



NEURODIVERSITY

DESIGNING SUPPORTIVE LEARNING ENVIRONMENTS



Introductions



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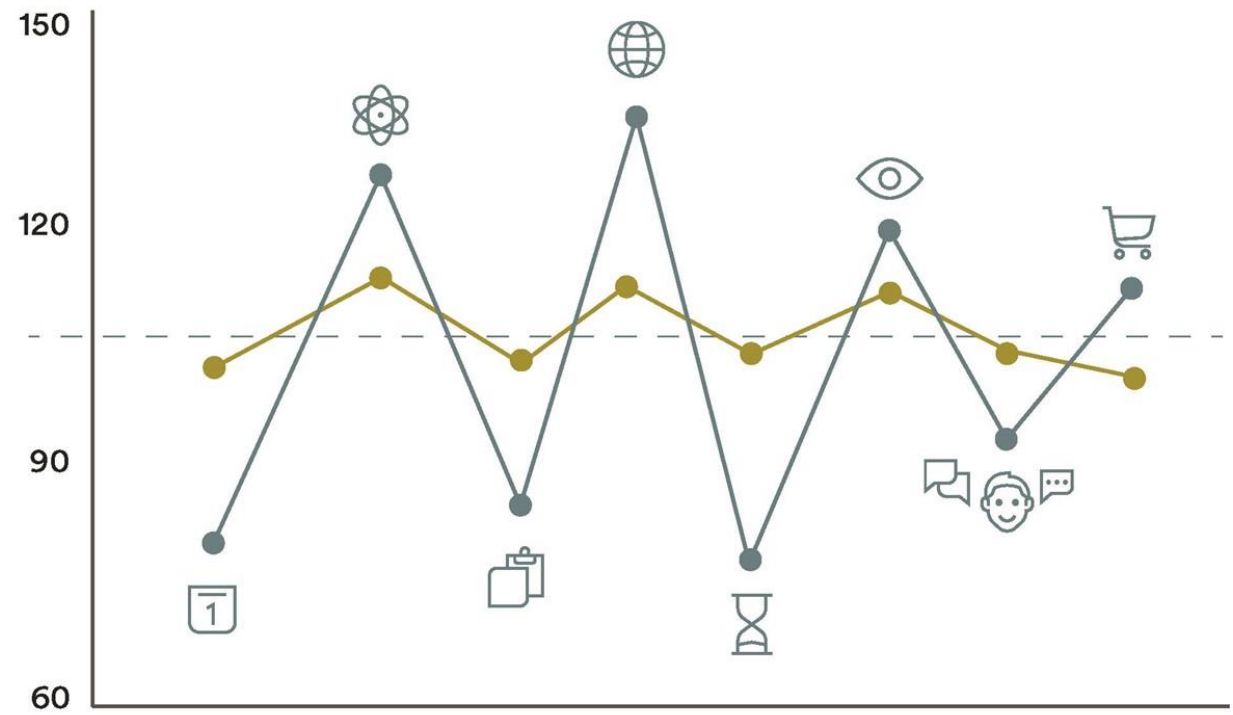
WHAT IS NEURODIVERSITY?

AREAS OF AGREEMENT AND CONTROVERSY

- Originally developed by stakeholders to redefine from what would be considered a disease to a recognition of a human .
- First research-based publication by Judy Singer, 1999. Primarily documenting experience of Autism
- Can also be considered diversity within an individual
- Should neurodiversity be considered a disability or a naturally occurring difference



SPIKY PROFILES



PREVALENCE OF NEURODIVERSITY?

HINT: IT'S A LOT



PREVALENCE OF NEURODIVERSITY?

