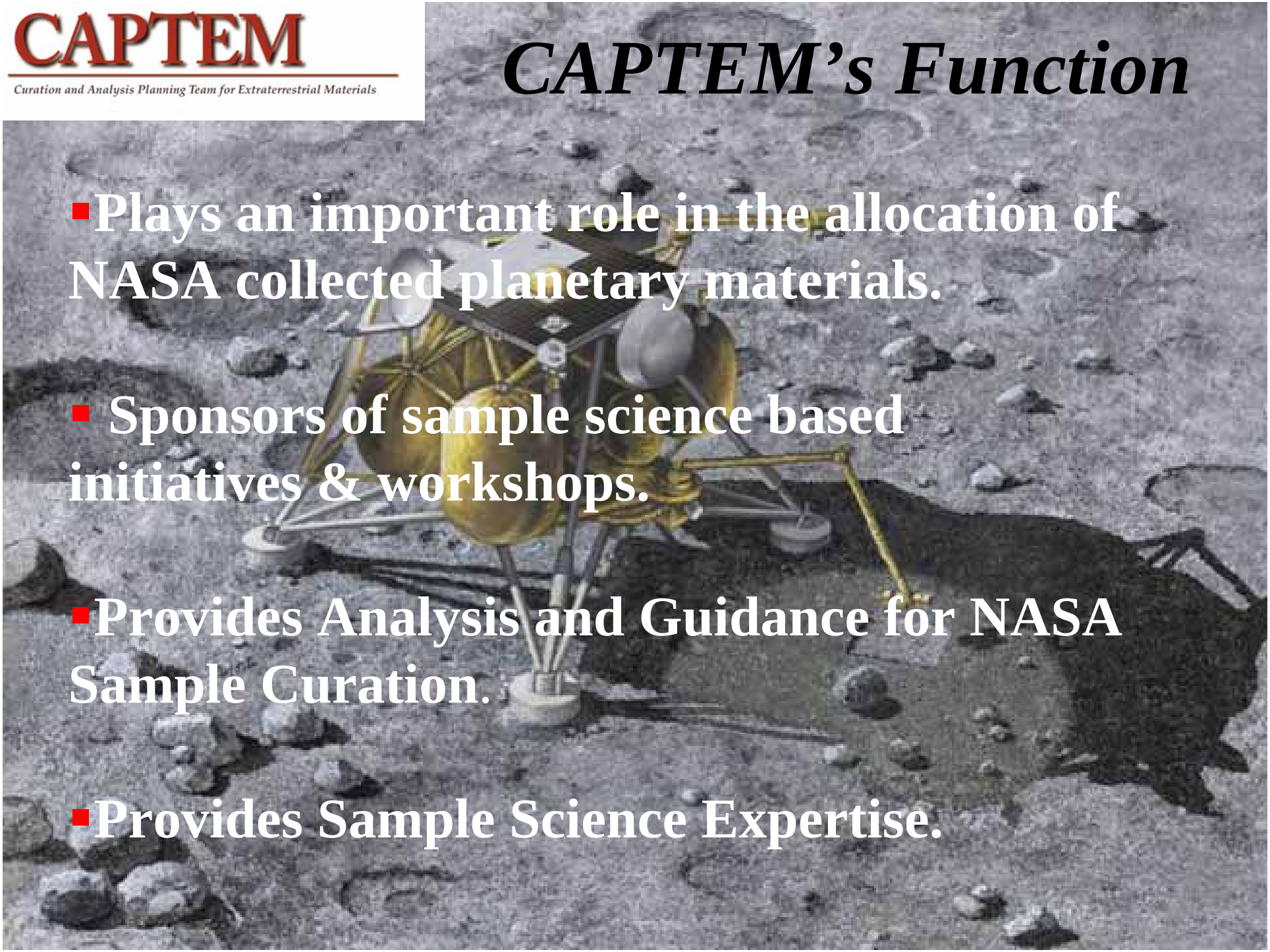

CAPTEM
Presentation to the
PSS NAC
Oct. 2-3, 2008
Chip Shearer
University of New Mexico

