1102-05-196 **Jacob Manske***, 1979 Milky Way, Verona, WI 53595, and **Jeremy Alm**, Jacksonville, IL 62650.
Highly constrained edge-colorings of complete graphs, part II.

In this continuation of Part I, we discuss recent progress on several problems.

Let $\mathcal{C} = \{r, b_1, \ldots, b_n\}$ and let $\mathcal{T} = \mathcal{C}^3 \backslash \{b_1, \ldots, b_n\}^3$. Thus r is a *flexible color* in $\mathcal{T}$. Alm, Maddux, and Manske showed in 2007 that $\mathcal{T}$ was realizable for all n using probabilistic methods. Recently, Alm and Sexton showed that for $n = 2$, $\mathcal{T}$ is realizable on K_{8192}.

For $\mathcal{T}_1$, it was known until recently only that $\mathcal{T}_1$ was realizable for $1 \leq n \leq 7$. The authors showed in 2013-14 that $\mathcal{T}_1$ is realizable for all $n \leq 400$, except possibly $n = 8$ and $n = 13$. Finally, the authors solved one of the two remaining minimal cases of the *flexible color conjecture*, where there are two colors, *red* and *directed blue*, and the only triangle that is forbidden is the "cycle" $\langle \overleftarrow{b}, \overrightarrow{b}, \overrightarrow{b} \rangle$.

All of these recent results were obtained using computational methods on finite groups. (Received July 28, 2014)