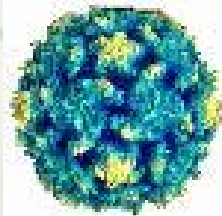




Synbio Concerns : a bottom up process driven by VivAgora



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sont requis pour visionner cette image.

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décompresseur TIFF (non compressé)
sont requis pour visionner cette image.

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VivAGORA
(mettre en culture
les choix scientifiques
et technologiques.)

Synthetic Biology Workshop

19 march 2010 Bruxelles



VIVAGORA : What for?

An NGO engaged in upstream debates
on technologies

- ★ To inform, question and enhance public engagement in political **choices**
- ★ To encourage the **inclusion of citizens** in techno-scientific decision-making bodies
- ★ To support dialogue between stakeholders in order to explore **responsible innovation practices**

ENGINEERING THE LIVING 2.0



co-organisé par

VivAgora iri Centre Pampidou cite

INGENIERIE DU VIVANT 2.0

LA BIOLOGIE SYNTHETIQUE EN QUESTION

CYCLE 2009
DE DEBATS PUBLICS

3 MARS
2 AVRIL
4 JUIN
1ER OCTOBRE
5 NOVEMBRE
3 DECEMBRE

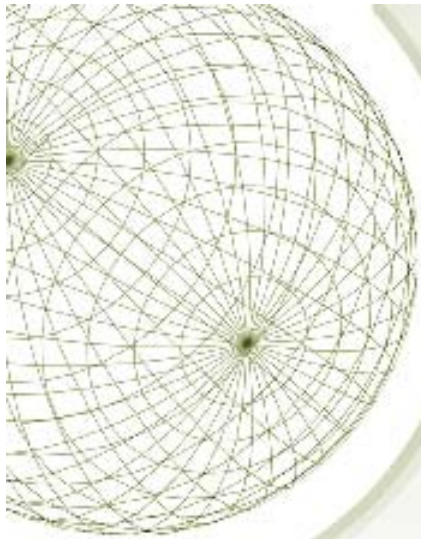
en partenariat avec : Alternatives Economiques Reporters d'Espoirs Le Monde L'arianne inter

Pour plus d'information : vivagora@vivagora.org

★ What?

A complete cycle of debates from march to december 2009

- State of art, **state of mind**
- Cognitive, societal, economic issues
- Is synthetic biology a real **possible goal?** (A. Danchin's dilemma)
- Which **politics** for synthetic biotechnologies?



★ How?

Confronting different expertises and positions

Avoiding the polarization between technophiles and technophobes

Identifying and understanding issues

+ Why?

To bring technological choices in the **public arena**

To build a common knowledge and a **shared future view**
(see our SynbioVillage

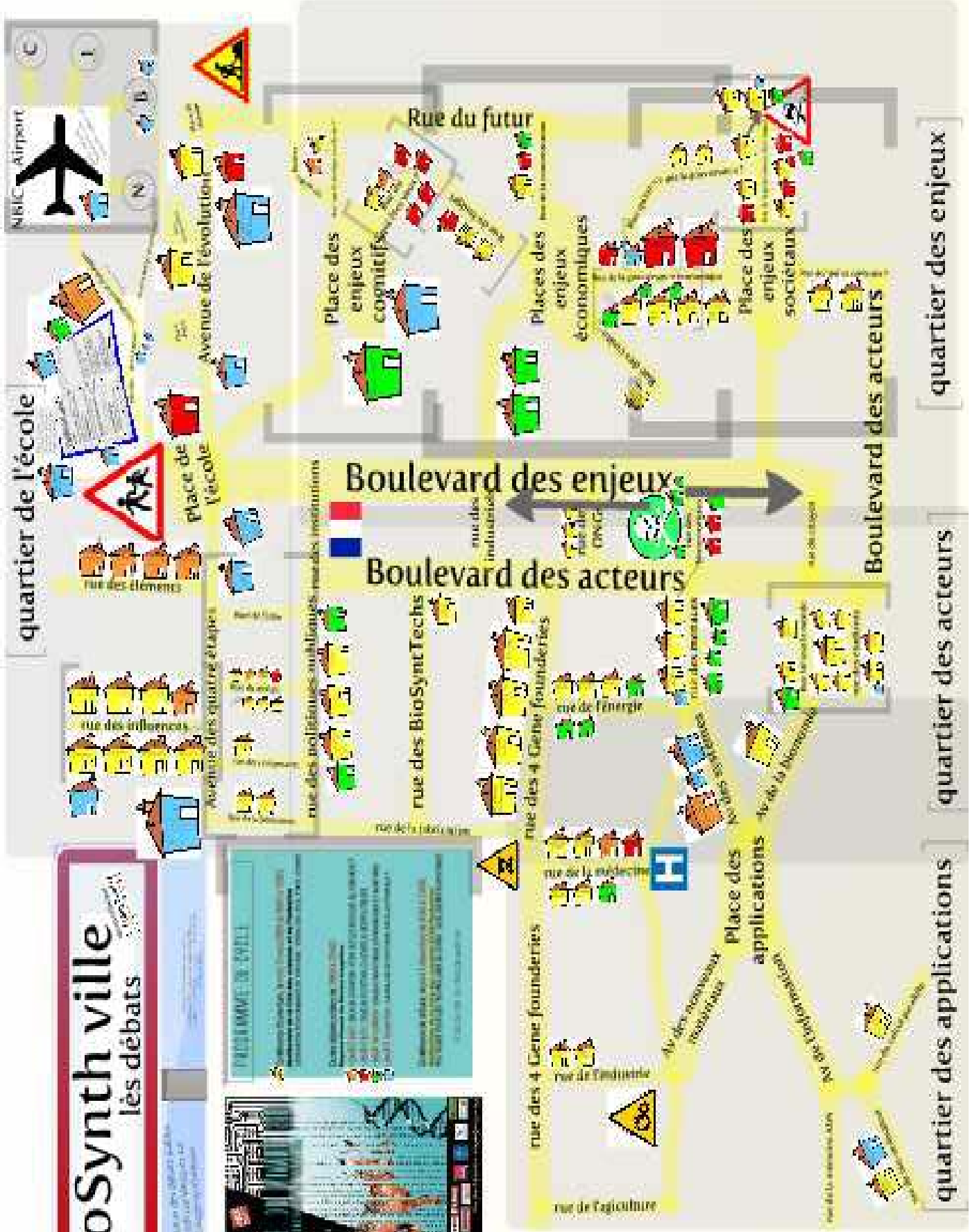
<http://prezi.com/e4x8yskkat1i/biosynth-ville-complete/>) **not only built by experts**

