

Stanford - Perspectives in Assistive Technology



Pacific Autism  
CENTER FOR EDUCATION

# The Autism Opportunity

**Designing for Community-Based  
Solutions**



# Social Design

- **Competence**
- **Conscience**
- **Compassion**



# The Autism Opportunity

- **Understanding Autism**
- **The Autism Field**
- **Designing for Community**

Connect

Support

Educate



# The Diagnosis

**ADHD**

**Aspergers**

**PDD-NOS**

Pervasive Developmental  
Disorder

**ED**

**OHI**

**ID (MR)**

**ASD**

**Autism**

**TBI**

**Rett Syndrome**

**SLD**

**HFA**

**LD**

**CDD**

Childhood Disintegrative Disorder

*Autism is a Spectrum Disorder*



# What is Autism?

Autism is a neuro-developmental disability that affects one's ability to communicate, interact socially and learn in conventional ways.



# Autism Characteristics

Individuals with Autism have difficulty with:

- Communication (delayed language)
- Social Interaction (literal, unfiltered)
- Behaviors (repetitive stimming)
- *Sensory Motor Regulation*
- *Executive Function*



# Basic Facts

- Autism is a spectrum disorder: it affects each person differently
- Autism affects a person for a lifetime
- 1 in 88 children has Autism  
(4:1 ratio of male to female)
- 11% of school special education in California is an Autism diagnosis
- Half of the Autism population is higher functioning (social impairments)

