Learning to design
Non-Physical Environments

Melanie Schoeppe
Michael O'Hare
APPAM Teaching Session
Fall 2011

Outline

- **Design is learned by designing**
  - And talking about what was designed
- Good exercises
- Design process and vocabulary
- Course activities
- Products
- Design criteria
- Pedagogical challenges

But first, this update to the paper:

Brooks, Frederick P. Jr., *The Design of Design, Essays from a Computer Scientist. Addison-Wesley 2010.*

Theory C Teaching

- Students undertake a task somewhat beyond their capacities

- Students accomplish task, preferably with everyone watching

- Everyone talks about what happened and why, if possible comparing results

(peripherals: lectures, vocabulary, examples as solutions to problems the students know they have, not new problems they probably don't want)

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Good Exercises

- Each:
  - Tight-loose
  - Open-ended but endable
  - Feasible but challenging
  - "best" solution doesn't exist [yet]
- Ensemble:
  - Generate a useful *set* of responses to compare
  - Support a variety of deliverables

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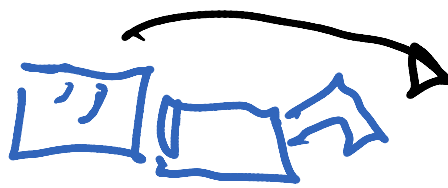- Pedagogical challenges

