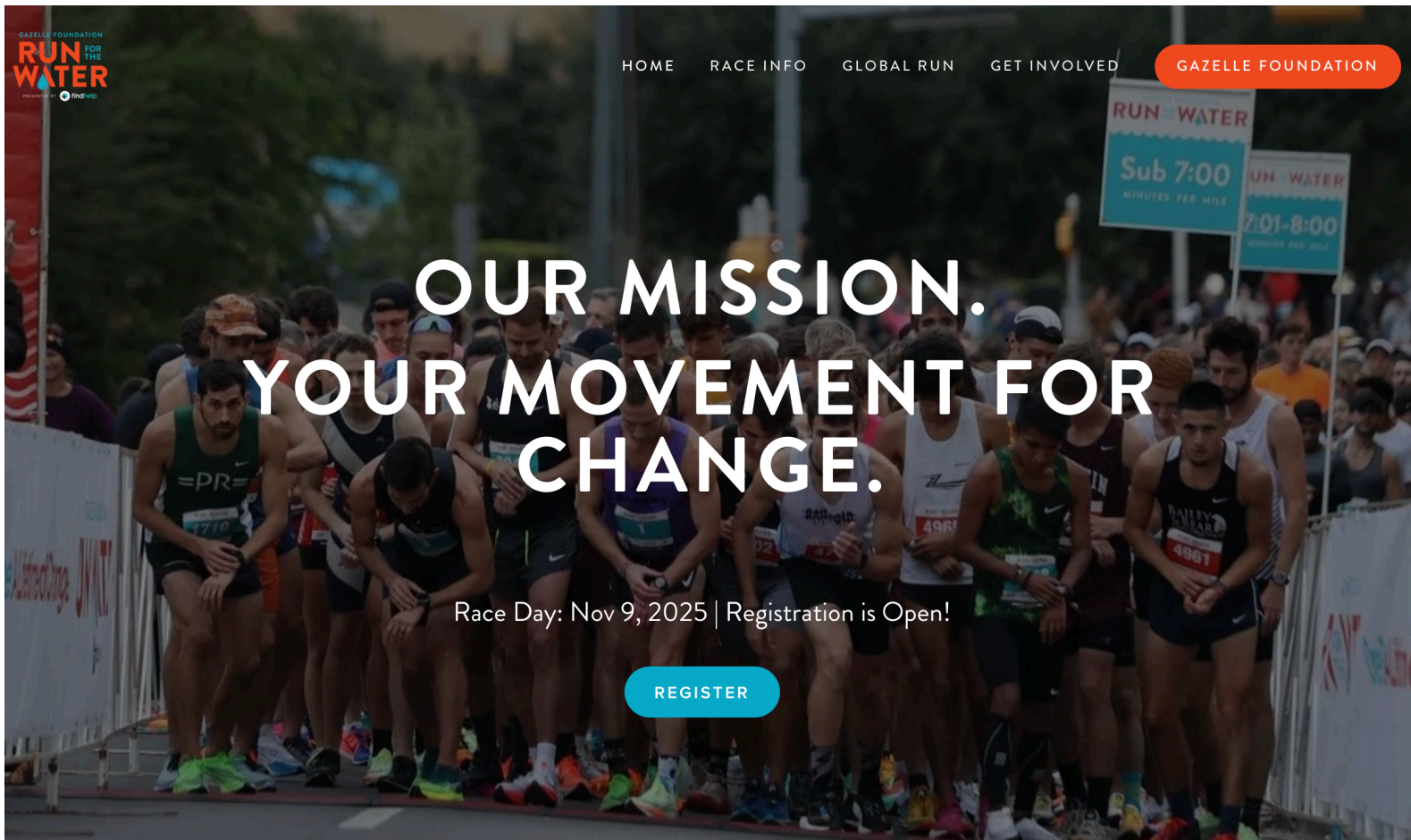


and if you have the resources you
can help change the lives of others!



Dr. Brent Iverson's Organic Chem Class
Gilbert Tuhabonye | Run For The Water
Gilbert will be there at 12:28. He knows your class begins at 12:30
Race date: Sunday Nov 9, 2025
Race website: runforthewater.com

Background details & special pricing:

- 15+ years Dr. Iverson's students have participated
- **SPECIAL PRICING FOR UT:** \$30 to register for 5k = clean water for 1 person.
 - Discount code: R4TW25HOOKEM
 - When registering for 5k: join Dr. Iverson's team: OChem Iverson

Here is Team Ochem Iverson's unique registration link:

<https://raceroster.com/events/2025/102453/run-for-the-water/register?team=871280>

And if you won't be running but would like to support Gilbert and the Gazelle Foundation, you can volunteer at the packet pickup before the race, or during the race you can work at a water stop (water stops 3,4,5 and 6 are going to be staffed by UT students like you!) where you provide water for the runners. You can get to the volunteer sign up by clicking here:

https://raceroster.com/events/2025/102453/run-for-the-water/volunteer?_gl=1*vluhd*_gcl_au*MTczMzQ3MDU3Ni4xNzU5NzA3Mzk2*_ga*MTc3NDA1NjI3Ny4xNzU5NzA3Mzk2*_ga_XSJQX37G0F*czE3NTk5Mzk3ODUKbzQkZzEkdE3NTk5NDAYMjckajQzJGwwJGgw

