

## CURRICULUM VITA OF MICHAEL P. CASTELLANI

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**Birth Date:** September 13, 1960; Dover, Delaware.

### Education:

Undergraduate: Furman University, Greenville, SC (1978 - 1982) B.S. in Chemistry; Undergraduate research with Prof. Noel A.P. Kane-Maguire.

Graduate: Northwestern University, Evanston, IL (1982 - 1983) M.S. in Chemistry.

University of California at San Diego, La Jolla, CA (1983 - 1986) Ph.D. in Chemistry; Research Advisor, Prof. William C. Trogler. Dissertation title: Tetraphenylcyclopentadienyl Complexes of First Row Transition Metals. (Transferred with WCT to the University of California at San Diego)

Post-Doctoral: University of Oregon, Eugene, OR (1987 - 1988) Research with Prof. David R. Tyler. Research topic: Thermal Disproportionation Reactions of the  $(C_5H_5)_2Fe_2(CO)_4$  Dimer.

### Academic Positions:

Assistant Professor, Marshall University, 1988 – 1993.

Associate Professor, Marshall University, 1993 – 1999.

Visiting Associate Professor, University of North Texas, 1996 – 97 (Sabbatical leave)

Visiting Associate Professor, Texas Wesleyan University, 1997 – 98 (Leave of absence)

Professor, Marshall University, 1999 – present.

Chair of Chemistry and Head of the Division of Physical Sciences, 2004 – present.

### Research Interests:

Synthesis, reactivity, physical properties, and mechanism in organometallic chemistry. Open shell complexes. The effect of large ligands on the reactivity of complexes.

### Professional Societies:

American Chemical Society

Council on Undergraduate Research

### Honors and Awards:

American Chemical Society Award, Western Carolina's Section (1982)

Camille and Henry Dreyfus Scholar (2001 – 2003)

Chemistry Councilor, Council on Undergraduate Research (2001 – present)

## Marshall University Publications

\*Undergraduate student coauthor.

†Masters student coauthor.

1. Synthesis, Molecular Structure, and  $^1\text{H}$  NMR, Analysis of Bis(tetraphenylcyclopentadienyl)ruthenium(II). \*Hoobler, R.J.; \*Adams, J.V.; \*Hutton, M.A.; \*Francisco, T.W.; Haggerty, B.S.; Rheingold, A.L.; Castellani, M.P. *J. Organomet. Chem.* **1991**, *412*, 157-167.
2. Synthesis, Characterization, and Crystal Structure of the  $(\eta^5\text{-C}_5\text{Ph}_5)\text{Cr}(\text{CO})_3$  Radical. \*Hoobler, R.J.; \*Hutton, M.A.; \*Dillard, M.M.; Castellani, M.P.; Rheingold, A.L.; Rieger, A.L.; Rieger, P.H.; Richards, T.C.; Geiger, W.E. *Organometallics* **1993**, *12*, 116-123.
3. Synthesis, Characterization, and Crystal Structure of Bis(tetraphenylcyclopentadienyl)-rhodium(II). †Collins, J.E.; Castellani, M.P.; Rheingold, A.L.; Miller, E.J.; Geiger, W.E.; Rieger, A.L.; Rieger, P.H. *Organometallics* **1995**, *14*, 1232-1238.
4. Substitution Reactions of  $(\text{C}_5\text{Ph}_5)\text{Cr}(\text{CO})_3$ : Structural, Electrochemical, and Spectroscopic Characterization of  $(\text{C}_5\text{Ph}_5)\text{Cr}(\text{CO})_2\text{L}$ , L =  $\text{PMe}_3$ ,  $\text{PMe}_2\text{Ph}$ , and  $\text{P}(\text{OMe})_3$ . \*Hammack, D.J.; \*Dillard, M.M.; Castellani, M.P.; Rheingold, A.L.; Rieger, A.L.; Rieger, P.H. *Organometallics* **1996**, *15*, 4791-4797. **MU**
5. EPR Spectra of  $[(\text{Cr}(\text{CO})_2\text{L}(\eta\text{-C}_6\text{Me}_6))]^+$ , L =  $\text{PEt}_3$ ,  $\text{PPh}_3$ ,  $\text{P}(\text{OEt})_3$ ,  $\text{P}(\text{OPh})_3$ : Analysis of Line Widths and Determination of Ground State Configuration from Interpretation of  $^{31}\text{P}$  Couplings. Castellani, M.P.; Connelly, N.G.; Pike, R.D. Rieger, A.L., Rieger, P.H. *Organometallics* **1997**, *16*, 4369-4376.
6. Molecular Structure of Bis(tetraphenylcyclopentadienyl)rhodium(III) Hexafluorophosphate,  $[(\text{C}_5\text{HPh}_4)_2\text{Rh}]\text{PF}_6 \cdot \text{CH}_2\text{Cl}_2$ . Guzei, I.; Rheingold, A.L.; †Collins, J.E.; Castellani, M.P. *Z. Krist.* **1998**, *213*, 431-433.
7. Steric versus Electronic Control During the Carbonylation of Substituted Thexylboranes. A Semi-Empirical Investigation. Castellani, M.P.; McAllister, M.A.; Hubbard, J.L. *J. Mol. Struct. (THEOCHEM)* **2000**, *496*, 41-65.
8. Halogen Oxidation Reactions of  $(\text{C}_5\text{Ph}_5)\text{Cr}(\text{CO})_3$  and Lewis Base Addition To  $[(\text{C}_5\text{Ph}_5)\text{Cr}(\mu\text{-X})\text{X}]_2$ : Electrochemical, Magnetic, and Raman Spectroscopic Characterization of  $[(\text{C}_5\text{Ph}_5)\text{CrX}_2]_2$  and  $(\text{C}_5\text{Ph}_5)\text{CrX}_2(\text{THF})$  (X = Cl, Br, I). X-ray Crystal Structure of  $[(\text{C}_5\text{Ph}_5)\text{Cr}(\mu\text{-Cl})\text{Cl}]_2$ . †Hutton, M.A.; \*Durham, J.D.; \*Grady, R.W.; \*Harris, B.E., \*Jarrell, C.S.; \*Mooney, J.M.; Castellani, M.P.; Rheingold, A.L.; Rieger, P.H.; Korte, B.J.; Sommer, R.D.; Yee, G.S.; Kölle, U.; Bogges, J.M.; Czernuszewicz, R. *Organometallics* **2001**, *20*, 734-740.

