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The Role of Design Thinking in Scientific Research & Communication

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designer

ADVERTISING, BRANDING &
COMMUNICATION STRATEGIES

THE WALL STREET JOURNAL.







Robert Wood Johnson
Foundation






University of Nebraska







design thinking
= Process for Problem-Solving



Stanford
University

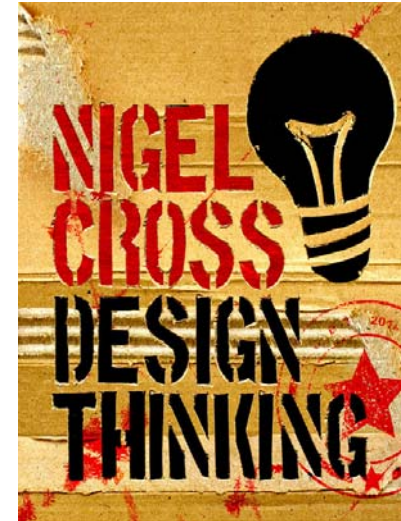


design thinking

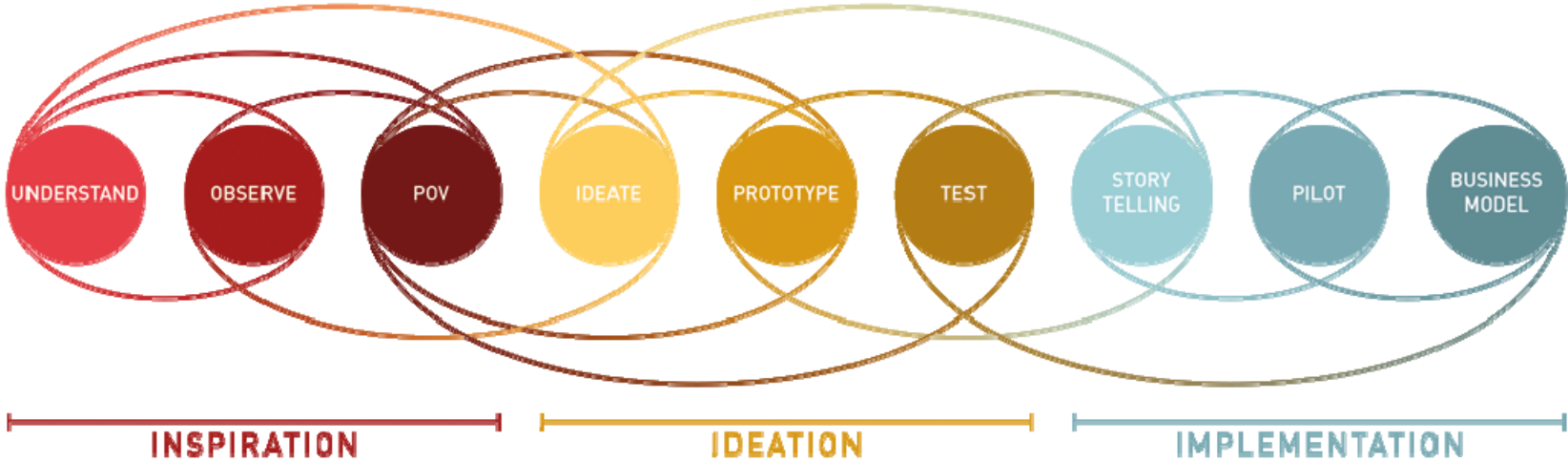
= Process for Problem-Solving

Research:

- Interviews with designers
- Observations and case studies
- Experimental studies
- Simulation
- Reflection and theorizing



THE DESIGN THINKING PROCESS



design thinking

= Process for Problem-Solving

Designing is not a search for the optimum solution to the given problem, but that it is an exploratory process. The creative designer interprets the design brief not as a specification for a solution, but as a starting point for a journey of exploration,...

in an exploratory process

uses abductive reasoning

“Deduction proves that something must be;
Induction shows that something actually is operative;
Abduction suggests that something may be.”



Charles Peirce

uses abductive reasoning

Difference from science and humanities...

The main point of difference is that of timing.

Both *artists and scientists* operate on the physical world as it **exists in the present** (whether it is real or symbolic),

while *mathematicians* operate on **abstract relationships** that are independent of historical time.

