

Quick LifTTS Tools to Stop Brain Drain: Ensuring Knowledge Continuity

Michael Bell and Susan Snyder



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Question: Please Type Response in Chat

What was your best OR worst knowledge transfer experience when starting a new job or project?



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*Learn from the past
to succeed in the future.*

appel.nasa.gov/knowledge



Knowledge Continuity

Image: <https://appel.nasa.gov/virtual-backgrounds/>

The Knowledge Retention Challenge

“It is NASA policy to...**mitigate the impacts of attrition and other workforce demographic trends** or program/project closeouts on **knowledge loss and close anticipated knowledge gaps** to benefit future knowledge users.”

- *NASA Policy Directive 7120.6a*

“The anticipated change in workforce demographics due to...**retirement of the most experienced personnel** — many of whom cannot easily be replaced — presents a **serious knowledge retention challenge** for NASA.”

- *NASA Knowledge Capture and Transfer Working Group*



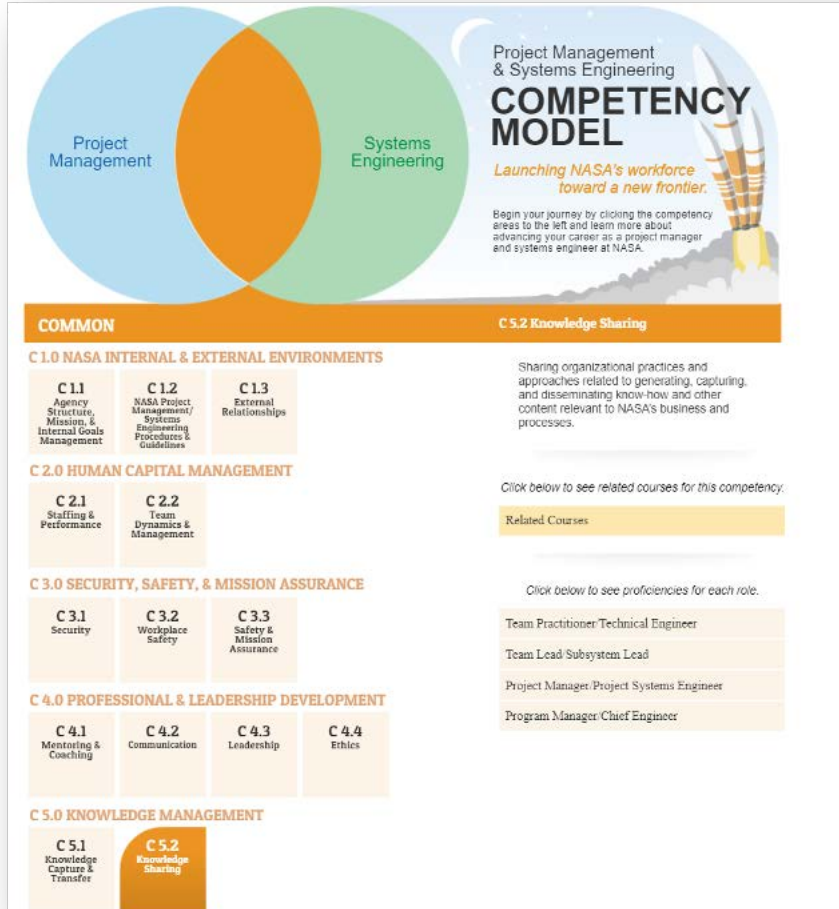
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Knowledge Sharing is a Competency

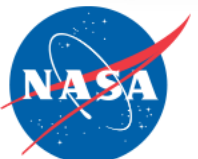


Knowledge Capture and Transfer

Identifying, capturing, evaluating, and transferring knowledge in an organized fashion to improve performance and reduce risk associated with future programs, systems, and projects.

Knowledge Sharing

Sharing organizational practices and approaches related to generating, capturing, and disseminating know-how and other content relevant to NASA's business and processes.



