



"People" People Working or Not Working in Isolation: Coping Tools for the Hospitality Industry

Topic 3 of 4:

Lessons from Astronauts on Dealing with Isolation

Presented by:

Dr. Lauren Blackwell Landon

Team Risk Discipline Scientist, Human Factors, and Behavioral Performance (HFBP) Element
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Research Recovery & Reskill

WEBINAR
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UCF

Rosen College of
Hospitality Management

UNIVERSITY OF CENTRAL FLORIDA

Lessons from Astronauts on Dealing with Isolation

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UCF

Targeted Research Training (TRT) Program

Housed in Department of Psychology at UCF



Cutting-edge research and interventions to improve workplace well-being and organizational effectiveness in hospitality



Interdisciplinary training for graduate students



Outreach and dissemination of research findings

Sunshine Education & Research Center

Funded by

The National Institute for Occupational Safety and Health (NIOSH)

Mission

The Sunshine Education and Research Center transforms workplace quality of life through transdisciplinary education, research and practice, and industry partnerships.



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Targeted Research Training

Faculty

- Dr. Mindy Shoss, I/O Psychology
- Dr. Cynthia Mejia, Rosen College
- Dr. Kristin Horan, I/O Psychology
- Dr. Steve Jex, I/O Psychology
- Dr. Deborah Breiter Terry, Rosen College

Academic Partners

- Multiple Universities
- Multiple Disciplines
- Faculty, Graduate and Undergraduate Students

Advisory Partners

- Central Florida Hotels
- Union
- Research & Public Policy



**Research
Recovery
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**WEBINAR
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**Rosen College of
Hospitality Management**
UNIVERSITY OF CENTRAL FLORIDA



Dr. Lauren Blackwell Landon
Research Scientist, NASA



JOURNEY TO MARS



Lauren Blackwell Landon, Ph.D.

Behavioral Health & Performance (BHP) Laboratory

Human Factors and Behavioral Performance Element



NASA Johnson Space Center, Houston, TX



Space Flight Environmental Stressors



- μ gravity
- Space radiation
- Launch/entry acceleration/vibration
- Geochemical properties of destination (g, volatiles, dust)
- Comm lag
- Noise
- Altered light/dark cycles
- High CO₂
- Sensory deprivation
- Confinement
- Isolation
- Lack of privacy
- Tasks/workload



