SPECIAL COLLOQUIUM

• **Speaker:** Prof. Serge Lang (Yale University).

• **Title:** Zeta functions and theta functions from the heat kernel.

• **Schedule:** Friday February 4th, 3:30pm.

• **Room:** HUM 428

**ABSTRACT:** We first review the heat kernel and basic properties, on the real line, the circle, euclidean space and more general spaces. On the circle, or certain types of quotients of spaces which look like euclidean spaces, one can periodize in a suitable sense the heat kernel, and then derive a Fourier expansion. The equality between the heat kernel and its Fourier expansion is a general form of theta relation, to which one can apply integral transforms (Mellin transform à la Riemann, Gauss transform à la Jorgenson-Lang) to get a zeta function and its functional equation.

Serge Lang has been a Professor of Mathematics at Yale University since 1972. Lang was born in Paris but moved to the USA when he was young. He received his PhD from Princeton University and was a professor of mathematics at University of Chicago and at Columbia University before moving to New Haven.

Prof. Lang has made substantial contributions to several branches of mathematics: Algebraic number theory, algebraic geometry, Diophantine problems, automorphic forms. He is a prolific writer, he has published more than 50 books on mathematics (not counting articles!). Among them many classical graduate and undergraduate textbooks on an astonishing number of subjects, as well as books for high school students, e.g. Math : Encounters With High School Students and for the general public, e.g. The beauty of doing mathematics. He is also an outspoken member of the community, very concerned about the world (particularly the academic world) and its whereabouts. Some of his non-mathematical works, he calls them political works, in the broad sense of the word political, have been published recently under the title Challenges.

Lang has earned many honors. He is a member of the National Academy of Sciences. He has received the Cole Prize in the USA and the Prix Carriere in France.

**RECEPTION** There will be a reception prior to Prof. Lang’s talk in the Department of Mathematics and Statistics.

• **Date:** Friday February 4th.

• **Place:** Lounge - Humanities Building 4th floor.

• **Time:** 3:00-3:30pm

You are all welcome to come, it should be a very entertaining lecture! Needless to say this is an exceptional opportunity to meet a very distinguished mathematician.