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**Mark R. Sepanski** (Mark\_Sepanski@baylor.edu) and **Ronald J. Stanke\***  
(Ronald\_Stanke@baylor.edu). *Symmetries of the heat equation and representations*. Preliminary  
report.

We study certain subspaces of the kernel of the  $n$ -dimensional heat operator that are invariant under a subgroup of the semi-direct product of the symplectic group and the Heisenberg group. The structure of these subspaces and the role of special functions are examined. (Received February 04, 2008)