Safety Journey to Human and Organizational Performance (HOP) and Operational Learning

Kirk Smith, MS, CSP

What is Human & Organizational Performance (HOP)?

- HOP is a risk-based **operating philosophy** which recognizes that **error** is part of the human condition and that an organization's **processes and systems** greatly influence employee action and choices, and consequently, their likelihood of success.
- It's about **learning** how humans and organizations interact to accomplish work.
- It's a **mindset change** that allows us to build more error-tolerant systems and teaches us that expecting perfection from workers, processes, or procedures is not realistic.
- HOP provides a new way of looking at work, people, and the systems in which people get work done.

Origins of HOP

From Nuclear to Process Safety to Manufacturing

Chevron
bp
ConocoPhillips
Los Alamos NATIONAL LABORATORY
INL Idaho National Laboratory
DUKE ENERGY
SOUTHERN CALIFORNIA EDISON
ExxonMobil
BAKER HUGHES a GE company
SOUTHERN COMPANY Energy to Serve Your World
RioTinto
Ford
TESLA
MAERSK
JOHN DEERE
ALCOA
Shell
The Walt Disney Company
DELTA
novavax Creating tomorrow's vaccines today.
AstraZeneca
CATERPILLAR
REGENERON SCIENCE TO MEDICINE
MERCK
Takeda
Bristol Myers Squibb
Pfizer CentreOne

5 Principals of HOP

Principal #1: People Make Mistakes

- People are fallible, and even the best of us make mistakes.
- We acknowledge that error is part of the human condition.
- We strive to prevent errors, and we build in the capacity to fail safely.
- We cannot change the Human Condition, but we can change the conditions in which humans work.

Principal #1: People Make Mistakes

ERROR is NOT a Choice

Assumption: If you try hard enough, you won't make mistakes!

"We must stop seeing workers as problems to be fixed. But, as Solutions to be harnessed."

- Dr Todd Conklin

Mistakes & Errors

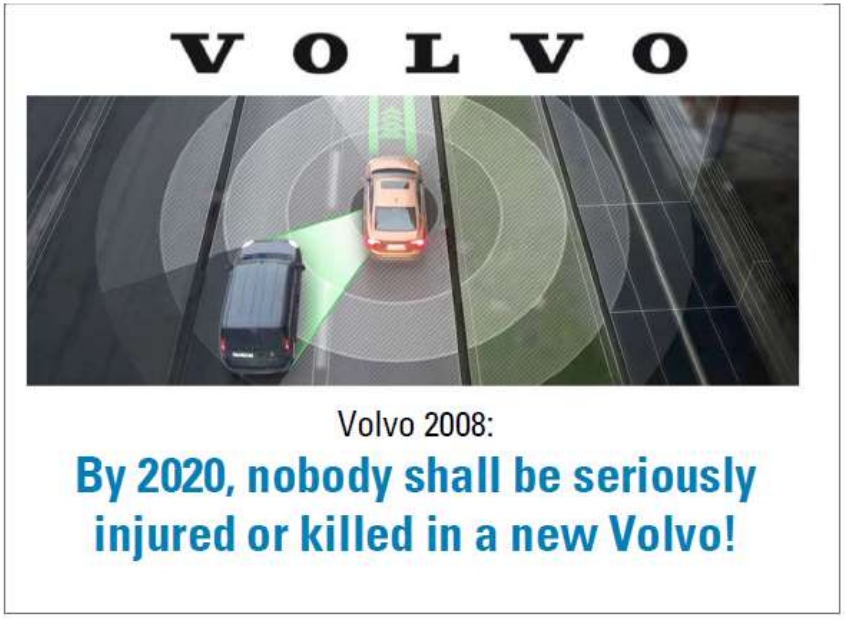
Violations

"Workplaces and organizations are easier to manage than the minds of individual workers. You cannot change the human condition, but you can change the conditions under which people work."

- James Reason, PhD

Principal #1: People Make Mistakes

What can we learn from car manufacturers?



- Volvo: Not every accident is preventable.
- Assumption: 100% chance for a car to crash.
- Car = designed around the operational assumptions that it's going to crash.
- Volvo: Doesn't manage the absence of failure – they predict failures are likely.
- They manage the car's ability to manage the consequences of the failure – **to fail safely**.