Stages

- Problem definition (and limitation)
- Blob diagramming
- Parti identification
- Sketching
- Design development
- Design revision
- Working drawings
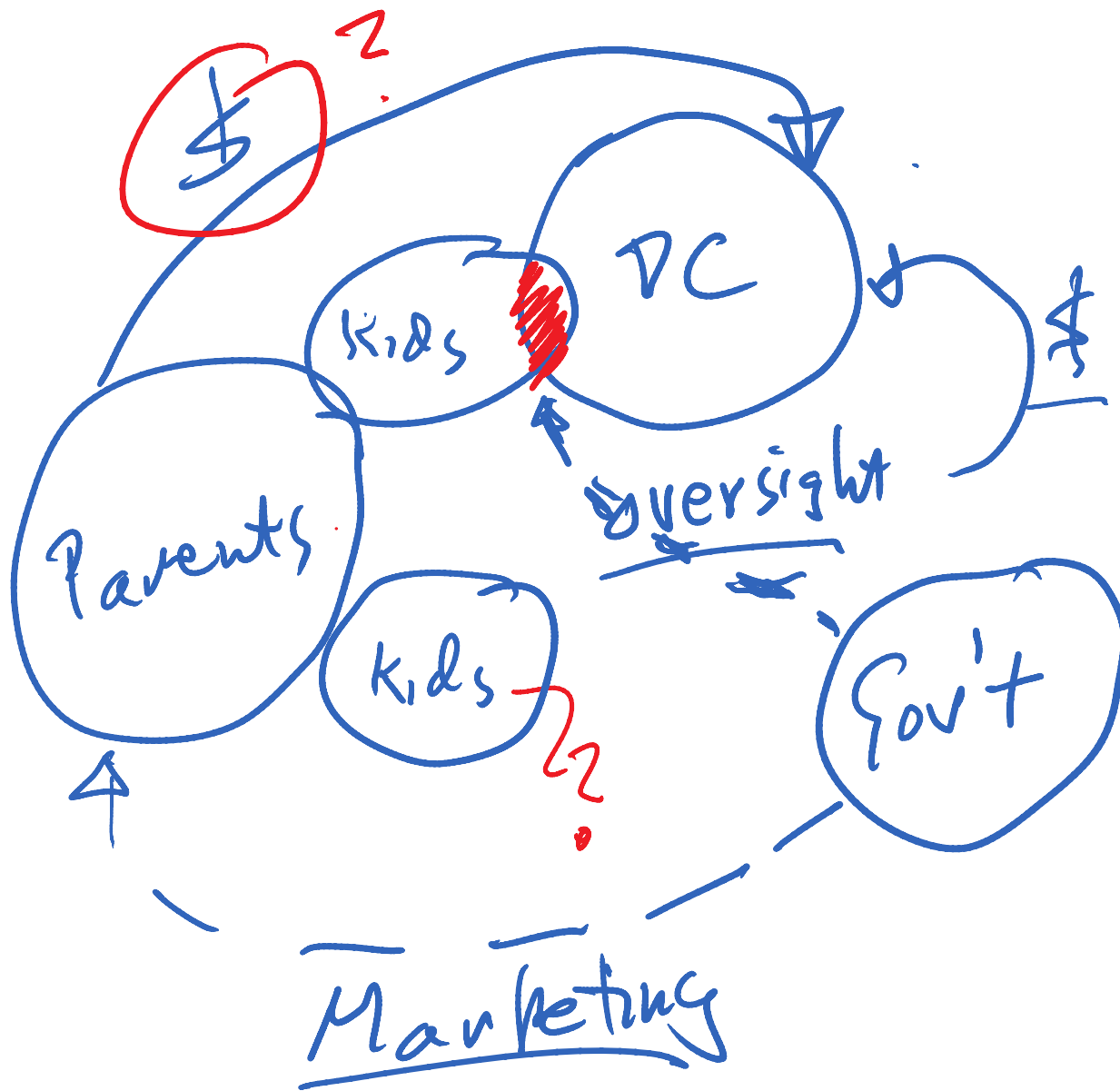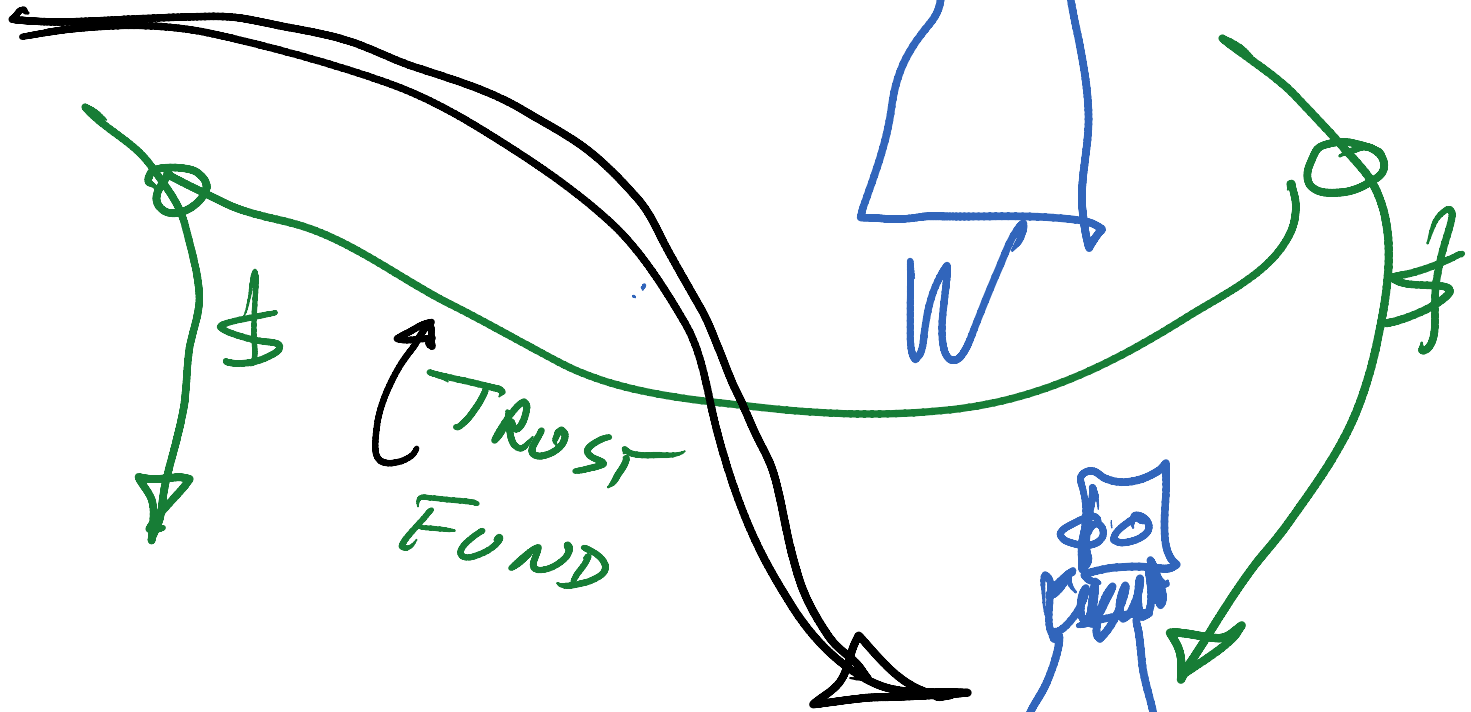
Generic partis

