

SEMINAR  
CENTER FOR APPLIED MATHEMATICS AND SCIENCE  
DEPARTMENT OF MATHEMATICS  
UNIVERSITY OF WEST GEORGIA

2:00 PM, TUESDAY, OCTOBER 15, 2013, BOYD 306

Speaker: **Dr. Vu Kim Tuan**, Department of Mathematics, UWG

Title: **Multidimensional Inverse Heat Equations**

**Abstract:** Let  $\Omega$  be a bounded domain in  $\mathbb{R}^n$ , and  $b$  be an arbitrary point in  $\overline{\Omega}$ . Consider the heat equation in  $\Omega$

$$\begin{aligned}u_t &= \Delta u + q(x)u, & x \in \Omega, & \quad t > 0, \\u|_{\partial\Omega} &= 0, & u(x, 0) &= f(x) \in L^2(\Omega),\end{aligned}$$

where the heat coefficient  $q$  and the domain  $\Omega$  are unknown.

We will show that the mapping  $f(x) = u(x, 0) \in L^2(\Omega) \implies g(t) = u(b, t)$  determines  $q$  and  $\Omega$  uniquely. This is a joint research with Dr. A. Boumenir.

All are welcome.