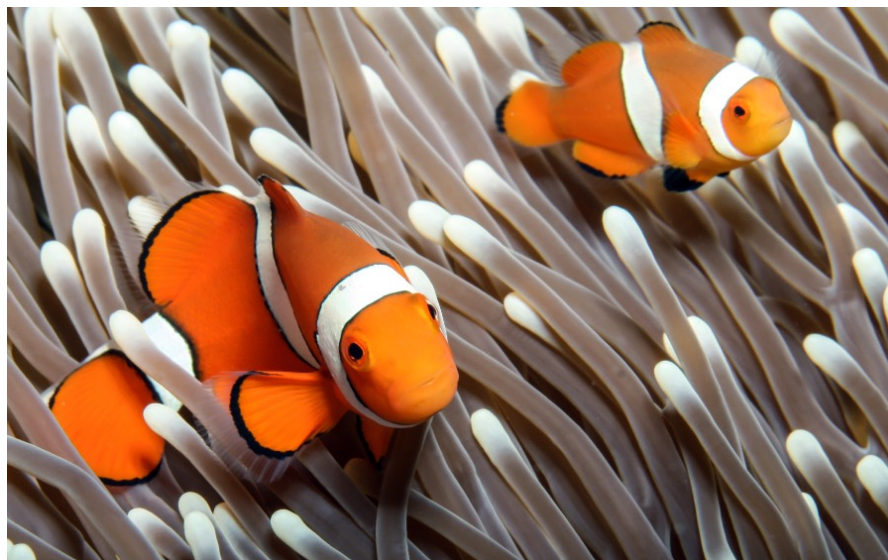
From the Gazelle Foundation: "Water stops 3, 4, 5 and 6 are labeled "UT only". If students are more interested in packet pickup and we don't get quite enough to fill those spots, no worries. We'll supplement with other interested volunteers. Just wanted to make sure your students get first dibs and the chance to be with each other. 😊"

Tutors Reimagined

Organic Chemistry is a hard subject. For that reason, we are giving you two additional resources to help you **succeed beyond your wildest dreams**. I am not exaggerating, these are both effective!

First: Arushi Arora, an Actual Human

Tutor This course is supported by Supplemental Instruction (SI) sessions run by a former very successful student in my class, Arushi Arora, working with the Sanger Learning Center. SI Sessions are led by experienced and trained students who develop engaging, structured, small-group activities for you to work through. These sessions are at Monday 8:00 pm-9:00pm @ JES A305A Thursday 3:30-4:30 pm @ JES A215A



Second: AI Tutor

UT Sage is an AI tutor platform developed here at UT! We've created a tutorbot specifically for this course that can answer syllabus questions, clarify complex topics, and reinforce learning. **It's trained on the course textbook and resources** and allows you to ask questions in plain language and receive clear explanations informed by the course materials. Please use it as flexible resource for reviewing material or getting unstuck outside of class while being aware that generative AI tools can make mistakes. You can access your UT Sage tutor anytime in the Canvas navigation menu or by clicking here.

Top Stories



Kris Kristofferson's 8 Children: All About the Late Country Singer's Sons and Daughters



Inside the Horrifying Story of a 13-Year-Old Who Was Stalked by Teacher's Aide Before Going...



Zookeeper 'Mauled' to Death by Lion After Leaving 'Safety Protection Gate Open' During...



Lawyer for Sean Combs Accuser Claims She Saw 'High-Profile' Person Featured in Tape...

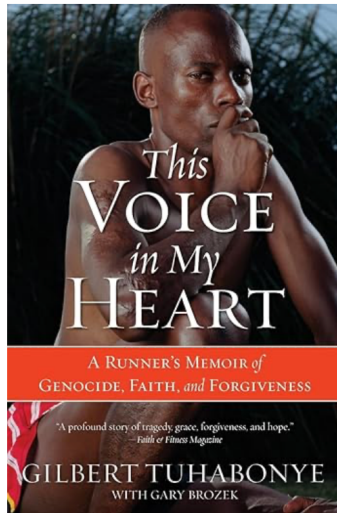
Coach Almost Died in Burundi Genocide — Now He Spreads Hope: 'Vengeance Isn't the Solution'

"You'd think he should be bitter and angry," says Jenna Bush Hager, one of Gilbert Tuhabonye's former runners. "But he channeled that through running and teaching. To me, he embodied pure love and grace."

