MODELING BIOLOGICAL SYSTEMS

INSTRUCTIONS TP-TD2

I - Writing in the scientific community

In groups of 3 to 5 people, you will search the available scientific literature, and write a small scientific report of your findings, with a bibliography. You will be graded on your ability to find publications related to your subject, and to extract and present information from them.

Recommended steps:

- From the subject you chose, extract keywords

- Select one or multiple databases or scientific search engines, and browse through scientific literature

- You will be doing the equivalent of **a very small review**. It requires to browse through a lot of potential articles with a limited time. The usual way to do this is:

  o From your original search, select articles according to their **title**. If the publication looks interesting, keep it
  o From the pool of articles you kept, now use the **abstract** to determine if the publication seems to match your problematic (if you still hesitate, read the conclusions, it may help you)
  o Once you kept only the articles with a promising abstract, read the **full text** of the remaining publications (do not keep too many of them, **reading and understanding an article takes time**), and choose a few of them.

- From the articles that suit the most to your problematic (on average 1 to 3 articles per person), write a small report (5 to 7 pages per group), describe their content, detailing how the problematic is handled or what is proposed by the scientific community, and how the publications are linked to the same central subject.

- Your report should provide your references (e.g. your scientific articles) in the text, and you will include a bibliography at the end of the document. For this report, you will use the **AMA (American Medical Association) reference style.**

- The classic structure of an article is highly suggested

The goal of the exercise is for you to browse through scientific literature, to extract useful information from it and to present it in an orderly manner. Do not expect to find a good answer or a bad answer, you will find information, more or less relevant to your topic. **The objective is to pinpoint data you think will provide an interesting point of view on your problematic, and to link it to your subject and your other articles accordingly.**

Provide the source of everything you use or write (graph, information, hypothesis or fact, etc ...) and a bibliography (AMA reference style).
Your report will be written in **English** (be careful if you use French to English translation). Please do not paraphrase abusively.

You will send a **.pdf file and the original file**. You have 3 hours of Tutorial class dedicated to this work. Your work is to send on the **7**th **of Novembre at 23h59.**

II - Proposed research topics

All diseases can be chosen but the articles have to be related to some mathematical or numerical models.

In case your lost, here is a suggestion :
Work on a largely spread infectious disease of your choice (examples: Ebola; Cholera; Malaria; Tuberculosis; Plague; AIDS; etc.). Write a report about the propagation models of the disease you chose, about how it spreads across the population affected.

If the topic seems too vast, you can focus on a specific model, a single region or country, talk about the differences between models or between 2 regions, etc... The main objective is to find publications related to your topic, and to extract and present useful information from them. Do not try to be exhaustive, you will find a lot of material. Focus on one topic, and present the different scientific hypothesis on it, or the scientific consensus if a single answer emerges from all your publications (if you are unsure about your topic or the disease you chose, you can always ask for my opinion).