

KNOWING YOUR CREATIVE ABILITIES and FINDING THE TIME TO USE THEM

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GETTING FROM HERE TO THERE...

- **Imagination** is the ability to cognitively form images without reference to the actual senses.
- **Creativity** is the universal human ability to harness imagination and the senses to generate new ideas.
- **Innovation** is where creative thought and practical know-how (i.e. domain knowledge) meet to realize value by doing new or old things in new ways.

(John Kao – AAMC Meeting - 2012 - entrepreneur, musician, MD)

IMAGINATION to INNOVATION

- **Seminal why**
- **Innovation: 6 steps**
- **Your Creative Brain Set**
- **Creativity: personal observations**

THE BEST QUESTION IN THE WORLD:

WHY?

Curiosity is what separates us from most of the other groups that minister to the suffering. It is the bedrock of the scientific process. Without it, medicine, as we know it could not exist, nor could we anticipate future progress.
(Lange, PH: Urol Oncol:25, 2007)

“SEMINAL WHY”

Seminal why: A *disruptive* question, birthed by clinical consternation/empathy, that spurs the imagination.

How do you identify a “seminal why”?

“The question that generates the greatest negative response in the most senior faculty is invariably a “seminal why”!

INNOVATION: “6 ESSENTIALS”

3 Emotional factors:

- Vision of the desired future that defines the purpose of your innovation
- What’s the purpose of the journey (i.e. is it compelling, invigorating, and emotionally engaging)?
- Does it create a sense of urgency?

3 Practical factors:

- Do you have the time/energy to seek the new? (Discovery)
- Do you have a way for disruptive innovation to coevolve with the day to day work? (Development)
- Do you have an effective model for innovation stewardship? (Dissemination)

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FROM INNOVATION TO IMPLEMENTATION: THE *TIPPING POINT*

An act or event after which nothing is ever the same...

(“Watson, come here I need you.” – Alexander Graham Bell and the beginning of the telephone)

(N.B.: In medicine, to truly make something “tip”, the innovation needs to move through three processes: discovery, development (refinements of the innovation), and dissemination (teaching the new technology to practitioners))

(Gladwell, Malcolm: *The Tipping Point*. 2000)

CREATIVITY: WHAT IS YOUR “CREATIVE BRAIN SET”?

Seven states of mind: “CREATES”

C – connect – divergent thoughts brought together

R – reason – convergent logical thought

E – envision – imagery

A – absorb – intake of knowledge and surroundings

T – transform – redirection of (often negative) energy

E – evaluate – assess feasibility of ideas

S – stream – “in the zone”

Two pathways: **deliberate and spontaneous – need to be able to “flex” in and out of each one.**

- (Visit online Creativity quick test: <http://www.shelleycarson.com/creative-brain-test>) (Buy the book: Shelley Carson, PhD: Your Creative Brain: 2010)

CREATIVITY AND INNOVATION: Personal Observations

- **Focus**
- **Solitude**
- **Group Play**
- **Timing**
- **Persistence / Resilience**
- **Mentors and Colleagues**

FOCUS

find your *raison d'être* –
can you state it in a single phrase?

**“Concentrate all
your thoughts on
the work at hand.**

**The sun’s rays do
not burn until
brought to a
focus.”**

Alexander Graham Bell



SET THE WORLD ON FIRE!

CREATIVITY: SOLITUDE

- **LOOK!** (The key word is awareness...“forget yourself!”)
- To invent ... you need to outvent...take it easy

... find a distraction...let the problem sink into your subconscious...and then float back to the surface...you can't “force” creativity

- **Organize your life but realize that creativity requires a fair amount of chaos.**
- **Seek different perspectives (internal): Mentally view the situation from all angles...put it upside down...assume that what you know IS true is not...what would happen if just the opposite or were correct.**
- **“Bigger is better” and R. Feynman (nanotechnology)**

CREATIVITY: GROUP PLAY: Mental Jazz (Cerebral Riffing)



Seek different perspectives (external): “As I began riffing on plans for my home's addition, I found two guys who shared my vision—John Fernández, a contractor, and Paul Lubowicki, a project designer. We were like a jazz trio, freely experimenting and exchanging ideas.” Frank Gehry - Architect

CREATIVITY: TIMING

- Creation occurs in “real time” - find some self time – block it out / set up specific times each day for email or phone calls (e.g. 1 hour in the AM and 1 hour in the PM) and stick to it / create “bogus meetings” / declare a lab day! / make every 6th week a lab week
- Find a place at work to hide! (...and don't tell anyone where you are)
- Final act of creation is a singular activity or event based on all that has been consumed and communicated {(this act will likely occur while you are on a ski slope, during your drive home from work, or in a dream – (keep a pen and pad next to your bedside)}

CREATIVITY: PERSISTENCE AND RESILIENCE

- There are no negative results – just the presence of an intellect too deficient to recognize the opportunity.
- “No” is the first step on the creative path.
- Each change in the planned course of events, is an opportunity for discovery...