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Knowledge Transfer and Capture

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Ensuring Knowledge Continuity during Employee Transitions: NASA Knowledge Capture and Transfer Working Group Report

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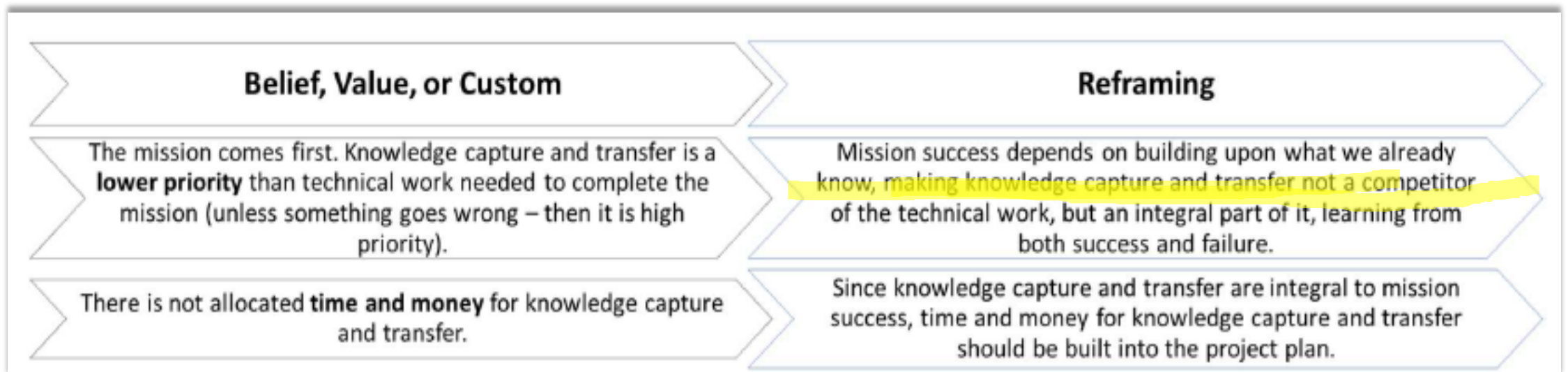
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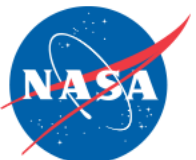
Social and Information Sciences (General)

Administration and Management

Key to Mission Success



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Working Group Report & Recommendations



NASA/SP-20210026226



Ensuring Knowledge Continuity during Employee Transitions

NASA Knowledge Capture and Transfer Working Group Report

APPEL Knowledge Services
NASA Headquarters, Washington, DC

December 2021

Three overarching recommendations were developed by the Working Group:

1. Standardize **processes**, templates, and guidance to support knowledge capture for personnel and project transitions.
2. Develop **templates** and guidance to support knowledge transfer and connection processes.
3. **Promote** and support knowledge capture and transfer practices and tools so that they can be applied effectively throughout the agency.



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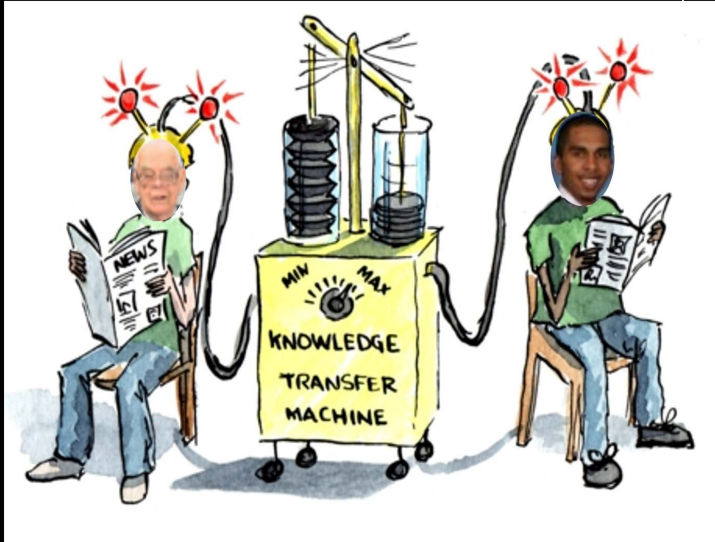








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Ensuring Knowledge Continuity during Employee Transitions

<https://appel.nasa.gov/knowledge-capture-and-transfer/>





Knowledge Capture and Transfer

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Ensuring Knowledge Continuity during Employee Transitions

When people retire or transition from one project or program to another for career development and growth opportunities, they leave behind critical knowledge gaps for their teams and missions. The experiences and knowledge held by the valuable members of NASA's technical workforce cannot easily be replaced. Transitions like these can cause stress and loss of productivity for teams and can present risks to projects and impact the likelihood of mission success.

