



Exploration Systems Mission Directorate

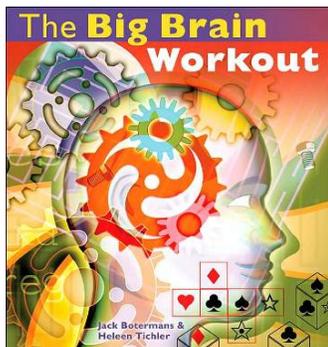
Knowledge

*Café*

4-6 May 2010

Huntsville, Alabama

# Goals



## *Big Brain Workout using the Knowledge Café Method*

Help develop and refine Constellation Program Knowledge Capture and Transfer processes

*Have Fun - Network!*

### Key Takeaways:

Knowledge Mapping Techniques

Knowledge Frameworks

Capture Methods

Transfer Methods

Knowledge-Based Products

Roles of Security and Records Management

Organization and Planning Issues

Risk Management Integration

*YOU are the star of this show!*



# Welcome

Space Exploration Imperative

*Communicate and Work As Effectively as Possible, Learning From Each Other & the Past*

Welcome to the NASA ESMD Knowledge Café!

The following pages outline the topics that will be at each table. Please review the menu, select a topic, and sit at the corresponding table before the formal program starts.

After the overall introduction by Maitre-d Dave Lengyel, there will be a 30 minute discussion facilitated by various Sous Chefs, your table's host.

At the end of the 30 minutes you will be notified that you have 5 minutes to join another table for a different discussion. You will have an opportunity to visit all 8 tables.

Thank you for attending our Knowledge Café.  
Bon appétit!

## Knowledge Café's

- Develops and evolves thinking on specific issues
- Draws out broad participation through small group conversation format
- Elicits deeper understanding of issues
- Encourages open / creative conversation
- Promotes dialogue / not debate or argument
- Values diversity of perspective
- Identifies options / possibilities / pros & cons
- Allows consensus to emerge

## MENU

#	Host	Topic
1	Tom McInnis	Knowledge Demand / Pull Process
2	Scott Motter	Knowledge Maps
3	Steve Newman	Knowledge Frameworks
4	Vyga Kulpa	Planning and Organization
5	Don Vecellio	Knowledge Capture
6	Phil Mongan	Knowledge Transfer
7	Dan Mulligan	Knowledge Products
8	Dave Lengyel	Risk Management Integration

# Schedule

## Tuesday, May 4

12:00	12:10	Welcome Aboard	John Olson
12:10	12:30	Workshop Goals / Objectives	David Lengyel
12:30	14:15	Knowledge Capture / Transfer Best Practices and Lessons Learned - Panel Discussion	
14:15	14:30	BREAK	
14:30	15:00	CxP Records Retention Plan	Thad Henry
15:00	15:30	Cyber Security / K-Artifact Screening Plan / Threat Brief	Phil Bounds
15:30	16:00	Knowledge Capture Frameworks – Ares I-X Lessons	Dr. Steve Newman
16:00	16:30	Knowledge Map Discussion and Wall Walk	All
16:30	16:45	Knowledge Cafe Process, Goals and Objectives	David Lengyel
16:45	17:30	Facilitator / Technographer Training (Optional)	Phil Mongan
18:30	20:30	Dinner @ Rosies Cantina	

## Wednesday, May 5

07:45	08:30	Knowledge Cafe - Table Topics	Sous Chefs
08:30	09:10	Cafe - Round 1	Sous Chefs
09:10	09:50	Cafe - Round 2	Sous Chefs
09:50	10:00	BREAK	
10:00	10:40	Cafe - Round 3	Sous Chefs
10:40	11:20	Cafe - Round 4	Sous Chefs
11:20	12:20	LUNCH	
12:20	13:00	Cafe - Round 5	Sous Chefs
13:00	13:40	Cafe - Round 6	
13:40	13:50	BREAK	Sous Chefs
13:50	14:30	Cafe - Round 7	Sous Chefs
14:30	15:10	Cafe - Round 8	Sous Chefs
15:10	16:00	HOTWASHUP	Facilitated Discussion

# Schedule

## Thursday, May 6

08:00	08:30	Knowledge Maps	Scott Motter
08:30	09:00	Knowledge Frameworks	Dr. Steve Newman
09:00	09:30	Knowledge Capture Methods	Don Vecellio
09:30	10:00	Knowledge Transfer Methods	Phil Mongan
10:00	10:15	BREAK	
10:15	10:45	Knowledge Products	Phil Bounds
10:45	11:15	Organizational / Planning Issues	Vyga Kulpa
11:15	11:45	Knowledge Demand / Pull Process	Tom McInnis
11:45	12:15	Risk Management Integration	David Lengyel
12:15	13:00	Expert Panel Observations	Facilitated Discussion
13:00		WORKSHOP COMPLETE	

# Table 1

“conversation around the theme”

## Knowledge Demand / Pull Process

### Discussion Threads

Co-Sous Chef: Tom McInnis

Co-Sous Chef: Jon Boyle

Why capture knowledge at all?  
At the end of the day, we will attempt to satisfy the “knowledge demand” of several sets of **customers**. Some examples include:

- 1) Knowledge will be preserved for our own reuse in new projects and programs
- 2) Knowledge will be used by commercial crew and cargo providers, e.g. critical technologies
- 3) Knowledge may also be relevant to the Science, Technology, engineering and Mathematics (STEM) initiative

So how do we determine and then prioritize the type of knowledge and in what form we should be capturing?