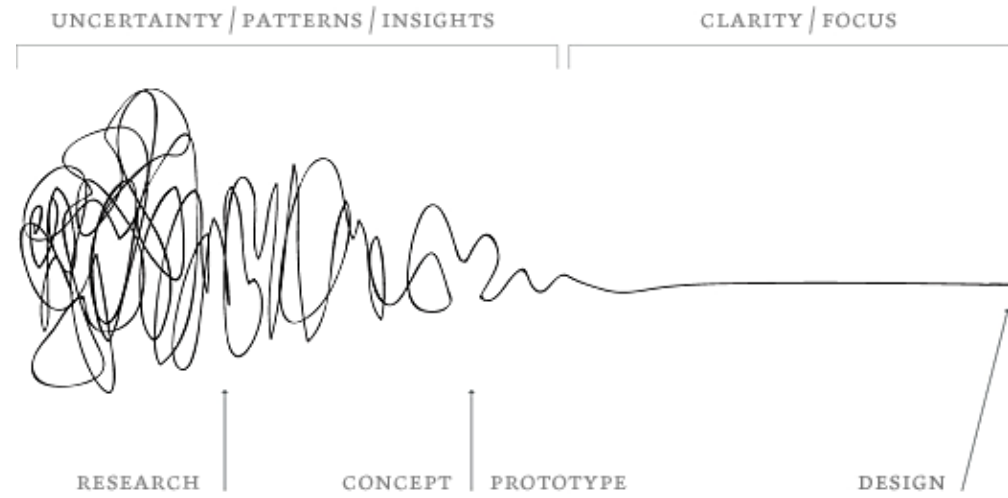
Designers... are forever bound to treat as real that which exists **only in an imagined future** and have to specify ways in which **the foreseen thing can be made to exist**.

John Chris Jones, Design Method



John Chris Jones on the objectives of a designer
In Design Methods (1970)

“The designer must be able to predict the ultimate effects of their proposed design as well as specifying the actions that are needed to bring these effects about.”



design thinking

= Process for Problem-Solving

uses abductive reasoning
in an exploratory process
especially useful in *'wicked'*
_____ research studies ~moi

like... Injection Risk Networks in Rural Puerto Rico

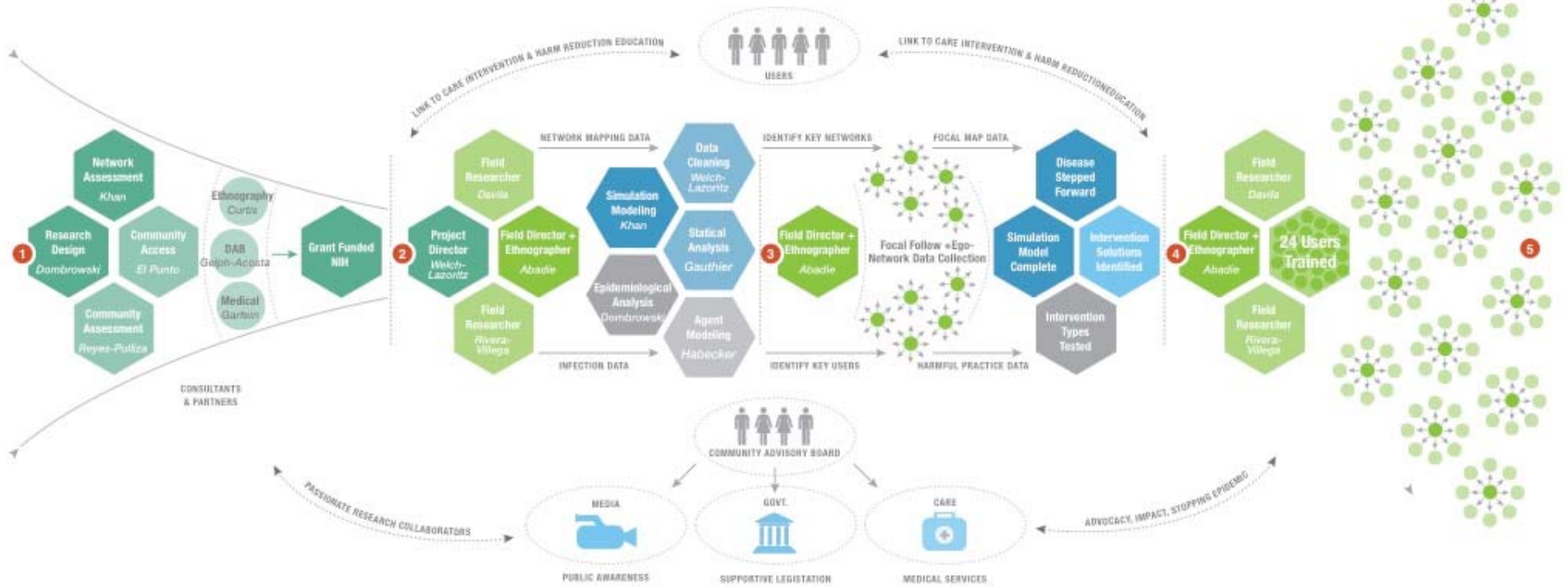
LIFE. ACTION. HEALTH.