This page provides resources to help NASA leaders and teams take steps to build a culture that connects employees to knowledge when they join a team and that retains the critical knowledge held by experienced personnel in advance of retirement or other transitions. These resources have been developed by NASA Center and Mission Directorate Chief Knowledge Officers and the APPEL Knowledge Services team based on NASA's recent Knowledge Capture and Transfer study.



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Setting the Culture



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Setting the Culture

Mission success depends on building upon what we already know. Knowledge capture and transfer are integral to achieving NASA's goals, and teams do well when they establish a culture that supports sharing and advancing knowledge at the outset.

- **Knowledge Capture and Transfer Guide for Supervisors:** An easy-to-use guide for NASA supervisors to help capture and transfer knowledge within their organization.
- **Knowledge Management Planning Guide:** Provides guidance for NASA project managers to develop meaningful knowledge management plans that bring value to projects, leverage available resources, are realistic in terms of cost and schedule implications, and are flexible enough to adjust to the evolving needs of the project.
- **Knowledge Transfer:** This simple guide explains the process of knowledge transfer and provides a basic framework for conducting knowledge transfer activities.
- **Competency Model:** Element C5.1, "Knowledge Capture and Transfer", provides proficiency level definitions, illustrations, underlying skills, and fundamental knowledge required for performing knowledge capture and transfer activities at each of four roles in the NASA technical workforce.

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Keeping Knowledge Current



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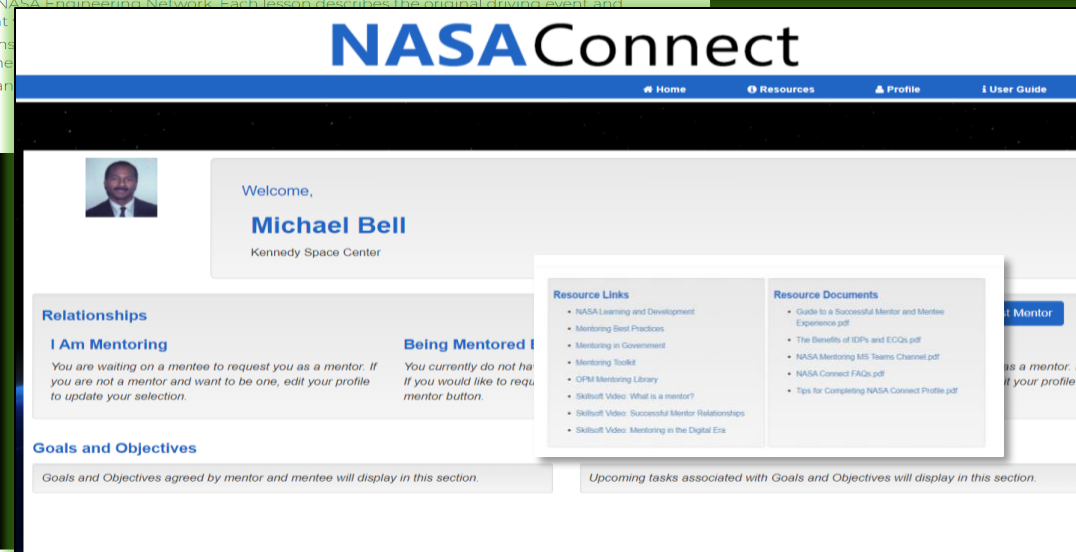
Knowledge Capture Tools



Keeping Knowledge Current

It's better to capture and maintain knowledge in the course of everyday work than to try to gather all the insights at the end of a process. Even more difficult is doing so at the end of a decades-long career. Here are some techniques for capturing knowledge in any organization, which can be modified to meet teams' needs.

- Use **onboarding passports and checklists** to help new team members understand the environment, gather the knowledge they need, and connect with different sources of organizational and agency knowledge.
- Engage in **technical mentoring and job shadowing**. Individuals can seek out a mentor whose experience or expertise he or she admires. Willing mid-late career practitioners can also offer their experience for the benefit of earlier-career personnel. Shadowing a colleague or peer is another opportunity to learn how experienced leads approach problems, run technical meetings or engage with partners, and then, consider how what is observed might apply to a team.
- **NASA Public Lessons Learned System**: Provides access to official, reviewed lessons learned from NASA programs and projects. These lessons have been made available to the public by the NASA Office of the Chief Engineer and the NASA Engineering Network. Each lesson describes the original driving event and provides recommendations that feed into NASA's continual improvement.
- **After Action Review or Pause and Learn**: This approach to eliciting lessons information is gathered while all the participants are still available, and the
- Maintain **information systems** containing responsibilities, roles, policies and duties for replacement personnel.