Principal #1: People Make Mistakes

Volvo Cars: Multiple Layers of Capacity Built in to Fail Safely

Principal #1: People Make Mistakes

Limitations of Human Nature: Situational Awareness

Principal #1: People Make Mistakes

Take Aways:

- BAD things don't just happen to "BAD" people!
- As work gets more complex, the number and complexity of errors increase.
- An Operator Dependent System will fail eventually.
- People are not machines – but we are problem solvers.
- Error is Normal – Plan for failure and build in the capacity to Fail Safely

"Mistakes arise directly from the way the mind handles information, not through stupidity or carelessness."

- Edward de Bono PhD

Principal #2: Blame Fixes Nothing

- Blame is common because it is part of human nature.
- Some of our biases make blame our first reaction.
- Blaming an individual will not change the probability of a similar event.
- Blame destroys relationships and trust.

Principal #2: Blame Fixes Nothing

Why do we blame?

- Blaming helps to discharge our pain and makes us feel as though we have some control.
- Blame helps to assign meaning to a negative event – resolving uncertainty and finding piece of mind.
- It's difficult to accept our own failures. Blame can be a defense mechanism, helping us to preserve our self-esteem.
- Blame can be used to avoid responsibility.
- Lead with positive intent.

Principal #2: Blame Fixes Nothing

Blame in Everyday Life – Google News

Bloomberg.com

Tesla Crash Victim Was 99% to Blame for His Death, Jury Says

... who crashed a Model S into a wall at high speed, concluding that the 18-year-old and his father were 99% to blame for the 2018 accident.

KCRG

Iowa State Patrol: Sleepy driver to blame for central Iowa crash

IOWA FALLS, Iowa (KCRG) - Iowa State Patrol says a driver falling asleep at the wheel is to blame for a crash in central Iowa Wednesday...

The Kansas City Star

Amtrak, BNSF Railway blame Missouri dump truck company for deadly Mendon train crash

... blame Missouri dump truck company for deadly Mendon train crash ... and BNSF Railway Company have filed a federal lawsuit blaming the...

LevittownNow.com

Goose To Blame For Fatal Motorcycle Crash

A person was killed in a Friday motorcycle wreck that police said was caused by a goose. Advertisements. The crash happened around 9:55 a.m....

29 Fox San Antonio

Police say alcohol to blame for fatal accident

The police Sergeant on the scene said intoxication was to blame for the crash. According to police, both drivers appeared to have been...

Engineering News-Record

Was a Paving Contractor Really to Blame for a Deadly Crash?

A police report placed most of the blame for the fatal crash on Darrin Carroll (bottom, at a Boone County, Ky., court appearance shown on the...

The Tribune-Democrat

Coroner: 'Freak accident' likely to blame for miner's death

– A "freak accident" was likely to blame for a miner's death in Somerset County on Wednesday, Cambria County Coroner Jeffrey Lees said Thursday.

"The rock, which had probably been there for hundreds of years ... broke from the wall and fell where he was standing," Lees said, adding that the rock pinned the man against a piece of machinery.

Principal #3: Context Drives Behavior

- The context in which work occurs mainly determines our behaviours and actions.
- People do what they do because it makes sense to them at the time.
- If one person makes an error or breaks a rule there is high probability others will do the same.

Principal #3: Context Drives Behavior

Local Rationality

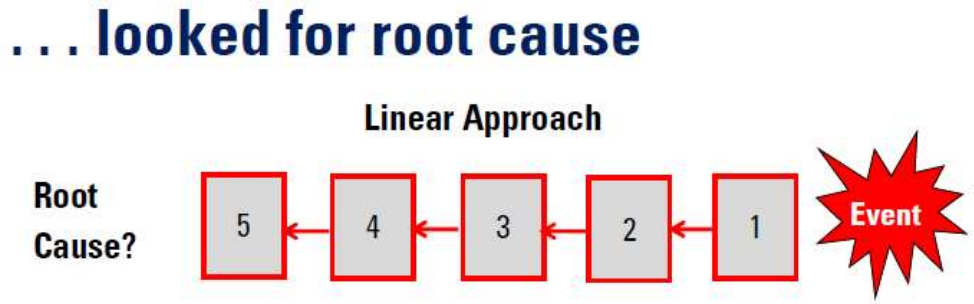
- Context (Organizational Processes, Values & Incentives, and Operational Systems) drives workers actions.
- People do things that make sense to them at the time, under the existing circumstances (expectations, goals, resources, mindset, environment…), otherwise they would not do them.
- Workers are experts at (complex) adaptive problem solving.