Spaceflight Operations

Low Earth Orbit

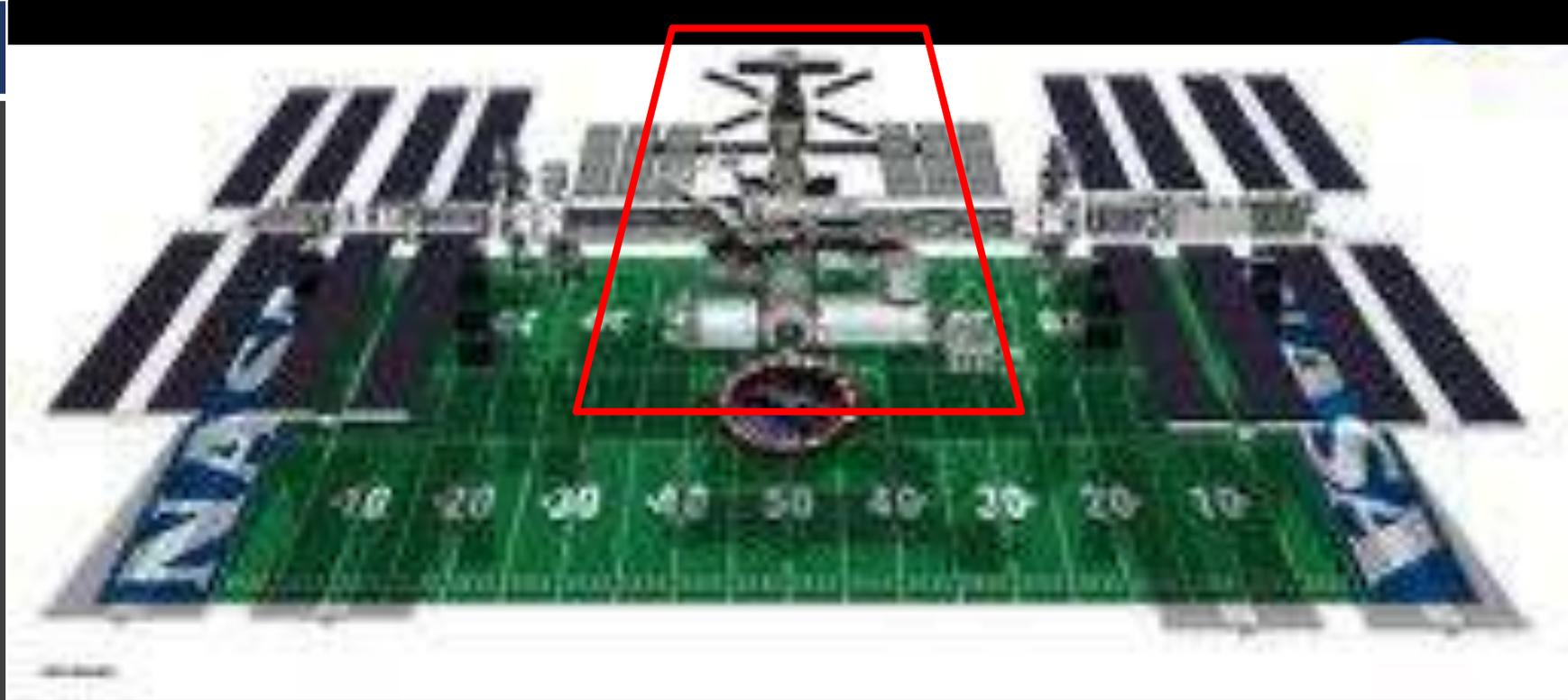
- Real-time communication with ground operations, family
- Provision of crew care packages
- Discretionary events
- Evacuation options
- Cupola and Photography
- Exercise 2 hours/day
- High tempo workload
- Private crew quarters

Future Missions

- Orion vehicle is much smaller
- Minimal privacy
- Reduced resupply

Major Challenges

- Selection & crew composition
- Team cohesion & coordination
- Fatigue, workload management
- Motivation, family connection
- Adaptation & resilience





Scott Kelly's 1-year Mission



- “Every day, I was exposed to ten times the radiation of a person on Earth, which will increase my risk of fatal cancer for the rest of my life. Not to mention the psychological stress, which is harder to quantify and perhaps just as damaging.”
 - *Scott Kelly, excerpt from “Endurance: My Year in Space and our Journey to Mars”*



Example analogs:

- Human Exploration Research Analog (HERA)
- Antarctic Stations (e.g., South Pole)
- Arctic Stations
- NEEMO, deep sea
- HI-SEAS
- Russian Mars 500
- :envihab
- Healthcare
- Military
- ISS





Past Findings in ICE



Overall Positive Experiences

- Challenge of the work
- Appreciation of colleagues
- Ability to master new skills
- Self satisfaction

Isolated Confined Extreme Environments (ICE)

“Winter-over Syndrome”

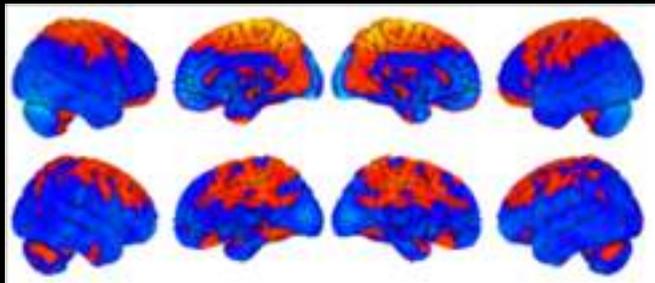
- Social narrowing
- Social withdrawal
- Somatic complaints
- Tension, irritability
- Emotional lability
- Territorial behavior
- Depression
- Lack of concentration
- Short-term memory
- Sleep problems, insomnia
- Aphasia
- Fugue state
- Susceptibility to illness