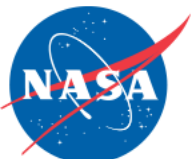


CONTINUITY CHECKLIST: Questions to ask

- ☐ **Duties:** What are all the roles, duties, and responsibilities associated with this position?
- ☐ **Organization:** Is there an organization chart with names, job titles, and contact information? Who is my supervisor? Who will I supervise?
- ☐ **Points of Contact:** Who should I expect to interact with? What are their specific roles & how do I contact them? (If possible, ask to be introduced to frequent or important points of contact.) Who else you I contact for mentorship or advice?
- ☐ **References:** What documents, books, or regulations are essential to my job? Where can I find them? Are there any sections to highlight that are most often referenced?
- ☐ **Calendar & Tasks:** What daily, weekly, monthly, and yearly tasks will I be expected to accomplish and when are their deadlines? What important events should I attend? Is there a checklist or calendar that includes these tasks and deadlines? Are there any techniques for accomplishing these tasks?
- ☐ **Flow of Information:** How and from whom should I expect to receive information (emails, chatrooms, websites, meetings, etc)? Who will I commonly push information to and in what format/setting? Where is information and important documents normally stored? What programs or software should I have access to? How do I get access?
- ☐ **Maps & Locations:** Are there any locations, facilities, or rooms that I will need to use? How do I get access?
- ☐ **Equipment:** Is there any equipment that I will be responsible for or need to use for the job? Are there manuals, instructions, or videos for how to use it? Can you show me the equipment and how to use it?
- ☐ **Training & Development:** Are there any courses, conference, or events that are beneficial for this job? Are there any required certifications? Is there a community of practice I can join?
- ☐ **Troubleshooting:** Are there any recurring or expected problems to be aware of? How should I troubleshoot or find solutions?
- ☐ **Lessons Learned:** Do you have any stories or lessons learned to share? Is there anything you learned "the hard way"? Are lessons learned tracked? Where?

Contact your **Center Chief Knowledge Officer** and visit the **KC&T website** for more resources!

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Maintaining Knowledge through Retirements and Other Transitions

When departures are imminent, prioritize the most critical knowledge to capture to support the team and the mission. When there is greater lead-time for a transition, consider ways to strengthen and reinforce knowledge among team members.

- **Panel discussions and focus groups** give experts the opportunity to have a dialogue with colleagues and contribute their knowledge through stories and interactions. When there is sufficient time to set up a panel discussion or group conversation, teams can benefit from having a shared experience and some members of the team will pick up insights that others might miss.
 - **Related resource:** [Langley Research Center's Legacy Fellowship Program](#)
- **Video capture** can help illuminate the personality and experience of an expert. Video capture practices can range from one or a few long-form interviews to short snapshots of a specific practice or specific leadership advice. Using video capture reduces the amount of editing and review necessary for the interviewee, and it helps to ensure that the information collected is exactly what was said.
 - **Related resources:**
 - [Capturing Legacy – Drawing out a Great Story \(NASA Only\)](#)
 - [Capturing Legacy – Tips and Tricks for the Smartphone Videographer \(NASA Only\)](#)
- Set up **meetings and pre-exit interviews** to help ensure that unique information, procedures, and documents are all identified. In these conversations, be sure to discuss lessons learned, points of contact, and any additional tips and resources that might not otherwise be documented.

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The Knowledge Community

<https://appel.nasa.gov/critical-knowledge/nasa-knowledge-community/>



The following resources provide additional support for these activities.

- **NASA Policy Directive 7120.6a, Knowledge Policy for Programs and Projects:** This Policy Directive establishes NASA's policy on knowledge retention and outlines roles and responsibilities for maintaining program and project knowledge throughout NASA.
- **NASA Knowledge Community:** The NASA knowledge community is a vibrant group of practitioners who actively facilitate knowledge capture, storage, reuse and sharing across the agency. This resource lists all current Chief Knowledge Officers, Points of Contact, and their teams, so that each Center or Mission Directorate can easily contact the appropriate group to provide guidance or reach out to others in the CKO Community for relevant experience.



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- Please put in chat the barriers to being able to implement these ideas in our organizations.
- As participants see the barriers, add an idea you heard on this call that would make it easier to make these changes.



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