

Opening Remarks

INCOSE

Int'l Workshop in Model-Based Systems Engineering Healthcare Working Group: Modeling for a Healthy Future

Session 2:

“Modeling the System” for Improving Patient Safety and Medical intervention Effectiveness

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Retired: U.S. Department of the Navy

Immediate Past Chair, Society for Simulation in Healthcare

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Disclosure Statement

I have no economic conflicts of interest.

Since retiring from the defense industry all associations have been and remain voluntary activities which are uncompensated with the exception of occasional expense reimbursement, Its what I do in lieu of golf. All presentation material and discussion represent personal knowledge, beliefs, and opinions.

Quick Bio

PhD(c) Instructional Systems Development Indiana University, Bloomington.

PhD(c) Special Education (Research), Indiana University Bloomington

Captain, USNR - Retired.

US Dept of Navy civilian, GS-15 - Retired:

Dir. of Acquisition Support Detachments, Navy Human Performance Center.

Dir. Human Systems Integration Testing, Navy Operational Test and Evaluation Force.

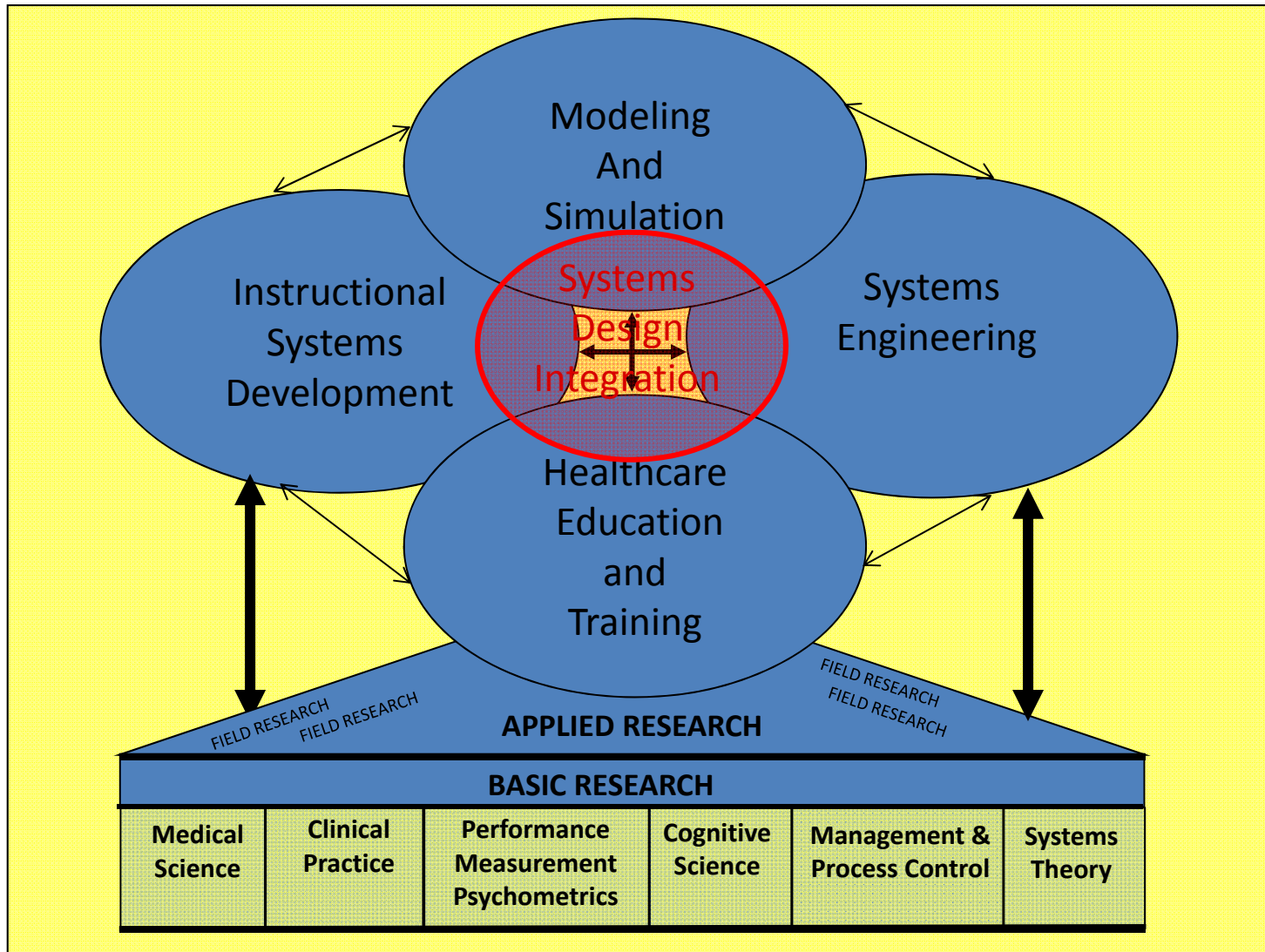
Innovation Engineering Lead, Navy Combat Direction Systems (Engineering) Center.

Twenty years a Contractor in Defense Modeling, Simulation for training, research, development, testing and evaluation.

Volunteer, Chair, Technology and Standards Committee,
Society of Simulation in Healthcare.

Why am I here?

Integration of Systems Design Methods



Society for Simulation in Healthcare Research Symposium, January 2011

Current State of Healthcare and Medical Related Modeling and Simulation

Training: Society For Simulation in Healthcare

Physics based Computational
Biology/Physiology/Pharmacology/Biomechanics
Computational Systems Biology

Medical Equipment and Devices Engineering & Testing
Med Device Innovation Consortium
FDA use of simulation data in clinical trials processes

Some Quick Thoughts About Modeling and Simulation

It's nothing new

It's ubiquitous in human cognitive evolution

It's not a coherent discipline

It's in "stovepipes" everywhere

There is high risk of misuse or abuse

It's arguably the next formal "Scientific Method"

Who's Playing?

(at least in their own sandboxes)

Clinicians and Educators

Bio and Physics Scientists

Computer Scientists & Mathematicians

Human Factors Engineers

Government Agencies

(DOD, HHS)

Where are the System Engineers and what do they have to offer to improve healthcare?

You tell me.

Think about the following.

Behold. The turtles



wiseGEEK

They get move ahead only when they
stick their necks out.



But, They do not 'model' (think) very far ahead about where they are going and how to get there.



Challenge to System Engineers in Healthcare

THINK STRATEGICALLY

- Assess resources (Paradigms, knowledge, time, energy to offer)
- Do terrain reconnaissance and mapping.
- Select targets where resources will have moderate, affordable but observable results.
- Consider tactics to take advantage of target soft spots (needs) and resource strengths.
- Expect to have to 'study' a lot.
- Adapt to the target culture. (Do not expect it to adapt to yours)
- Leave room for mistakes.
- Be prepared to invest where there are needs not just where there are funds.
- Be alert and agile.