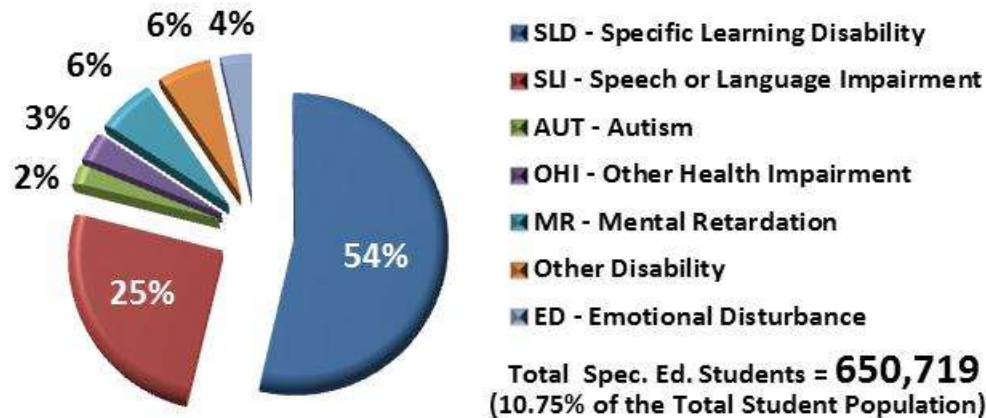




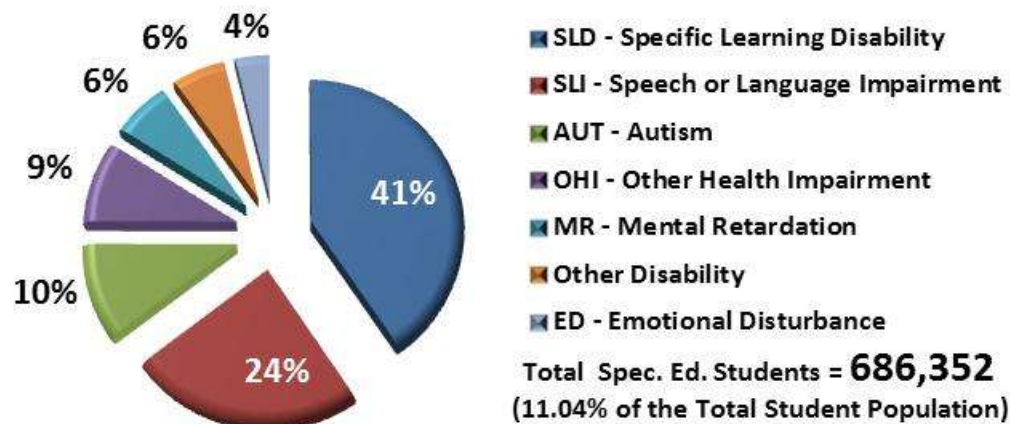


# Autism Diagnosis in School

## California Special Education - 2001

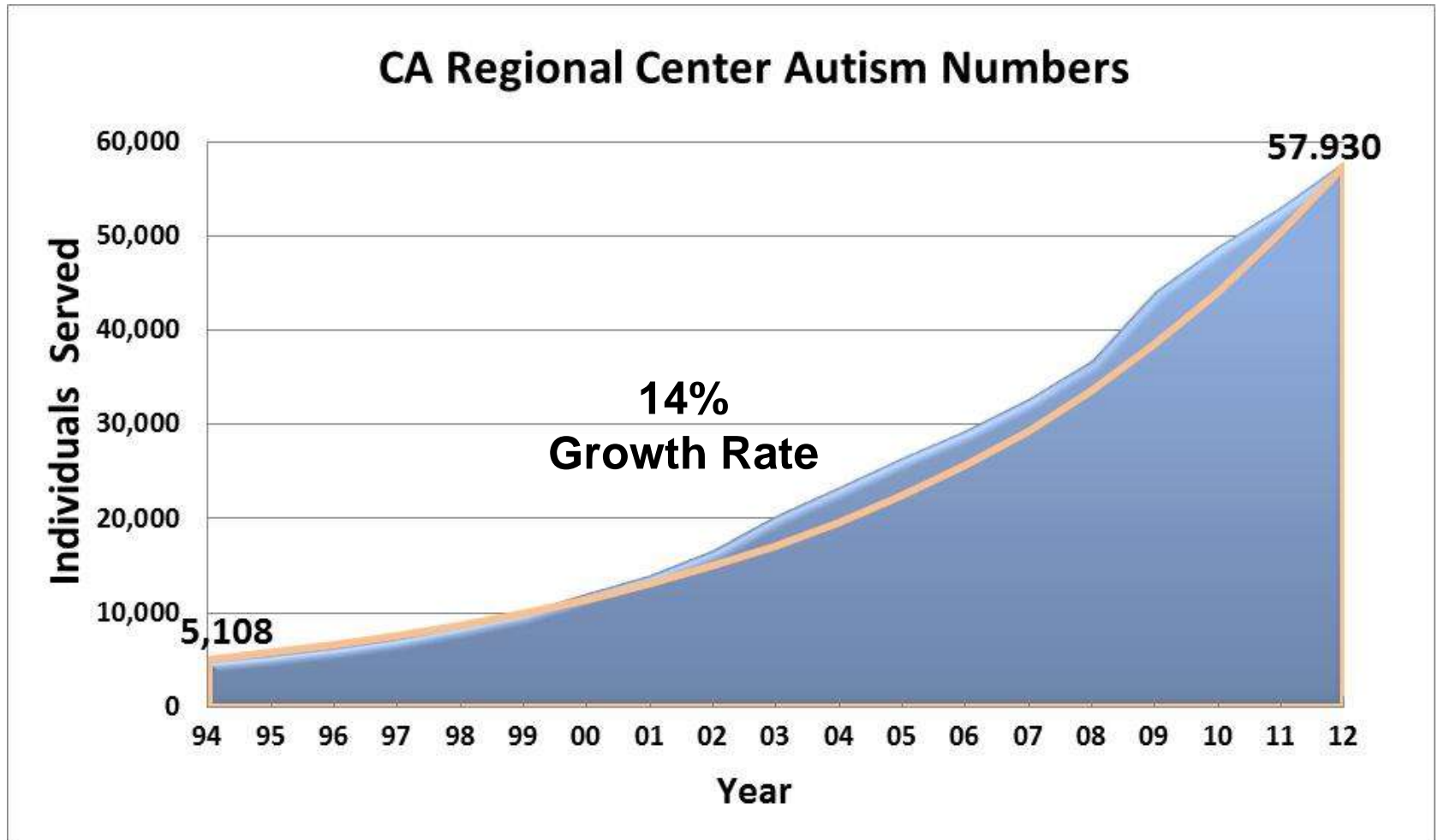


## California Special Education - 2012





# CA Regional Center Autism





# Autism Research

- Genetic Predisposition  
(Proteins – Gene Messages)
- Environmental Factors  
(Triggers - Toxins)



# **Top 10 Design Considerations**



# 1

# Sensory Regulation

- Heightened sensory awareness
  - ▣ Loud noises, flickering lights, change in temp., etc.
- Need for sensory diet areas (distractions)
- Individuals may not have a good sense of their expression (loud screams, rough play, etc.)





