

HISTORY of the Workshop Series

Dave Garvey
Alidade Inc.

2001

From ABSTRACTION to APPLICATION

- Bring the combinatoric optimization crowd & military search theorists
- Is "Search" still relevant?

2002

SEARCH THEORY INVENTED NOW

- Examine the changes in operational concepts, math tools & platform technologies
- Would we invent the same SEARCH THEORY
- How does Historical hindsight meld with predictive modeling?

2003

NETWORKED SEARCHES & SEARCHES in NETWORKS

- Social Networks
- Multiple UAV searches
- Peer-to-Peer bidding

2004

INVESTIGATING "HIDER" THEORY

- Zig-zagging
- Sub chase
- Smugglers/embezzlers
- Encryption
- pollution/contamination event
- Co-operative search(hide)& rescue

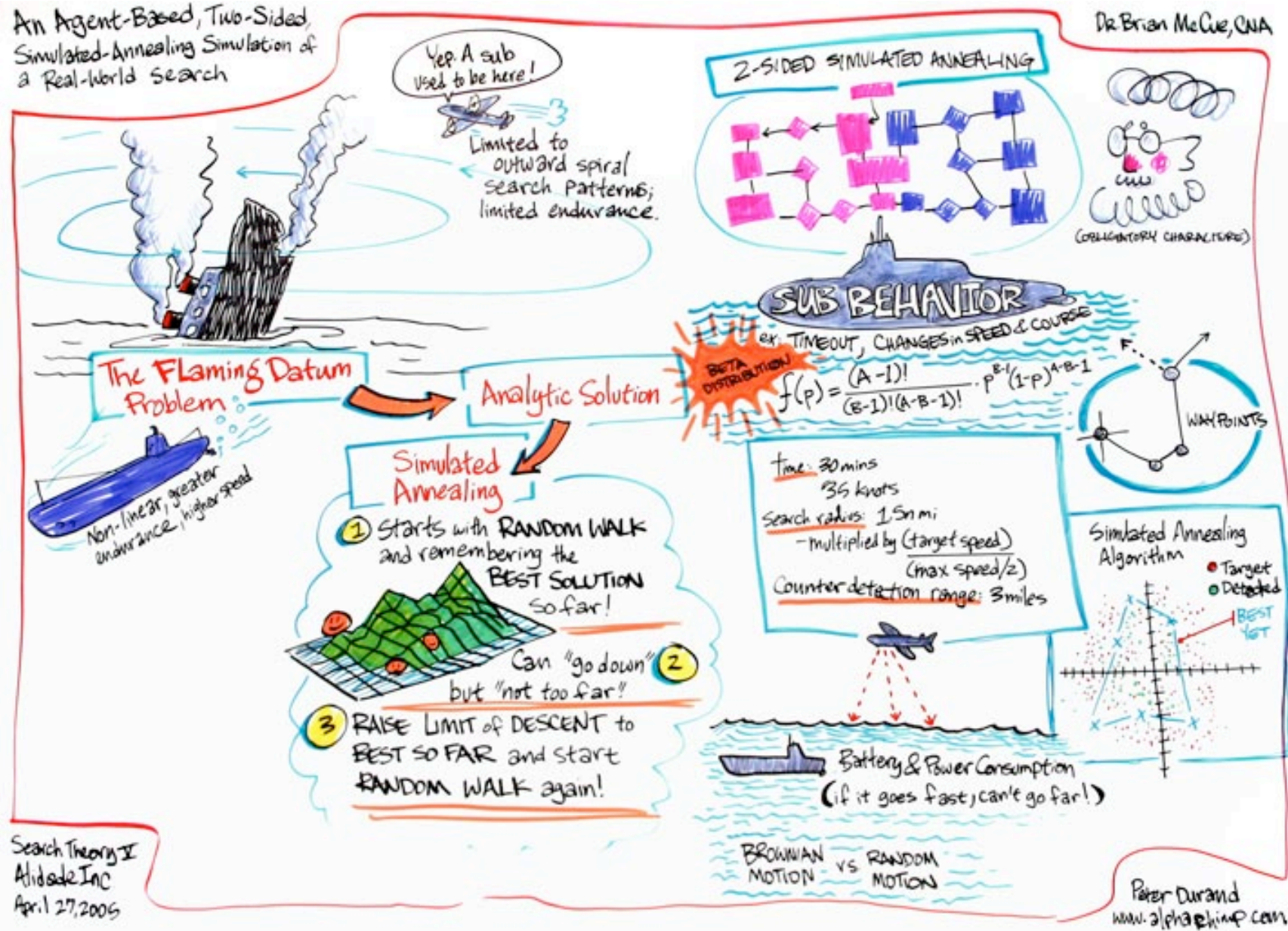
2005

INVESTIGATING NEW METRICS

- Hiders with Intent
- Agent-based models
- Game Theory ("Battleship")
- Distributed Network Forces