"To explain Failure, do not try to find where people went wrong. Instead, find how people's assessments and actions made sense at the time, given the circumstances that surrounded them."

- Sidney Dekker

Principal #3: Context Drives Behavior

Traditional approach…



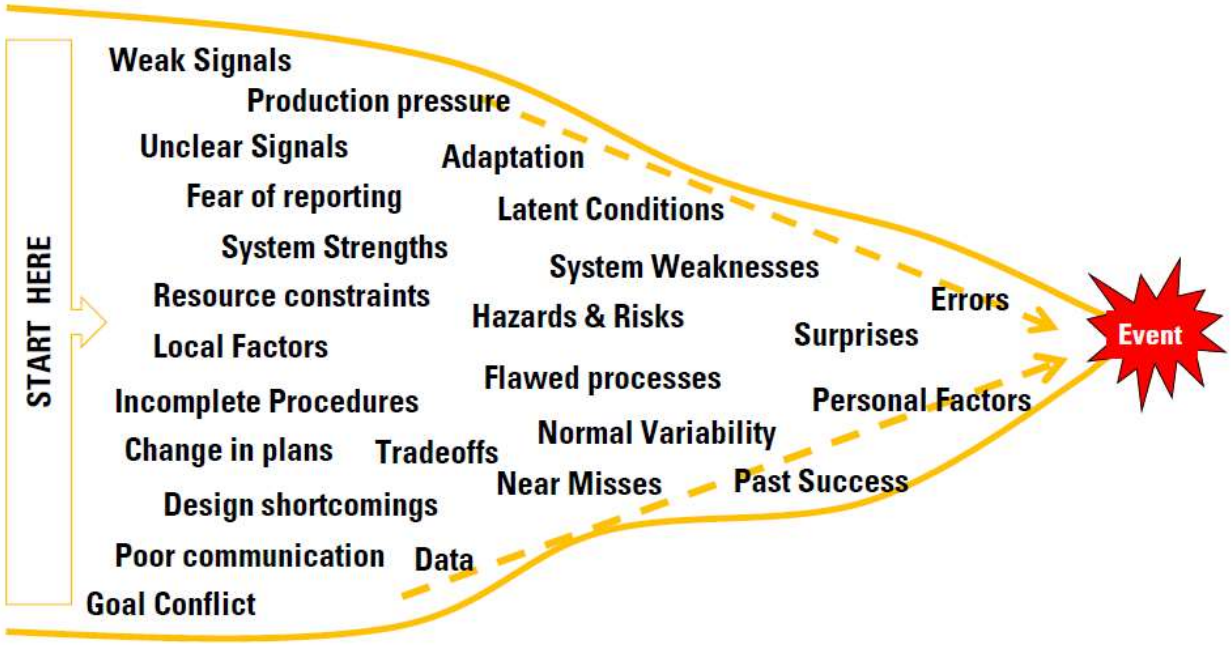
The problem is, the failure probably was not linear…

…and there almost NEVER is one root cause.

Dr Todd Conklin.