9. Ion-Pairing Thermodynamics for  $(\eta^5\text{-pentadienyl})\text{Fe}(\text{CO})_2^-$  (Pentadienyl = MeCp, C<sub>5</sub>Me<sub>5</sub>, C<sub>5</sub>Ph<sub>5</sub>, C<sub>9</sub>H<sub>7</sub>) and X-ray Crystal Structure of  $[(\eta^5\text{-C}_5\text{Ph}_5)\text{Fe}(\text{CO})_2][\text{PPN}]$ . \*Carter, B.T.; Castellani, M.P.; Rheingold, A.L.; Hwang, S.; Longacre, S.E.; Richmond, M.G. *Organometallics* **2002**, *21*, 373-379.
10. 1,1'-Diethyl-2,2',3,3',4,4',5,5'-octamethylferrocenium Tetracyanoethylene,  $[\text{Fe}(\text{C}_5\text{EtMe}_4)_2]^+[\text{TCNE}]^-$ , a Charge-Transfer Salt Magnetic Solid with a Novel Structural Motif. \*Harris, T.D.; Castellani, M.P.; Rheingold, A.L.; Reiff, W.M.; Yee, G.T. *Inorg. Chim. Acta* **2006**, *359*, 4651-4654.<sup>MU</sup>
11. Tricarbonyl( $\eta^5\text{-cyclopentadienyl}$ )manganese(I) Complexes. \*Kirk, P.N.; Castellani, M.P. *Inorg. Synth.* Vol. 35. In press.