20%

- Common Learning or Attention Issues
- Approximately 8% receive special accommodations

12.5%

- Childhood Trauma (ACES Score of 4 or More)



SUPPORTIVE ENVIRONMENTS

Award History 2002 ~ 2019

Year Room 612 Acquired

High and consistent Performance



Awards	Competitions	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
AMD CAD Award	CalGames																			
Autonomous Award	CalGames																			
Champion	CalGames																			
Creativity Award sponsored by Xerox	FIRST																			
Delphi "Driving Tomorrow's Technology" Award	FIRST																			
Engineering Excellence Award	FIRST																			
Engineering Inspiration	FIRST																			
Entrepreneurship Award	CalGames																			
FIRST Dean's List Finalist	FIRST																			
FIRST Dean's List Award	FIRST																			
Imagery Award in honor of Jack Kamen	FIRST																			
Innovation in Control Award	FIRST																			
Judges Award	FIRST																			
Kleiner, Perkins, Caufield and Byers	FIRST																			
Mentor of Year (David Giandomenico)	CalGames																			
Most Improved Team Award	ChezyChamps																			
Professionalism Award	ChezyChamps																			
Quality Award sponsored by Motorola	FIRST																			
Regional Finalists	FIRST																			
Regional Winners	FIRST																			
Rockwell Automation Innovation in Control Award	FIRST																			
Rookie Star	CalGame																			
Safety Award	FIRST																			
Safety Animation Award	FIRST																			
System Award	CalGames																			
Volunteer of the Year (David Giandomenico)	CalGames																			
Woodie Flowers Award	FIRST																			
Wow Award	MadTown																			

