

**Amgen Seminar Series in Chemical Engineering**  
in  
Cherry Auditorium, Kirk Hall, 1 PM

**Presents on April 27, 2017**

**Chemistry Inside Brewing Science**

By

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This seminar will address the chemistry that makes up ingredients which create beer and touch on the reactions which take place during brewing.

The basic ingredients that make beer are: barley, hops, water, and yeast. Brewing refers to the series of mechanical processes which leads to fermentation. Home brewers are quite aware of this fact. Applying this process will indeed produce beer however the recipe for creating unique, consistent, great, and satiating beer requires an understanding of the compounds within these ingredients. The basic components remain the same but it's the interaction of compounds between ingredients and their application that develops character in beer resulting in different styles and flavors.

Fermentation requires a sugar source, in the case of brewing that is barley. The grain must first be malted, a process that makes the energy stored in starches, extractable. Hops are more than a just a flower to flavor beer but the only known source of lupulin which provides beer with its distinct character. Water is perhaps the most underappreciated ingredient but because each water source can have its own unique composition it can have the greatest impact on the flavor of beer. The science of water and its role in brewing is vast and d