### Other Publications

12. Synthesis, Molecular Structure, and 2-D NMR Analysis of Bis(tetraphenylcyclopentadienyl)iron(II). Castellani, M.P.; Wright, J.M.; Geib, S.J.; Rheingold, A.L.; Trogler, W.C. *Organometallics* **1986**, *5*, 1116-1121.
13. Synthesis, Reactivities, Molecular Structures, and Physical Properties of Paramagnetic Bis(tetraphenylcyclopentadienyl) Complexes of Vanadium, Chromium, Cobalt, and Nickel. Castellani, M.P.; Geib, S.J., Rheingold, A.L.; Trogler, W.C. *Organometallics* **1987**, *6*, 1703-1712.
14. Synthesis and Molecular Structure of Chlorobis(tetraphenylcyclopentadienyl)titanium(III). Synthesis and Variable Temperature <sup>1</sup>H NMR Study of Dichlorobis(tetraphenylcyclopentadienyl)titanium(IV). Castellani, M.P.; Geib, S.J.; Rheingold, A.L.; Trogler, W.C. *Organometallics* **1987**, *6*, 2524-2531.
15. Photochemistry of Organometallic Halide Complexes; Mechanisms for the Formation of Ionic Compounds. Pan, X.; Philbin, C.E.; Castellani, M.P.; Tyler, D.R. *Inorg. Chem.* **1988**, *27*, 671-676.
16. Distinction Between Three Possible Radical Chain Mechanisms in the Disproportionation Reactions of Cp<sub>2</sub>Fe<sub>2</sub>(CO)<sub>4</sub> (Cp =  $\eta^5\text{-C}_5\text{H}_5$ ) Castellani, M.P.; Tyler, D.T. *Organometallics* **1989**, *8*, 2113-2120.
17. Photophysical Behavior of Doubly Bridged d<sup>7</sup>-d<sup>7</sup> Metal-Metal Bonded Compounds: The Crystal Structure and the Excited- and Ground-State Electronic Spectra of Re<sub>2</sub>(CO)<sub>2</sub>(dmpm)<sub>2</sub> [dmpm = Bis(dimethylphosphino)methane]. Milder, S.J.; Castellani, M.P.; Weakley, T.J.R.; Tyler, D.R.; Miskowski, V.M.; Stiegman, A.E. *J. Phys. Chem.* **1990**, *94*, 6599-6603.
18. Bis( $\eta^5\text{-cyclopentadienyl}$ )molybdenum(IV) Complexes. Silavwe, N.D.; Castellani, M.P.; Tyler, D.R. *Inorganic Syntheses* **1992**, *29*, 204-211.

19. Synthesis and Molecular Structure of Bis(tetraphenylcyclopentadienyl)tetrakis( $\mu$ -trifluoroacetato)divanadium(III). Castellani, M.P.; Swepston, P.N.; Trogler, W.C. *Inorg. Chim. Acta* **1993**, *205*, 153-156.
20. Equilibrium Constants for Homolysis of Metal-Metal Bonded Organometallic Dimers in Cyclohexane Solution. Reaction of the (MeCp)Mo(CO)<sub>3</sub> Radical with the Nitroxide Radical Trap TMIO. Tenhaeff, S.C.; Covert, K.J.; Castellani, M.P.; Grunkemeier, J.; Kunz, C.; Weakley, T.J.R.; Koenig, T.; Tyler, D.R. *Organometallics* **1993**, *12*, 5000-5004.
21. Observation of a Salt Effect in the Chain Disproportionation Reaction of Cp<sub>2</sub>Fe<sub>2</sub>(CO)<sub>4</sub> with Dppe. Castellani, M.P.; Hesse, E.T.; Tyler, D.T. *Organometallics* **1994**, *13*, 399-400.
22. Synthesis of a Mixed Cluster/Binuclear Compound. Electrochemical Properties and X-Ray Diffraction Structure of Co<sub>3</sub>(CO)<sub>9</sub>[ $\mu$ <sub>3</sub>-CCO<sub>2</sub>CH<sub>2</sub>CH{Co<sub>2</sub>(CO)<sub>6</sub>}]. Castellani, M.P.; Bott, S.G.; Richmond, M.G. *J. Chem. Cryst.* **1998**, *28*, 693-699.
23. Reaction of Ethyl Diazoacetate with Co<sub>3</sub>(CO)<sub>9</sub>( $\mu$ <sub>3</sub>-CCl): Isolation and X-ray Structures of Co<sub>3</sub>(CO)<sub>9</sub>( $\mu$ <sub>3</sub>-CCO<sub>2</sub>Et), Co<sub>3</sub>(CO)<sub>9</sub>( $\mu$ <sub>3</sub>-CCH<sub>2</sub>CO<sub>2</sub>Et), and [Co<sub>3</sub>(CO)<sub>9</sub>( $\mu$ <sub>3</sub>-CCHCO<sub>2</sub>Et)]<sub>2</sub> Castellani, M.P.; Smith, W.G.\*; Patel, N.G.\*; Bott, S.G.; Richmond, M.G. *J. Chem. Cryst.* **1999**, *29*, 609-617.

In publication 23, the two University of North Texas undergraduate students worked under my immediate supervision.