	Coercive	**Incentives**
Market	Tax Make	Subsidize Buy
Information	[Oblige] Prohibit	Inform Implore

NOW

LATER
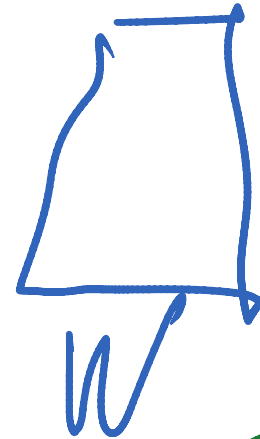
TRUST FUND

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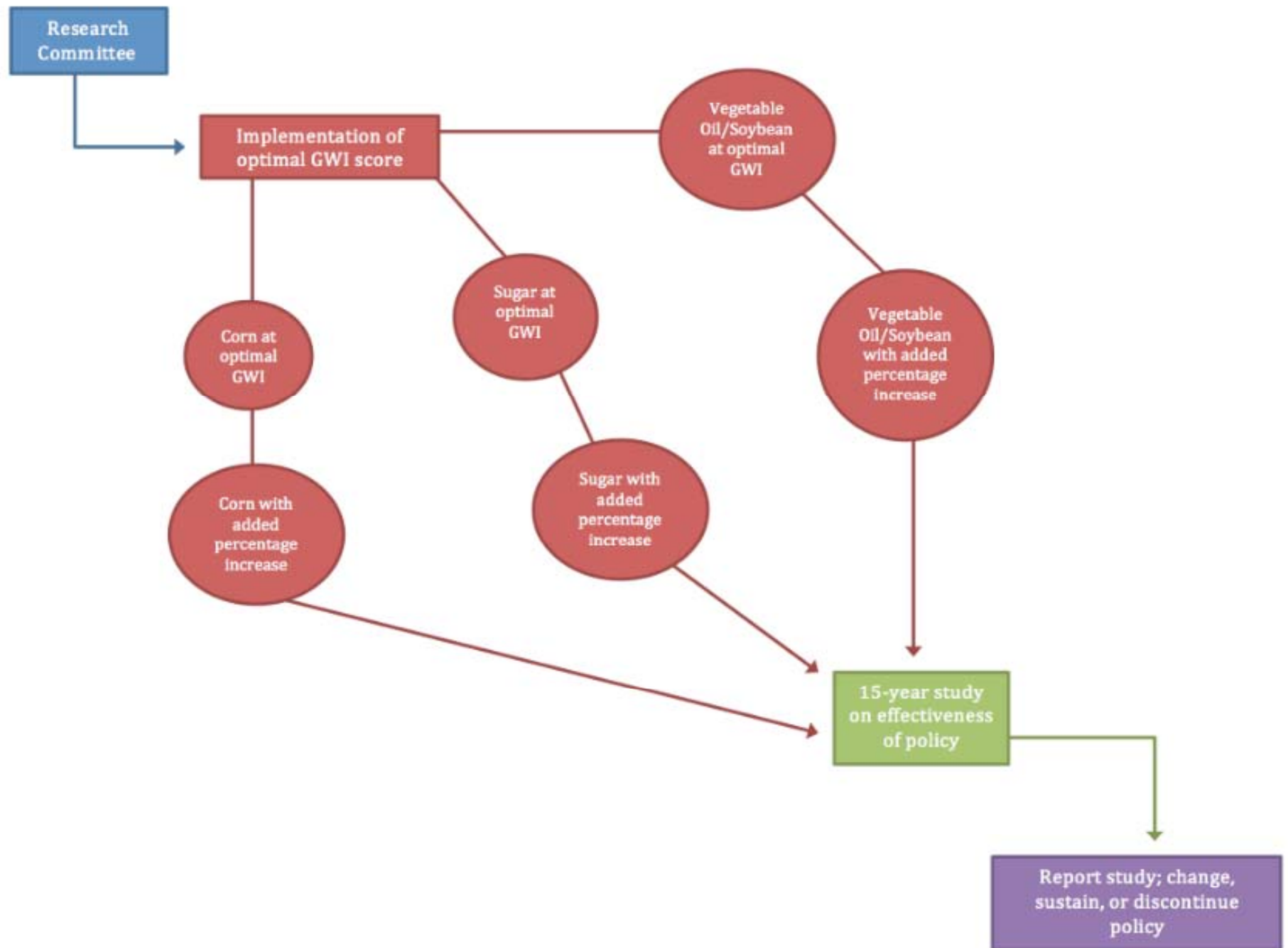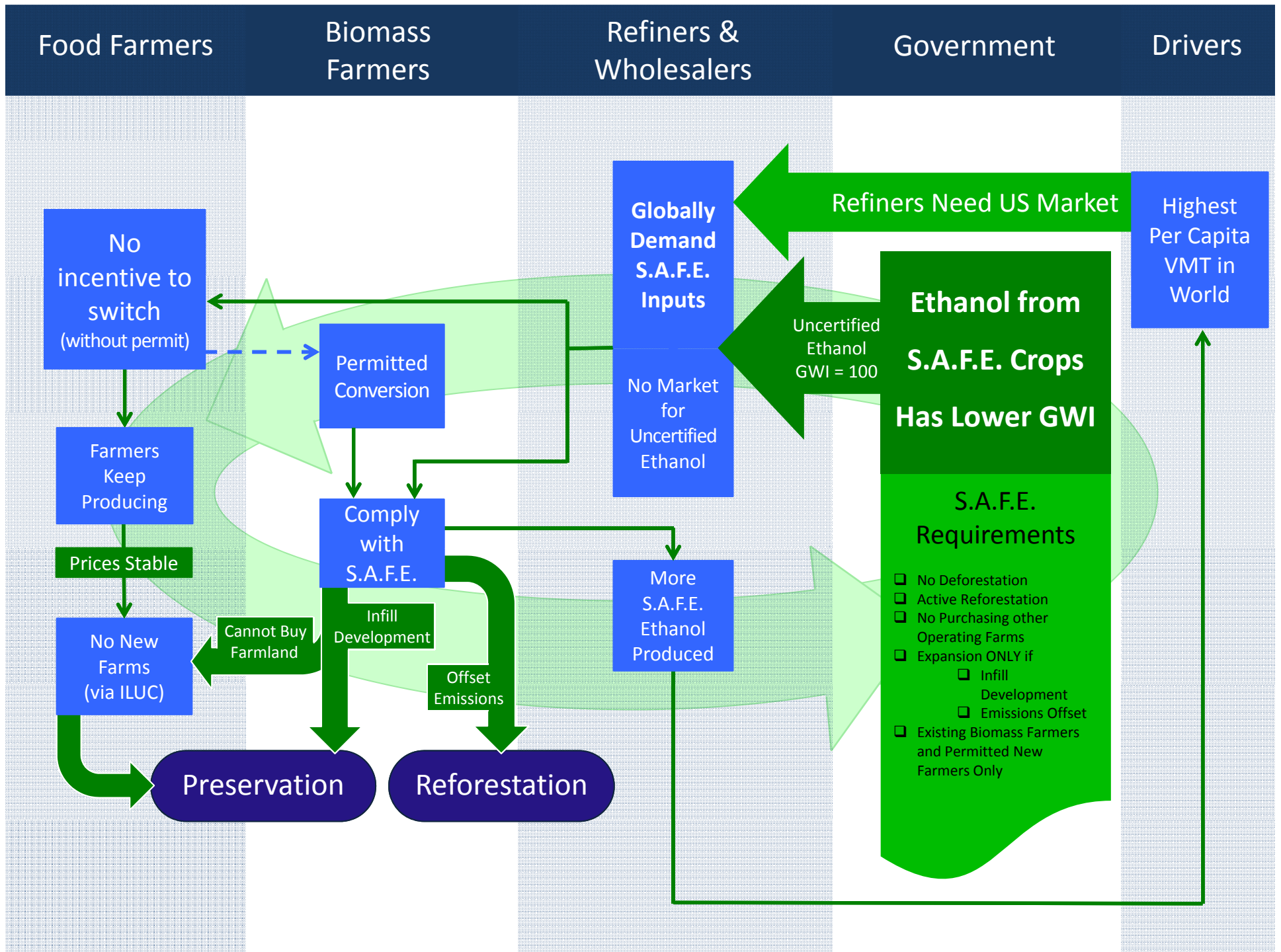- Design criteria
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What is design embodied in?

