strategies.  Integrating mathematics, epidemiology, economics, and evolutionary biology, this interdisciplinary research generates predictions that could not be made by the sedisciplines alone, and has important impacts on these fields as well as for policy makers world-wide.

강연전 4:40부터 다과회가 있습니다.

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