CAPTEM

Curation and Analysis Planning Team for Extraterrestrial Materials

CAPTEM's Function



- **Plays an important role in the allocation of NASA collected planetary materials.**
- **Sponsors of sample science based initiatives & workshops.**
- **Provides Analysis and Guidance for NASA Sample Curation.**
- **Provides Sample Science Expertise.**

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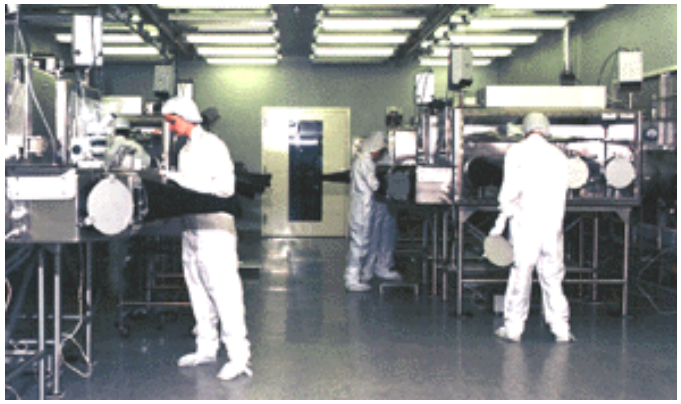
Renovation of 31N

- CAPTEM Facilities Committee (Shearer, Borg, Neal, Papanastassiou, and Nyquist) reviewed the engineering study for the air handling system in lunar sample facility.
  - 30% review of the 31N design -- **August 6, 2008.**
  - Inspect and review ongoing progress **Oct. 14, 2008.**



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Lunar Sample Return

The Scientific Context for Exploration of the Moon: Final Report

Committee on the Scientific Context for Exploration of the Moon, National Research Council

ISBN: 978-0-309-10919-2, 120 pages, 8 1/2 x 11, paperback (2007)

Finding 4R: The NASA curatorial facilities and staff have provided an exemplary capability since the Apollo program to take advantage of the scientific information inherent in extraterrestrial samples. The VSE has the potential to add significant demands on the curatorial facilities. The existing facilities and techniques are not sufficient to accommodate that demand and the new requirements that will ensue. Similarly, there is a need for new approaches to the acquisition of samples on lunar missions.

Recommendation 4R: NASA should conduct a thorough review of all aspects of sample curation, taking into account the differences between a lunar outpost-based program and the sortie approach taken by the Apollo missions. This review should start with a consideration of documentation, collection, and preservation procedures on the Moon and continue to a consideration of the facilities requirements for maintaining and analyzing the samples on Earth. NASA should enlist a broad group of scientists familiar with curatorial capabilities and the needs of lunar science, such as the Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM), to assist it with the review.