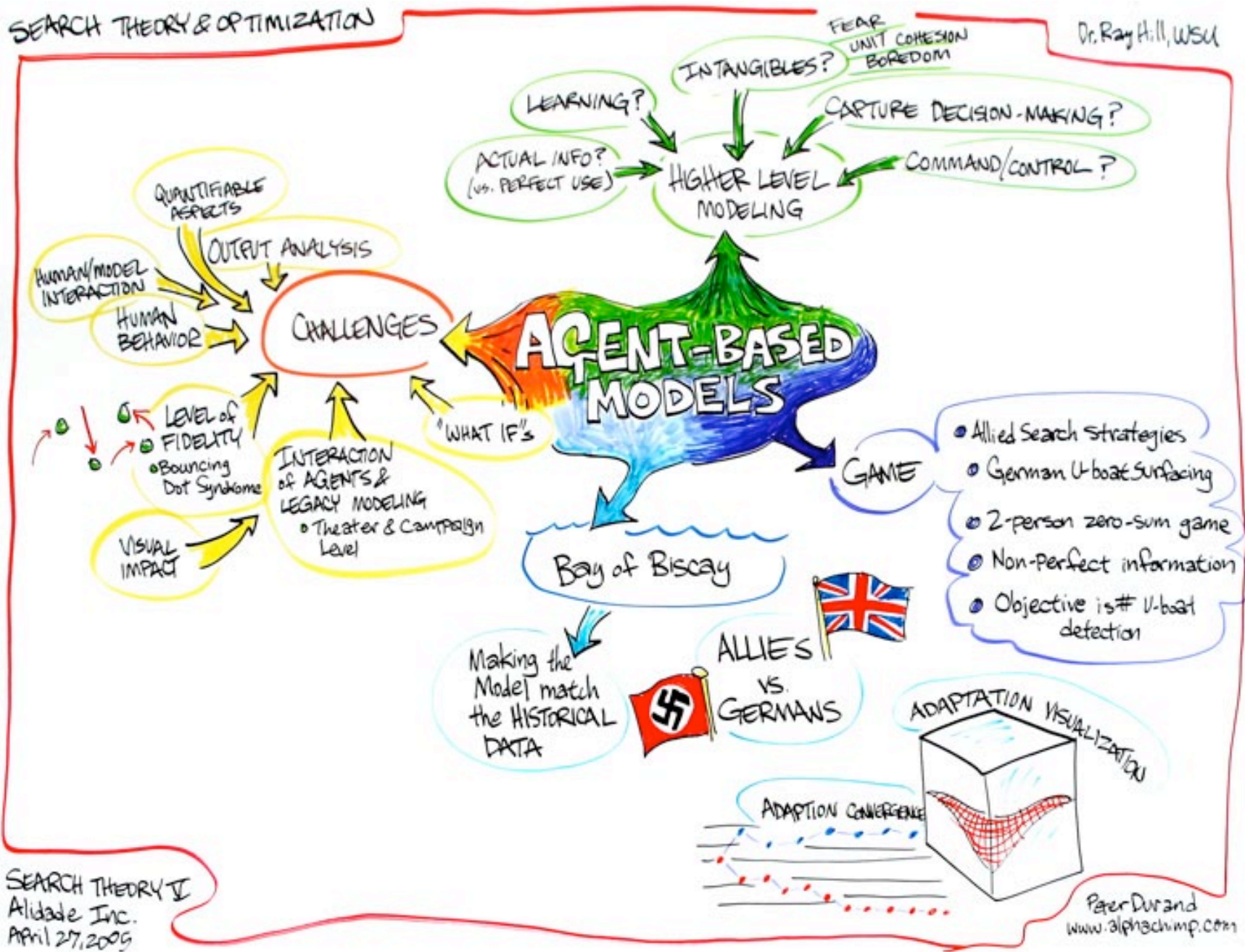
Search Theory II
April 27, 2005

Peter Durand
www.alphachimp.com