VAS

VIDA. ACCIÓN. SALUD.

REACH LAB: RESEARCH COLLABORATION MODEL

A map of the research process, collaborators & scope of the Injection Risk Networks in Rural Puerto Rico, a NIH funded research grant.



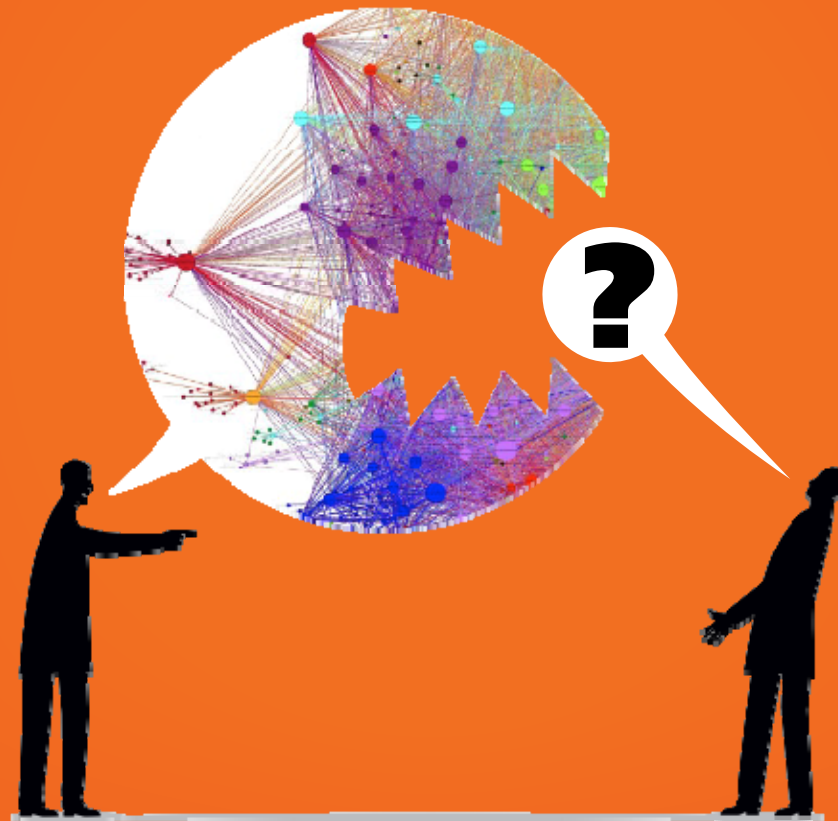
- The ego reported injection risk networks of perceived HCV- respondents are half what is reported by those with a positive or unknown status. Perceived negative HIV status is associated with larger injection networks compared to those with a self-perceived HIV positive status.

- The estimated population proportions show that ~90.4% of the population of people who inject drugs in rural Puerto Rico are male, while ~9.6% are estimated to be female.

- The recruitment behavior from the sample suggests that male PWID showed no gender preference (Homophily=0.00) when recruiting a peer in the study, while female PWID showed a significantly high preference for recruiting male PWID (Homophily=-0.601) (although this recruitment pattern played little role in biasing the final sample because women make up such a small percentage of rural PWID).

- PWID who perceived themselves to be HCV+ (prior

Asked my team:
"What are the best SNA results coming out of Phase I?"