Principal #3: Context Drives Behavior

Understand the Context – Start back in Process…move towards the Event



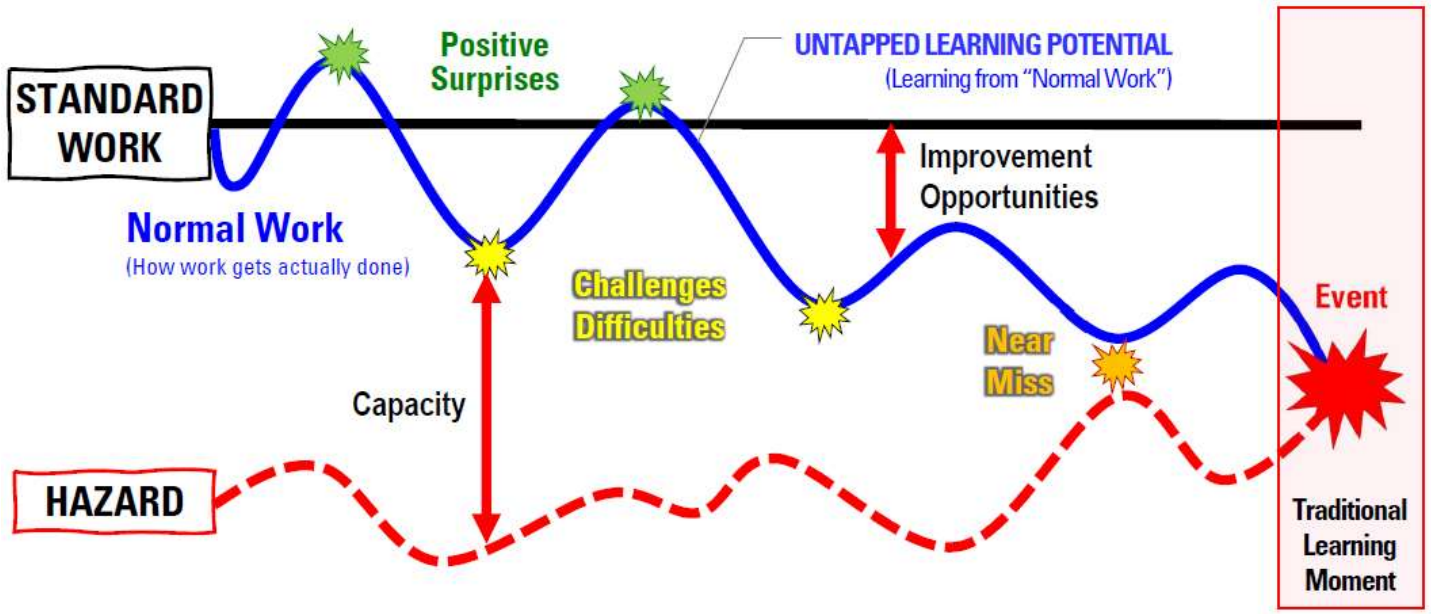
Dr Todd Conklin.

Principal #3: Context Drives Behavior

Work-as-Imagined vs. Work-as-Done

What is Happening?

- Adaptations
- Adjustments
- Work-arounds
- Problem Solving
- Tweaking
- Fine-Tuning
- Goal Trade-Offs



Dr Todd Conklin.

Principal #3: Context Drives Behavior

Work Changes Every Day

- All work environments are dynamic
- We expect (pay) workers to get the job done
- Procedures are always underspecified
- Planners are not smarter than workers
- Workers are the “Masters of the Blue Line,” the heroes of our workplaces
- Drift is often the result of “Trade Offs” being made when adapting work to reality

Principal #4: Learning & Improving is Vital

- We learn and improve from both – failure and successful work.
- Those closest to the work have the best knowledge how work can be done successfully.
- Leaders create an environment, which fosters learning.

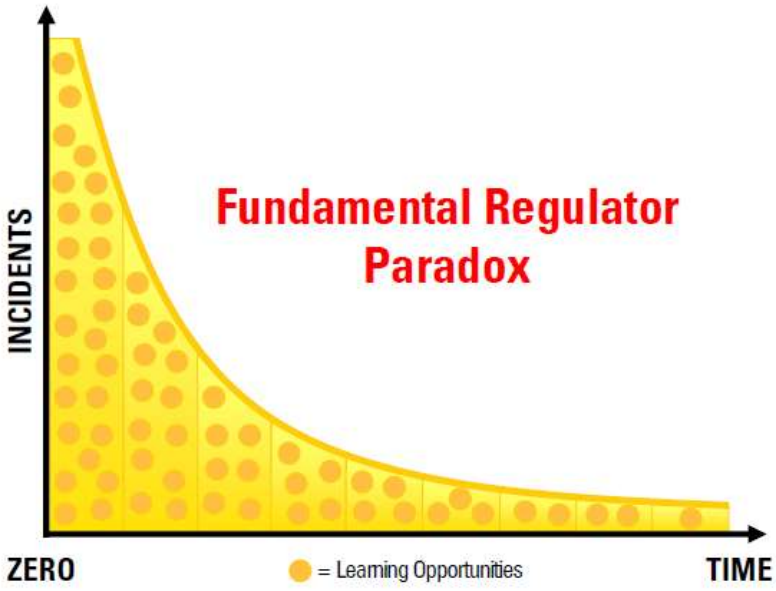
Principal #4: Learning & Improving is Vital

Building a Learning Organization:

- Learn from Events, Normal Work and Success
- Learning is integrated into all stages and aspects of work
- Learning happens at all levels of the organization
- LISTENING is required in order to learn; listening is a skill and takes practice
- Learn first, then improve, otherwise we might make things worse

Principal #4: Learning & Improving is Vital

Our Challenge Today

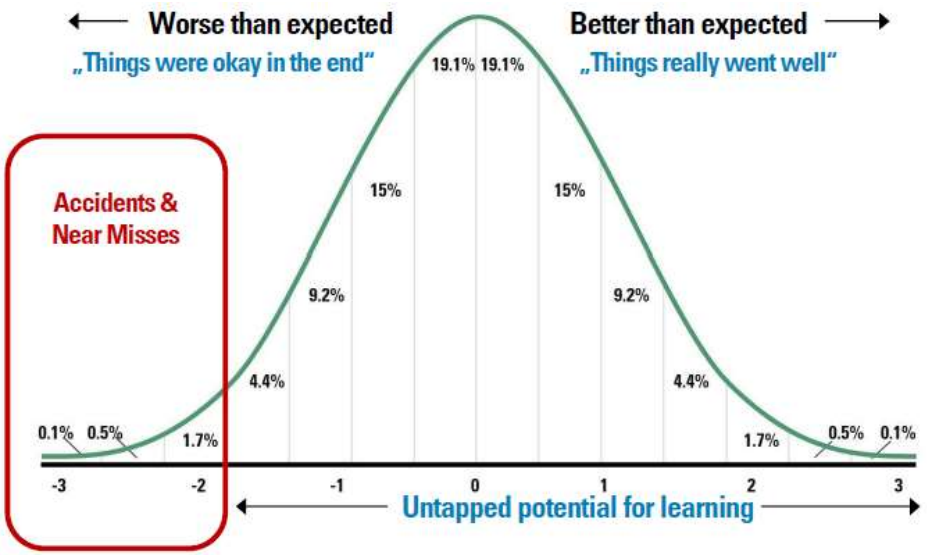


- As we get better at preventing events, we naturally have fewer events.
- Which makes it hard to predict where the next failure will happen, and where to focus on.
- Old days: Six hand cuts = hand safety program – today we don't have six hand cuts…
- Old days: We waited for failure to learn what to fix.
- Today: We can't wait for failure because it hardly ever happens, and when it does it's completely anomalous
- So our ability to manage resources based upon trending data has gone away.

Principal #4: Learning & Improving is Vital

Learning from “ Normal Work”

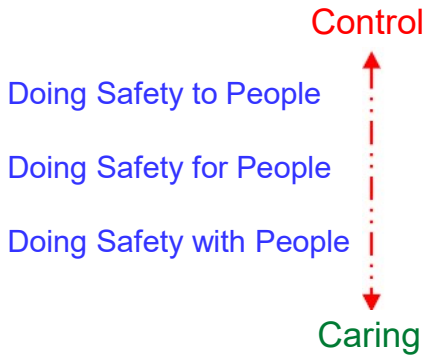
- Only a very small percentage of all activities result in an undesired event, and we can’t afford to wait for the next event.
- What can we learn from normal work and challenges that could, but did not, result in an accident/event?



Principal #4: Learning & Improving is Vital

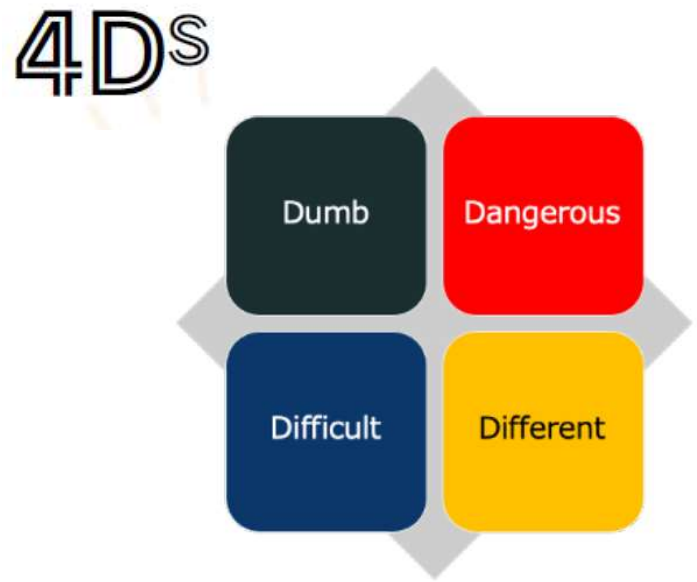
What is a Learning Team?

