

Spirukit etc.

Ideas for a new project at the Hackuarium

With Alexandra Florin,
Michka Mélo, other DIY Bio Labs, and... ?
Who wants to join?

Objectives:

- A kit to produce Spirulina at home
 - From minimal resources: cheap, available, valorising waste
 - Educational & fun
- Promotion of...
 - ...The idea of turning wastes into resources
 - ... The production of healthy food at home
 - ...The consumption of Spirulina in daily life

Context

- Personal interests to
 - Work together with people!
 - Make science available for a greater social impact
- Company developing “biological life support systems”
 - Open to open-source development 😊
 - Make a product accessible to a larger number

Why that green stuff?

- A super-food complement rich in..
 - Proteins:
ideal amino-acids composition
 - Minerals: very bioavailable + can be enriched
(e.g. Fe, Mg, Ca...)
 - Vitamins (A, B, C, E) and other nutrients
- Autophototrophic
 - ☀
 - => valorises CO₂
- Could help “treat” urine



Matthewjparker - Wikipedia.org

Hello, we're Arthrospira platensis. Here to serve you.

Let's make something useful

Possible users

- Fans of techno
- Schools
 - Children
 - Teenagers - adults
- Urban gardeners, ecologically aware
- Conscious + healthy eaters

To consider: what they want / need

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Possible users

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What they might want / need?

- Interactive functions, to play with parameters
- App to follow the process
- Maximal ease of use
- Beautiful design
- Functional design

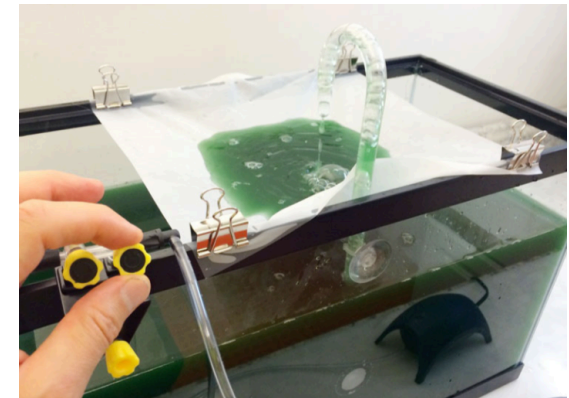
Let's improve what exists

Current DIY kits

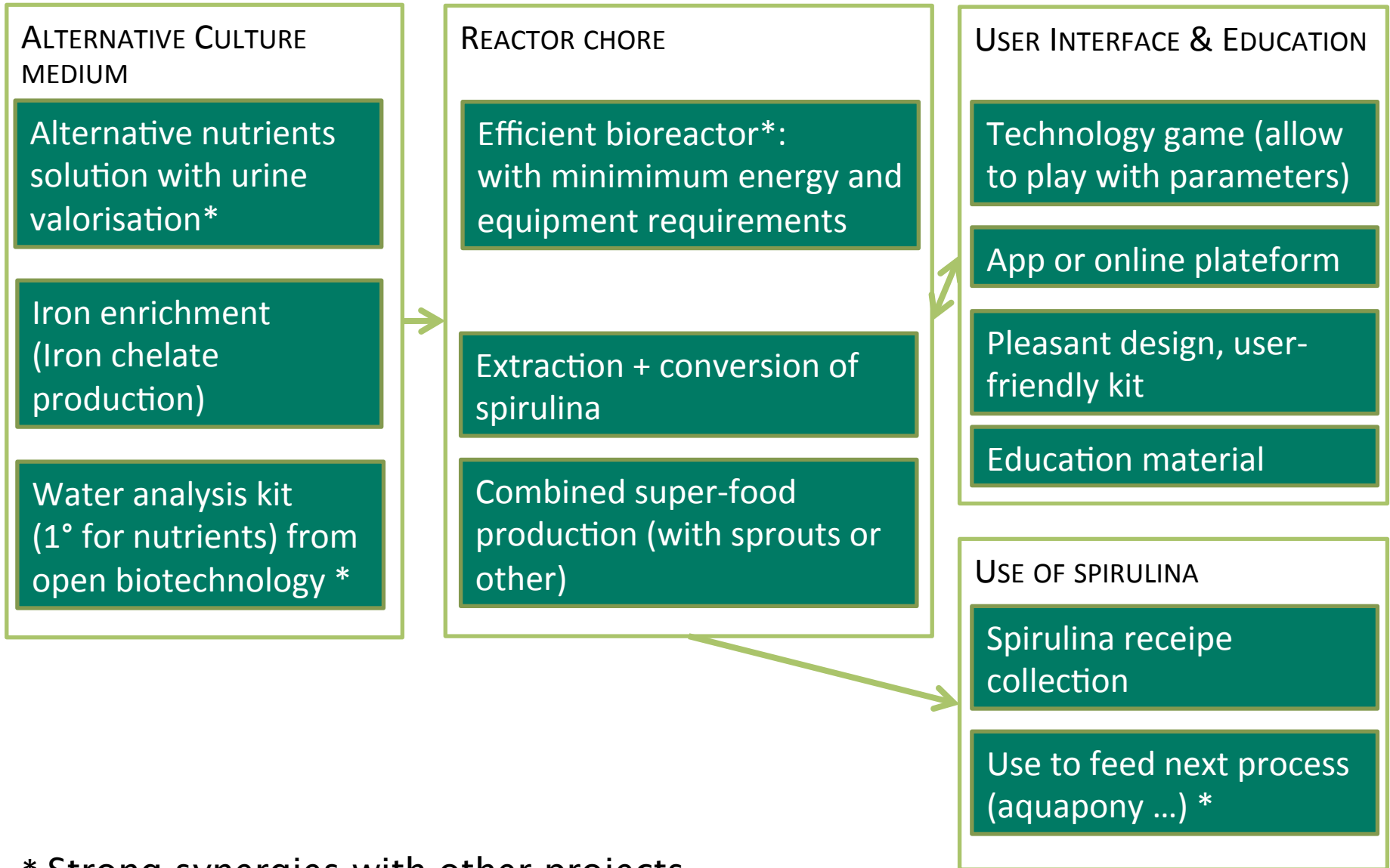
- require to buy
 - Air pump
 - Heater
 - Chemical mix from industrial suppliers
- Are not always that attractive to use...



