**Supplemental Discussion**

Potential relationships between WTC dust-induced changes in circulating levels of several key proteins (e.g., MCP-1, MMP-9, RANTES, Galectin-3) in the context of what is known about heart diseases, cardiac pathologies, etc.) have already been discussed. In regard to some other proteins found elevated in WTC dust-exposed rat blood at Day 360, with monocyte-derived chemokine (MDC/CCL22), analyses of WTC dust-exposed macrophages as well as of FR serum have shown there was elevated formation/release of this protein due to dust exposure (Nolan et al. 2012; Weiden et al. 2012, 2013; Schenck et al. 2014). How increases in MDC might relate to changes in heart size/pathologies in the dust-exposed rats here is not readily clear. Normally, MDC released by dendritic cells and macrophages induces effects by interacting with cell surface receptors for chemokines, including CCR4 (Yoshie and Matsushima 2014). Among various T-cells, CCR4 is predominantly expressed by $T_H2$ cells and T-regulatory ($T_{reg}$) cells. In the absence of inflammation, CCR4 is expressed predominantly by $T_{reg}$ cells; thus, CCL22 is important to $T_{reg}$ cell migration (Iellem et al. 2001; Sather et al. 2007) and also would seem to play a role in how these cells could impact on development of cardiac/cardiovascular diseases (reviewed in Meng et al. [2016] and Björkbacka [2016]). At this point, changes in circulating $T_{reg}$ cells in the WTC dust-exposed rats remain to be confirmed.

In a similar unexpected manner, circulating levels of NOV/CCN3 were increased in dust-exposed rats. CCN is a family of secreted extracellular matrix-associated signaling proteins that mediate diverse cell functions (Lin et al. 2003; Yeger and Perbal 2007). Acting as cell adhesion substrates, CCN3 (with CCN1 and CCN2) can induce fibroblast apoptotic death (Chen and Lau 2009); thus, increases in CCN3 should suggest potential adverse pathologies in the heart. On the other hand, Lin et al. (2010) suggested CCN3 may have an important function in *limiting* effects

of pro-inflammatory cytokines and also cause reductions in monocyte adhesion to cells; if so, increases in CCN3 should suggest potential positive impacts on the heart. In an absence of robust literature to support positive/negative impacts on cardiac/cardiovascular status from increased levels of CCN3, it is currently unclear what this particular finding in dust-exposed rats portends.