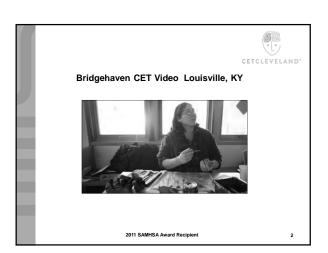


# CET: Physical Therapy for the Brain

2015 Missouri DMH Spring Training Institute (STI)

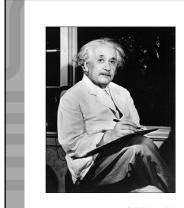
May 29, 2015

Ray Gonzalez, ACSW, LISW-S Center for Cognition and Recovery, LLC



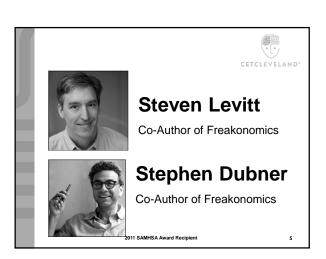


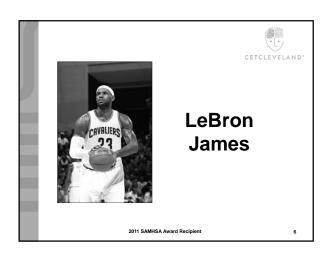
## What do...





### Albert Einstein







### ... HAVE IN COMMON?

An ability to see, think and act outside of the box of normal expectations

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"Insanity is doing the same thing over and over again and expecting different results."

### **Einstein**

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Whatever part of the problem you are trying to solve, make sure you're not just attacking the noisy part of the problem that happens to capture your attention.

Levitt and Dubner



### **LeBron James**

Went from being a great inside threat to being an all around MVP because he focused on his weaknesses, not just on his strengths.

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### Active Treatment vs. Maintenance Management



- Do we, as mental health professionals have those abilities?
- Or are we too focused on the noisy part of mental illness: the positive symptoms?
- What of the more insidious cognitive deficits and negative symptoms of impaired memory, processing speed and lack of social cognition that prevent more complete recovery?
- We need to redefine the problem as "Incomplete Recovery" and view it as impaired cognitive and social functioning rather than the noisier, acute psychotic symptoms. Such thinking leads to innovative solutions.

### True or False?





- Cognitive problems are due to laziness and lack of effort
- Cognitive problems will go away when symptoms like hallucinations go away
- Cognitive problems are caused by medications
- Cognitive problems are caused by being in the hospital or nursing home or at home too long

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### Similar Cognitive Deficits Found in Schizophrenia, Bipolar Disorder, CETCLEVELAND **Chronic Depression and ASD**



- · Attention/Distractibility
- Processing Speed
- · Working Memory
- · Executive Functioning
- · Results in Social Cognition Deficits
  - Problems Taking Another Person's Perspective
  - How to function in novel social and vocational situations

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### **CET** is an active treatment that changes our clients' brains:



- To have increased capacity to learn
- To <u>remember</u> what they learn
- To act in real time
- To improve their social cognition
- To act wisely in novel social and vocational situations
- To have <u>hope</u>

HOPE VIDEO CLIP

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### **Components of CET**



- 1. Specialized computer exercises done
- 2. in pairs in a group setting
- 3. Homework reporting in social cognition group, no one can hide
- 4. Weekly Psycho-ed talks



Cognitive Group Exercises done in pairs in front of group with diplomatic feedback by group members

6. Individual 'coaching' once a week

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### Ray Gonzalez, ACSW **Disclosures**



- Executive Director of The Center for Cognition and Recovery (CCR) a nonprofit LLC
- The CCR has received contracts from agencies, governments and grants from major foundations for the development and dissemination of CET
- · OSU School of Social Work grad with 35+ years as psychiatric social worker
- · Optimist with a belief in recovery

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### Anita's Recommendation



When Anita, a CET Graduate, was asked why she would recommend CET to other people recovering from a mental illness, she answered:

"To help them reach their true potential in work and

But even more importantly is the subjective aspect, enjoying the lives that we were meant to live."



