M E 433	Professor John M. Cimbala	Lecture 05
 Today, we will: Discuss the classification of air pollutants (CAPs, HAPs, NAAQS, etc.) Do some practice/review problems to help you get ready for Quiz 1 		

Practice questions to help you prepare for Quiz 1

- 1. A container has 40.2 g of water vapor. How many mols of water vapor are in the sample? [*Note*: You will be able to look up $M_{water} = 18.02$ g/mol.]
- 2. The mol fraction of CO ($M_{CO} = 28.0 \text{ g/mol}$) in a container of sampled polluted air is 50 PPM. The overall pressure of the gas mixture in the container is 100 kPa. Calculate the mass fraction of the CO in the container in units of mg/kg.

3. A container of sampled air contains mostly air, but also some carbon monoxide pollution ($M_{\text{carbon monoxide}} = 28.0 \text{ g/mol}$). The total volume of the container is 0.456 m³ and the partial volume of CO in the container is 2.43E-4 m³. The container is at STP conditions. Calculate the mass of CO in the container in grams.

4. The mass concentration of ammonia ($M_{\text{ammonia}} = 17.04 \text{ g/mol}$) is 1.11 g/m³. When the pressure is 97.3 kPa and the temperature is 573.15 K, calculate the mol fraction of the ammonia vapor in PPM.