? Ego

? Homophily

? PWID

? Clustering

? Oversampled

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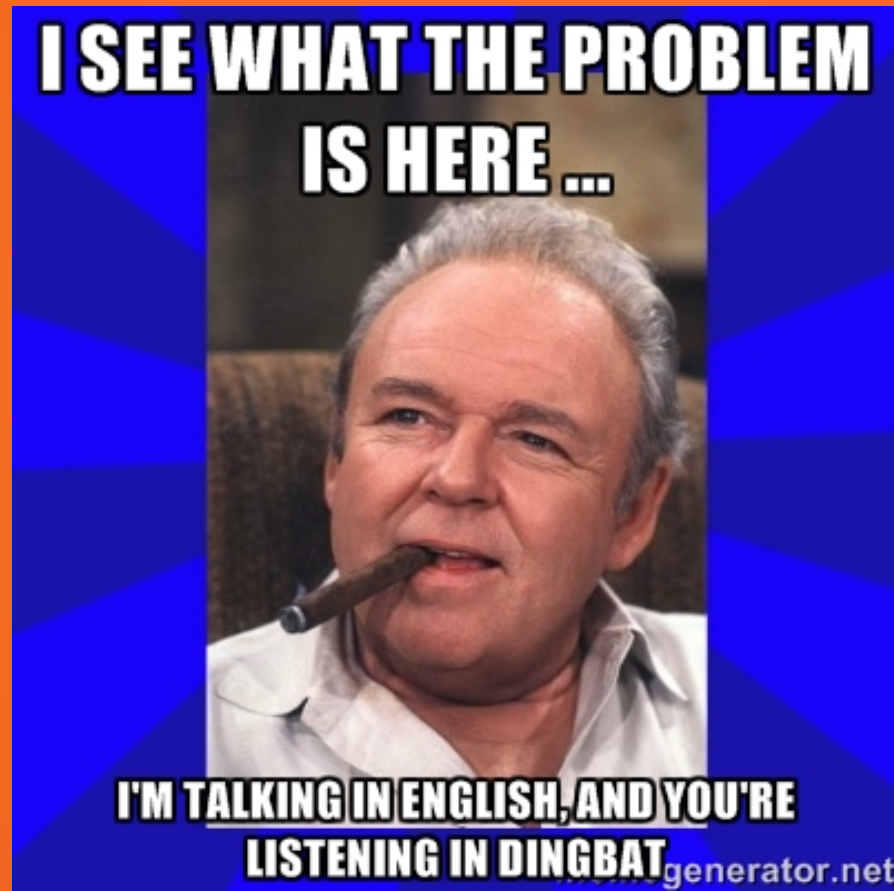
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- PWID who perceived themselves to be HCV+ (prior to rapid testing) do show a low

Asked my team:

“What are the best SNA results coming out of Phase I?”



? Ego

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? Oversampled

funder+ naming
logo +
branding

participants

+ signage
brochures
safe injection kits
advertising +

public+ documentary
storytelling
photo/voice

LIFE. ACTION. HEALTH.

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community+ public art graffiti
curriculum +
art exhibition

media

+ news
data sets
website +

legislators

fact sheets
reports
+ visualizations

Stop the epidemic.



BE AWARE. DON'T SHARE. SAFE INJECTION KIT

BE AWARE. DON'T SHARE.
IT COULD SAVE YOUR LIFE.

PREVENT AN OVERDOSE
Avoid using alone.
If you overdose, you want someone to be careful if you have an overdose.

USING PAINKILLERS OR HEROIN?
Avoid mix
Most over-
doses are
caused by
mixing
painkillers
with
heroin.

Reduce your risk
OF OVERDOSE, HEP C + HIV

IF YOU OVERDOSE
If someone who has overdosed,
call 911
and get them
to the hospital
as soon as possible.
If you are alone
and have
overdosed,
try the
Naloxone
Narcan.
If you are
alone and
overdosed,
try the
Naloxone
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If you are
alone and
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Naloxone
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BE AWARE. DON'T SHARE. SAFE INJECTION KIT

any of these.