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# **Typical Course of** CETCLEVELAND Schizophrenia 30 2011 SAMHSA Award Recipient

### CET Focuses on Negative Symptoms Of Schizophrenia



- Flat or blunted emotion
- · Lack of motivation or energy
- Often on Auto Pilot
- · Lack of pleasure or interest in things



- Slow, effortful thinking process
- · Concrete thinking
- · Poor concentration and memory

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### What is CET?



- CET is an EBP form of cognitive remediation that aims to improve brain functioning
- For stable clients who have plateaued but have not fully recovered
- Combination of specialized computer exercises, social cognition groups and individual coaching
- · Utilizes a coaching methodology
- · 48 once-a-week sessions
- 80 to 90% attendance and graduation rates

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### Why CET?



- 60 + years of research show that there are major cognitive deficits associated with Schizophrenia but no active treatments
- · There was and is a need to rethink the problem.
- While medication is needed for positive symptoms, negative symptoms are what keep individuals from fully recovering: live full live including learning, loving and working

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"It's important for the field to recognize that while we've been waiting now for 30 years for a drug that will improve social outcomes, we've been ignoring the results of many studies showing that psychosocial treatment achieves psychosocial results.

And that most of those results are in some ways more meaningful for patients and their families than just the absence of a relapse."

William McFarlane, MD, Director of the Center for Psychiatric Research at the Maine Medical Center Research Institute, 9/10/10

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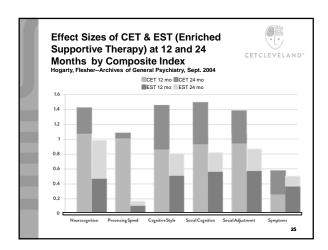
### **History of CET**

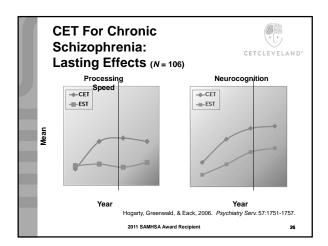


- Developed by Gerard Hogarty and Samuel Flesher at the EPICS Program at the University of Pittsburgh Medical School
- CET Research funded by NIMH grant
- 121 Subjects CET (N=67) or EST (N=54) and treated for two years, between January 1995 and February 2002
- Initial study published in the Archives of General Psychiatry, Sept. 2004 & a study on the Neuroprotective Effects of CET Against Gray Matter Loss in Early Schizophrenia also in the Archives of General Psychiatry, May, 2010
- Additional CET studies published on durability 12/06, 11/09; for persons in early psychosis 11/09, all in Psychiatry Services

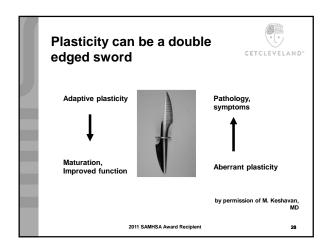
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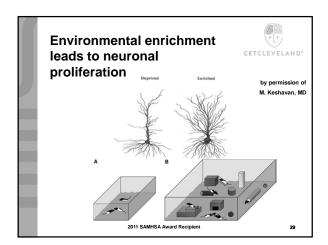
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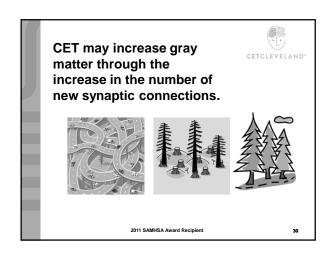




# Cognitive remediation is based on Neuroplasticity Neuroplasticity refers to the brain's ability to re-organize itself through forming new neural connections or by adding cells Neuroplasticity allows the neurons in the brain to adjust their activity and organization in response to new situations or to changes in the environment







Neuroprotective Effects of CET Against Gray Matter Loss in Early Schizophrenia, Eack, S., et al, Archives Of General Psychiatry, May 2010



- These differential effects of CET on graymatter change were significantly related to improved cognitive outcome, with patients who experienced less gray-matter decline and greater gray-matter increases also demonstrating significantly greater cognitive improvement over the two years of the study.
- Thus cognitive remediation may benefit cognition in people with schizophrenia by preventing or reversing gray-matter loss.