Negative Factors

- Difficulty of disengaging from failed relationships
- Increased focus to micro-stimuli
- Increased us versus them attitude
- Psychological and physiological sluggishness
- “Toasty”
- Insomnia

Adaptive Factors

- Station manager tone
- Prior experience
- Realistic expectations (e.g., crewmembers, recreation)



Bed rest brains

Space brains



Summarized from
Otto, Nicolletti,
Salam, Leone and
Palinkas, Kanas
Reviews

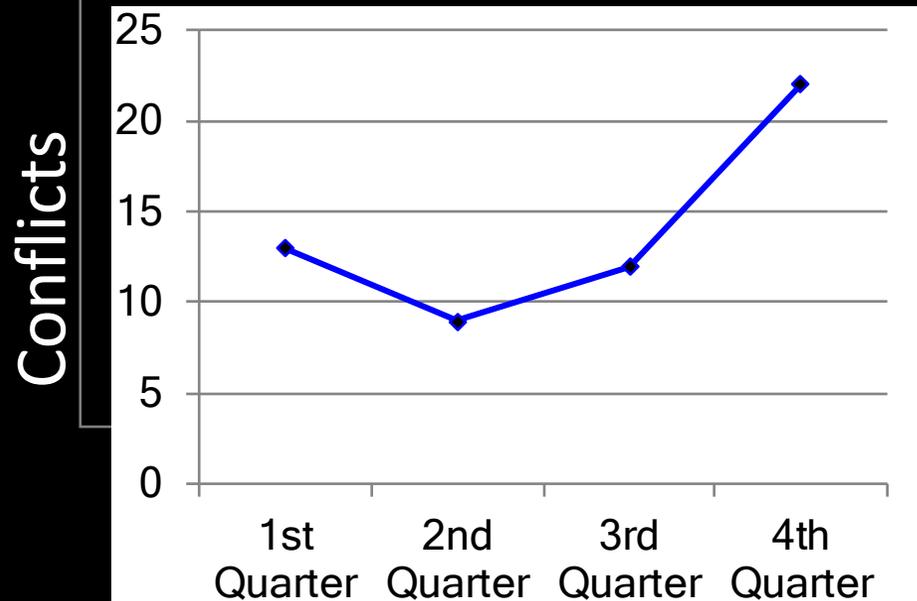


Teams Over Time

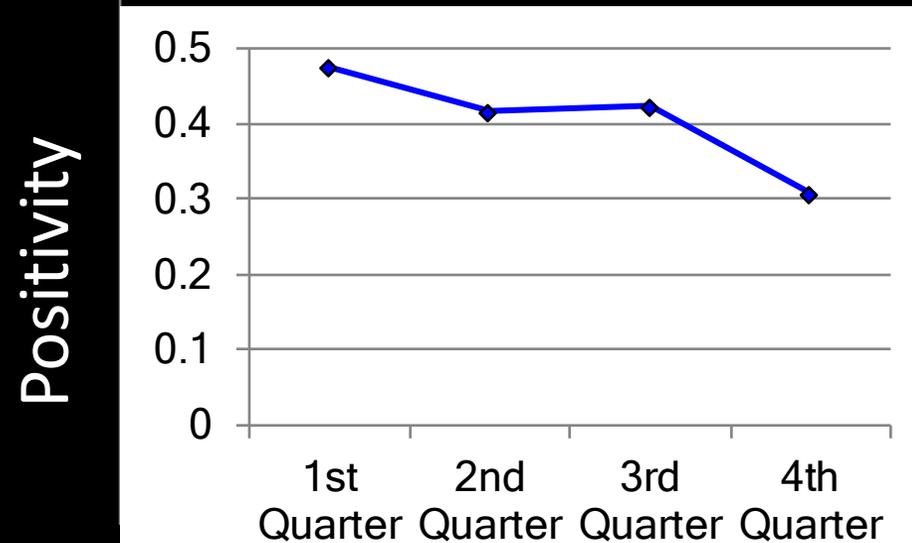


“You can live with anyone for two weeks...” – Shuttle-flown astronaut(s)

- ISS Astronaut journal entries on conflict by mission quarter



- ISS astronaut group interaction positivity ratings by mission quarter (n=244 entries)



NASA C-O-N-N-E-C-T



ISOLATION
What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members rely on each other to help address it, and we learn ways to solve problems whether in space or at our highest peaks.



