Course presentation
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Intro to Bayesian statistics
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Bayesian modeling
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Bayesian Inference
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Conclusion
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Bayesian methods
in biomedical research
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Part I: Bayesian theory

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Conclusion
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Course Presentation

Introduce yourself

https://www.menti.com/14uj38ttuj

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https://www.menti.com/14uj38ttuj

https://www.menti.com/8ztu8q7ke1

Bayesian vocabulary

- **paradigm**

- ***a priori***

- ***a posteriori***

- **elicitation**

Course objectives

I **Familiarize** oneself with the **Bayesian framework**:

1. understand and assess a Bayesian modeling strategy, and discuss its underlying assumptions

2. rigorously describe expert knowledge by a quantitative prior distribution

II **Study** and **perform** Bayesian analyses in **biomedical applications**:

1. understand, discuss and reproduce a Bayesian (re-)estimation of a Relative Risk

2. perform a Bayesian regression using **R**, applied to meta-analysis

3. put into perspective the results from a Bayesian analysis described in a scientific articlee

NB : this course is by no means exhaustive, and the curious reader will be referred to more complete works such as *The Bayesian Choice* by C Robert.

Disclaimer

Audience is often **diverse**:
Students with *different backgrounds & different expertise*
will get a **different experience** of this class

Some parts can feel *hard*, *frustrating* or even *not very relevant **to you***.

My goal: *everyone* finds interesting ideas, concept and tools to learn.

For some, the important focus will be the *medical applications*, for others it will be the *programming tools*, or the new *philosophical framework*, or the *statistical tools*...

> OK to feel a bit lost at first
> Things should make more sense as we progress !
> ⇒ **Ask questions !**