CAPTEM

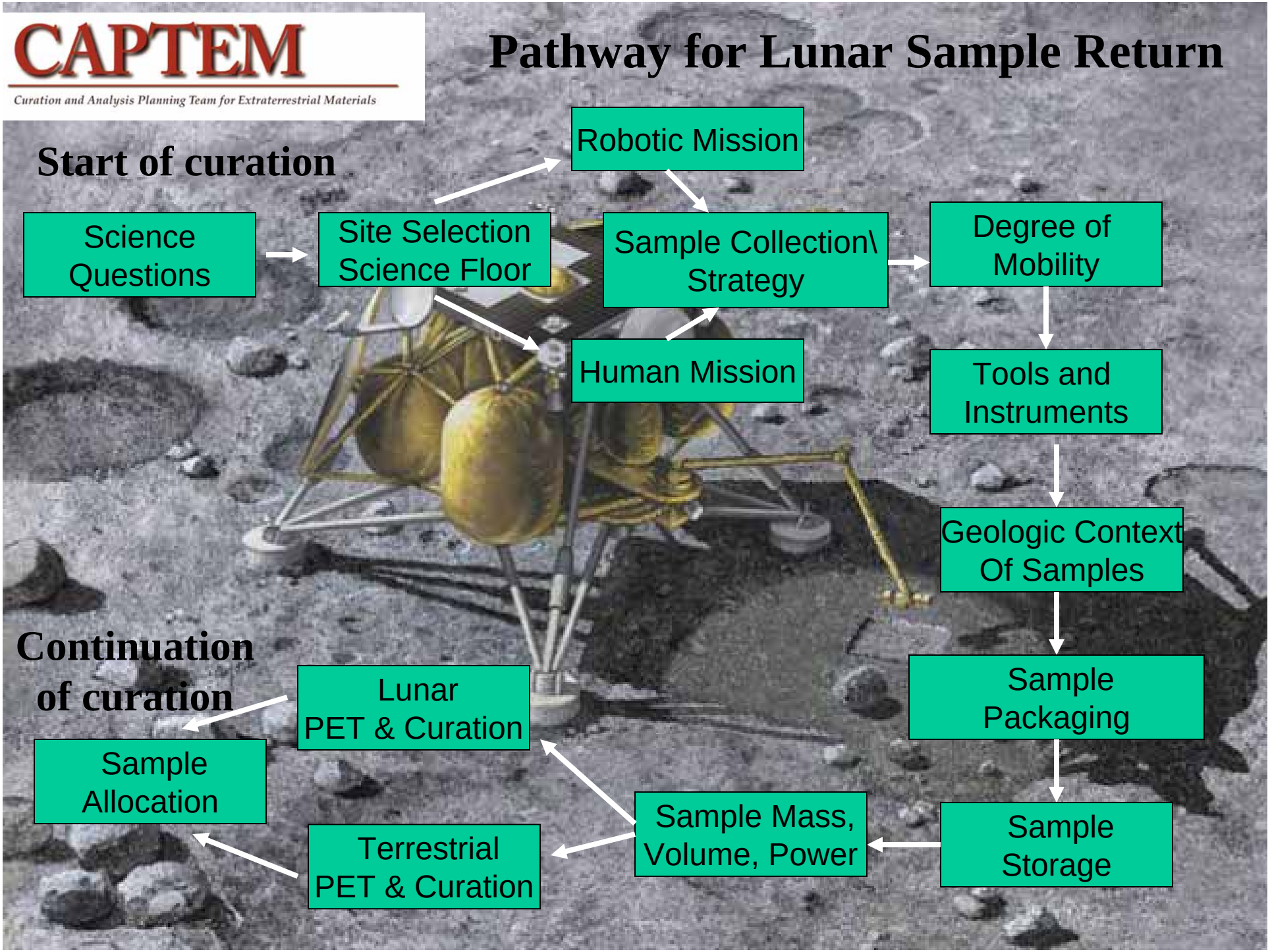
Curation and Analysis Planning Team for Extraterrestrial Materials

JOINT CAPTEM-LEAG INITIATIVE: LUNAR SAMPLE ACQUISITION, DOCUMENTATION, AND CURATION

Co-Chairs

Clive Neal (chair, LEAG)

Charles Shearer (chair, CAPTEM)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Curation and Analysis Planning Team for Extraterrestrial Materials
Pathway for Lunar Sample Return
Start of curation
Robotic Mission
Science Questions
Site Selection Science Floor
Sample Collection\ Strategy
Degree of Mobility
Human Mission
Tools and Instruments
Geologic Context Of Samples
Continuation of curation
Lunar PET & Curation
Sample Packaging
Sample Allocation
Sample Mass, Volume, Power
Sample Storage
Terrestrial PET & Curation

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Initial Steps of Analysis

On the Earth

Terrestrial Curation Facilities for Lunar Samples:
(1) What are the current curation capabilities?
(2) What are future curation requirements?
(3) What advanced curation technologies are needed?

On the Moon

- Sample Mass, Volume, Power
- Sample Storage And Packaging
- Sample Documentation
- Sample Selection, Acquisition, and Contamination
- Strategies Behind Curation on Lunar Surface