SEARCH THEORY & OPTIMIZATION

Dr. Ray Hill, WSU

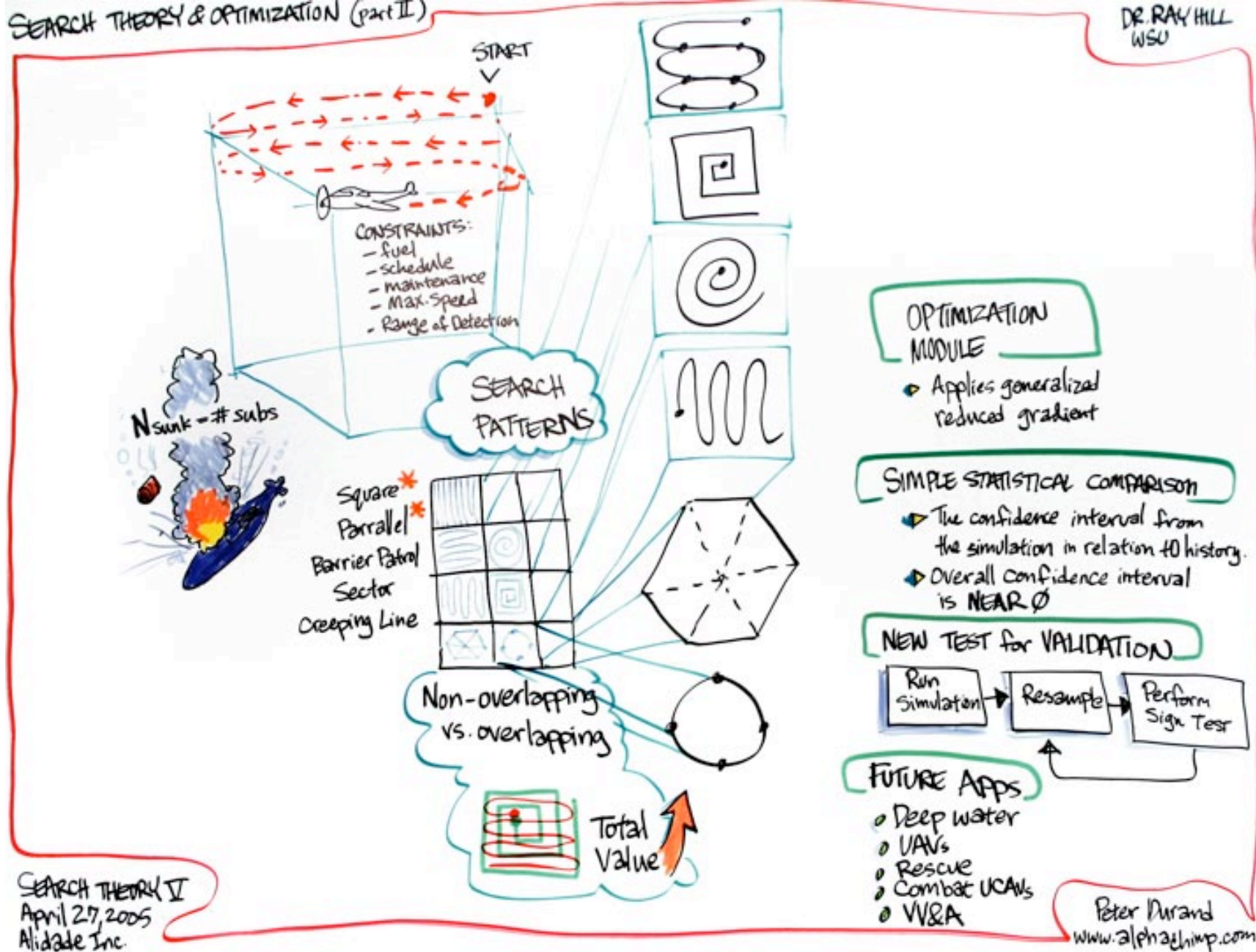


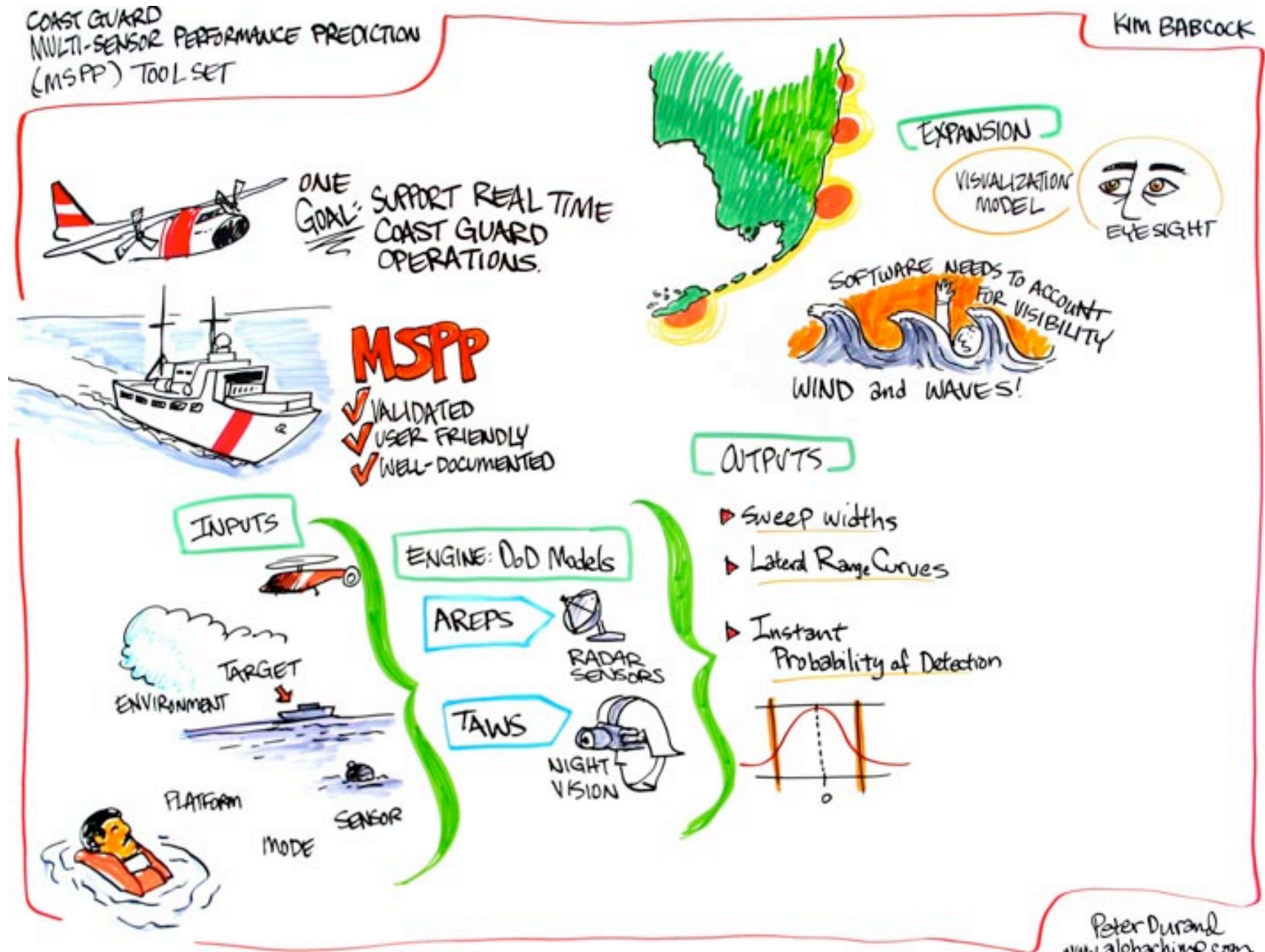
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SEARCH THEORY & OPTIMIZATION (part II)

