Clicker Records will be posted this weekend.

Students with Pad Numbers 413 and 460 have no ID or name (and thus 0 points.)

Office Hours:
I have an office hour on Tues 10:45 am - 11:45 am in Chem Room 759. This is to handle primarily administrative details. I will hold a general office hour on Friday 12:50-2:10 pm in the Chemistry Learning Center, Chemistry Room 312.

The Chemistry Learning Center is the place to go for help with problem sets, lectures and workshops. The TAs will have office hours there throughout the week.

Hours will be posted on the web site soon.

Propose a synthesis of this diene. Your starting materials can have four or fewer carbons.

Which synthesis would work?
A i.
B ii.
C iii.
D i. or ii.
E i. or iii.
F ii. or iii.
G i. or ii. or iii.

Another factor in the stability of dienes is the short and strong sp²-sp² sigma bond.

Dienes want to be planar

In Butadiene s-trans is more stable than s-cis, but you would still have a small percentage of cis.

\[
\frac{-15 \text{ kJ/mol}}{5.7 \text{ kJ/mol}} = \log(K_{eq}) = -2.6 \quad K_{eq} = 10^{-2.6} = .002
\]

But add substituents and the cis becomes impossible.

Which of these two is the most stable?

What is the main product?

What is the second product?
The Diels Alder reaction is a \([2\pi + 4\pi]\) cycloaddition reaction.

4\(\pi\) - the diene  
2\(\pi\) - the dieneophile

The reaction was discovered by German chemists, Otto Diels and Kurt Alder.

They received the Nobel Prize in 1950.
Arrows can go either way

The diene must be in the \textit{s-cis} configuration.

\begin{align*}
\text{s-trans} & \quad 0 \text{ kJ} \\
\text{+} & \quad 24 \text{ kJ} \\
\text{+} & \quad 15 \text{ kJ}
\end{align*}

Some cyclic dienes work very well because they are “locked” into the \textit{s-cis} conformation.

But with big substituents sometimes you cannot make \textit{s-cis}. No Diels Alder possible.