

# The Neuroscience of Compassion: Tools to Tap into its Power for Good

## Presenters:

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Evonne Kaplan-Liss MD, MPH: *Director, Center for Compassionate Communication (CCC)*

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# Empathy and Compassion in Medicine



*"The Doctor", Sir Luke Fildes*



# The Sanford Institute: Overarching Goals

We endeavor to explore the neurobiological basis of empathy and compassion and to apply the insights to support the training of medical professionals.

We aim to create and provide resources to enable individuals and organizations to support the therapeutic alliance.

# Our Story

The origin of the T. Denny Sanford Institute for  
Empathy and Compassion

# Our Vision

A transformation of medical education in which an emphasis on skill learning and competence in empathy and compassion parallels that of scientific and technical skills.



# Definition: Empathy

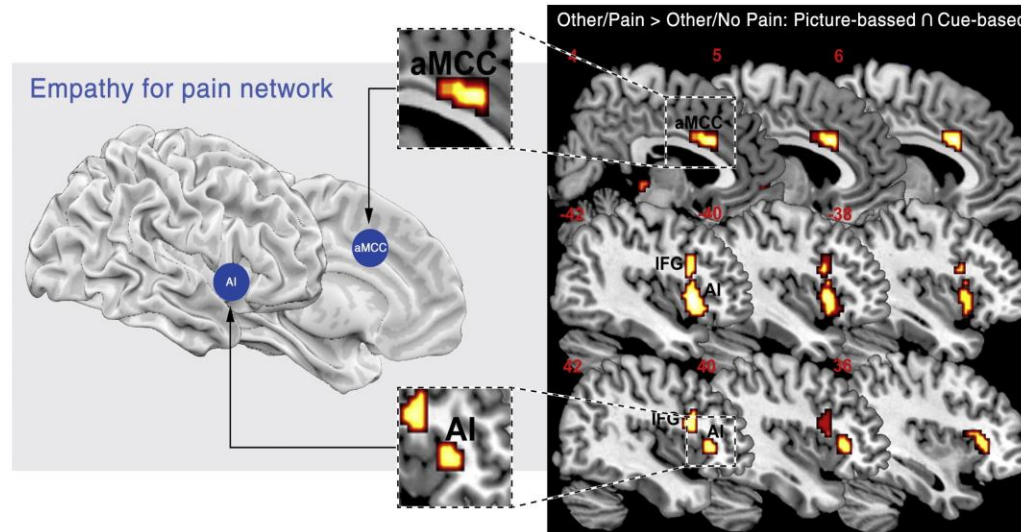
## Empathy:

The act of understanding, being aware of, being sensitive to, and vicariously experiencing (i.e. resonating with) the feelings, thoughts, and experiences of another. ***Empathy is feeling with the other.***

## Characteristics:

- One is in affective state;
- The state is isomorphic to another person's state
- It is elicited by observation/imagination of the other's state
- One knows that the other person is the source of one's affective state

# Affective Empathy Network: Anterior Insula and Anterior Middle Cingulate Cortex



Lamm et al., 2011  
Singer and Klimecki, 2014

# Definition: Cognitive Empathy

## **Cognitive Empathy/ Mentalizing/ ToM (Cognitive Perspective Taking):**

The ability to make attributions about other's mental states such as intentions, desires or beliefs, and to understand another's desires and intentions as different from our own.

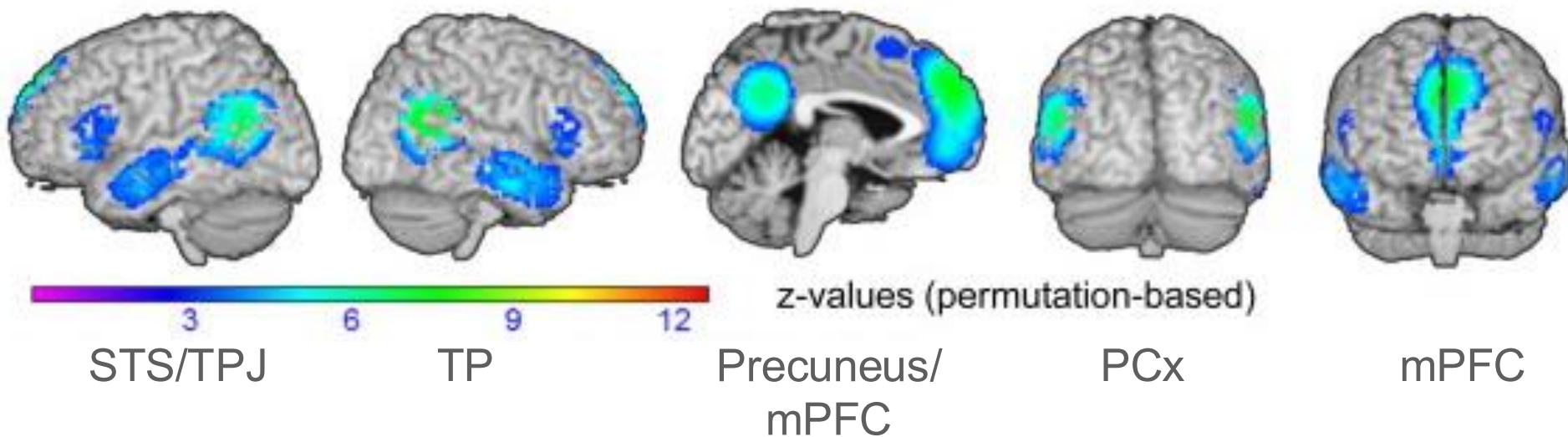
***Cognitive empathy is understanding another's thoughts, feelings and desires.***

### Characteristics:

- (i) Thinking about what another is thinking about;
- (ii) Understanding how the other's thoughts impact their feelings and responses;
- (iii) Knowing that the other's thoughts and desires are not our own.