Community
Find ways to support each other and contribute to the greater good.

Openness
Be open-minded. Find the ways to adapt to life's challenges.

Networking
Make contacts. Connect with others to create new activities and share experiences.

Needs
Find a solution. Find and design work, mission, physical and personal health systems.

Expeditionary Mindset
Overlook challenges. Focus on what happens next and possible options to solve it.

Countermeasures
Embrace stress. Be mindful of your strengths to prevent and change your concerns.

Training
What we enter can be learned to do. Practice skills and learn experience.



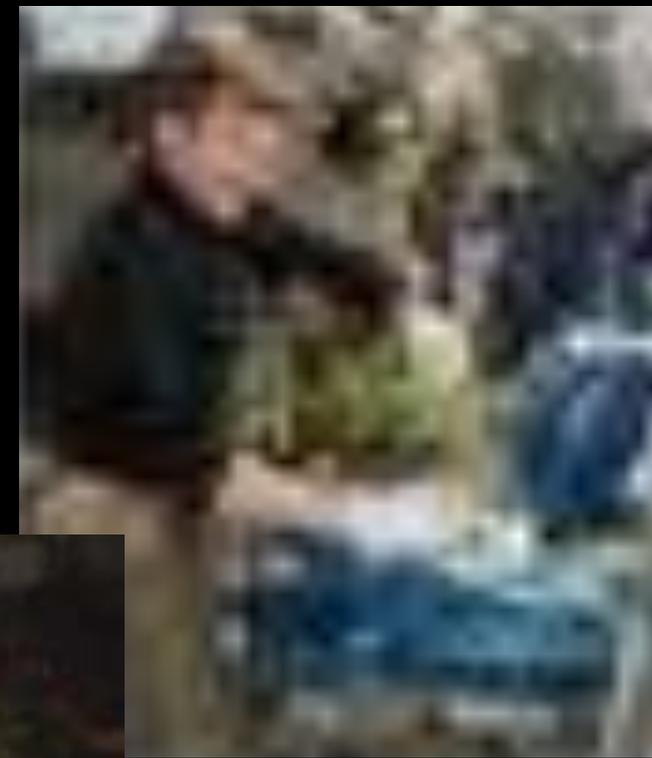
Created by: Dr. Tom Williams
Human Factors and Behavioral Performance Element Science
NASA Human Research Program



Connect with nature

- Psychological link to home / nature
- Sensory deprivation countermeasure
 - ✓ Sight
 - ✓ Smell
 - ✓ Taste
 - ✓ Touch
- Stress prevention / relief method