By [Eileen Finan](#) | Published on November 12, 2021 01:00PM EST



Gilbert Tuhabonye. PHOTO: HOLLY REED PHOTOGRAPHY



This Voice in My Heart: A Runner's Memoir of Genocide, Faith, and Forgiveness Paperback – May 22, 2007

by [Gilbert Tuhabonye](#) (Author), [Gary Brozek](#)

4.7 ★★★★★ 171 ratings

[See all formats and editions](#)

Gilbert Tuhabonye is a survivor. More than ten years ago, he lay buried under a pile of burning bodies. The centuries-old battle between Hutu and Tutsi tribes had come to Gilbert's school. Fueled by hatred, the Hutus forced more than a hundred Tutsi children and teachers into a small room and used machetes to beat most of them to death. The unfortunate ones who survived the beating were doused with gasoline and set on fire. After hiding under burning bodies for over eight hours, Gilbert heard a voice inside saying, "You will be all right; you will survive." He knows it was God speaking to him. Gilbert was the lone survivor of the genocide, and thanks his enduring faith in God for his survival.

Today, having forgiven his enemies and moved forward with his life, he is a world-class athlete, running coach and celebrity in his new hometown of Austin, Texas. The road to this point has been a tough one, but Gilbert uses his survival instincts to spur him on to the goal of qualifying for the 2008 Olympic Summer Games. **THIS VOICE IN MY HEART** will portray not only the







Fall of 2010



There were 137 runners this year. Great job!



12/11/2010

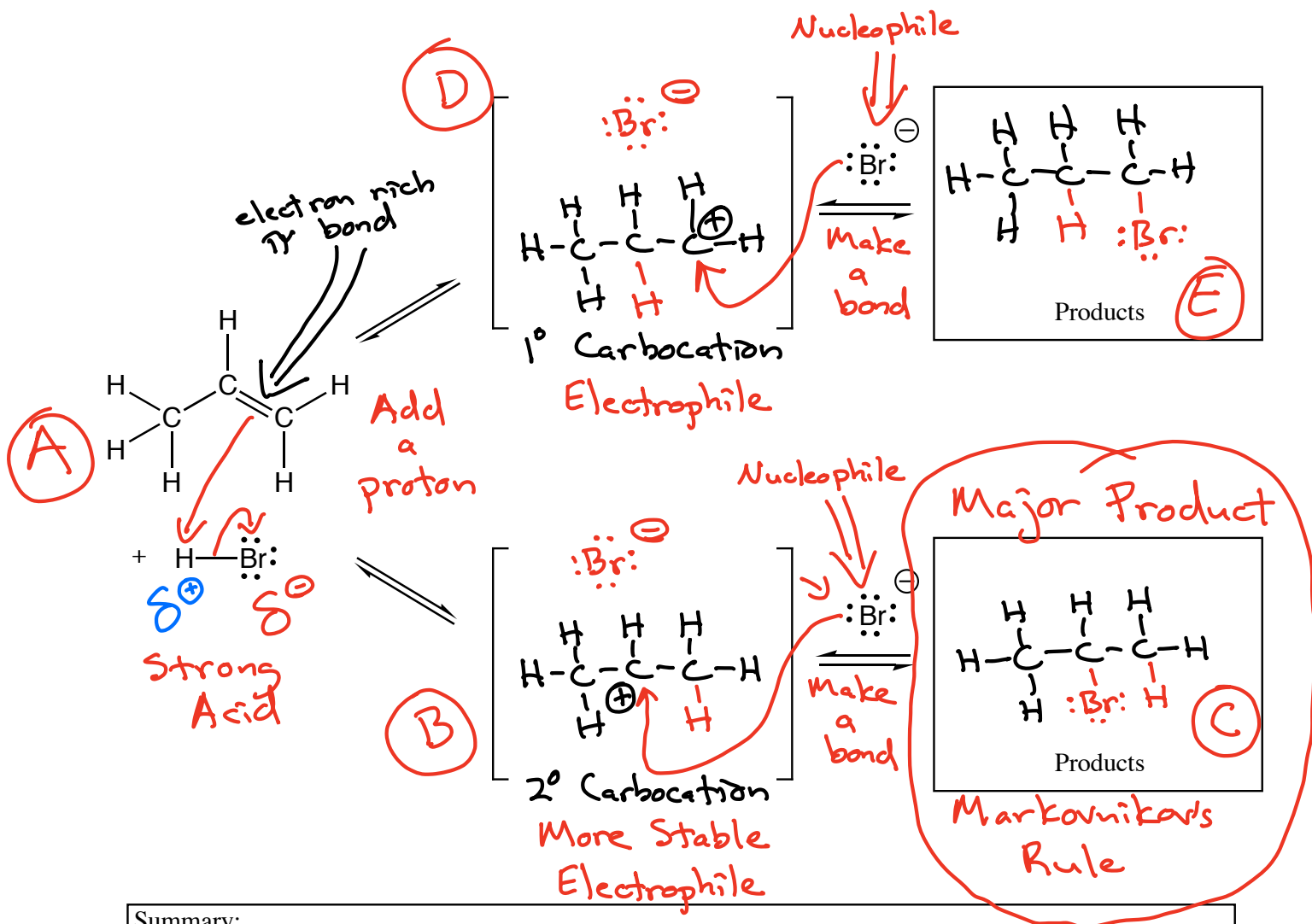
Dear Dr. Iverson,

I have a story you should tell to your class next year when trying to get them to run.

