Welcome!

Preparing People for Climate Change in the PNW
Many Thanks to Our Conference Co-Sponsors

- The American Public Health Association
- National Council for Behavioral Health
- Oregon Public Health Association
- 350 Seattle
- 350 Deschutes
- 350 Eugene
- Mobilizing Action for Resilient Communities (MARC) Program
- Northwest Center for Public Health Practice, University of Washington School of Public Health
- The Trauma Resource Institute
- Local Government Commission
- Children’s Resilience Initiative of Walla Walla
- Interfaith Power and Light
- Gorge Climate Action Network
- ACEs Connection Network
- Health Share of Oregon
- Trauma Informed Oregon
- Oregon Environmental Council
- The Center and Library for the Bible and Social Justice
- Trauma Healing Project
- Willamette U. Dept. of Psychology
Many Thanks to the Conference Planning Committee

- **Emily York**, Climate and Health Program Lead, Oregon Health Authority, and ITRC Advisory Committee member
- **Maggie Bennington-Davis, M.D.**, Chief Medical Officer Health Share Oregon, and ITRC Steering Committee Member
- **Dr. Mandy Davis**, Director of Trauma Informed Oregon, and ITRC Steering Committee Member
- **Dr. David Pollack**, Professor of Psychiatry, Family Medicine Management OHSU, and ITRC Steering Committee Member
- **Dr. Sara Walker**, Assistant Professor, Neuropsychology at OHSU
- **Claire Ranit**, Coordinator, Creating Resilience in the Columbia River Gorge
- **Sue Kroger**, Professor, Department of Psychology, Willamette University
- **Trudy Townsend**, former Coordinator of Creating Sanctuary in the Gorge, and ITRC Steering Committee Member
Learn Skills and Methods to Make the PNW the

First Trauma-Informed Resilience-Enhancing Region in the US for Climate Traumas!

Our focus must be to build “Transformational Resilience”

TR is a function of interplay between individual, group, and community factors. Conference structure reflects this.
Why Build a Culture of Transformational Resilience?

Because climate change is now the Greatest Social Determinant of Health and Wellbeing!

The Adverse Human Reactions to Climate Change
The Climate Crisis is Unlike Any Modern Society Has Faced!

• It will **worsen for decades** and increasingly **intermix fast-moving disasters** with **slow-growing chronic toxic stresses** offering less and less time for **recovery**.

• Left unaddressed, the **adverse mental health** and **psycho-social-spiritual** reactions might become **as bad** as the physical impacts.

• Left unaddressed, the harmful human reactions might also **stall efforts to cut emissions** and **reduce the crisis to manageable levels**.
But the Climate Crisis Also Offers The Opportunity for Profound Transformation!

It is a primal truth that, as painful as it can be, adversity is often our greatest impetus for learning, growth, and transformation.
Imagine the Benefits of a Regionwide Preventative Transformational Resilience Movement That Helps:

• **Everyone** become **trauma-informed**, **build on strengths** and **enhance personal and social protective factors** to **cope constructively** with climate and other adversities.

• **All leaders** learn to **promote social narratives**, **shift cultural norms and practices** & make their groups **safe, healthy, just** and **equitable** resilience-enhancing entities.

• **Everyone** learn to use adversities as **transformational catalysts** to find **meaning, direction**, and **hope** in ways that increase **personal, social, & ecological wellbeing**.
Trauma and Toxic Stress Are Epidemic Today

To these now add the acute traumas and chronic toxic stresses generated by rising global temperatures.
The Greenhouse Effect

Natural Greenhouse Effect:
- More heat escapes into space

Human Enhanced Greenhouse Effect:
- Less heat escapes into space
- More re-emitted heat
- Re-radiated heat
- CO₂
- CH₄, N₂O
- Greenhouse Gases
- Atmosphere
Average Global Surface Temperatures Have Already Risen By 1.8 F (1C) Above Pre-Industrial Levels—2/3 Occurred Since 1975

2014: second warmest on record
2015: warmest ever recorded
2016: warmest ever recorded
2017: likely similar to last 3 years
Projected Impacts in the PNW Under Existing Emission Path
Combination of information from Oregon Climate Change Research Institute (OCCRI) and UW Climate Impacts Group (CIG)

- Average temps are expected to **rise by 3-7 degrees F by 2050** and by **5-11 degrees F by 2080**. (OCCRI)

- Even if global emissions level off by mid-century temperatures will **still rise by 2-7 degrees F**. (OCCRI)
Examples of PNW Impacts
Combination of information from Oregon Climate Change Research Institute (OCCRI) and UW Climate Impacts Group (CIG)

- **Continued warming in all seasons** (CIG)
- More **frequent** and **extreme heat events** (OCCRI)
- More **frequent** and **extreme precipitation events** and **flooding** (OCCRI and CIG)
- **Increased wildfires** and **wildfire smoke**: by 2080 the area burned by wildfire in Puget Sound is projected to increase by +150% to +1000% (CIG)

- **Rising sea levels and flooding:**
  - Newport, Oregon, could see **sea level rise of 12 to 47 inches** with thousands and more than 100 miles of coastal roads at risk for yearly flooding. (OCCRI).
  - Seattle, Washington, could see **sea level rise of +6.5 inches by 2050** and **+24.3 inches by 2100**. (CIG)

- Harm to **freshwater fish** & **aquatic organisms** due to less snowpack & more heat.