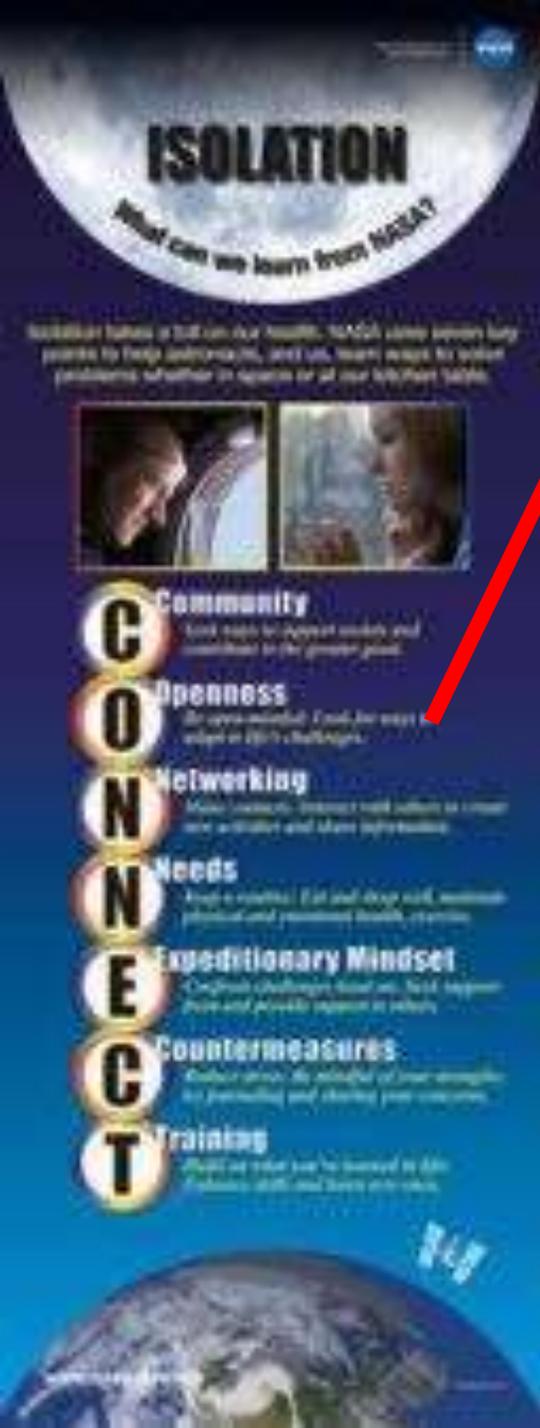
Picture taken by Shannon Lucid on Mir



Mike Foale, ISS

"I loved the greenhouse experiment. I enjoyed looking at [the plants] every morning for about 10 to 15 minutes. It was a moment of quiet time."

NASA C-O-N-N-E-C-T



ISOLATION
What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members face problems to help astronauts, and we learn ways to solve problems whether in space or at our beloved home.

C Community
Find ways to support each other and contribute to the greater good.

O Openness
Be open-minded. Find the best ways to solve our toughest challenges.

N Networking
Make contacts. Connect with others to create new activities and share information.

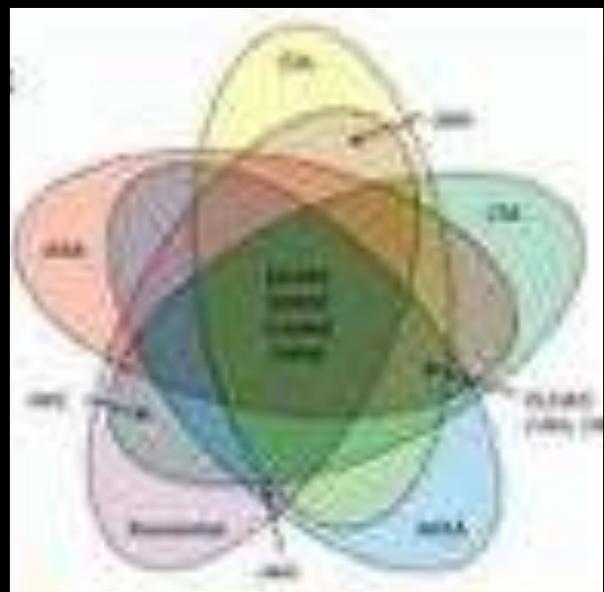
N Needs
Find a solution. Eat and sleep well, maintain physical and psychological health, exercise.

E Expeditionary Mindset
Overlook challenges. Focus on the best options. Discover possible options to return.

C Countermeasures
Embrace stress. Be mindful of your strengths for preventing and clearing your concerns.

T Training
Practice what you've learned to do. Perform skills and learn alternatives.

Openness



NASA C-O-N-N-E-C-T



ISOLATION
What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members rely on each other to help address, and on, team ways to solve problems whether in space or at our highest levels.

C Community
Find ways to support each other and contribute to the greater good.

O Openness
Be open-minded. Find new ways to adapt to life's challenges.