# Neural Circuitry: Cognitive Empathy

A. Pooled meta-analysis including all studies (n=73)





# Definition: Compassion

## Compassion:

To experience the consciousness of an other's distress with a desire to alleviate it. ***Compassion is feeling for the other. Some include within this term "acting to alleviate the burden of another".***

## Characteristics:

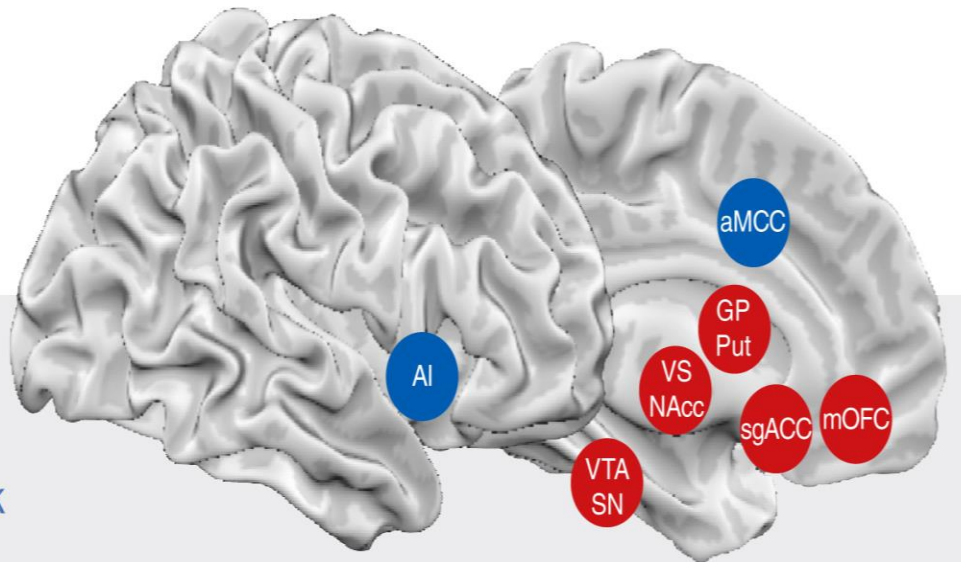
Though not sharing the other's distress –

- (i) One is aware of the distress;
- (ii) One feels warmth and concern for the other;
- (iii) One feels a strong motivation to address the distress and to improve the other's wellbeing.

# Neural Circuitry: Empathy and Compassion

Compassion network

Empathy for pain network



*Singer and Klimecki, 2014*

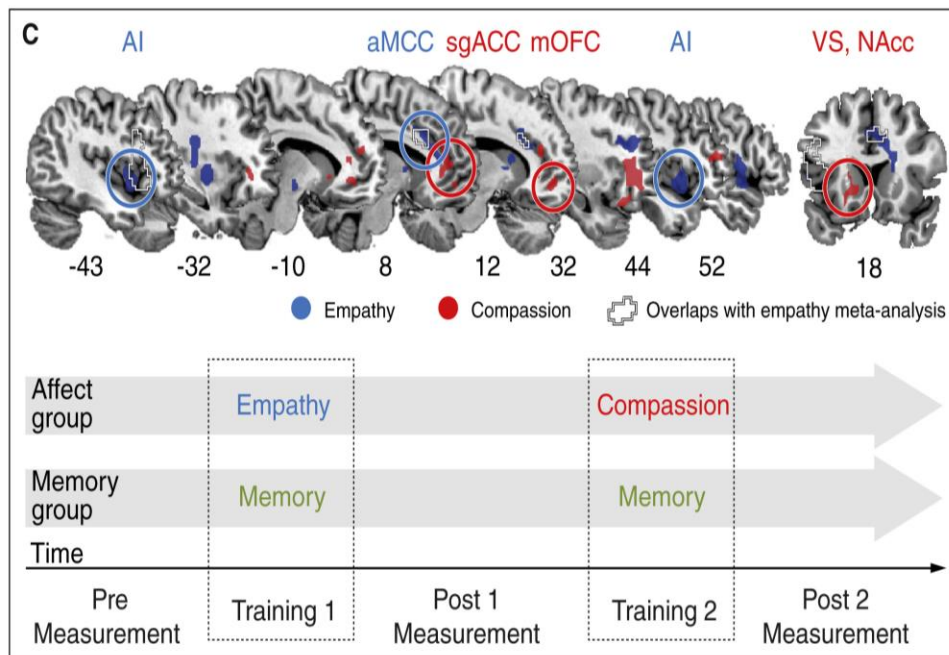
# Enhancing Empathy and Compassion

Given the prosocial values of empathy and compassion, can one:

- 1) train to enhance operation of neural circuits that mediate them?
- 2) create subjective and objective measures for efficacy?
- 3) employ brain-based signals to improve both?

Existing data encourage the view that the answer is **yes** – empathy and compassion circuits appear to be modifiable.