Today I woke up at 9:25. My Genetics final started at 9:00 and the professor ~~threw~~ has a no-entry policy after @ 30 minutes of the exam. Luckily I sprinted from my apt. over to the room in 3 minutes and got to take my final. Had I not trained for ~~the~~ Run For The Water, I probably would have not made it on time and failed my class. So, thanks a million for inspiring me to run! It's already helped my future!!

Addition of H-X to an Alkene

X = Cl, Br, I
but not F

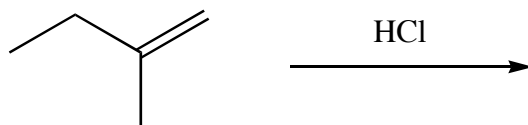


Summary:

Regiochemistry:

Stereochemistry:

Example:



Regiochemistry → Which constitutional isomer is made in largest amounts in a reaction

→ For H-X addition this is explained by Markovnikov's Rule



Stereochemistry → Which of the possible stereoisomers are formed?

→ If a new chiral center is made from a molecule (the alkene) that itself is NOT chiral → You end up with a racemic mixture.

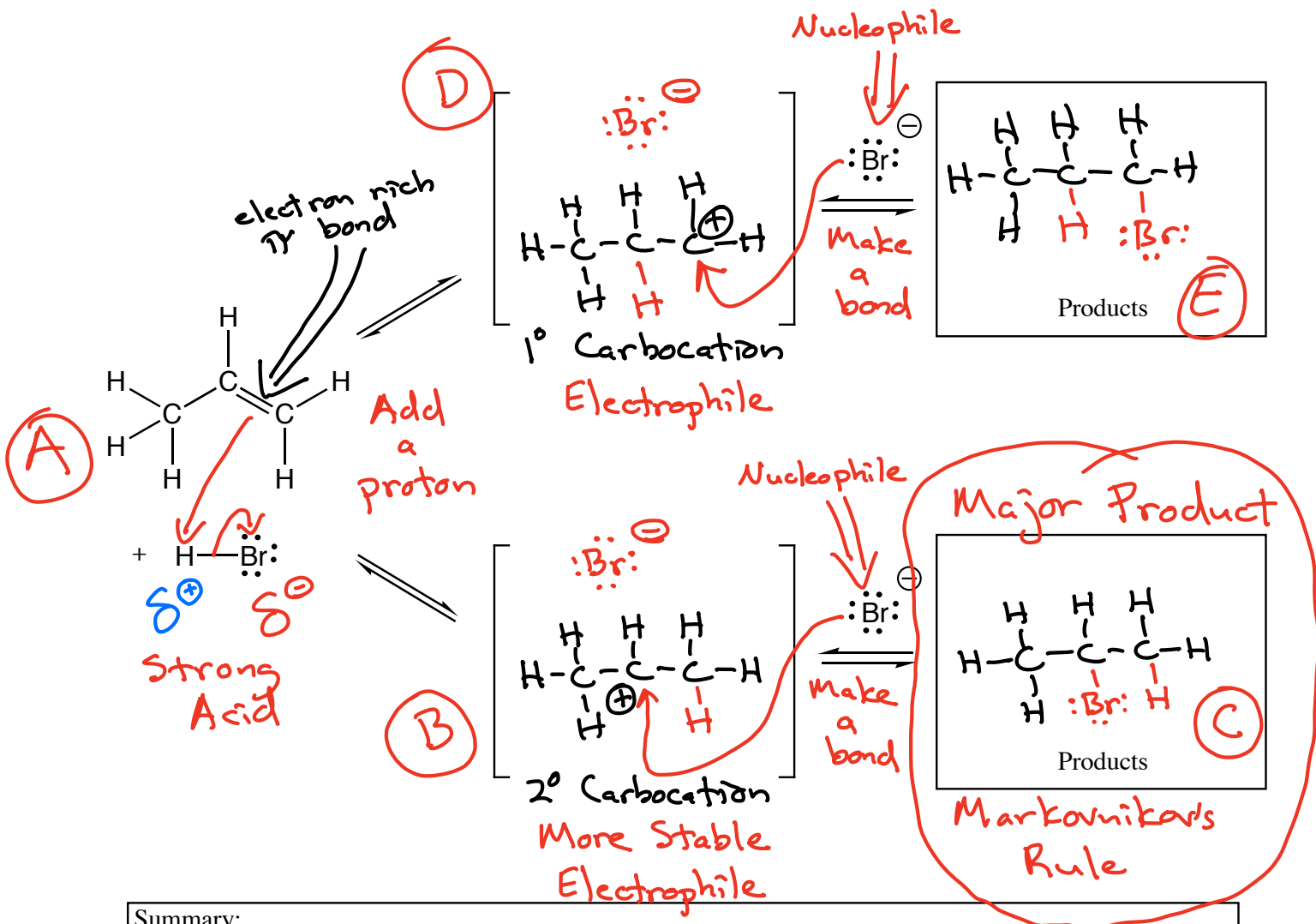


Time capsule → The stereochemistry of H-X addition to an alkene is MIXED as H and X can end

up on both the same (cis, syn) and opposite (trans, anti) sides of the original double bond

