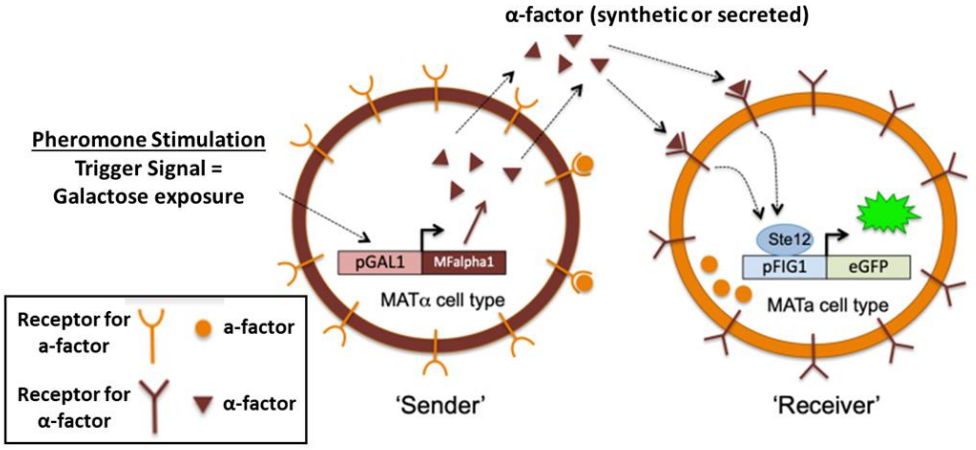
Phero-MolCom

Yeast Pheromone Testbed for Molecular Communications

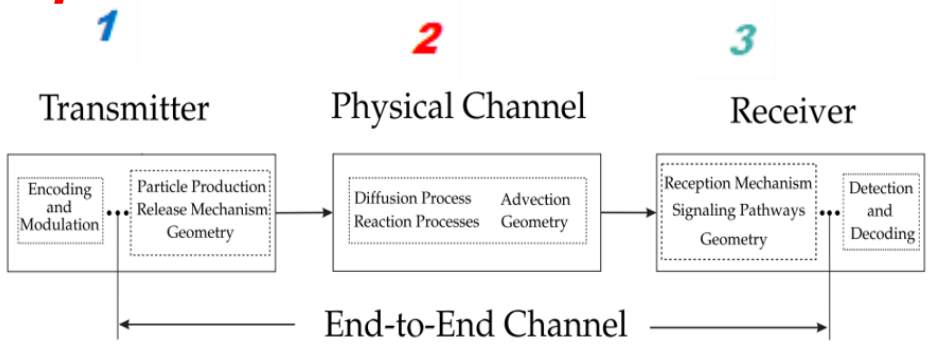
Our purpose

- Yeast cells as communicating nanomachines.
  - Sender cell.
  - Pheromone molecules (carrier signal)
  - Receiver cell.
- End-To-End mathematical modelling of the yeast mating process in yeast cells.
- Validation of theoretical findings by extensive experimental trials using in-house engineered yeast cells.
- Investigation of yeast cell-to-cell communication techniques (pheromone molecules act as the carrier signal).

Our system model (biology perspective)



Equivalent communication model



Our experimental platform

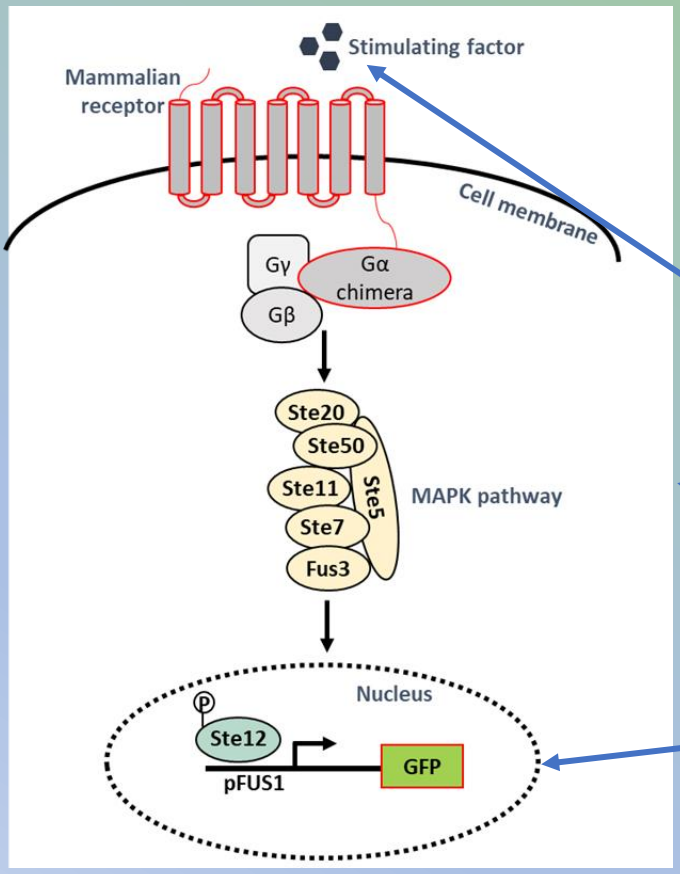
https://drive.google.com/file/d/1eTJVm736M9YKEi9tC_drza9RUU9E5XWr/view?usp=sharing