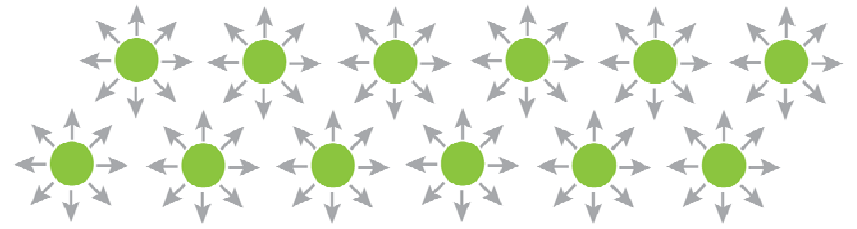
Be aware Don't share

Most people don't realize,
HIV and HepC can be spread through
cottons, tourniquets, needles,
cookers and water.

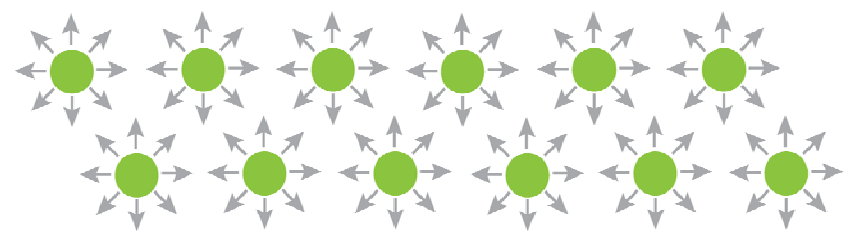
- PILLOWBOX CONTAINS:**
- 3 CLEAN NEEDLES
 - 3 CLEAN COOKERS
 - 3 CLEAN WATERS
 - 3 TOWELETTES
 - 1 TOURNIQUET

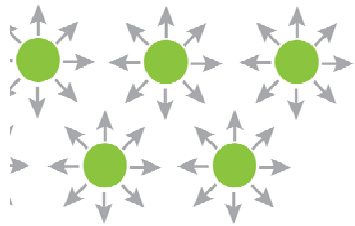


RDS + RAPID TESTING HIV HVC

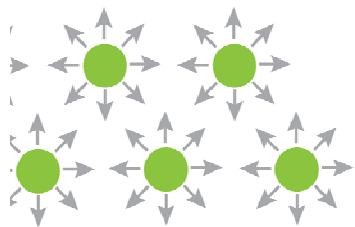


FOCAL + EGO NET





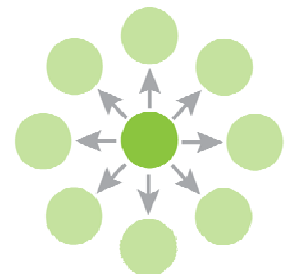
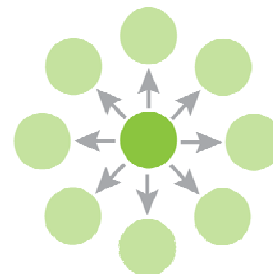
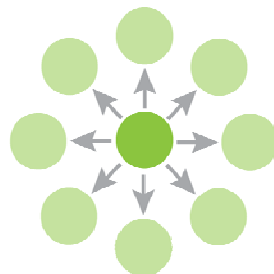
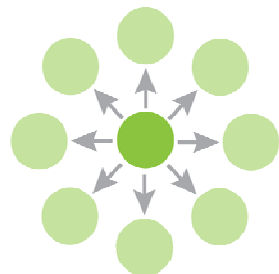
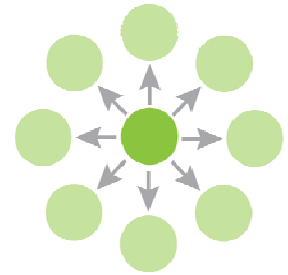
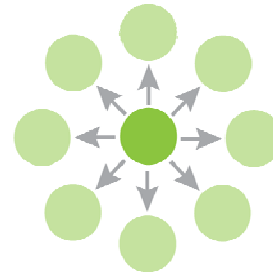
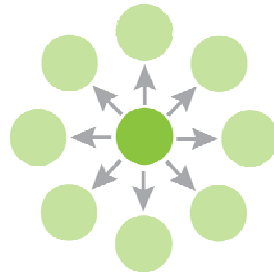
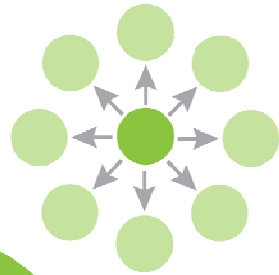
L + **EGO**
NET