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### **CET Improves**



- Social cognition (the awareness to interawisely with others)
- Processing speed (enables timely response
- Cognitive functioning (attention, memory, problem solving)
- Meaningful roles (employment, student, volunteer, care giver, friend)
- · Self-management of mental and physical health
- · Acceptance of and adjustment to disability

SOCIAL LIFE VIDEO CLIP

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### **Goals of CET**



by permission of S. Eack, Ph.D., University of Pittsburgh

Foster Higher Thinking By Becoming:

Abstract and Gistful vs Concrete
.
An Active Thinker vs Passive Receiver

· of Information

Cognitively Flexible vs Following Rigid Rules

More Spontaneous vs Rehearsed

More of an Initiator vs Doing Nothing

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### **Typical CET Day**



11:00 – 12:00 Computer Exercises

12:00 - 12:30 Break

12:30 – 2:00 Group

Individual coaching session held with each client during the week to work on homework questions

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### **Computer Work**



- · One hour a week
- Done in pairs
- · Pairs support each other
- A chance for socialization
- · Prepares participants for group
- · Continues during the course of the group
- Progressively more challenging and more abstract

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# Attention, Memory, Problem Solving



- Attention
  - Establish set
  - Maintain set
  - Shift set
- Memory
  - Recall, recognition, procedural
  - Working Memory is most impaired in mental illness
- Problem Solving





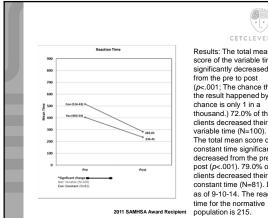
### Coaching Methodology



- Support
- Challenge
- Be Permissive
- Reward



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CETCLEVELAND

Results: The total mean score of the variable time significantly decreased from the pre to post (p<.001; The chance that the result happened by chance is only 1 in a thousand.) 72.0% of the clients decreased their variable time (N=100). The total mean score of the constant time significantly decreased from the pre to post (p<.001). 79.0% of the clients decreased their constant time (N=81). Data as of 9-10-14. The reaction

# COGNITIVE ENHANCEMENT THERAPY Tuesday, January 16, 2007 Group #9, Session 20

Welcome Back: Judy

Selection of Chairperson: Review of Homework:

a) Describe a recent situation in which you disagreed with another person b) Describe your perspective c) Describe their perspective

Psycho-Educational Talk: Foresightfulness

Speaker: Ray

Exercise: Word Sort Participants: Sam and Jo Feedback: Everyone Coach: Judy

Homework:
Tell about a time when you could have been more foresightful.
Tell how being foresightful would have made the situation different.

Next Group Meeting is Tuesday January 23, 2007

### Socialization



· Children are told what to do



· Adults are expected to "get it"



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### But.....



Suppose your memory is impaired and it's hard to follow a much less participate in it.

Suppose your thought processing is slowed down and it takes extra effort to process and respond to what is happening around you.

Suppose you can't trust your judgment.

Then what happens?



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### Desocialization



- If adults (your clients) don't "get it" people walk away
- · When people walk away
  - Socialization stops
  - Learning stops
  - Strange behaviors grows
  - People become desocialized



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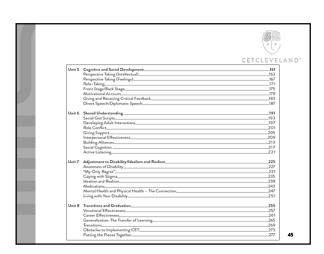
### Desocialization

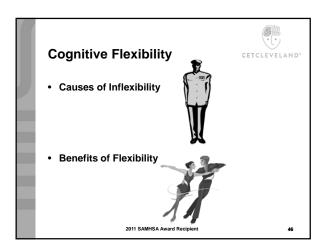


- · Dysfunctional roles are established
- · Others begin to reinforce dysfunctional roles
- Dysfunctional behavior becomes familiar if not always comfortable
- · No learning about the generalized other
- · The best mental exercise is social interaction



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# Homework on Motivational Account • Give an example of the situation in which it was important to give a motivational account • Tell us why it was important to give a Motivational Account • How could you have given a better Motivational Account?