## 2

# Communication

- Visual learners (visual schedules/timers, icons)
- Visual learning more retained than verbal
  - Build a visual library
  - Engage in image sequence elements
  - Visual memory mapping is an important skill





# 3

## Consistent & Predictable

- Change is extremely difficult to manage
  - Management of the sensory surroundings
- Build defined structure and consistent routine
  - Develop a well defined timeline
  - Incorporate frequent breaks (every 15 minutes)
- Involve manageability, predictability & control
  - Slower movements
  - More exaggerated motions (expressive)
- Importance of “First – Then” statements (forecasting)



# 4

# Behavior Reinforcement

- Behavior antecedents can be subtle (video replay)
- Utilize reward reinforcement sparingly
- Understand the process of prompt fading
  - ▣ Types of prompts: physical, gestural, and verbal
- Importance of transparent data tracking methods







# 5

## Visual Learners

- Children are very pictorial in the way they think
- Visual recognition more receptive than language
  - ▣ Build a visual library
  - ▣ Engage in image sequence games
  - ▣ Visual memory mapping is a good learning tool





# 6

## Body Language

- Less than 20% of communication is verbal
- Develop awareness of body language
  - ▣ Unable to understand facial expressions
- Moods are unpredictable & uncertain
- Focus on face-to-face interaction





# 7

## Repetitive Behavior

- Stemming – Repetitive behavior is necessary
  - Helps to center the individual
- Students learn on the move (kinetic learners)
  - Need for physical movement
- Need for dynamic change to avoid rote behavior





# 8

# Behavior Modeling

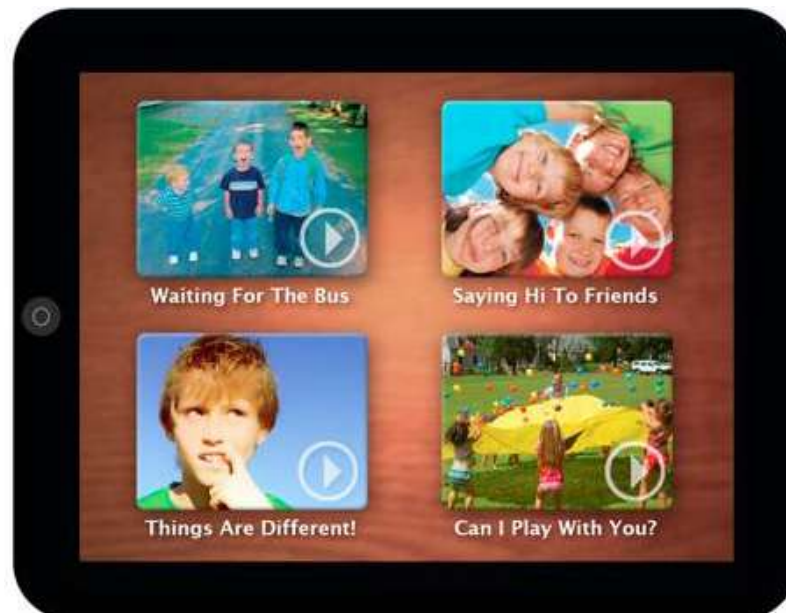
- Learning through repetitive behavior models
  - Focus on multiple repeats of task for memory





# 9 Social Stories

- Social story is a short visual guide
  - Focus on key concepts
  - Break function into simple sequence of steps
  - Incorporate response questions





# 10

# Design for Community

- Solutions are 24/7
- Parent / caregiver training is critical
  - Easily adaptable (minimal programming)
- Design for solutions that cover multiple domains
- Low tech can be highly desirable
- Understand cultural sensitivities

  
Lorchlight



# Contact Information

## **Kurt Ohlfs**

Executive Director

Pacific Autism Center for Education (PACE)

1880 Pruneridge Ave.

Santa Clara, CA 95050

[kurt@pacificautism.org](mailto:kurt@pacificautism.org)

408/625-6171