INTERVENTION
SIMULATION



TRAINING
IMPACT

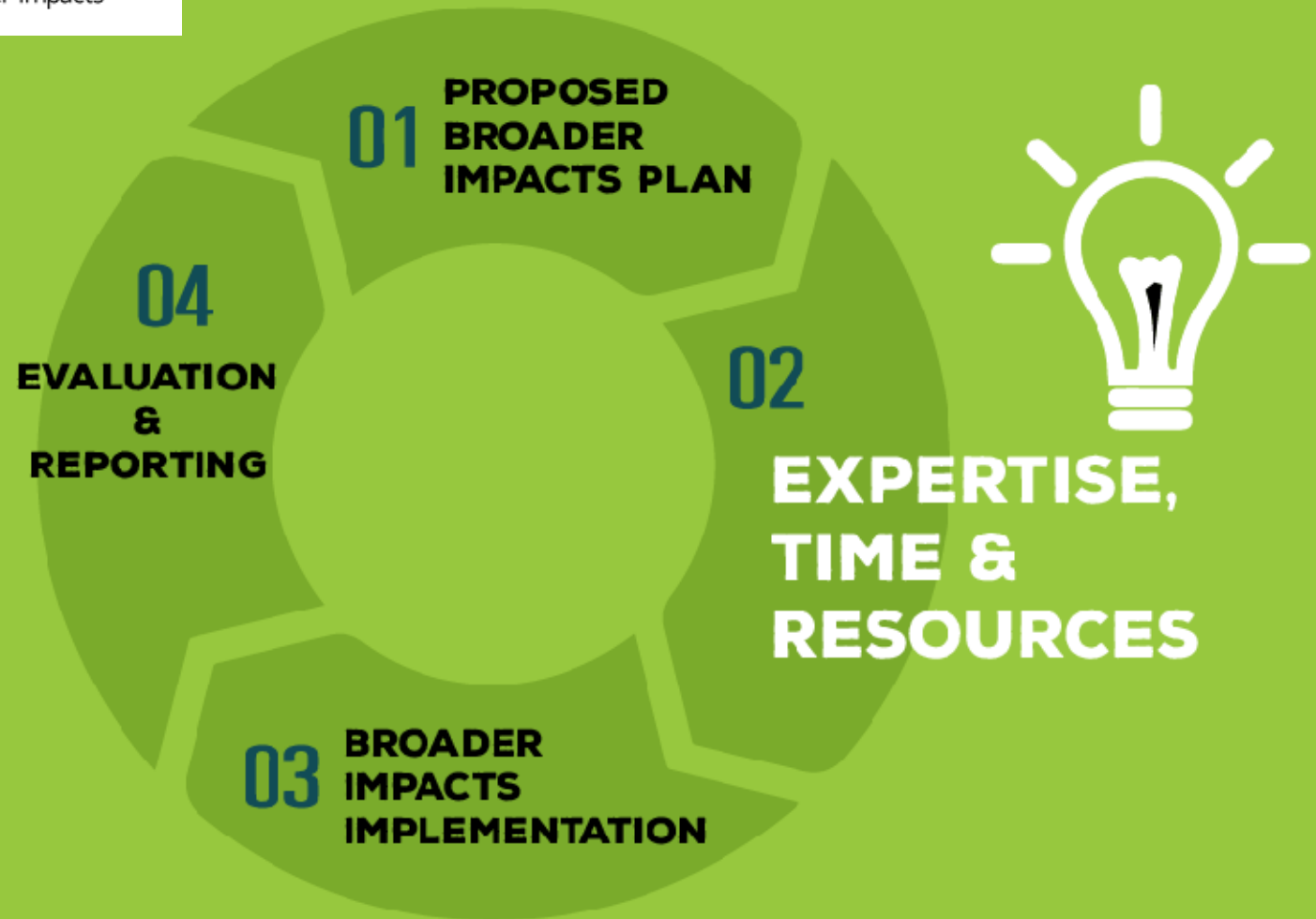








Broader Impacts = Societal benefits of research



Why not include an impacts expert?

Take a ways:

1. Designers must predict the **IMPACTS** of the “product” as well as specify the *actions* that are needed to bring these effects about.
2. Designers don't just design graphics.
We study the mechanisms that can bring about actions: compassion, desire, adoption, motivation and engagement.
3. For broader impact designers need to be *involved from strategy*
— *not inclusion at end phase of grant.*

Impact *by* design