1. Consider the various processes you are familiar with to request information (e.g. RFI process). What parts of these processes could be implemented to determine the “knowledge demand” from a new set of customers?
2. Discuss the “Top-N” list of information/knowledge which is likely to be the most valuable to ourselves and our “customers” (e.g. technology, processes, materials, manufacturing techniques, etc.)
3. How should a knowledge demand / pull process be administered and/or controlled? And by whom?
4. List the ways that establishing a process to define our customer requirements will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

# Knowledge Maps

**Sous Chef: Scott Motter**

Yogi Berra once said, “You've got to be very careful if you don't know where you are going, because you might not get there.”

Knowledge Maps are nothing more than a textual and/or graphical template of where knowledge resides, and in what form, in an organization or process. Determining the type of template to use can be accomplished by asking yourself what is the most important thing we need to identify with the map—in other words, what is the goal or destination?

Do we need to understand what competencies or critical skills exist in our organization and the vulnerabilities due to retirements and downsizing? Do we need to understand the knowledge required for a new program or project? Are we building a Knowledge Map to identify content to populate an ICE wiki space or community of practice?

## Table 2

*“conversation around the theme”*

### Discussion Threads

1. After reviewing the sample Knowledge Maps during the “Wall Walk” discuss your likes or dislikes in mapping techniques.
  - What fields are the most important and why?
  - Should subject matter experts be identified, along with the identification of critical skills?
  - What presentation methods would you use for your knowledge map?
2. Should a work process map be developed as a base for each knowledge map? Do you know what percentage of your processes are documented?
3. Should decision forums be identified on all Knowledge Maps?
4. Do you see a need for adding a critical skills overlay to the knowledge map?
5. Brainstorm how Knowledge Maps can be used most effectively to inform the knowledge capture and transfer process
6. Discuss the ways Knowledge Maps will help CxP conduct the knowledge capture / transfer process

- Sous Chef to further evolve
- Conversation to further define

# Table 3

*“conversation around the theme”*

## Knowledge Frameworks

**Sous Chef: Steve Newman**

### Discussion Threads

1. Brainstorm potential knowledge frameworks best suited to CxP knowledge capture and transfer activities.
2. How many “bins” or categories are optimal to provide a user-friendly interface?
3. To what extent should NASA’s new FY11 agenda instruct the KCT framework(s)?
4. How many individual frameworks should be used for knowledge capture?
5. How many individual frameworks should be used for transfer?
6. Can tagging knowledge artifacts (short stories, lessons learned and vignettes) be implemented to support multiple user interfaces?
7. List the ways Knowledge Frameworks will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

All frameworks are imperfect by definition – each has the power to reveal as well as conceal. Structure – embodied in the knowledge capture/transfer framework is critically important. The right framework will ensure the right information is captured and that the information is transferred in an intuitive fashion that relates to an individual’s (or an organization's) needs. Knowledge frameworks can vary from engineering discipline, process, risk, requirements, work / organizational breakdown structure, systems engineering, to milestone orientations.

*“conversation around the theme”*

# Planning and Organization

## Discussion Threads

1. Reflecting on past experience, what are the key elements of a knowledge capture and transfer plan?
2. Discuss ways to organize at your level for knowledge capture.
3. What are some ways to effectively integrate with records management and security personnel?
4. List some of the skills sets required for knowledge capture?
5. Discuss the top-N risks you see in organizing and planning for knowledge capture—include brief statements on how to mitigate these risks.
6. List the ways that a Knowledge Capture / Transfer Plan will help CxP complete this effort

- Sous Chef to further evolve
- Conversation to further define

# Table 4

**Sous Chef: Vyga Kulpa**

Welcome to Knowledge Capture Planning and Organization 101...!

This should come as no surprise to you.....successful knowledge capture and transfer requires upfront planning just as any well run project.

This requires clear definition of :

- 1) Roles and responsibilities
- 2) Knowledge frameworks
- 3) Knowledge maps
- 4) Work breakdown structure
- 5) Integrated schedule
- 6) Integrated budget
- 7) List of deliverables

# Table 5

*“conversation around the theme”*

## Knowledge Capture Methods

**Sous Chef: Don Vecellio**

Knowledge capture methods range from the passive lessons learned database approach to active techniques which involve structured individual and team interviews.