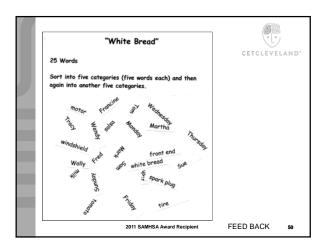
### Idealism vs. Realism



- So this past winter has been especially brutal for everyone in the great lake states. This past February during the lunch hour on a day hovering around zero degrees – I (Randy Wolbert, CET Coach) was walking on the down town pedestrian mall in Kalamazoo.
- I ran into a December graduate from CET, sitting, drinking coffee, and chatting with a friend. When he saw me he said: "Ideally it would be 75 degrees and we would be walking around in shorts and t-shirts – realistically it is near zero and I am glad that I have a warm coat and gloves". We both broke down laughing.

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# Accurate and Diplomatic Feedback



- Intellectual
- Emotional
- Teamwork
- Response to Coach

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So	cial Cognition Exercise:	• [*)
Co	ndensed Message	CETCLEVELAND
	The Facts An art dealer went to Paris on one of his frequent trips and took up residence at a hotel where he used to stay whenever he was in that city. He was just about to conclude a series of promising deals with some art galleries when he came down with the flu and developed a high temperature.	
	Since he was such a good customer of the hotel, he received excellent medical care and plenty of attention from the staff. He was quite comfortable, but his business mission was about to fail if help did not arrive within two days at the most. His wife, who currently held another job, had been his able and founded business partner in previous years.	
	The art dealer decided to inform his wife of his condition, without alarming her, and to ask her to come and help out with the business.	
	The Circumstances	
	<ol> <li>His wife was not able to take phone calls during the day but she would be able to listen to short voice messages.</li> </ol>	
	Assumptions	
	1) His wife could get away from her job at a moment's notice.	
	<ol> <li>The couple had an excellent relationship. They communicated with each other in direct and precise language.</li> </ol>	<del> </del>
	What would a 12 word (or less) message be?	
		FEED BACK
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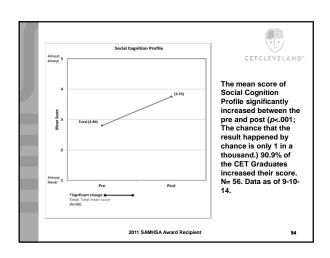
### Social Cognition Profile



(completed by mental health professional familiar with the CET participant, pre & post CET)

- This tool measures changes in social cognition, the ability to act wisely in social situations. Questions deal with areas such as: concern about others, peaceful, trustworthy, open minded, flexible.... The MH professional is asked to give a rating on a scale of almost never to almost always. A higher score on this assessment indicates higher functioning.
- This assessment was developed by Jerry Hogarty MSW, Sam Flesher PhD and Deborah Greenwald PhD for the original CET research done at the University of Pittsburgh Medical Center, Western Psychiatric Institute and Clinic. For more information see the article on CET in the Archives of General Psychiatry 2004;61:866-876

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### **Impact of Impaired Cognitive Functioning on Physical** Health



- Reduced awareness of own physical health
- · Difficulty in communicating with others, esp. primary health care providers
- · Poor memory results in poor follow throu on medical treatment, e.g. medication compliance, MD appt.'s, diet etc.
- · Few social supports and lack of self initiation

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### **CET Attendance & Graduation Rates**