Addition of H-X to an Alkene

X = Cl, Br, I
but not F



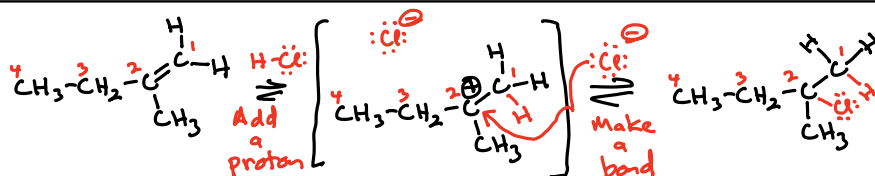
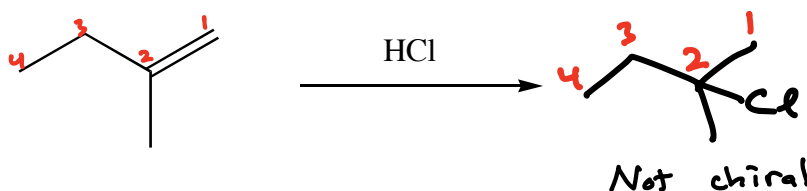
Summary:

The alkene π bond reacts with H-X to add a proton to create a carbocation intermediate that makes a bond with X^- to give the product

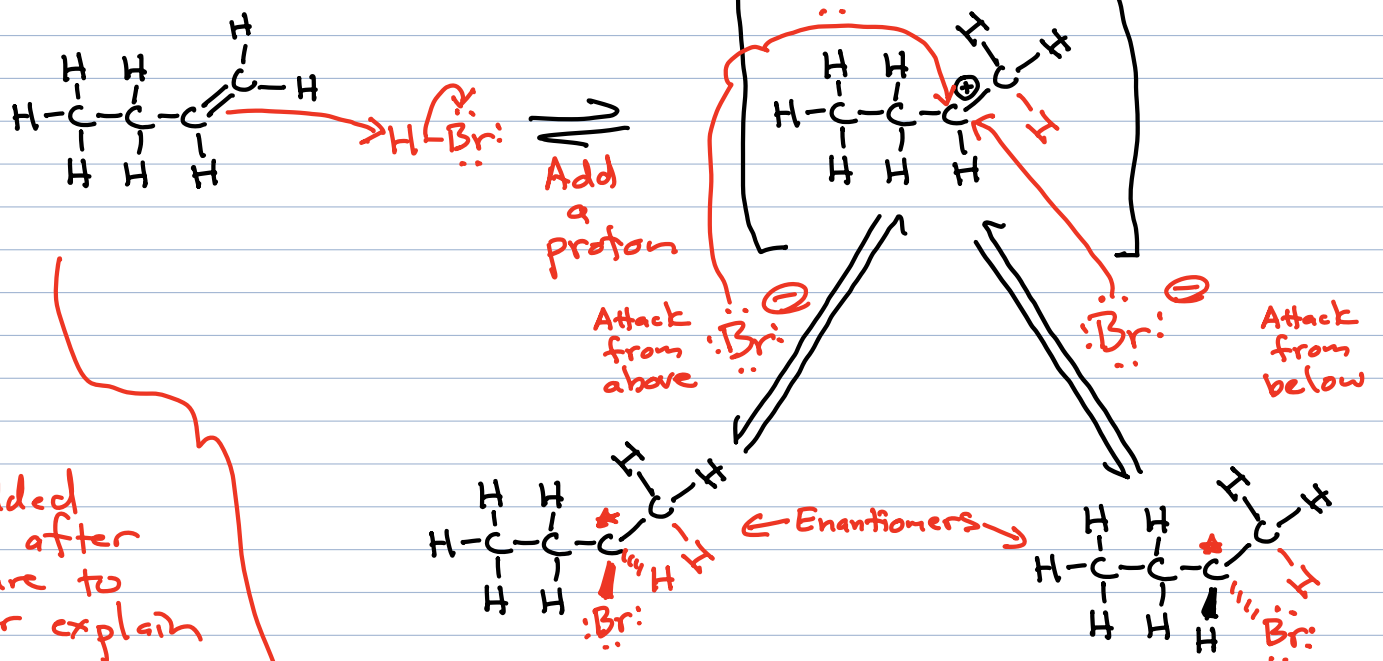
Regiochemistry: **Markovnikov's Rule**

Stereochemistry: **Mixed (time capsule) → Racemic Product**

Example:



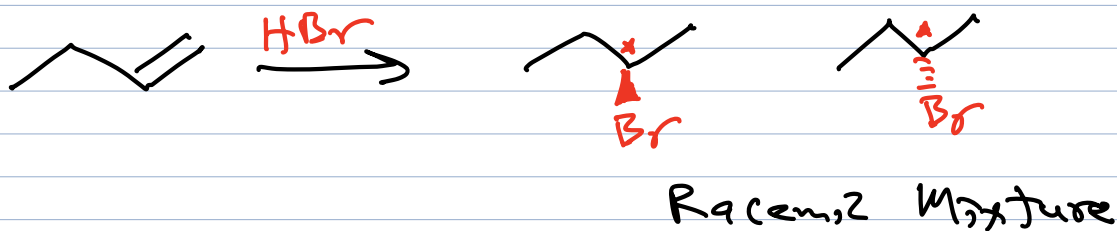
Example:



I added this after lecture to better explain

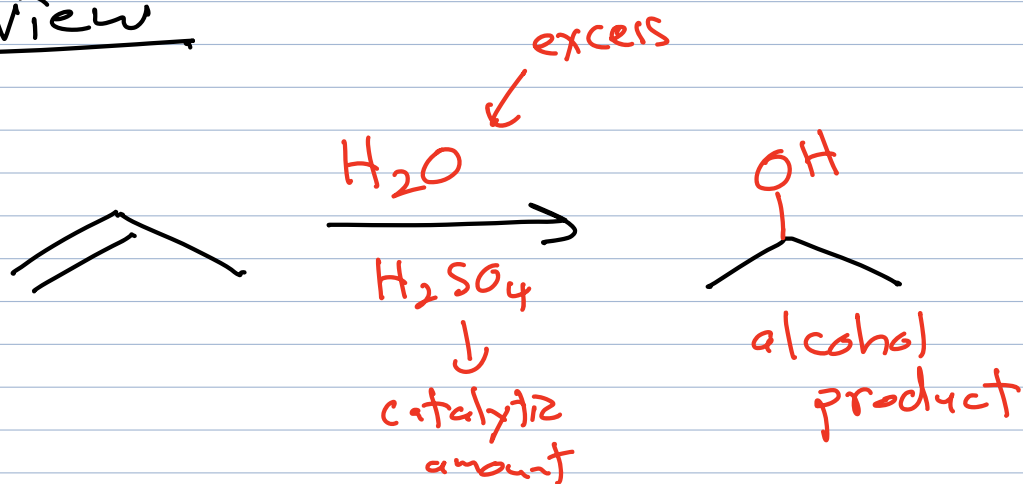
Racemic Mixture
It is equally likely to make either enantiomer

Also written as



New Reaction: $\rightarrow$ "same song, different verse"

Overview



The 4 Most Important Mechanistic Elements

The following are expressed from the point of view of the carbon-containing molecule taking part in a reaction

1) **Make a bond** between a nucleophile and electrophile.

⇒ A nucleophile and electrophile are both present and a bond can be made.

2) **Break a bond** to give stable molecules or ions.

⇒ None of the other possibilities are likely and the fragments produced are relatively stable

3) **Add a proton**

⇒ Acid is present or the molecule is a strong base.

4) **Take a proton away**

⇒ Base is present or the molecule is a strong acid.

Notice → 1) is the reverse of 2) and
3) is the reverse of 4) and vice versa

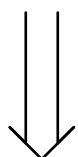
Mechanism Summary

The following questions and mechanistic elements are described from the point of view of the carbon-containing reagent, written in the form of a flowchart.

Is there a strong acid present or is the carbon-containing reagent a strong base?

YES
⇒

Add a proton

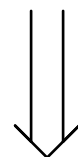


NO

Is there a strong base present or is the carbon-containing reagent a strong acid?

YES
⇒

Take a proton away

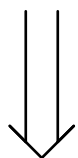


NO

Are there a nucleophile and electrophile present?

YES
⇒

Make a bond

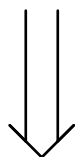


NO

Can a bond be broken to create stable molecules or ions?

YES
⇒

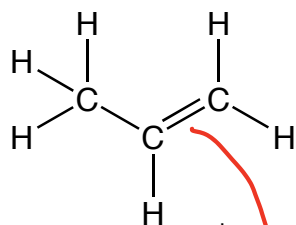
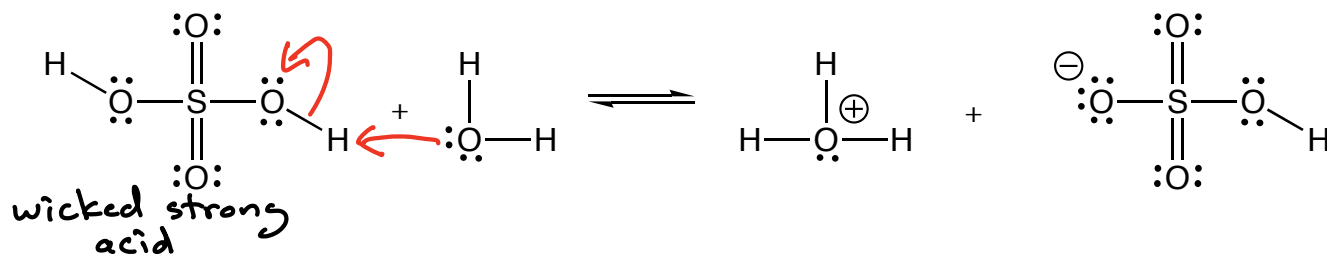
Break a bond