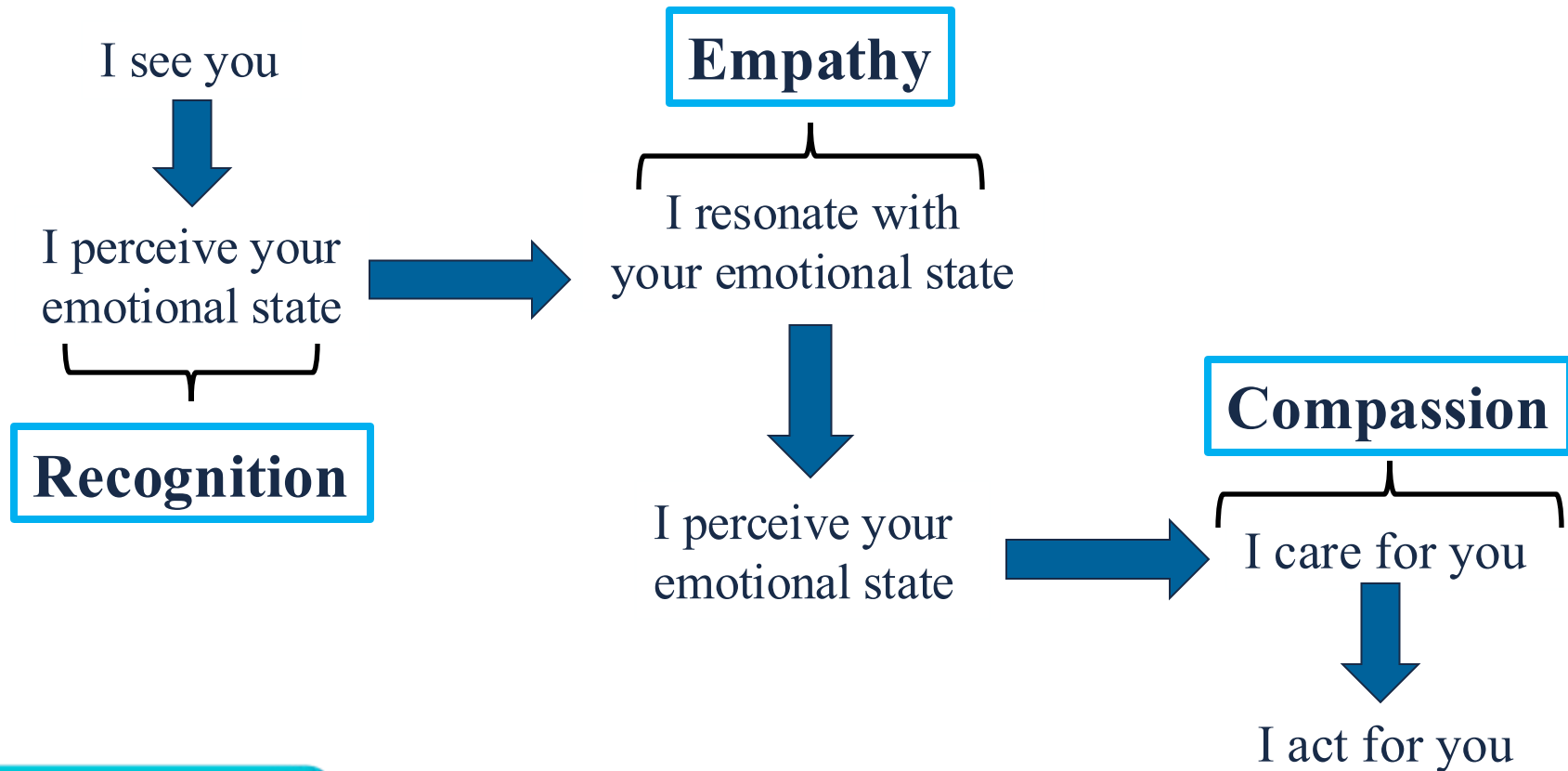
# Enhancing Empathy and Compassion



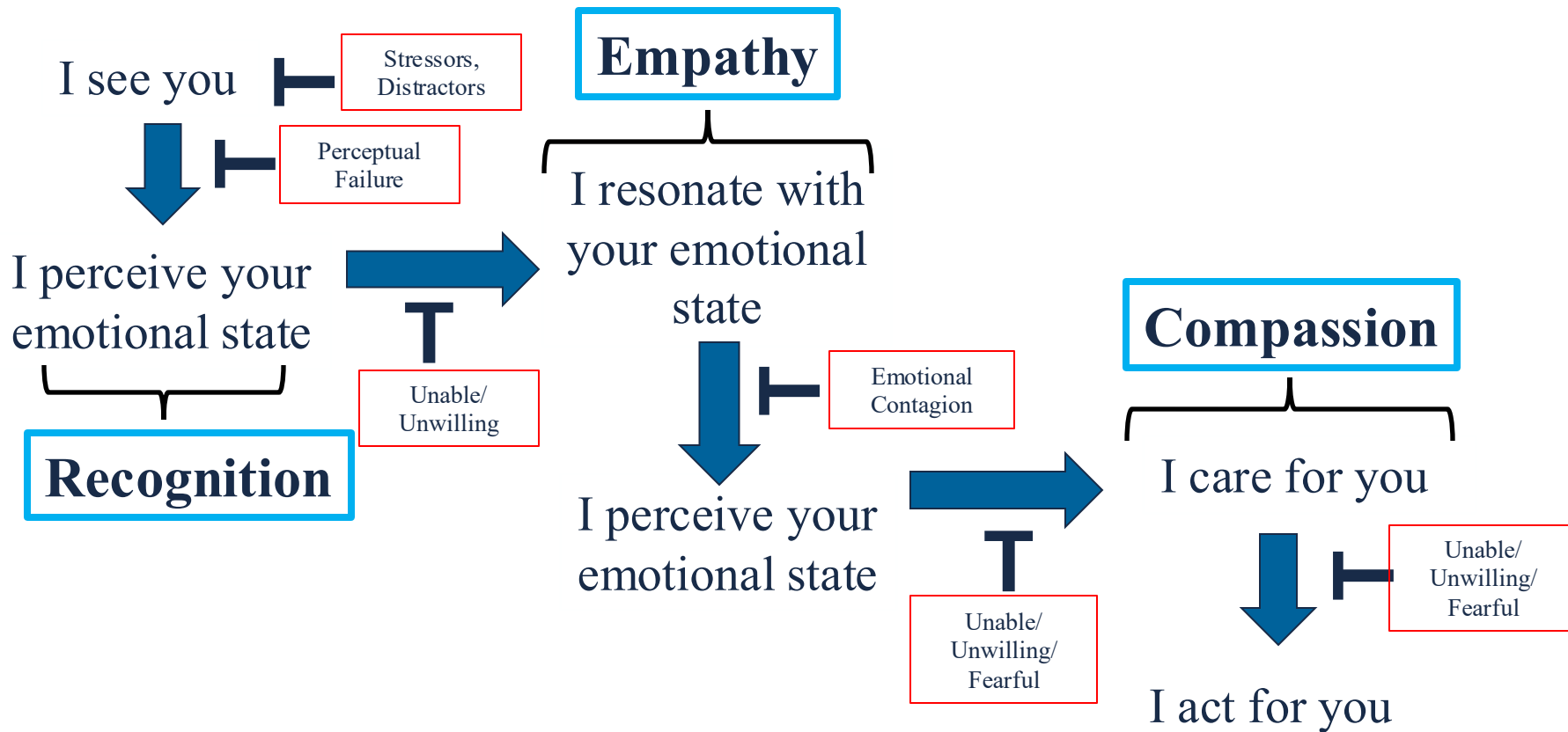
Current Biology

*Klimecki et al., 2014*

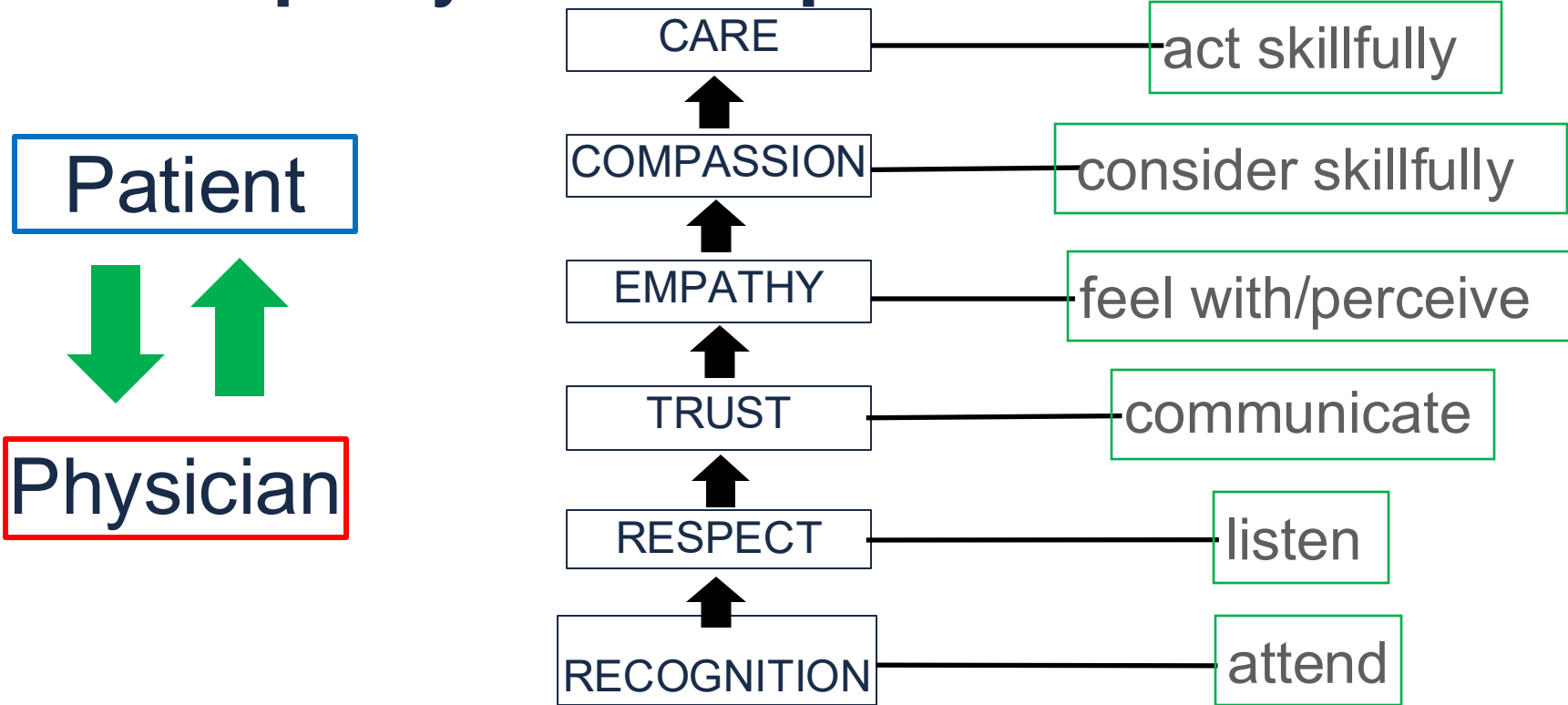
# Empathy and Compassion: A Process



# How Empathy and Compassion Fail



# Therapeutic Dialogue: To Support Skillful Empathy and Compassion



# Center for Compassionate Communication



## Our Team *(Pictured left to right)*

Norma A. Nava: *Team Administrator*

Val Lantz-Gefroh: *Director of Communication Education*

Evonne Kaplan-Liss MD: *Center Director*

Gary Buckholz MD: *Co-Director SCCAF*

# Mission & Scale

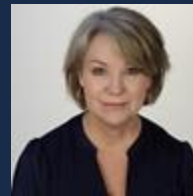
To inspire the practice of compassionate communication in healthcare.



# UC San Diego Health: Sanford Compassionate Communication Academy Fellowship Impact

## Research team:

Bintliff, Kaplan-Liss, Lantz-Gefroh, & Levine



& PhD students: Chandani, Ewaz, Foerster, & Homan

# Background

Integrating the arts and humanities into medical education shows promise for improving physician compassionate communication (Howley et al., 2023), but research is limited.

