Communication skills learned from my first crystal structures

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The first crystal that I collected was in 2005, on a brand-new single crystal diffractometer equipped with a CCD detector. The molecular structure consisted of a pentanuclear manganese cluster with six ligands, four perchlorates, and many disordered water molecules, all which I attempted to model (($C_{60}H_{60}Mn_5N_{42}O_6$)($ClO_4$)$_4$($H_2O$)$_7$; CCDC 299033). My second crystal structure was a nonanuclear manganese cluster (($C_{102}H_{78}Mn_9N_{66}O_{12}$)($NO_3$)$_6$($H_2O$)$_{28}$; CCDC 299034). These were both published [1] which opened many doors, but perhaps the one that I have been slowest to pass through is the one on route to effective communication skills. Modern instrumentation has enabled rapid progress on my research path, but it has so far not replaced the requirement to develop fundamental skills in communicating results. Herein I will share the mistakes that I have made in communicating my work as posters, oral presentations, journal publications, and on social media. These mistakes have informed my practice as an educator and mentor, and I will share examples of how I have embedded these mistakes as exercises in courses that I teach.

[1] Dawe, L. N.; Abedin, T. S. M.; Kelly, T. L.; Thompson, L. K.; Miller, D. O.; Zhao, L.; Wilson, C.; Leech, M. A.; Howard, J. A. K. Self-Assembled Polymetallic Square Grids ([2 × 2] M4, [3 × 3] M9) and Trigonal Bipyramidal Clusters (M5) - Structural and Magnetic Properties. J. Mater. Chem. 2006, 16 (26), 2645-2659.