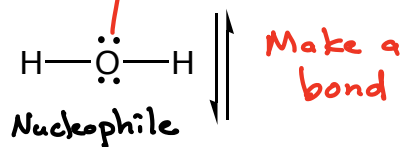
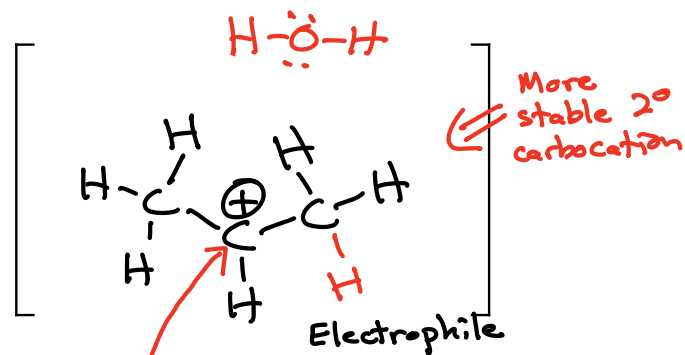
NO

Think about alternative mechanistic elements

Acid-catalyzed Hydration of an Alkene

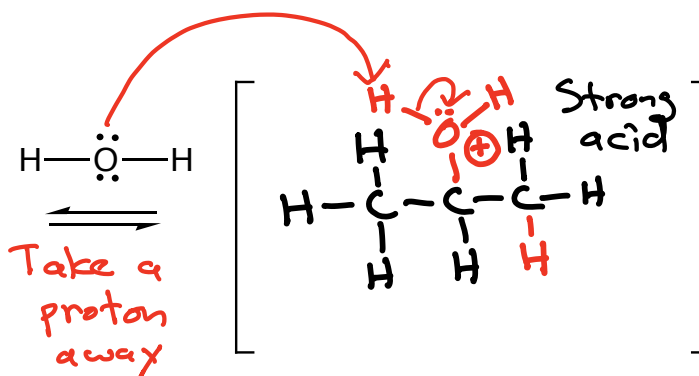
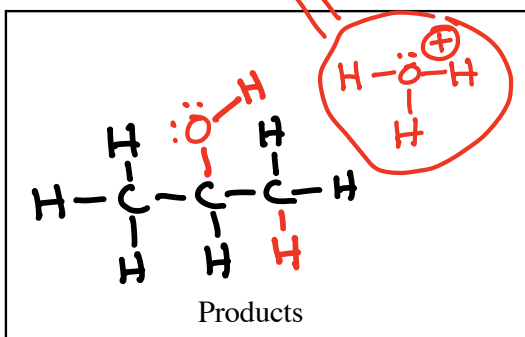


Add a proton



Catalytic in Acid!
 $\Rightarrow$ The $[\text{H}_3\text{O}^+]$ does not change during the reaction

strong acid

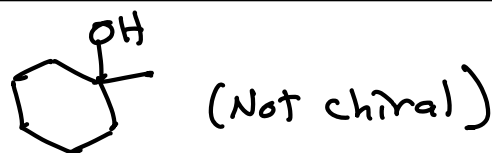
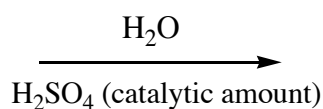
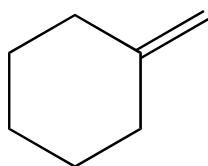


Summary: Proton adds to make a carbocation intermediate, water attacks to make a new bond, take a proton away to make the product alcohol. Catalytic in H_3O^+

Regiochemistry: Markovnikov's Rule

Stereochemistry: Mixed (time capsule)

Example:



-OH on more substituted C atom $\Rightarrow$ Markovnikov's Rule

Organic Chemistry is the study of carbon-containing molecules.

This class has two points.

The first point of the class is to understand the organic chemistry of living systems. We will teach you how to think about and understand the most amazing things on the planet!!

Water is essential for life, you will learn why water has such special properties. 8/27/25

You will learn the secret structural reason proteins, the most important molecular machines in our bodies, can support the chemistry of life. 9/10/25

You will learn why when you take Advil for pain, exactly half of what you take works, and the other half does nothing. 9/24/25

You will learn how toothpaste works. 10/6/25

You will learn how a single chlorofluorocarbon refrigerant molecule released into the atmosphere can destroy many, many ozone molecules, leading to an enlargement of the ozone hole.

You will learn how medicines like Benadryl, Seldane, and Lipitor work.

You will learn how Naloxone is an antidote for an opioid overdose.

You will learn why Magic Johnson is still alive, decades after contracting HIV.

You will learn how MRI scans work.

The second point of organic chemistry is the synthesis of complex molecules from simpler ones by making and breaking specific bonds.

You will learn how to understand movies of reaction mechanisms like alkene hydration. 10/8/25

You will learn reactions that once begun, will continue reacting such that each product molecule created starts a new reaction until all the starting material is used up.