Approaches used by large organizations in the past (e.g. NGLT and OSP) have mechanized the process in an assembly line fashion for the capture of discrete lessons that are rolled up to overarching categories and themes. Any rigorous capture approach will be synchronized with the knowledge framework to produce a most useful product in the end.

### Discussion Threads

1. What are the most successful knowledge capture techniques you have seen at NASA?
2. Which of these techniques would be most useful for your organization?
3. Discuss the skill sets required for knowledge capture. Does your organization have these critical skills?
4. Discuss the manner in which the knowledge framework used will facilitate the knowledge capture activity.
5. Discuss how knowledge maps could be used to drive the knowledge capture effort.
6. List the ways that defined Knowledge Framework methods will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

*“conversation around the theme”*

# Knowledge Transfer Methods

## Table 6

### Discussion Threads

1. What are the most effective knowledge transfer techniques you have observed at NASA?
2. Which of these techniques would be most useful for your organization?
3. What do you find more useful—learning thru conversation or learning thru reading?
4. How can CxP effectively transfer knowledge to commercial crew service providers?
5. What can you do at the individual level to ensure that knowledge transfer is successful?
6. Should the Web 2.0 modalities – especially wikis, twitter, blogs, Second Life – be in the knowledge transfer mix?
7. List the ways that defined Knowledge Transfer methods will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

### **Sous Chef: Phil Mongan**

Many people feel that knowledge capture is easy compared to knowledge transfer. While some people will reflect on best practices and lessons learned as a program stands up, they tend to be less likely to do so once “on the clock” —unless they run into a problem requiring some form of assistance. Knowledge transfer techniques can range from the codification of knowledge in programmatic documents or command media, knowledge sharing forums, peer assists, training, mentoring, checklists and so on. More than one technique is generally needed.

# Table 7

*“conversation around the theme”*

## Knowledge Products

### Sous Chef: Dan Mulligan

Knowledge capture products at NASA tend to be very report and / or powerpoint presentation-oriented. OSP and NGLT are two examples of this. In ESMD, we have endeavored to create more multi-media products such as KBRs and case studies. A variety of products could be created for CxP knowledge capture ranging from the existing ESMD integrated risk and knowledge management products to design review checklists, best practices reports, process documentation with lessons appended, training packages and so on. We are limited only by our imagination—and our budget of course!

### Discussion Threads

1. Reflecting on past experience, discuss the knowledge capture products ( e.g., a facilitated discussion, a document, a video, a web-based case study, a seminar) a which you have found most useful in your NASA career.
2. What format / media and delivery methods were used?
3. Discuss how the knowledge framework used will drive the content of your products.
4. What are the critical skills required to create the various forms of knowledge products? Does your organization have these skills?
5. How would you organize internally to create a portfolio of knowledge capture products?
6. List the ways that defined knowledge products will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

*“conversation around the theme”*

# Risk Management Integration Discussion Threads

1. How can we enhance the integration of risk and knowledge management to inform transition activities? How do we most effectively keep risk management relevant to busy managers?
2. What are the Top-N risks to implementing an effective knowledge capture / transfer effort? How can they be mitigated?
3. Discuss current R&KM workshops, KBRs, Case Studies, P2Os and ways to further develop these practices and products to enhance risk management processes.
4. List the ways that defined risk management integration will help CxP conduct knowledge capture / transfer.

- Sous Chef to further evolve
- Conversation to further define

## Table 8

**Sous Chef: David Lengyel**

ESMD has employed an integrated risk and knowledge management approach for the last five years. Risk management will be critically important during a potential lengthy transition period which would include extensive knowledge capture activities. If we were to draw a roadmap for ESMD Risk & Knowledge Management 2020” what things should we be thinking about improving today to make our work more relevant to successful project / program management?

# Thank You

## Don't Miss the Next Event

**What:** 17<sup>th</sup> IRKMS Workshop on Transition Risk Planning

**When:** 08-10 November 2010

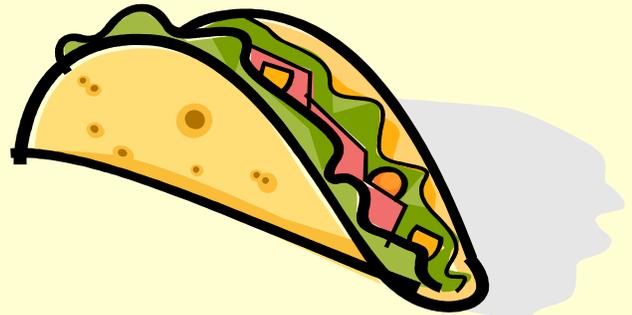
**Where:** Wallops Flight Facility

**More Info:** Contact David Lengyel for Details

## Tuesday's Dinner

### **Rosie's Cantina**

7540 Memorial Parkway Southwest  
Huntsville, AL 35802-2265  
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## Sponsor Information

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