DR. RAY HILL
WSU



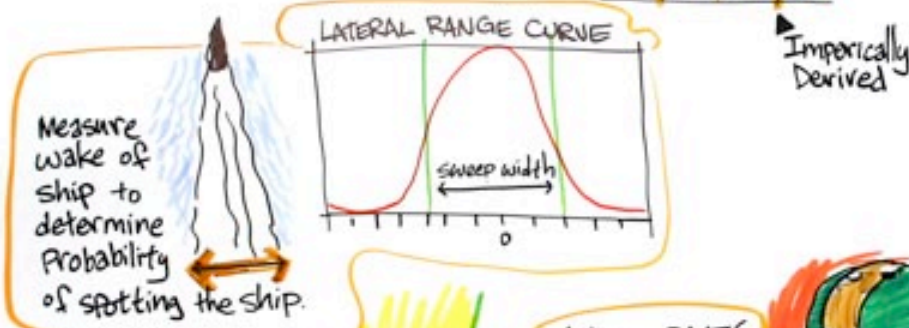


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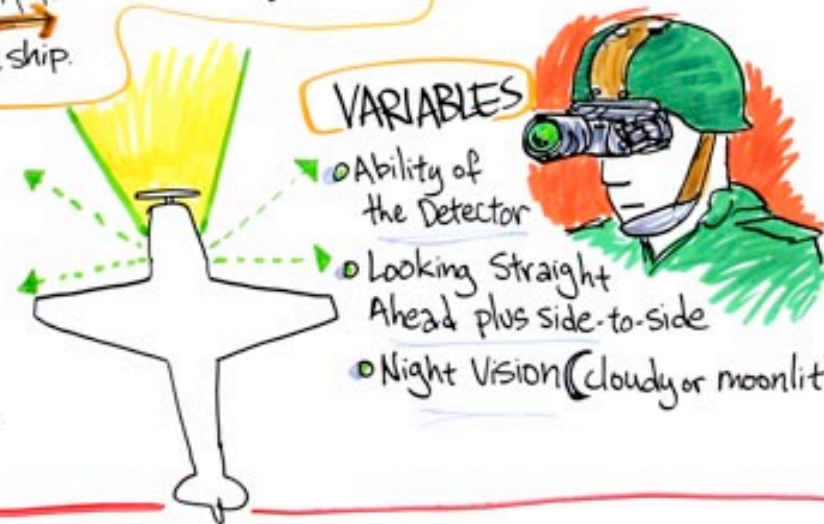
SEARCH & RESCUE METRICS & DEFINITIONS

DAVE LARSON
US COAST GUARD

CPA: Closest Point of Approach



- VARIABLES
- Ability of the Detector
 - Looking Straight Ahead plus side-to-side
 - Night Vision (cloudy or moonlit?)



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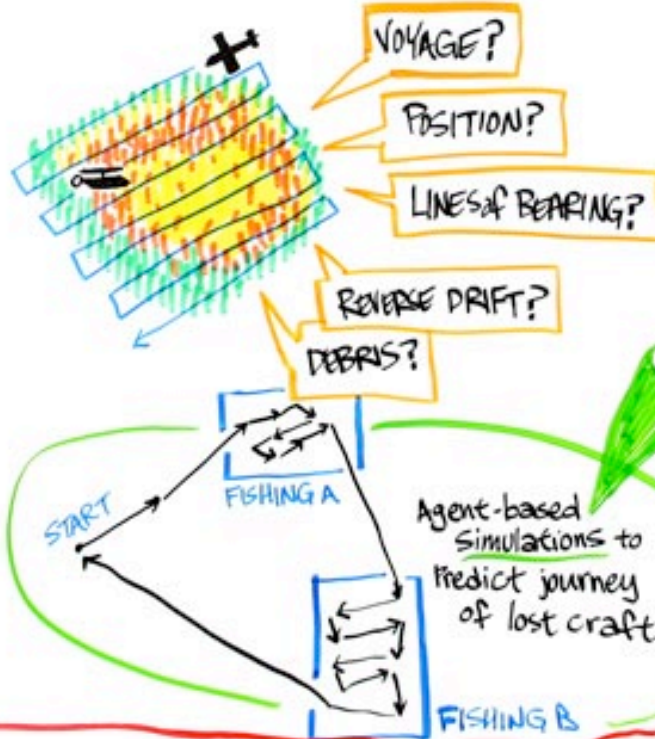
SEARCH & RESCUE OPERATIONS

Jack Frost Coast Guard

SAR TOOLS
 JAWS Near shore 1950's pen+paper
 Computer Assisted Search Planning



SAROPS



SIM ENHANCEMENTS

- Optimal Survival Search
- Canadian Cold Env.
- Moving Hazards
- Sensor Modeling

SIMULATION

- Particle filter
- motion
- hazards
- Pre/post distress
- Search Objects
- Effects of previous unsuccessful search

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