

**The Catholic University of America**  
*Department of Physics*  
**Colloquium**

**Victor Yakovenko**

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**Statistical Mechanics of Money, Income, Debt,  
and Energy Consumption**

By analogy with the probability distribution of energy in statistical physics, I argue that the probability distribution of money in a closed economic system should follow the exponential Boltzmann-Gibbs law. Analysis of the empirical data shows that income distribution in the USA has a well-defined two-class structure. The majority of the population (about 97%) belongs to the lower class characterized by the exponential ("thermal") distribution. The upper class (about 3% of the population) is characterized by the Pareto power-law ("superthermal") distribution, and its share of the total income expands and contracts dramatically during bubbles and busts in financial markets. The probability distribution of energy consumption per capita around the world also follows the exponential Boltzmann-Gibbs law, which is consistent with entropy maximization. For more information, see <http://physics.umd.edu/~yakovenk/econophysics/>

**Wednesday October 31, 2012**

**4:00pm**

**106 Hannan Hall**

**Refreshments will be served at 3:45**

Sponsored in part by the Graduate Student Association

For more information, please contact:

**Dr. Kraemer (202) 319 -5315**

If you would like to request disability accommodations, please contact Gail Hershey at (202)-319-5315 to make arrangements.