- Average attendance and graduation rates are 80-85% across all sites
- Much of the attendance success can be attributed to how much participants value the program.
  - " "I like coming to CET because they treat me like I have a brain"
  - "We feel that we got our son back after he went through CET." Marty and Gerry Conway, parents of PLAN Member Neil.
  - "CET was invaluable, I learned to laugh again and it brought out the happy side of me"

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### A Meta-Analysis of Cognitive Remediation for Schizophrenia



T. Wykes Am. J of Psychiatry, May 2011

- Conclusions: cognitive remediation benef people with schizophrenia, and when combined with psychiatric habilitation, this benefit generalizes to functioning, relative to rehabilitation alone.
- What is more important than the surface characteristics (e.g., using a computer) is the technique of specific and explicit training of strategies and the use of various transfer techniques, as shown in the improved functioning outcomes for these approaches.

### **Dissemination Lessons** Learned



- · CET works best with clients who:
  - Are stable but not fully recovered
  - Have major cognitive deficits
  - Are recovering from schizophrenia or have major social cognition disabilities
  - Are able to read at a fifth grade level or higher
  - Have had some prior vocational or educational
  - Are at least marginally interested in recovery although CET is designed to work on amotivation

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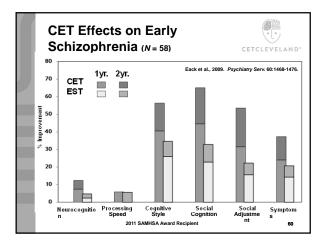
### Ways CET benefits clients



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- Attention
- Memory
- Motivation
- Affect
- · Awareness of social context
- Vocational effectiveness
- Interpersonal effectiveness

- · Active Thinking
- Awareness of illness/disability
- · Dependability
- Spontaneity
- Foresightfulness
- · Perspective Taking
- · Cognitive Flexibility
- Mental Stamina



# Increased Social and Vocational Capacity



- Improved Processing Speed and Increased Working Memory enables clients to process information in real time
- Clients learn how society works
- Clients are taught that there are others' perspectives, that there are cultural norms in vocational settings and how to deal with them
- Clients learn how to interact wisely with others
- A major goal of CET is to enable clients not only to get jobs but be able to keep their jobs long term

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# Effects of CET on Employment Outcomes in Early Schizophrenia: Eack, et al



	CET (N = 24)		EST (N = 22)	
Variable	N	%	N	%
Competitively employed	13	54	4	18
ob status				
Full time	6	25	3	14
Part time	7	29	1	5
Employment pattern				
Achieved employment	10	42	2	9
Maintained employment	3	12	2	9
Lost employment	0	0	6	27
Job category <sup>a</sup>				
Professional	1	5	0	0
Clerical/sales	5	23	1	5
Skilled manual labor	1	5	0	0
Unskilled labor	4	18	3	14
	м	SD	м	SD
Weekly earnings	207.92	337.97	69.77	156,47
Satisfaction with employment status <sup>b</sup>	2.46	1.56	3.77	1.69
			VOC	ATIONAL \

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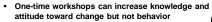
# Performance Based Training (for Clients and Coaches)

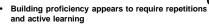


- Know: Knowledge acquisition
- · Know How: Skill Acquisition
- Do: Skill performance
- · Performance-based training includes
  - Deliberate practice
  - Experiential learning
  - Feedback
  - Support

By permission: Sonja K. Schoenwald PhD Professor of Psychiatry & Behavioral Sciences Medical University of South Carolin

### Toward Evidence-Based Training $\smile$ (for Clients and Coaches)





- One estimate: 20 25 implementation attempts to achieve consistent professional behavior change (Joyce & colleagues, 2002)
- Approaches & techniques recently reviewed
  - Academic detailing

  - Coaching Inter-professional learning

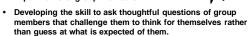
  - Reminders self-regulated learning problem-based learning

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### **Lessons Learned-Coaching Involves:**



- Relearning patterns of interacting with group members, e. g., the support and challenge that coaching requires
- Developing a new awareness of functional impairments of group members



- Being able to allow clients to fail and succeed with the right amount of support and challenge
- Learning a remediation/rehabilitation treatment orientation

