The First Ligand Assignment: Due in class.

Ligand Assignment 1: Find one ligand that binds to transition metal ions through nitrogen (only through N, no mixed ligands) and answer the following questions (that will apply to all subsequent ligand assignments in addition to other questions that we will add over the course of the term). Please sign up for a ligand so that there are no duplicates. Every Ligand Assignment, several of you will take 2-5 minutes each to present your ligand. Friday the presentations will be given by the first four students on the course registration list. Also for this assignment…no one can sign up for a “Scorpionate”. This ligand will be presented by our seminar speaker Professor William Jones.

Questions for Ligand Assignments:

1. Give the name of the ligand and the name of one complex that it forms with a selected metal.

2. Draw the Lewis Structure of the ligand and determine the geometry and hybridization of each atom in the ligand.

3. Is it charged or neutral (determine if it can or will deprotonate when it binds)?

4. Is it a chelating or monodentate ligand?

5. What is the symmetry of the metal ligand complex you have chosen to show in 1.

6. Is there any other interesting chemistry associated with this ligand?

7. Give a reference citation for you ligand

With time we will elaborate on our description of the ligands. For example, we will strive to answer the following questions: Is it a strong, medium, or weak field ligand? Is is a hard base or soft base. Does the ligand impose a certain structure on the complex? Can we draw a description of the orbitals used in bonding?

A few suggested sources:

Issues of **Inorganic Chemistry** (Library or our ACS Electronic Database)

Comprehensive Coordination Chemistry II, 8 Volume Set, Pergamon Press, NY, 2004

(Reference Section of the Library), Volume 1 has sections on Ligands.

Comprehensive Coordination Chemistry, 7 Volume Set, Pergamon Press, NY, 1987

**Volume (2) on Ligands is on Open Reserve**

Advanced Inorganic Chemistry, 6th Edition (as well as 5th Ed), F.A. Cotton, G. Wilkinson, Murillo and Bochmann, **on Open Reserve**