## **Most of the extant literature:**

- focuses on conceptual works and program descriptions, rather than program evaluation or learner assessments;
- is dominated by undergraduate medical education, not continuing medical education;
- considers only medical learners, to the exclusion of learners from other professions such as the arts & humanities (Moniz et al., 2021)

# UC San Diego Health: Sanford Compassionate Communication Academy Fellowship

[60-hour experiential fellowship](#) for medical professionals and artists

**Objective:** Apply arts and humanities lessons to explore, practice, and ultimately lead others in improving compassionate communication within medicine.

## **Mechanisms: Arts & Humanities Integration**

“What’s been very unique in this training compared to anything else I’ve done is the focus on drawing on the communication expertise of journalists and the arts, particularly theater. It had never occurred to me that there’s a wealth of wisdom about communication in many other fields besides those who trained me.”


## **Research Purpose:**

To evaluate the effects of the Sanford Fellowship program on practicing clinicians and artists

# Theoretical Framework

Transformative Learning Theory (Mazirow, 1997) is an adult learning theory that focuses on the expansions of consciousness through which an individual can question themselves and their own feelings, beliefs, assumptions, and perspective on their purpose through critical reflection and new experiences.

## Phases of Transformative Learning Theory

1. Disorienting dilemma
  2. Self-examination
  3. A critical examination of assumptions
  4. Recognition that others have shared similar transformations
  5. Exploration of new roles
  6. Developing a plan for action
  7. Acquiring knowledge to implement the plan
  8. Trying out the plan
  9. Development of confidence in new role
  10. Reintegration into daily life on the basis of new perspectives
- 

# Demographic of Fellows

- 47 Doctors
- 15 Nurses
- 3 Social Work/Clergy
- 5 PhDs
- 1 PsyD
- 12 Artists



# Mixed Methods Study

## Quantitative methods

- Pre- and post- surveys to analyze shifts in:
  - empathy
  - theories of empathy
  - compassion
  - wellbeing
  - mindfulness

*Analysis: paired t-tests*

## Qualitative methods

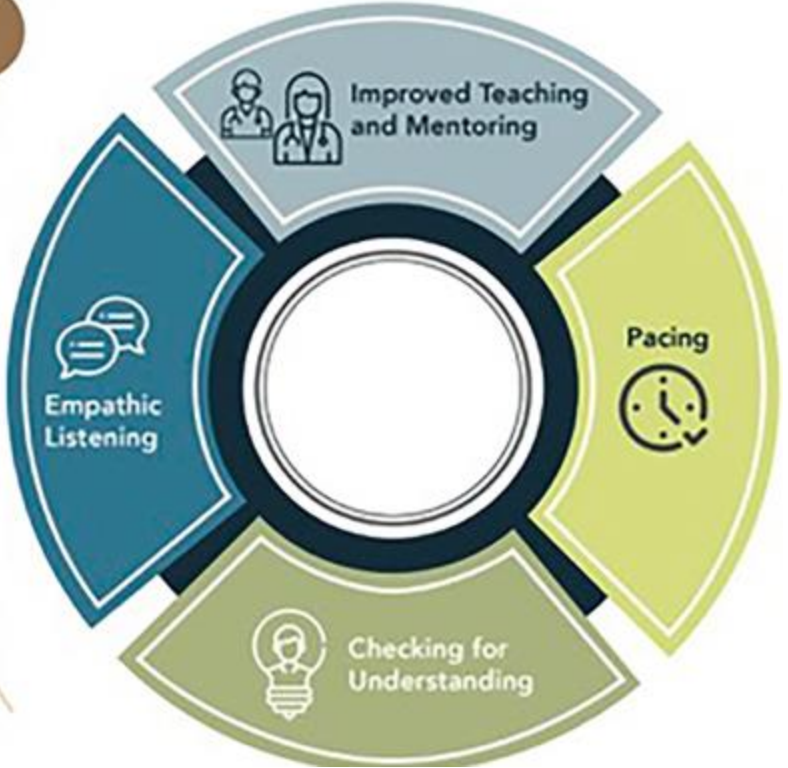
- Two interviews with each fellow
  - 45-minute interview post-fellowship
  - 30-minute interview 6 months post-fellowship
- Field notes documenting program delivery

*Analysis: coding & theme development*

# Qualitative Research

## SCCAF Mechanisms

- Time and Resources
- Reflective Practice
- Care and Safety
- Arts and Humanities Integration
- Co-learning With Artists and Across Roles
- Train-the-Trainer Model



# Quantitative Research Tools

Toronto Empathy Questionnaire

Theories of Empathy Scale

Santa Clara Brief Compassion Scale

Ryff's Psychological Well-being Scale

Freiburg Mindfulness Inventory

# The Ripple Effect

Our fellows have reached...

- Nearly all clinical departments
- Team meetings
- Grand rounds
- Wellness directors
- Leadership
- Residents and fellows
- National meetings
- Publications
- External training
- Medical student curriculum

# Outcomes: Empathic Listening

“I think, prior to this, I would spend a lot of time of trying to get to the end of the conversation rather than just listen ... normally, I just tried to come up with a solution, but now I spend more time listening. And responding.”

# Mechanisms: Train-the-trainer Model

“When I graduated, I immediately came back to my team and, you know, or I was already sharing, and I’m still sharing, I shared at my last staff meeting that I want to bring in some of these techniques. And, you know, because what I’ve noticed is we have a problem communicating with each other.”

# Mid-career Challenges: Burnout

"I was pretty burned out going into the fellowship, and I think my energy is very different now, and the fact that I get to continue the fellowship work is a part of that. And so you know, I know that I'm just showing up better for the people in my life, because I'm enjoying the things that I get to do at work."