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### Reduces need for urgent, high demand services



### InterAct Michigan, Kalamazoo MI

- Reduction of 156 hospital bed days for the 17 CET Graduates from the year prior to CET (7 clients)
- to 10 bed days for the CET treatment year (1 client)
- to 20 bed days for the 13 months after graduation, (2 clients, data as of 1/1/15; a 87% reduction in bed days; 146 less bed days times \$1,565A cost per bed day, equals \$228,490 in reduced costs)
- A The average national cost of a psychiatric bed day as reported in an article in USA Today http://www.usatoday.com/story/news/nation/2014/05/12/ mental-health-system-crisis/7746535/

# Reduces need for urgent, high demand services



- · Bridgehaven MHS, Louisville KY
  - Reduction of 104 hospital bed days for the 13 CET Graduates from the year prior to CET (5 clients)
  - to 0 bed days for the CET treatment year
  - to 28 bed days for the 15 months after graduation, (1 client, data as of 1/1/15; 76 less beds or a 73% reduction from the year prior to CET; 76 less bed days times \$1,565 (cost per bed day) equals \$118,940 in reduced costs

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# **Business Case for CET** for the Agency



- Funders are asking, "If the treatment is not an EBP, then why are you providing that treatment?"
- Gives CET trained staff new therapy tools to work with their clients both in CET and with non-CET clients
- Changes the focus of the agency to be more rehabilitation oriented, more active treatment oriented than TAU (Treatment As Usual)

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### Agencies with trained staff



Center for Cognition and Recovery, Cleveland Mercy Behavioral Health, Pittsburgh Community Support Services, Akron Jewish Family Service Association (JFSA) Beachwood, OH PLAN of Southwest Ohio, Cincinnati

Northcoast Behavioral Healthcare, Northfield Ohio (ODMHAS) PLAN of North Texas, Dallas Texas

Chestnut Ridge Hospital JEVS, Philadelphia PA City Mission of Washington, PA Bridgehaven MHS, Louisville KY LACDMH, Los Angeles, CA
Tri City MHS, Pomona, CA
InterAct Michigan, Kalamazoo, MI
Spindletop Center, Beaumont TX
Lake Shore BHS, Buffalo NY
Horizon House, Newark DE
Didi Hirsch, Los Angeles CA
Veterans Affairs, Cleveland OH
Lakes Regional Center, Terrill TX
The Mental Health Coop, Houston
TX

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- 1. 185 CET groups completed as of Dec-2014 with 1,600 CET Graduates
- 2. 47 CET groups currently running
- 3. Current Disseminations: Connections, Wilmington, DE 3/13; Gulf Coast Center, Galveston, TX 10/13; Harbor CMHC, 4/14, Unison Behavioral Health, 3/14, Zepf Center, 4/14, A Renewed Mind, 2/14, all in Toledo OH; Easter Seals of MI, Auburn Hill MI 3/14; Region Ten CSB, Charlottesville VA 8/14; Beech Brook, Pepper Pike OH 8/14; Coleman Professional, Lima, OH 1/15; Detroit Central City Community Mental Health and City Hegira Programs, Inc., both in Detroit, MI. 2/15
- 4. 12 new CET sites in development in CA, NJ, IN, KS, MI, OH, OK, OR, PA, VA, WA

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# Next steps to bring CET to your community



- Inform yourself about CET by setting up a CET Learning Community to learn more about CET (visit CCR website & sign up for our newsletter)
- Inform your local NAMI organizations about CET
- Inform your local mental health agencies about CET
- Inform your local and state funding sources (Community Mental Health Boards, foundations, etc.) about CET
- Advocate for CET

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### Center for Cognition and Recovery, LLC

Ray Gonzalez, ACSW,LISW-S Executive Director 3659 S. Green Road, Suite 308 Cleveland, OH 44122 216-504-6428

email: rgonzalez@cetcleveland.org website: www.cetcleveland.org CETCLEVELAND®

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