12.62 A carbocation is resonance stabilized when it is adjacent to an oxygen atom:

\[
\begin{align*}
\text{Resonance stabilized} \\
\end{align*}
\]

Such a carbocation is even more stable than a tertiary carbocation. Using this information, propose a mechanism for the following transformation exhibited by a diol. This reaction is called a pinacol rearrangement:

\[
\begin{align*}
\text{HO} & \quad \text{OH} & \quad \xrightarrow{\text{conc. H}_2\text{SO}_4, \text{Heat}} & \quad \text{C} \\
\end{align*}
\]