# Next steps:

1. Scaling up the Fellowship with multiple interprofessional cohorts
2. Offering Lead with Compassion, a condensed, external two-day curriculum
3. Integrating patient feedback and experiences in future studies
4. Analyzing the “ripple effect” of the fellowship
5. Expanding curriculum to help educators and caregivers

# Read more:

INNOVATION REPORTS

## Improving Compassionate Communication Through a Train-the-Trainer Model: Outcomes and Mechanisms for Transformation

 Bintliff, Amy V. PhD; Levine, Rebecca S. LICSW; Kaplan-Liss, Evonne MD; Lantz-Gefroh, Valeri MFA

[Author Information](#) 

*Academic Medicine* 100(6):p 689-694, June 2025. | DOI: 10.1097/ACM.0000000000005993 



# Our Trainings

## Free Virtual/Zoom webinars

Communicating my Research

Understanding the Value and Importance of Mediation Skills in Communication

Let's Talk: Preparing for Media Interviews

Raise Your Voice: How to write Op-eds and Letters to the Editor

Hearing Myself Think: Wellness through poetry

## Free Asynchronous Learning on Coursera

*(with facilitation guides for educators)*

A New Communication Framework for Healthcare

Communicating with the Public

Lead with Compassion: a 2-day training for change makers in healthcare education (April 8 & 9, 2026)

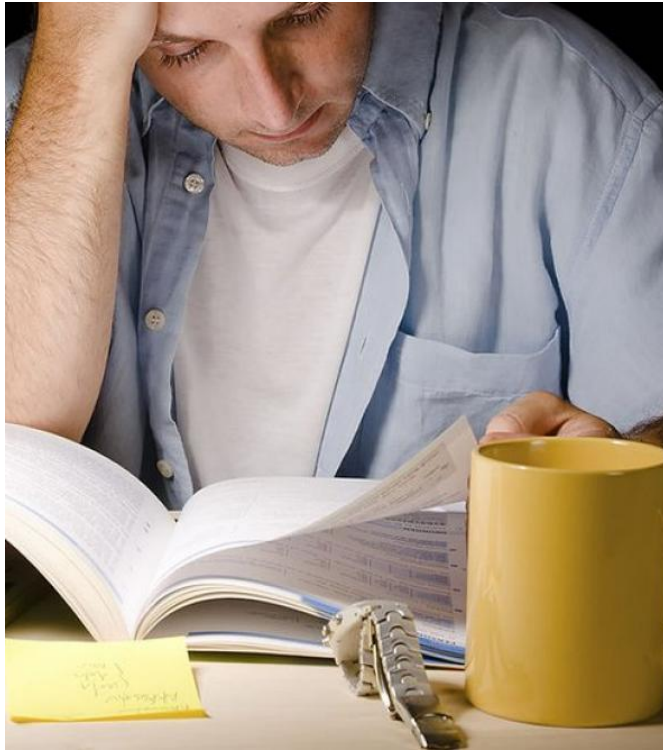
## Free Facilitation Manual for Educators



# Training the Next Generation

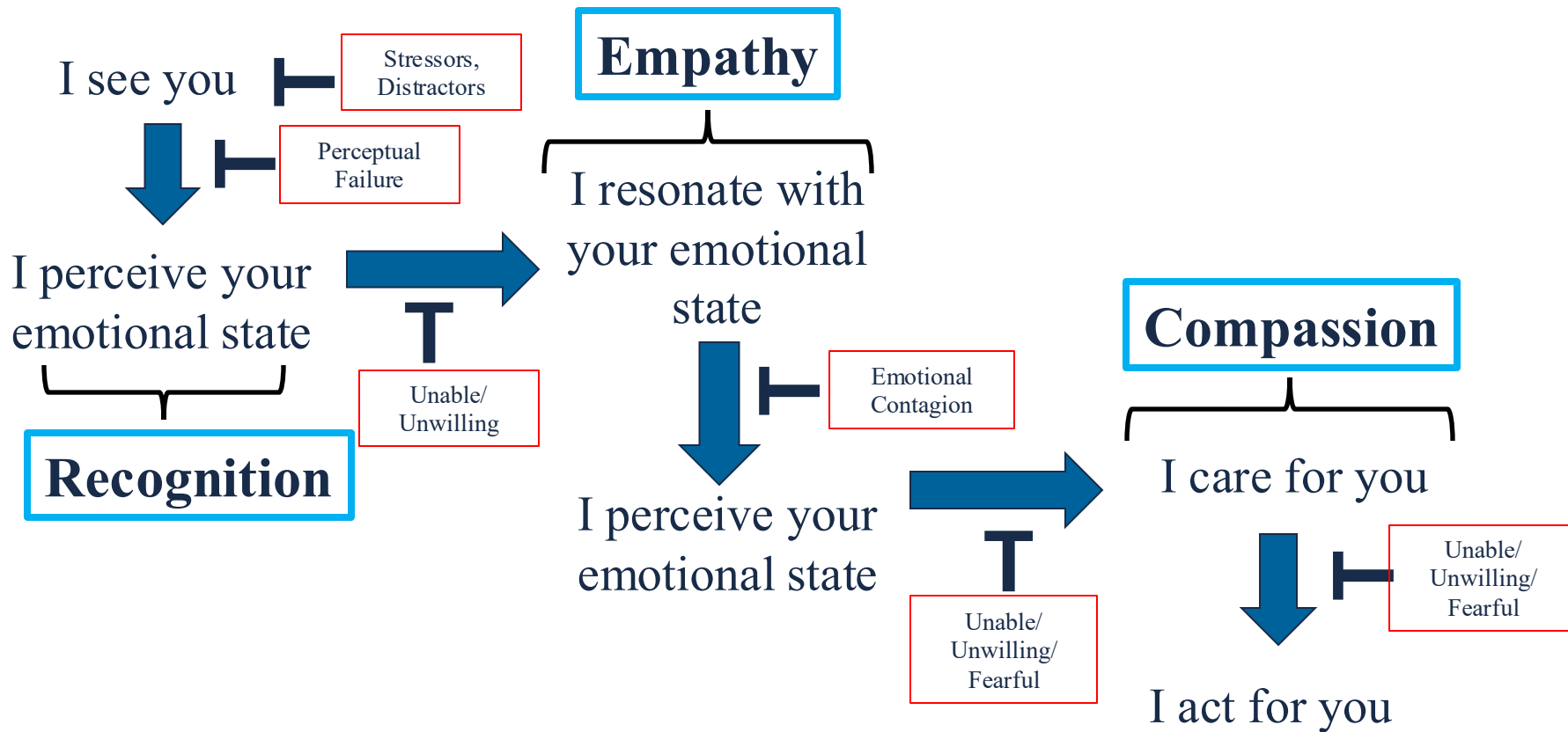
Lisa T Eyler, PhD

Director, [Center for Empathy & Compassion Training in Medical Education](#)