N Networking
Make contacts. Connect with others to create new activities and share experiences.

N Needs
Find a medical, EAT and sleep well, maintain physical and psychological health, exercise.

E Expeditionary Mindset
On-track challenges. Stay on. Stay happy. Present possible options to others.

C Countermeasures
Embrace stress. Be mindful of your strengths for promoting and sharing your concerns.

T Training
What do you need to be trained to do? Problems, skills, and team exercises.

Networking

Behavioral Support Services

- Provided to the crew: movies, music, family contacts, special events, photographs, magazines/newspaper, books, TV, holidays, etc.
- Training on the psychological factors of long duration spaceflight



Behavioral Medicine Services

- Psychiatrist/flight surgeon, Operational Psychologist, neurocognitive testing

Private Psychological Conferences & Private Family Conferences



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ISOLATION

What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members face problems to help astronauts, and we learn ways to solve problems whether in space or at our beloved home.



Community
Find ways to support each other and contribute to the greater good.

Openness
Be open-minded. Find the way to adapt to life's challenges.

Networking
Make contacts. Connect with others to create new activities and share experiences.

Needs
Find a solution. Eat and drink well, maintain physical and personal health, exercise.

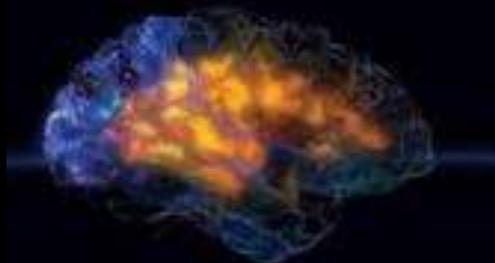
Expeditionary Mindset
Overlook challenges, focus on the task, support each other, provide support to others.

Countermeasures
Embrace stress as a signal of inner strength to persisting and sharing your concerns.

Training
What we enter we've learned to do. Push your skills and learn from others.



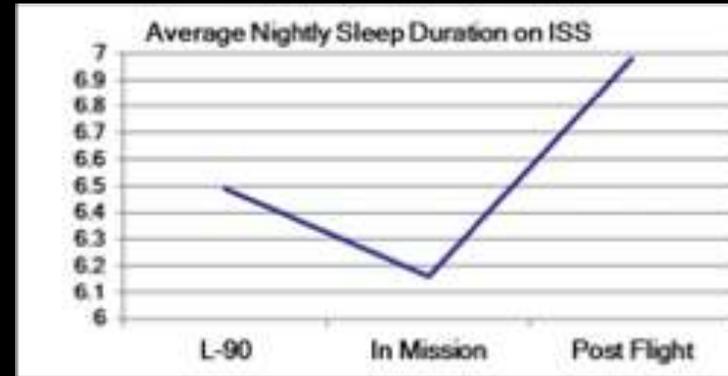
Needs





Sleep/Fatigue Findings

- Lab studies: **Neurocognitive deficits accumulate over time** in conjunction with subjective adaptation to sleepiness (Goel et al., 2009)



Analog studies (30 days)



- Acute sleep deprivation (awake for 36 hours)
 - Leadership: decreased in social support, providing resources, encouraging team self-management, providing feedback (becomes more hierarchical)
- Chronic fatigue (5.5hrs of sleep during week nights, 8hrs weekends)
 - Shared cognition: decreased overall, decreased communication
 - Supporting behaviors: decreased overall, but degree varied between individuals

NASA C-O-N-N-E-C-T



ISOLATION
What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members rely on each other to help address the challenges of living in space. What can we learn from NASA?

Community
Find ways to support each other and contribute to the greater good.

Openness
Be open-minded. Find new ways to adapt to life's challenges.

Networking
Make contacts. Connect with others to share activities and share experiences.

Needs
Find a solution. Find a way to work together. Find a way to support each other.

Expeditionary Mindset
Find a solution. Find a way to work together. Find a way to support each other.

Countermeasures
Find a solution. Find a way to work together. Find a way to support each other.

Training
Find a solution. Find a way to work together. Find a way to support each other.