SENSORY

SEEKING VS AVOIDING

- Lighting
- Indoor Air Quality
- Acoustics
- Furniture Selection

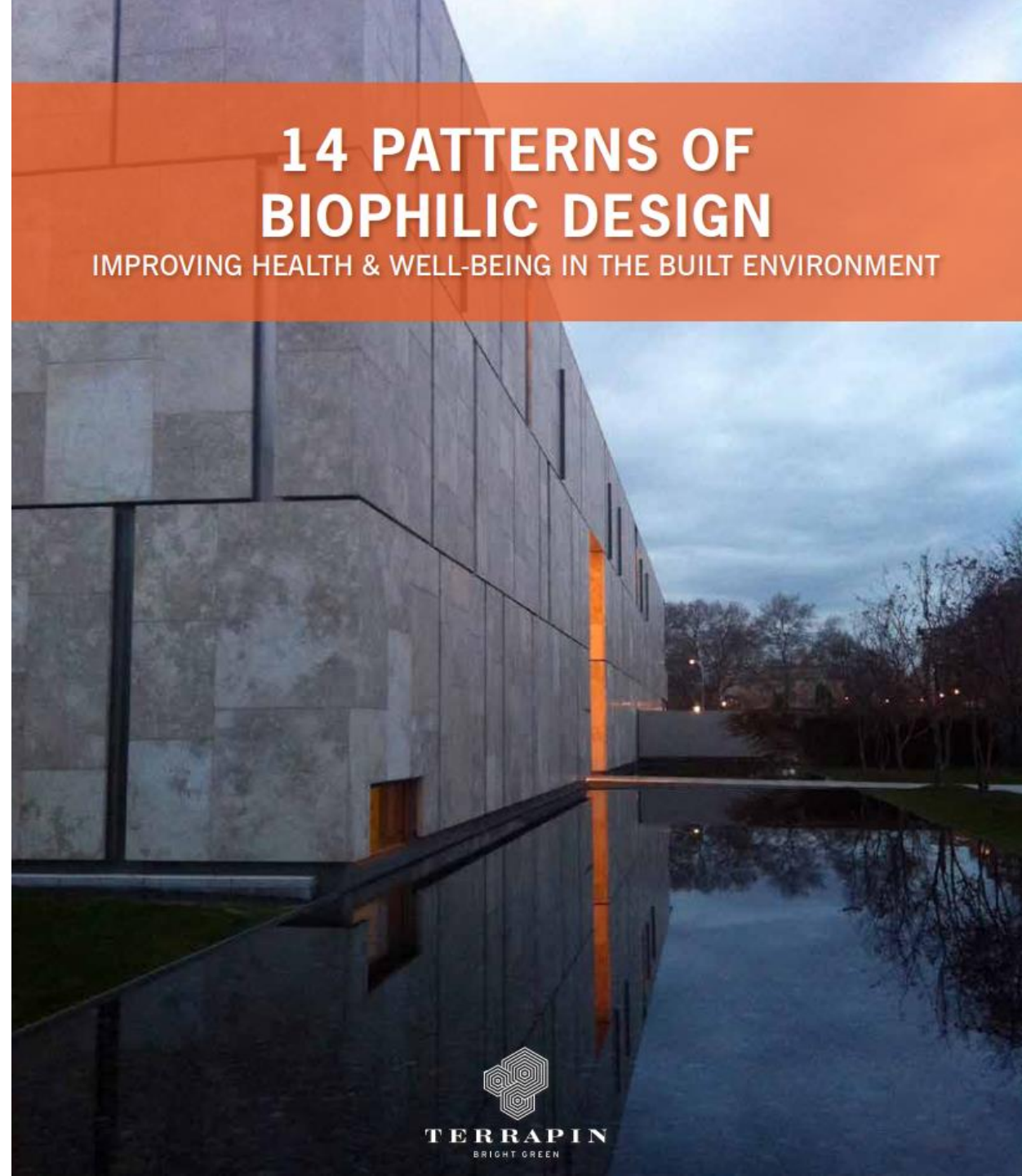




Biophilic Design

Biophilia = Innate Human Connection With Nature

- Emerging Area of Study
- Stress Reduction
- Attention Restoration



14 PATTERNS OF BIOPHILIC DESIGN

IMPROVING HEALTH & WELL-BEING IN THE BUILT ENVIRONMENT



TERRAPIN
BRIGHT GREEN



AREAS OF REFUGE

- Prospect
- Refuge
- Mystery
- Risk/Peril





From Disabled... to NeuroDiverse Autism and School

Presented by: Andrew Bailey MA, LMFT

Founder/CEO


The Anova Center for Education - ACE School
Santa Rosa & Concord California

Association for Learning Environments: A4LE
West Region Conference April 9-12, 2024 Honolulu, HI