# Targeting Possible Failure Points



# Key Ingredients

- Development of programs to help students balance between the science and art of medicine, incorporating
  - Arts- and humanities-based activities
  - Contemplative practice
- Rigorous research to refine and validate our approaches
- Collaboration with students
- Leadership and structural support
- Sharing programs with other institutions

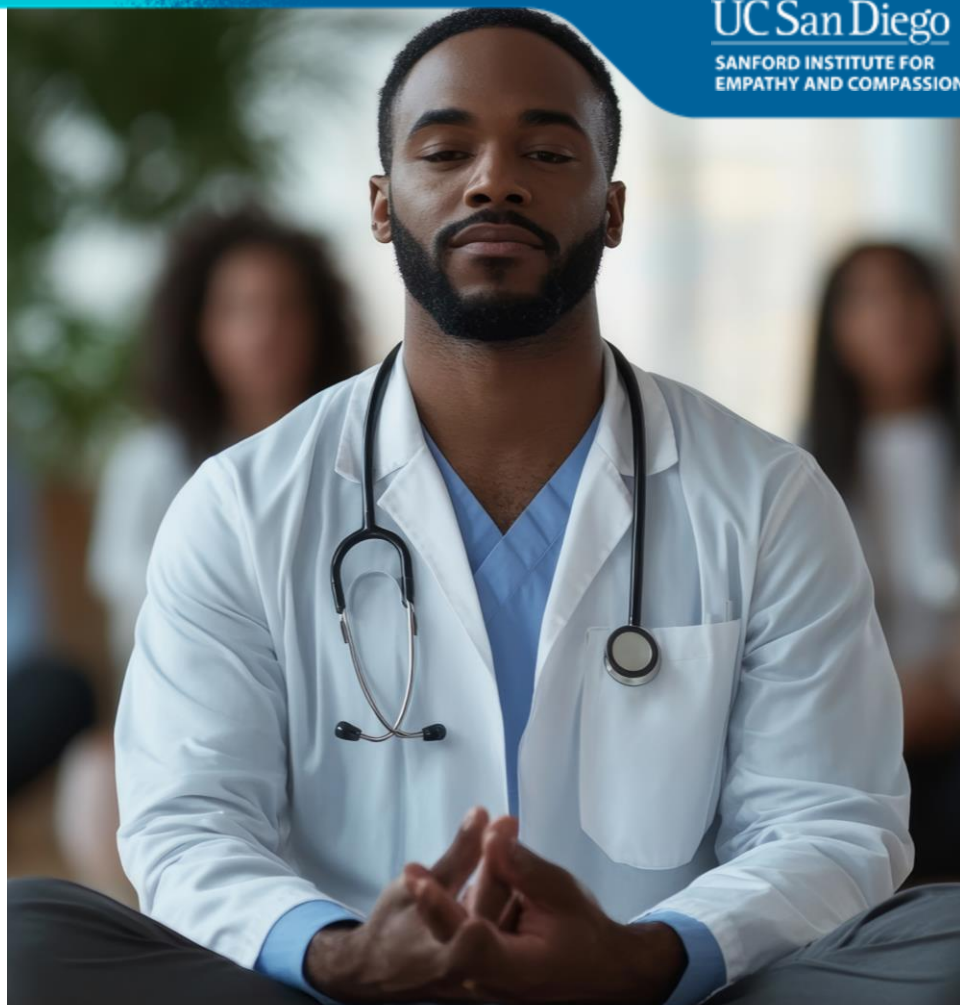


# Flagship Medical Education Programs

- [Compassionatomy](#)
- [CARE – Compassionate Action and Real Engagement in the community - course](#)
- [Mentor Clinician Program](#)
- [Sanford Scholars / Compassion Ambassador Program \(CAmP\)](#)

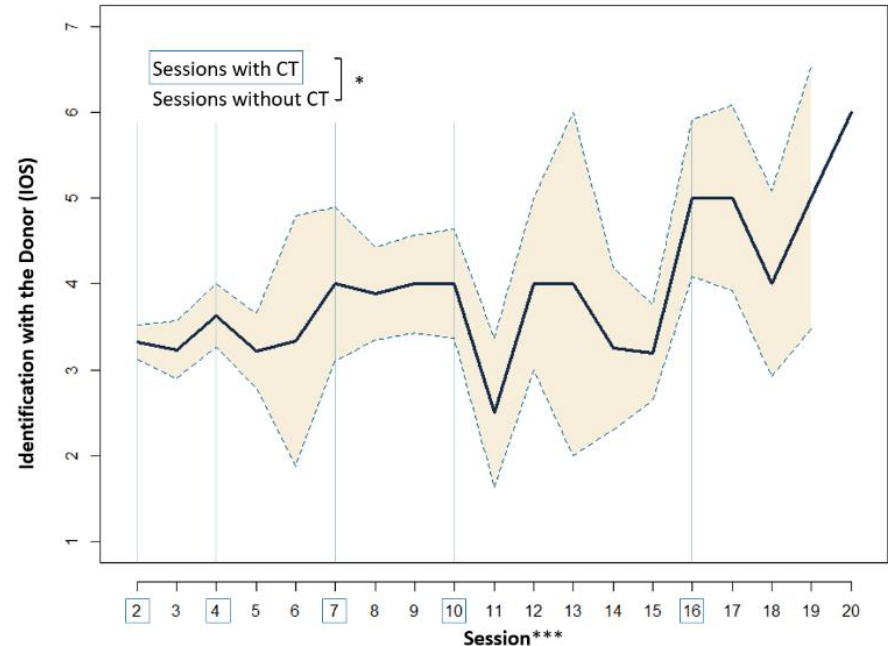
# Compassionatomy

- Research has shown that contemplative practice can enhance empathy and compassion & enhance emotional resilience
- Contemplative & reflective exercises before each anatomy lab
- Led by course leadership
- Started at UC San Diego and adapted for use at Case Western Reserve University
- Partnership with Compassion Institute