(Drown your sorrows over a beer and discover the tubing for cardiopulmonary bypass – C. Walton Lillehie

Find a putrid left over sandwich at work and discover penicillin...
Alexander Fleming

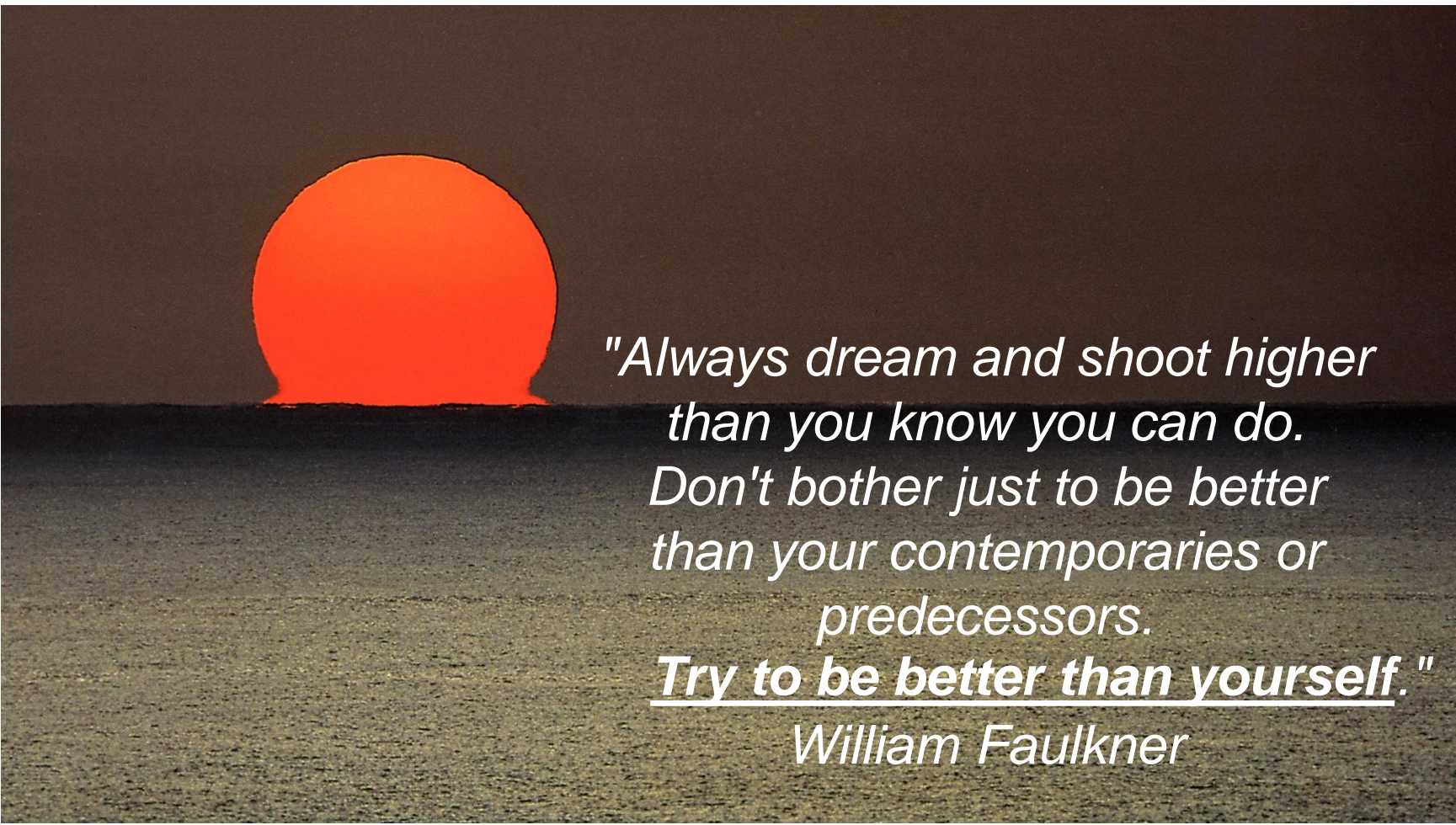
Bemoan your dateless Saturday nights and discover
Facebook...Mark Zuckerberg)

GUIDANCE: MENTORS

- **Choose a mentor based on their accomplishments and match with your personality.**
- **Create an initial outline for annual and quarterly goals**
- **Meet with your mentor regularly (at least monthly)**
- **Always have a preprinted agenda when you meet**

WHAT'S THE REASON FOR PUSHING THE ENVELOPE?

Justify your life: Why are you here – and how will you leave this place better than you found it?



*"Always dream and shoot higher
than you know you can do.
Don't bother just to be better
than your contemporaries or
predecessors.
Try to be better than yourself."*
William Faulkner