- **Ocean acidification** will **harm shellfish and other ocean fisheries** (CIG)
More Frequent and/or Extreme Traumatic Events

- Storms
- Heat Waves
- Wildfires
- Drought
- Flooding
- Sea Level Rise

And many more surprise traumas...
And, Persistent Toxic Stresses From Seeing, Experiencing, or Worrying About...

- Our future and our children’s future
- Loss of sense of place, culture, community, natural environment
- Loss of social support network
- Water, food and other resource shortages
- Economic disruptions and job losses
- New illnesses and diseases
- Injury or death from violence
- Many other surprising toxic stresses
What Happens When People Experience Trauma & Toxic Stress?
A simple description of the psychobiology of trauma and toxic stress

Prefrontal-Cortex: The "Executive Center"
- Directs, but does not control, the Fear & Alarm Center.
- Rationally sorts out real & false threats & decides how to respond—but can also prevent discharge of hyperarousal.

Amygdala: The "Fear and Alarm Center"
- Fear-based reaction occurs automatically when senses threat release neurochemicals into the body to prepare us to fight, flee (or freeze)
- Works like smoke detector—a false alarm is better than mistake—but can lead to dysregulation.
“Direct, acute experience with climate change can produce...sudden and severe mental health consequences.”

(Mental Health and Our Changing Climate, American Psychological Association 2017)
Research shows 20%-50% of people impacted by extreme weather events can experience severe:

- Anxiety
- Depression
- PTSD
- Higher suicide rates
- More

Examples

- 30% to 50% of Katrina survivors suffered from PTSD, severe depression, anxiety hopelessness, and suicides went up substantially.

- 20% of east coast residents after Superstorm Sandy reported PTSD, 33% reported depression, and 46% reported anxiety.
Examples of Psychological Impacts of *Fast Moving* Climate Impacts

Effects depend on the intensity, duration, and level of exposure to the event.

Elevated levels of PTSD have been found among people impacted by wildfires...

sometimes *lasting several years*. (APA)
Examples of Psychological Impacts of *Fast Moving* Climate Impacts

Effects depend on the intensity, duration, and level of exposure to the event.

Research shows similar effects from flooding as well as increased impacts on children:

- Anxiety
- Depression
- PTSD
- Higher suicides rates
- Increased aggression in children

**Example**

In the UK after the 2007 summer floods:

- 75% of the people directly impacted had severe anxiety
- 50% experienced depression
- About 25% suffered from PTSD
Effects depend on the intensity, duration, and level of exposure to the event.

**Disasters Can Increase Violence**

The risk of violence in emergencies increases by up to 300% due to a combination of shocks at the individual, family, community, and societal levels. The main drivers include:

- Collapse of personal or social protective systems
- Individuals relying on harmful coping mechanisms such as alcohol or drugs
- Increased individual and community stress
- Pre-existing risk of violence
- Crowd environments
- Research shows increases in violence of up to 300%

Examples of Psychological Impacts of *Slow Growing* Climate Impacts

Effects depend on the intensity, duration, and level of exposure to the event.

Research shows droughts can produce a range of mental health problems and increase substance abuse

**Examples**

- Studies in Australia found that family dysfunction, depression, anxiety, hopelessness and suicide rose in mist of drought.

- In US droughts of the 1980s, male farmers and ranchers in Wisconsin, Minnesota, North Dakota, South Dakota, and Montana demonstrated rates of suicide twice the national rate.

- Many studies have found that alcohol & drug abuse rise in droughts.
Examples of *Psycho-Social-Spiritual Impacts of Climate Change*

Effects depend on the intensity, duration, and level of exposure to the event.

- Substance abuse
- Domestic violence
- Assaults
- Robbery and burglary
- Higher suicides rates
- Increased aggression and violence

**Examples**

- One study looked at 30 years of monthly crime and weather data for 2997 U.S. counties and found that as temperatures warmed so did aggravated assaults, simple assaults, robberies, burglaries, larceny and vehicle theft.