- Laws & Regulations
- Press releases and coverage
- Forms and administration
- Charts and diagrams
- User experience

Food Farmers | **Biomass Farmers** | **Refiners & Wholesalers** | **Government** | **Drivers**

No incentive to switch (without permit)

Permitted Conversion

Globally Demand S.A.F.E. Inputs

No Market for Uncertified Ethanol

Refiners Need US Market

Highest Per Capita VMT in World

Ethanol from S.A.F.E. Crops Has Lower GWI

Uncertified Ethanol GWI = 100

Farmers Keep Producing

Prices Stable

Comply with S.A.F.E.

Cannot Buy Farmland

Infill Development

Offset Emissions

No New Farms (via ILUC)

More S.A.F.E. Ethanol Produced

S.A.F.E. Requirements

❑ No Deforestation
❑ Active Reforestation
❑ No Purchasing other Operating Farms
❑ Expansion ONLY if
  ❑ Infill Development
  ❑ Emissions Offset
❑ Existing Biomass Farmers and Permitted New Farmers Only

Preservation

Reforestation

Model of the user

- R. Leone, on "Elizabeth Best":

  Think about one of these guys who works for Best.

  What kind of desk does he sit at?

  What kind of shoes is he wearing?

  What pictures are on his wall? Desk?
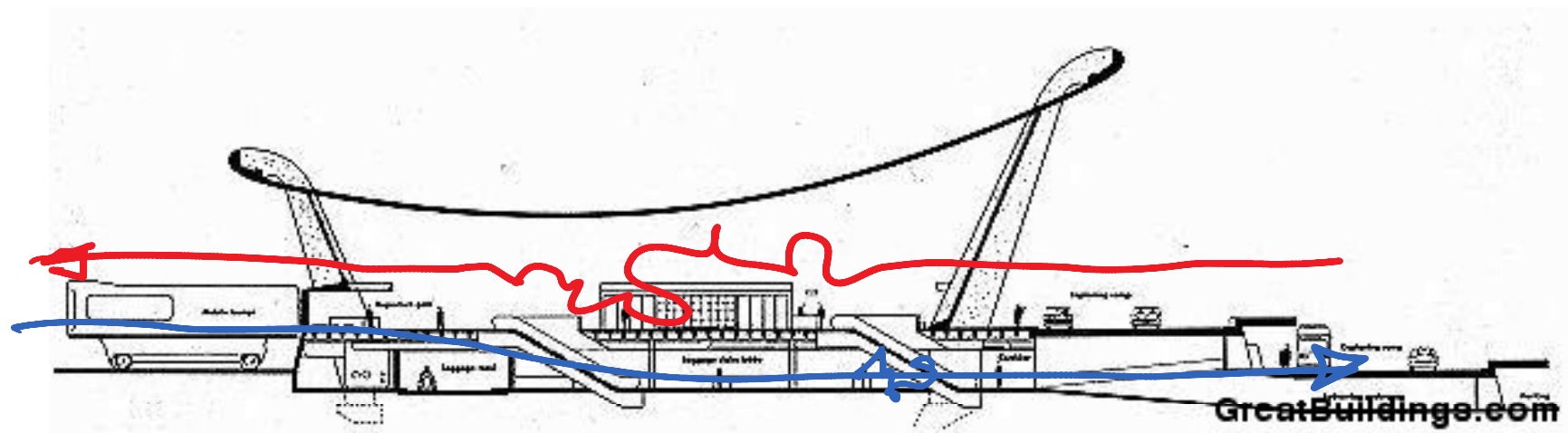
  What books does he have?
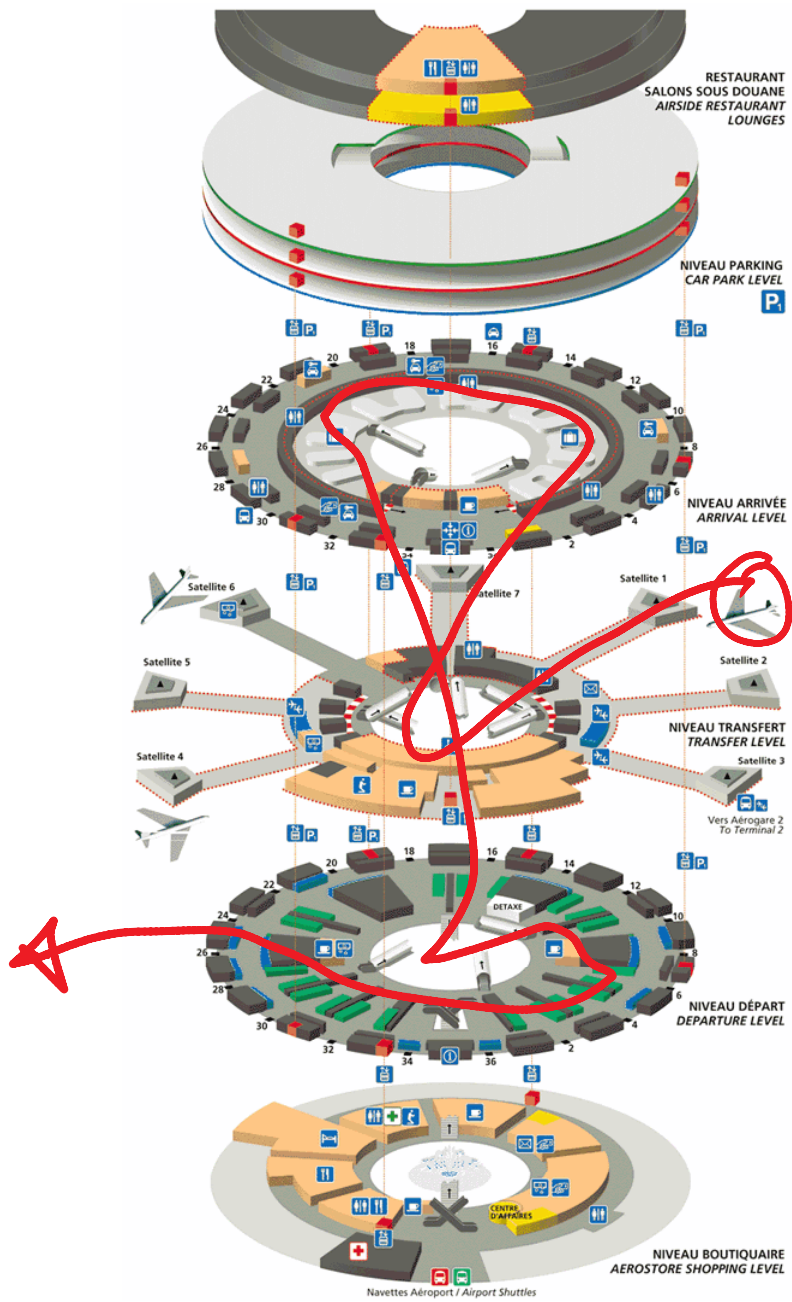
  Where would he most like to be now?

- Why do papers about learning have *teaching* in the title, and conversations about courses always switch to, or start with, what the prof does?

...but I digress.

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GreatBuildings.com

RESTAURANT
SALONS SOUS DOUANE
*AIRSIDE RESTAURANT
LOUNGES*

NIVEAU PARKING
CAR PARK LEVEL

NIVEAU ARRIVÉE
ARRIVAL LEVEL

Satellite 6

Satellite 7

Satellite 1

Satellite 5

Satellite 2

NIVEAU TRANSFERT
TRANSFER LEVEL

Satellite 4

Satellite 3

Vers Aérogare 2
To Terminal 2

DETAXE

NIVEAU DÉPART
DEPARTURE LEVEL

CENTRE
D'AFFAIRES

NIVEAU BOUTIQUAIRE
AEROSTORE SHOPPING LEVEL

Navettes Aéroport / *Airport Shuttles*

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Challenges

- Making work in progress visible
- Lack of visual conventions for representation
- Time for studio work and presentation
- Defect-finding and defensive presentation
- Christmas tree
- Less!
- Variety of design contexts