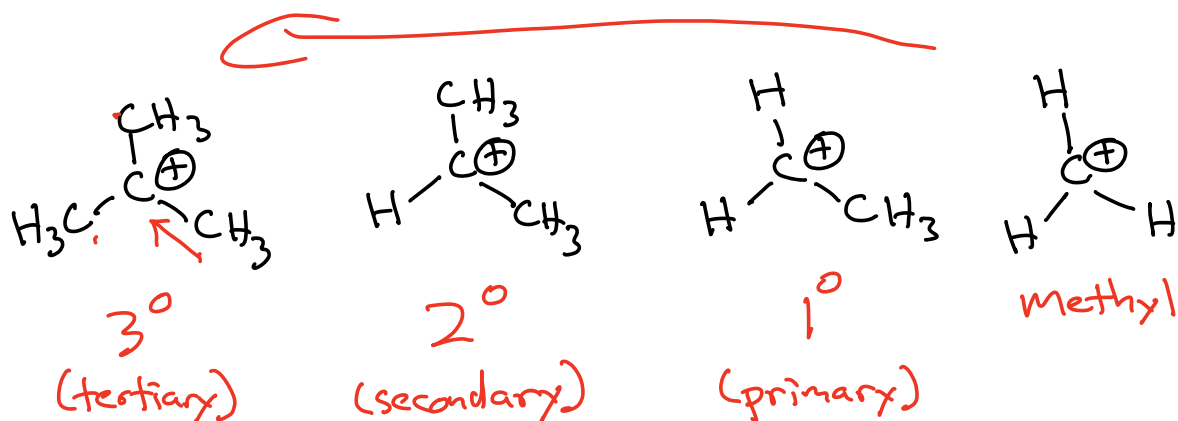
You will learn reactions that can make antifreeze from vodka.

You will learn a reaction that can make nail polish remover from rubbing alcohol.

You will learn how to look at a molecule and accurately predict which atoms will react to make new bonds, and which bonds will break during reactions.

You will learn how to analyze a complex molecule's structure so that you can predict ways to make it via multiple reactions starting with less complex starting molecules.

Carbocation stability $\rightarrow$ the more C atoms bonded to the C^+ the more stable



$\leftarrow$ Hyperconjugation stabilization

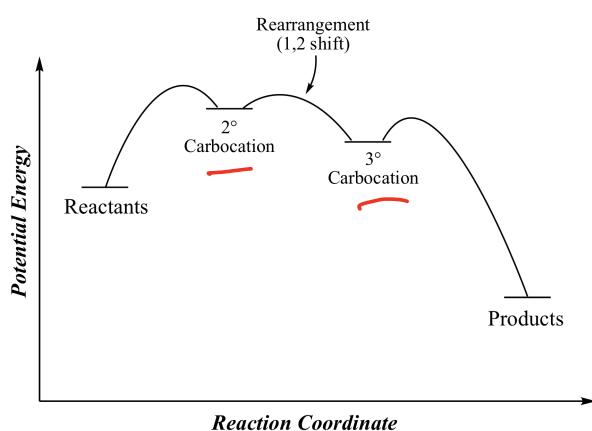
$\leftarrow$ Inductive effect stabilization

$\leftarrow$ Carbocation Stability

Markovnikov's Rule $\rightarrow$ For alkene reactions involving a carbocation intermediate the nucleophile (ex. $:Br:^-$) will make a bond to the more substituted C atom $\rightarrow$ derived from the more stable carbocation



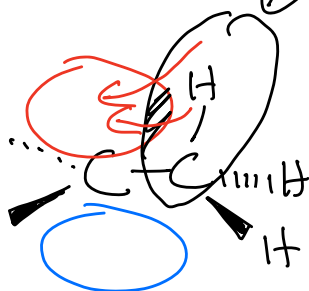
Carbocation intermediates can sometimes rearrange (called 1,2 shift) If a carbocation intermediate of equal or greater stability can be produced by shifting an adjacent H atom (or rarely an alkyl group), **rearrangement** will compete with product formation to give a mixture of products.



Motive → A 3° (tertiary) carbocation is more stable than a 2° (secondary) carbocation

Opportunity → The mechanism is really just hyperconjugation
"taken to the extreme"

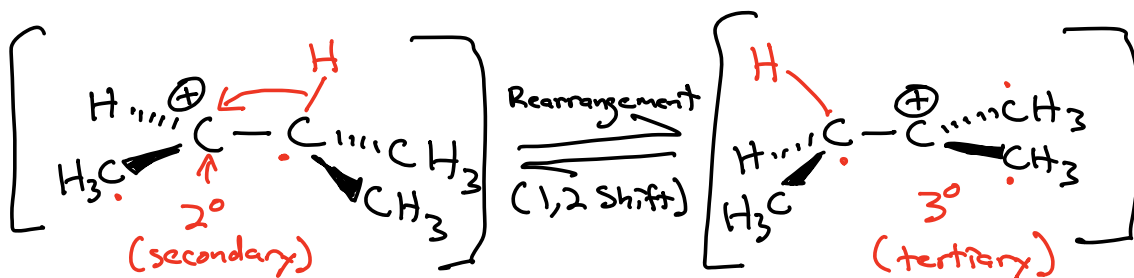
1) Hyperconjugation → overlap of adjacent σ bonding electron density with the empty 2p orbital of a carbocation



delocalizes the $\oplus$ charge

Some electron density of the C-H σ bond is pulled into the empty 2p orbital

(red arrows in the figure)



More Stable Carbocation