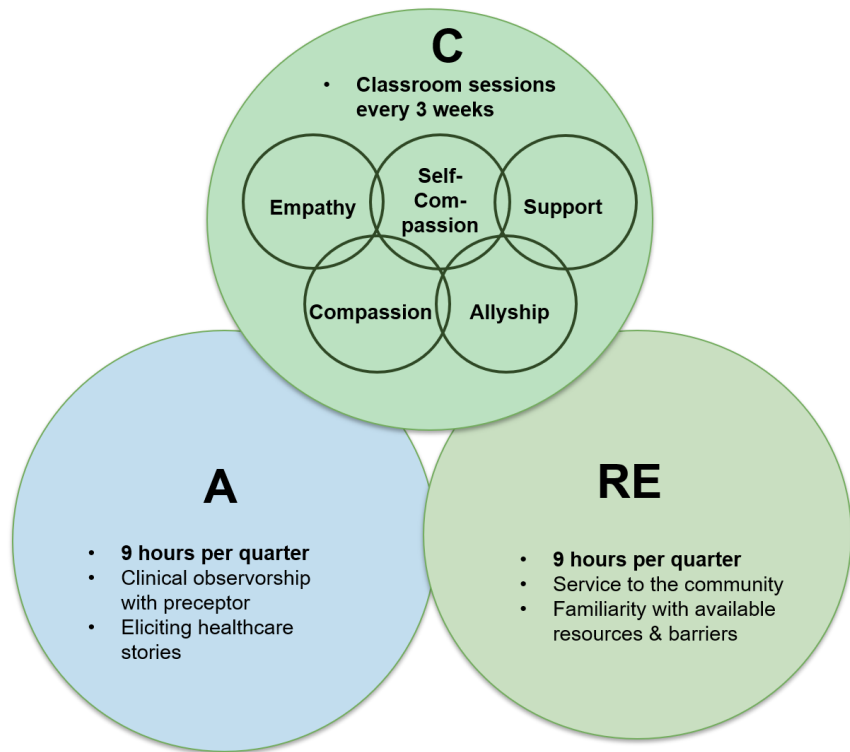
# Compassionatomy Works!

- Increase in connection with the donor
- Consistently excellent course evaluations
- Greater care of donor
- “Anatomy felt like a lifeline for me this year. There were many hours of isolation with just myself and endless facts that I had to memorize. Anatomy gave me a rare chance in the week to form connections, with my classmates and with this donor, my very first patient. It made me feel less alone. And for that I will be forever thankful.”



# CARE Course Elements

- Know yourself & connect with your meaning and goals
- Build community
- Learn others' stories & recognize their challenges and resilient strategies
- Observe how compassion looks in action and how it can fall short
- Practice and hone the art of medicine through arts, humanities, and contemplation
- Process your journey
- Practice compassion towards yourself



# CARE Course Sessions

Date	Session Title
Sep 17	Building Community and the Patient Perspective on Compassion
Oct 8	Compassion, Empathy, and Mindfulness: Introduction
Oct 29	<b>The Case for Compassion &amp; Compassionate Communication</b>
Nov 19	Compassion and Health Equity
Dec 3	Fall Evaluation and Narrative Medicine Processing
Jan 7	<b>The Power of a Story</b>
Jan 21	<b>Self-Compassion &amp; Self-Care</b>
Feb 11	Compassion and Trauma Informed Care
Feb 25	Winter Evaluation, Processing and Professional Identity Formation
Mar 25	Compassion in Chronic Pain
Apr 15	The Realities of Compassion
May 6	<b>Compassionate Upstander Training</b>
May 27	Spring Evaluation, Processing and Professional Identity Formation

# CARE Outcomes

- **Students appreciate:** patient panels, small group connection, clinically-relevant examples, observorships
- **Challenges:** time, pressure to perform on exams, lack of immediate application
- 28% of students agree / strongly agree that course is excellent; 44% are neutral
- First cohort now in their clinical year – longitudinal cohort study will be able to examine influence over all 4 years

## Student take-aways:

“Patience, humility, and understanding will be essential tools that I will utilize with my future patients to demonstrate empathy and compassion effectively. My goal will be to meet patients where they are.”

“Please end this course and help me pass step!  
Mindfulness is not going to make me a doctor.”

“Mostly that it all starts with and depends on listening. We learned a lot about trying to understand the context of a person's feelings and actions, trying to understand their background and life first, in order to provide the empathy and compassion they need and deserve... I definitely felt the power of that during the My Life, My Story assignment. I also think listening includes listening to yourself, to what you need, and giving that self- compassion to yourself.”

# Research Aspirations

- What is happening in the brain as a result of these curricular experiences?
- How can our knowledge of neurobiology inform how we teach (aka neurodidactics)?
- What is really happening with patients and patient experience scores?
- What is really happening with wellness in the long run?
- What is happening with the “Ripple Effect?”

# Thank you!

Want to learn more?



[empathyandcompassion.ucsd.edu](https://empathyandcompassion.ucsd.edu)