- Research in Europe has also linked hotter weather to higher crime rates.
Research shows growing **hopelessness** and **distress** due to the “**unrelenting day-by-day despair**” of climate change (APA)

**Examples**

- Prolonged drought, insidious impacts like food shortages, rising sea levels, and the gradual loss of natural environments are **“causing some of the most resounding chronic psychological consequences.”**

- Mental health problems can also be triggered indirectly from **“watching the slow and seemingly irrevocable impacts of climate change unfold, and worrying about the future for oneself, children, and later generations.”**
“Stress hormones” suppress the body’s immune system leaving people more physically vulnerable to:

- Respiratory Problems
- Cardiovascular Problems
- Endocrine Problems
- Gastrointestinal Problems
- Reproductive System Problems
- Musculoskeletal Disorders
Impact of Climate Change on Human Health

- Injuries, fatalities, mental health impacts
- Asthma, cardiovascular disease
- Heat-related illness and death, cardiovascular failure
- Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus
- Forced migration, civil conflict, mental health impacts
- Changes in Vector Ecology
- Extreme Heat
- Respiratory allergies, asthma
- Environmental Degradation
- Increasing Allergens
- Severe Weather
- Severe Sea Levels
- Water and Food Supply Impacts
- Water Quality Impacts
- Malnutrition, diarrheal disease
- Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms
- Rising Temperatures
- Rising CO2 Levels
Indigenous communities, people of color, immigrants, low income populations and other frontline communities often experience climate impacts first and the hardest.

The impacts are often aggravated by unjust and inequitable norms, practices, and policies before, during, and after impacts.
Fearful people often retreat into a self-protective survival mode that leaves them uninterested in external issues like emission cuts.

Left unaddressed, the adverse human reactions to climate impacts threaten to stall efforts to minimize the climate crisis!
A Whole New Way of Thinking Is Needed To Respond to a 3-7° F or More Temp Rise!
Disaster mental health programs—while vital--will increasingly be:

- **Overwhelmed** because most are already fragile

- **Stop Gaps** because most are short term and only seek to stabilize people during and after disasters

- **Inadequate** because they do not help cope with chronic toxic climate stresses.
A Whole New Way of Thinking Is Needed to Respond to a 2C Temp Rise

Many direct service programs—while vital—will be increasingly inadequate because they are:

• Siloed into mental health, physical health, social programs

• Not designed to address 2-5 co-occurring mental health and psycho-social-spiritual problems simultaneously

• Not able to assist all of the people affected.
A Whole New Way of Thinking Is Needed to Respond to a 2°C Temp Rise

Traditional approaches to risk and vulnerability analysis will be increasingly inadequate because they tend to...

- Focus on visible, quantifiable things like external physical factors
- Seek to eliminate weaknesses (which can seem endless) rather than build on strengths & enhance protective factors.

(Twigg, 2004, IFRC 2012)
A Whole New Way of Thinking Is Needed to Respond to a 2C Temp Rise

Traditional concepts of “resilience” will be inadequate because...

it will be impossible to “bounce back” to pre-crisis conditions....

And many people don’t want this!

Traumatized and stressed people want to increase their sense of wellbeing above previous levels!
A Whole New Way of Thinking is Needed to Respond to a 2C Temp Rise

Resilience vs. Preparedness

RAND Corp. Assessment

Traditional Disaster Preparedness Programs Have Not Worked Well Enough
Prevention is Key!

And It Works!

- ACEs prevention
- Smoking prevention
- Minimum drinking age laws
- HIV infections
- Childhood immunizations
- Motorcycle and bicycle helmet laws
- Child seat and safety belt use
- Many More Examples!

Adapted from. *Adverse Community Experiences and Resilience: Addressing and Preventing Community Violence*, by Ruben Cantu, The Prevention Institute Nov 4 2016
A major regionwide prevention movement can

Build a Culture of Transformational Resilience!
Pre-Disaster

Warning (years/days/hours)

Impact

“Heroic”

“Honeymoon Phase”
(Community cohesion often confused with resilience)

Threat

“Disillusionment”
(Mental, social, and physical distress)

“Working Through Grief”
(Coming to Terms)

Some People Remain Dysregulated

Warning

Trigger Events and Anniversary Reactions

Some People “Bounce Back” to Pre-Crisis Levels

(Adapted from NCBH 10-19-17 and Stephen Joseph’s What Doesn’t Kill Us)

But Others Use The Trauma As Transformational Catalyst To Increase Wellbeing!
Transformational Resilience is *Essential* for Climate Change
(also called post-traumatic or stress-based growth)

The ability to constructively cope with climate and other adversities and use them as catalysts to learn, grow, and increase personal, social, and ecological wellbeing substantially above pre-crisis levels.

From *Transformational Resilience*, B. Doppelt
(Greenleaf Publishing 2016)
Key Elements of Helping Individuals Build Their Capacity for Transformational Resilience

Age, culturally, and demographically appropriate:

“Presencing Skills”

• Internal locus of control
• Social support
• Self-efficacy

“Purposing Skills”

• Meaning making
• Values-based purpose
• Active hope

See ITRC Library on the website for research basis of this model.
The Three Pillars of Transformational Resilience in Organizations and Communities

1. Trauma-Informed and Resilience Skilled Members
2. Healthy Social Environment
3. Enabling Culture

See ITRC Library on the website for research basis of this model.
Building A Regional Culture of Transformational Resilience Is Possible!

“The ideas of one generation become the instincts of the next.”

— D.H. Lawrence
Let’s make the PNW the First Trauma-Informed Resilience Enhancing Region in the U.S. for Climate Traumas!