- Not a traditional investigation
- A method of Operational Learning – designed to build trust
- Not focused on blame
- Not focused on the one, “root cause”
- Tells the story of how work normally gets done (Blue Line)
- Tells the story of complexity



Principal #4: Learning & Improving is Vital

Learning Teams – Asking better questions



Principal #4: Learning & Improving is Vital

Breakout Session (30 minutes)

- Operational Learning Exercise

Principal #4: Learning & Improving is Vital

Change of Mindset

SAFETY is NOT the ABSENCE of INJURIES.

SAFETY is the PRESENCE of CAPACITY.

CHANGE MINDSET	FROM	TO
	Who failed?	How can we learn and improve?
	Failure is not an option.	Human error is normal - create capacity to fail safely.
	Employee behavior is the problem.	Employees are the experts and can help with solutions.
	Learning from what goes wrong.	Learning from what goes right ('Normal Work').
	Focus on recordable injuries.	Focus on preventing serious injuries.

Principal #5: How Leaders Respond Matters

- How leaders respond to events, builds or breaks a learning and improving culture.
- We build a culture of trust, where everyone feels safe to speak up.
- Change our beliefs (people are fallible, blame fixes nothing) and change how we respond to events.

Principal #5: How Leaders Respond Matters

Response to an Event

We can blame, shame and retrain

or

We can learn and improve

But we can't do both!

Learning Mindset:

- Hindsight bias is always a factor in event investigations.
- The ability to learn is a deliberate choice based upon how we react to unexpected events.

Principal #5: How Leaders Respond Matters

What Good Looks Like

RESPONSE

- Press **pause button** and think about **your response**
  - What reaction will your response cause (e.g., fear, blame, etc.)?
- Don't jump to conclusions but take time to **understand** what happened
- Ask **better** questions

QUESTIONS

- Is everyone **okay**?
- Tell me the **story** of what happened?
- What **could** have happened?
- What **factors** led up to this event?
- What worked **well**? What **did not work**?
- **Where else** could this happen?
- **What else** do I need to **know** about this event?

Resources

Recommended Reading

- *Do Safety Differently,* by Sidney Dekker and Todd Conklin
- *The Practice of Learning Teams: Learning and improving safety, quality and operational excellence,* by Brent Robinson, Brent Sutton, and Glynis McCarthy
- *Pre-Accident Investigations: An Introduction to Organizational Safety,* by Todd Conklin
- *Bob's Guide to Operational Learning: How to Think Like a Human and Organizational Performance (HOP) Coach,* by Bob Edwards and Andrea Baker
- *The 5 Principals of Human Performance: A Contemporary Update of the Building Blocks of Human Performance for the New View of Safety,* by Todd Conklin

Q&A

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Biographical Information

Kirk Smith, MS, CSP
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Kirk started his EHS career in the U.S. Coast Guard on an ice breaking ship on Lake Michigan and has spent the last 20 plus years in a variety of EHS leadership roles in six different industries and four multi-national organizations. Beginning as a Lab Pack Chemist with an environmental management company in Boston, Kirk progressed through a rotation of EHS roles in logistics with UPS and the alcohol industry with Jim Beam. Building on a bachelor's degree in management, he then attained a master's degree in safety, security and emergency management from Eastern Kentucky University and became a Certified Safety Professional three years later. Kirk then spent time in the technology industry as a Corporate Safety Manager for an LED lighting company before transitioning to the heavy manufacturing industry where he served as a Regional Health, Safety & Environmental Manager – Americas. Kirk eventually found his way home in the pharmaceutical industry and is currently a Principal, Environmental, Health and Safety Specialist at Alkermes in Wilmington, Ohio. Over the past year he has found his passion and purpose in Human and Organizational Performance (HOP) and has been integrating HOP principals and learning tools into his organization ever since. Kirk is an avid outdoorsman, loves spending time with his family outdoors, traveling, and skiing in the winter months. Kirk lives with his wife Paula in Morrow, Ohio where together they are raising two children who share their love for the outdoors on their small, seven-acre hobby farm.