7-17

Expeditionary Mindset

➤ Expeditionary Skills

- Teamwork and Group Living
- Team Care
- Self-Care/Self-Management
- Leadership/Followership
- Communication

➤ Stress Management

➤ Conflict Management

➤ Cross-Cultural Training





Psychological Competencies for Future Deep Space Missions



As vehicles/habitats get smaller, missions get longer, and communications get delayed, specific competencies become much more important:

- *Small Group Living*
 - Tolerance of other's differences
 - Awareness and respect for others' personal needs and boundaries
 - Respect for common living areas
- *Autonomy and independence*
 - Competence in solving technical issues independently and with limited resources
 - Working autonomously without dependence on ground or crewmates



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ISOLATION
What can we learn from NASA?

Individual factors affect our health. NASA crew members rely on each other to help address, and we, team up, to solve problems whether in space or at our beloved home.

Community
Find ways to support each other and contribute to the greater good.

Openness
Be open-minded. Find new ways to adapt to life's challenges.

Networking
Make contacts. Connect with others to share ideas, activities and share experiences.

Needs
Find a solution. Find and design work, personal, physical and personal health, etc.

Expeditionary Minds
Overlook challenges. Find solutions. Support each other. Provide support to others.

Countermeasures
Develop and use a variety of countermeasures to prevent and change your concerns.

Training
Practice what you've learned to do. Perform skills and learn new ones.

Countermeasures



William Clark Writing in His Journal at Eagle Creek, 31 May 1805, by Gary R. Lucy.



Nearly all astronauts in the astronaut journals project mentioned writing in their personal journals as an activity that helped them adjust to living and working on the ISS (Stuster, 2016).

“Thanks journal. Venting complete. I feel much better now... It is funny. A bunch of hours later and I am completely over this issue. Not a care in the world about it. Glad I could vent to the journal and not via email, because that could be catastrophic to my career.” – ISS Astronaut

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ISOLATION
What can we learn from NASA?

Isolation takes a toll on our health. NASA crew members try to help astronauts deal with team issues to solve problems whether in space or at our highest peaks.



C Community
Find ways to support each other and contribute to the greater good.

O Openness
Be open-minded. Find the ways to adapt to life's challenges.

N Networking
Make contacts. Connect with others to create new activities and share experiences.

N Needs
Find a mix of physical, mental, and emotional support and resources that work for you.

E Expeditionary Mindset
Overlook challenges, focus on the goal, and keep your eyes on the prize.

C Countermeasures
Embrace stress. Be flexible. Use your strengths to overcome and overcome your weaknesses.

T Training
What we learn can be learned to do. Practice skills and learn from others.



Training

Learn more: <https://www.nasa.gov/hrp/social-isolation>




NATIONAL OUTDOOR LEADERSHIP SCHOOL
NOLS, the premier teacher of outdoor skills and leadership, offers courses 10 days to full semesters in the world's most spectacular wilderness classrooms.



Questions?

<https://www.nasa.gov/hrp/social-isolation>





Question & Answer



For More Information

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Targeted Research Training

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sciences.ucf.edu/psychology/sunshine/



Rosen College

hospitality.ucf.edu
hospitality.ucf.edu/research-recovery-and-reskill



**Research
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Upcoming Webinars

Finding Purpose: A Life Check Up

Dr. Connie Wanberg, University of Minnesota

Thursday October 22, 2020

12 PM – 1 PM EST

[Zoom Registration Required](#)





Thank You!

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Additional Reskill resources:

Degree programs

<https://hospitality.ucf.edu/degree-programs/>

Graduate certificates:

[Hospitality and Tourism Technologies Graduate Certificate](#)

[Destination Marketing & Management Graduate Certificate](#)

[Event Management Graduate Certificate](#)

Upcoming Webinars:

"People" People Working or Not Working in Isolation: Coping Tools for the Hospitality Industry

(balance of 4-part series)

Part 4: Finding Purpose: A Life Check Up

Thursday, Oct. 22 @12:00 p.m. ET