BioSynth ville les débats

PROJET VILLE DE SYNTHE

Le projet de BioSynth ville est un projet de territoire innovant qui vise à créer un écosystème favorable à l'innovation et à l'entrepreneuriat dans le domaine de la biotechnologie.

Le projet est porté par le Centre National de la Recherche Scientifique (CNRS) et le Centre de Recherche Public (CRP) de la région Île-de-France.





COLLECTING 9 MAJOR CONCERNS

- ★ Does synthetic biology create different concerns from GMO issues?
- ★ Are the regulations in force for the GMO **applicable to** synthetic biology?
- ★ What are the **motivations of pioneers?** What about those of users or clients?
- ★ Is it **science or engineering?**
- ★ Are prospects **hype, or bluffing?**



- ★ Do we have **any chance** to obtain a living organism, able to last?
- ★ How can synthetic biology **revolutionize biology** itself ?
- ★ Can the **free access** to genetic sequences be **a threat** ?
- ★ Can we envision a **world governance** ? How could we shape it? Who should be in charge ?



COGNITIVE GOALS

SB is an umbrella for a variety of research practices and research goals (Piecing together a puzzle, Anna Deplazes, EMBO reports 2009/ Knowledge-making distinctions in SB, M. O'Malley, in Bioessays 2007)

with **ambivalent goals** :

Understanding life *versus* Building new organisms

Doing is knowing and knowing is doing

Living organisms considered as machines

- Standards : does it make sense ?
- Modelling : does a complete forecast of behaviour available?



SOCIETAL AND CULTURAL ASPECTS

- ★ A hype? « *making life ?* » (abusing term)
- ★ A playful research (**fun and tinkering** DYbio)/ Asilomar's concerns/ responsibilities
- ★ Life as a **program**/ useful for the « techno-market » (see « Biocapital » from K.S.Rajan)
- ★ **Clash of culture** : Subjugating organisms to the regularity and stability constraints of machines
engineers and computer specialists for **DESIGN, OPTIMIZATION, EMERGING, TINKERING** /
biologists used with **WANDERING, AGING...**



INDUSTRIAL AND ECONOMIC INTERESTS/ HEALTH ISSUES

- ★ Economy of hype (as nano) / **ambient skepticism**
- ★ Bioerrors/ bioterrors/ disseminations
- ★ Controlling the artificial life / pb containments
- ★ Patents : *Mycoplasma laboratorium* or *Synthia (C.Venter) E. Coli*
Scarab Genomics Research Fondation Alumni (WARF)
- ★ Transferts of activities - **from food needs to energy needs**
- ★ Biopower : animated tools what for? Same logics as GMO's?
- ★ Regulations : no answer about applying GMO laws?



ETHICAL TENSIONS

- ★ What becomes **our relation to the living** world, if the latter is an artefact, formatted to suit specific human needs?
- ★ Is reductionism that gives **preeminence** to information over system a fate?
- ★ Who is to be **responsible** for products that will be able to reproduce and evolve on their own?
- ★ What risk, and what benefit? **For whom?**

THE SYN BIO GOVERNANCE

DEMOCRACY

Many reports as A. Balmer and P. Martin's one - *Synthetic Biology: social and ethical challenges* - asked for an **upstream stakeholder involvement**. Nevertheless:

- Processes as VivAgora's cycle : difficult to finance and to publicize
- A growing gap between research and societal logics





SUSTAINABLE INNOVATION

- Including a reflexivity inside iGEM competition: SHS student in the french team)
- Exploring alternative uses of the living (bioinspiration, systemic approaches...)
- Asking for anticipating real uses, considering the « wishable » and responsibilities among future generations
- Questionning the **link between** the research goals and the economic structure/ **the values** associated with making life : standardization, automation...

A decorative wireframe sphere is positioned in the upper-left corner of the slide. The background features a light green color with faint, overlapping geometric lines and a large white rectangular area.

Thank you for... being human

- ◆ Unpredictable
- ◆ Evolving...



Disclaimer

This paper was produced for a meeting organized Health & Consumers DG and represents the views of its author on the subject. These views have not been adopted or in any way approved by the Commission and should not be relied upon as a statement of the Commission's or Health & Consumers DG's views. The European Commission does not guarantee the accuracy of the data included in this paper, nor does it accept responsibility for any use made thereof.