\$349 - spirulinacanada.ca

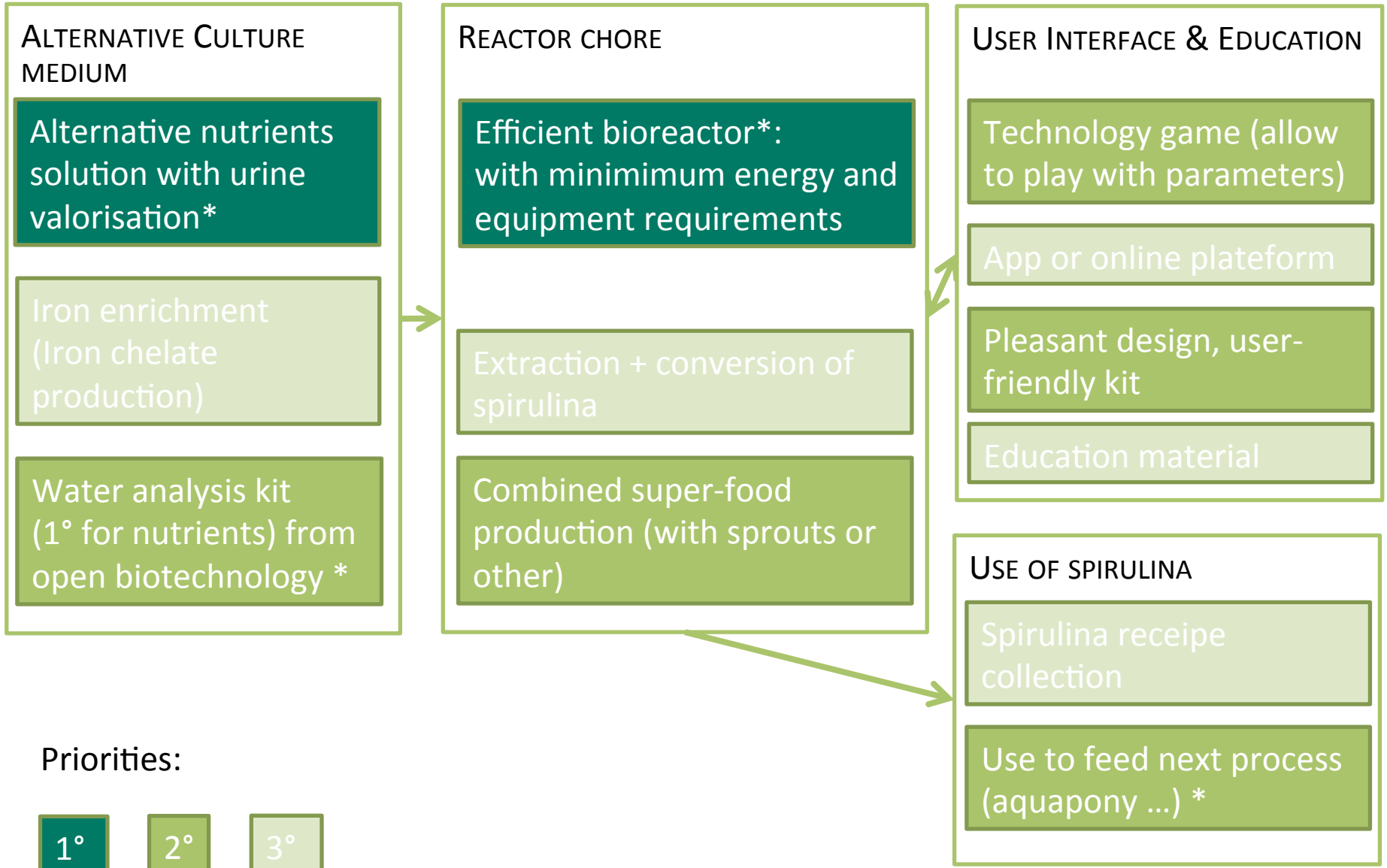


Choice of activities for all interests



* Strong synergies with other projects

Current choice of focus



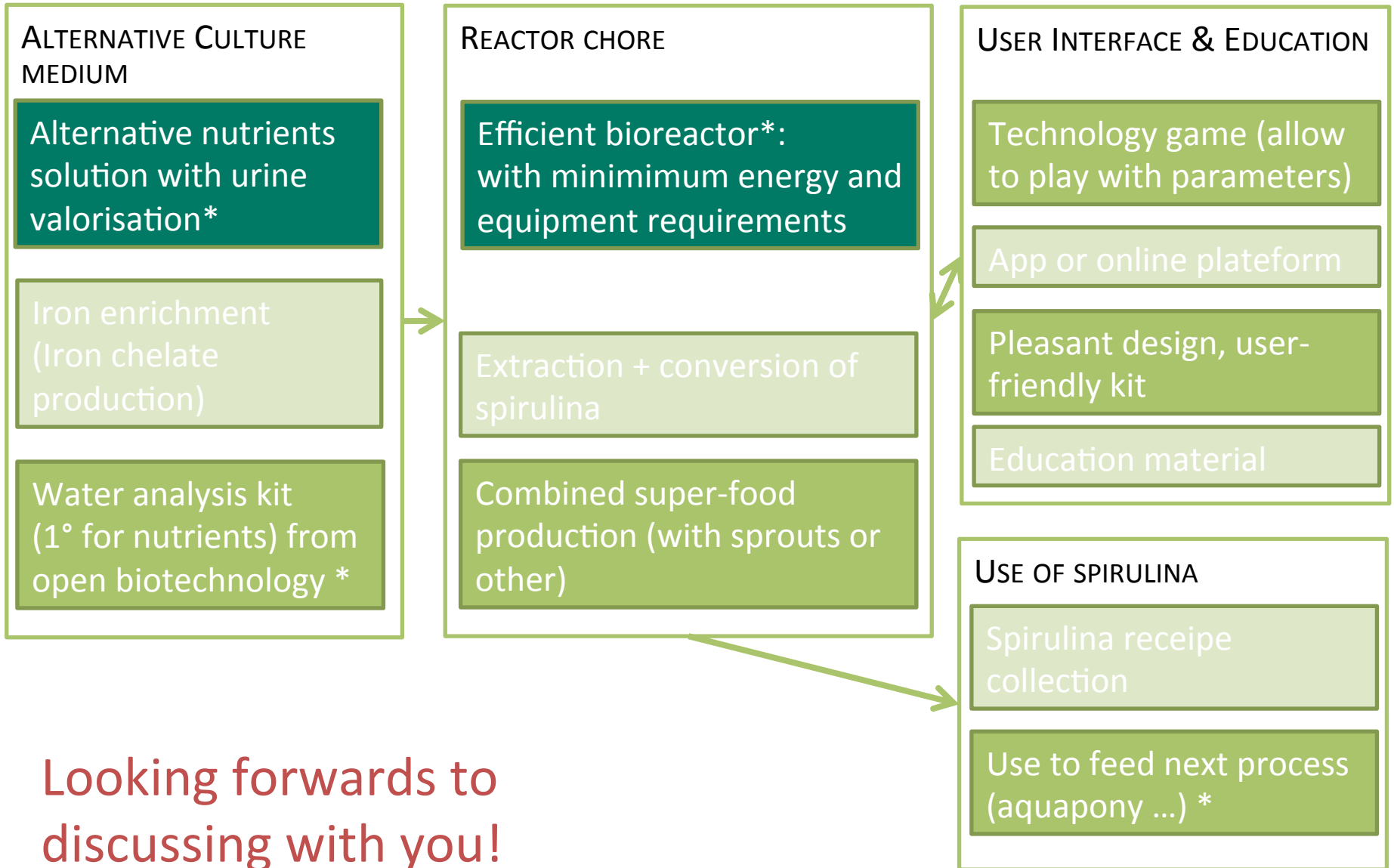
magic pot that uses little to make a lot

- Focus 1: Efficient open bioreactor
- Objectives
 - Cheap / Available components
 - Low energy consumption for: aeration, mixing, lighting, heating
 - Low-tech monitoring

Your pipi is worth gold

- Focus 2: Alternative nutrients solution with urine valorisation
- Objectives
 - Source most components for the nutrients solution from easily available materials instead of lab grade chemicals
 - Treat urine decentrally in order to valorise the nutrients contained for spirulina production

What to join for something?



Looking forwards to discussing with you!

Presentation outline

- Context and objectives (start and targets)
- Benefits of Spirulina (Why that green stuff?)
- Users (Let's make something useful)
- Project components and synergies (Choice of activities for all interests)
- Focus 1: efficient open bioreactor (the magic pot to use little to make a lot)
- Focus 2: Grow from urine's nutrients (your pipi is gold)
- Focus 3: Analysis kit
- Focus 4: Design and educative (make it fun and easy to use)
- My background (What you usually start with)