Check out our latest publication in IEEE TMBMC

https://ieeexplore.ieee.org/document/10429943

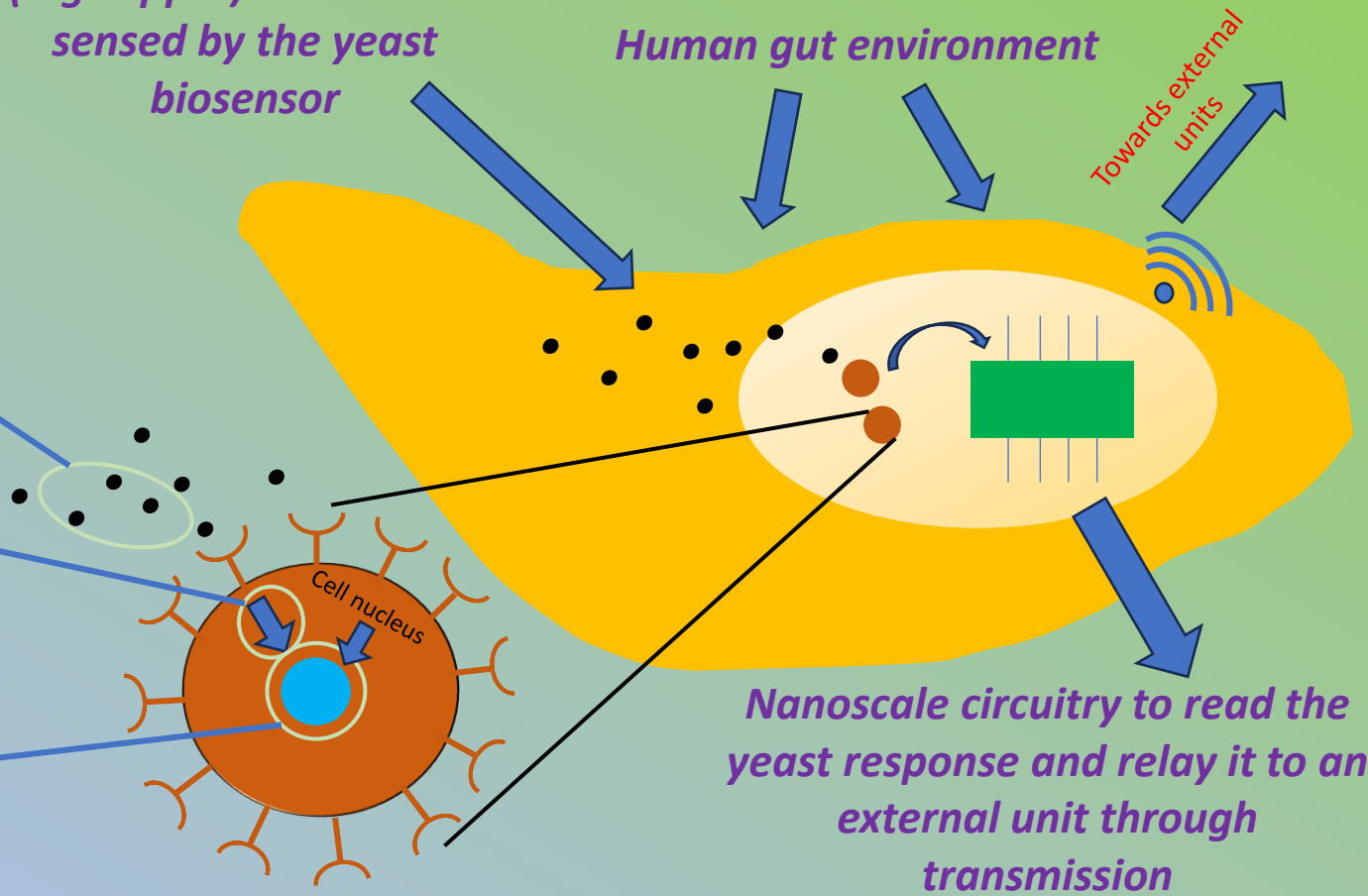
Yeast bio-sensing applications: Our vision for our next steps!

Modified yeast Pheromone Response Pathway to interact with molecules within the human body.



Environment molecules (e.g copper) that can be sensed by the yeast biosensor

Human gut environment



Nanoscale circuitry to read the yeast response and relay it to an external unit through transmission

Other applications include: Targeted Drug Delivery, Biosensing for industrial applications, Virus Detection.

+357 22394394 ext. 46109

http://pheromolcom.frederick.ac.cy/

Kyriakou Matsi Str., Pallouriotissa, Nicosia, 1035, Cyprus

eng.lm@frederick.ac.cy

https://www.linkedin.com/company/pheromolcom-project/