Anova Center for Education

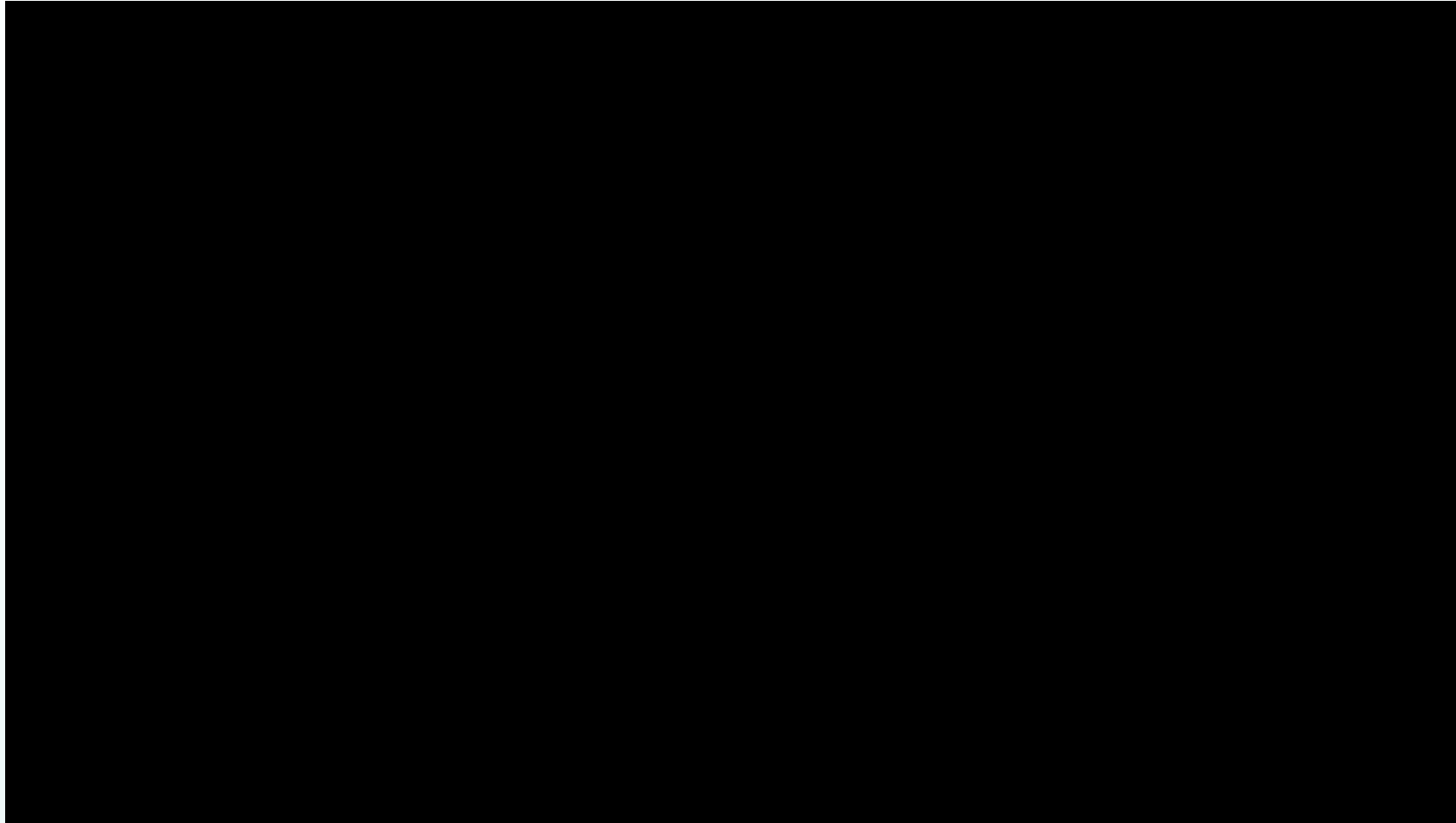
- The ACE School model was specifically designed to serve children and teenagers (K-12+) diagnosed with High Functioning Autism, Asperger's Syndrome, Learning Disabilities and other Neurodevelopmental Impairments.
- Anova provides ACE School programs in Santa Rosa and Concord, CA. Our program has evolved over 2 decades to become a global leader in autism education and is sought out by families from across the US
- The missing piece has been a custom designed school facility.





When your school burns down what should you do? Anova sought out experts to design the *school of our dreams!* Expertise in 'architecture for learning' from Quattrocchi Kwok will result in a world class autism education facility for our kids.

Like the mythical Phoenix rising from the ashes, our campus will be bigger, better and more beautiful!





Neurodevelopmental Impairments and School Performance

- Sensory integration difficulties
- Specific learning disabilities
- Behavioral excesses or deficits
- Impairments in social cognition (mindreading)
- Mental health issues

The Obstacles to Learning with Autism

Our autistic student population can be challenged by a combination of:

- **Sensory Modulation - Sensory Integration Difficulties**
- **Inconsistent or atypical academic abilities, executive functioning, short term memory and processing speed deficits**
- **Socially awkward or distressing interpersonal experiences related to social cognition and pragmatic language delays**
- **Anxiety, Depression, Attention and mental health issues**

These developmental and neurological deficits have led to emotional, behavioral and learning challenges in typical classroom environments.

These students are often 'disabled' by their autism and need therapy and support to show their incredible strengths.

AUTISM IS A KIND OF DIVERSITY...but not when school hurts your brain and you can't be in class.



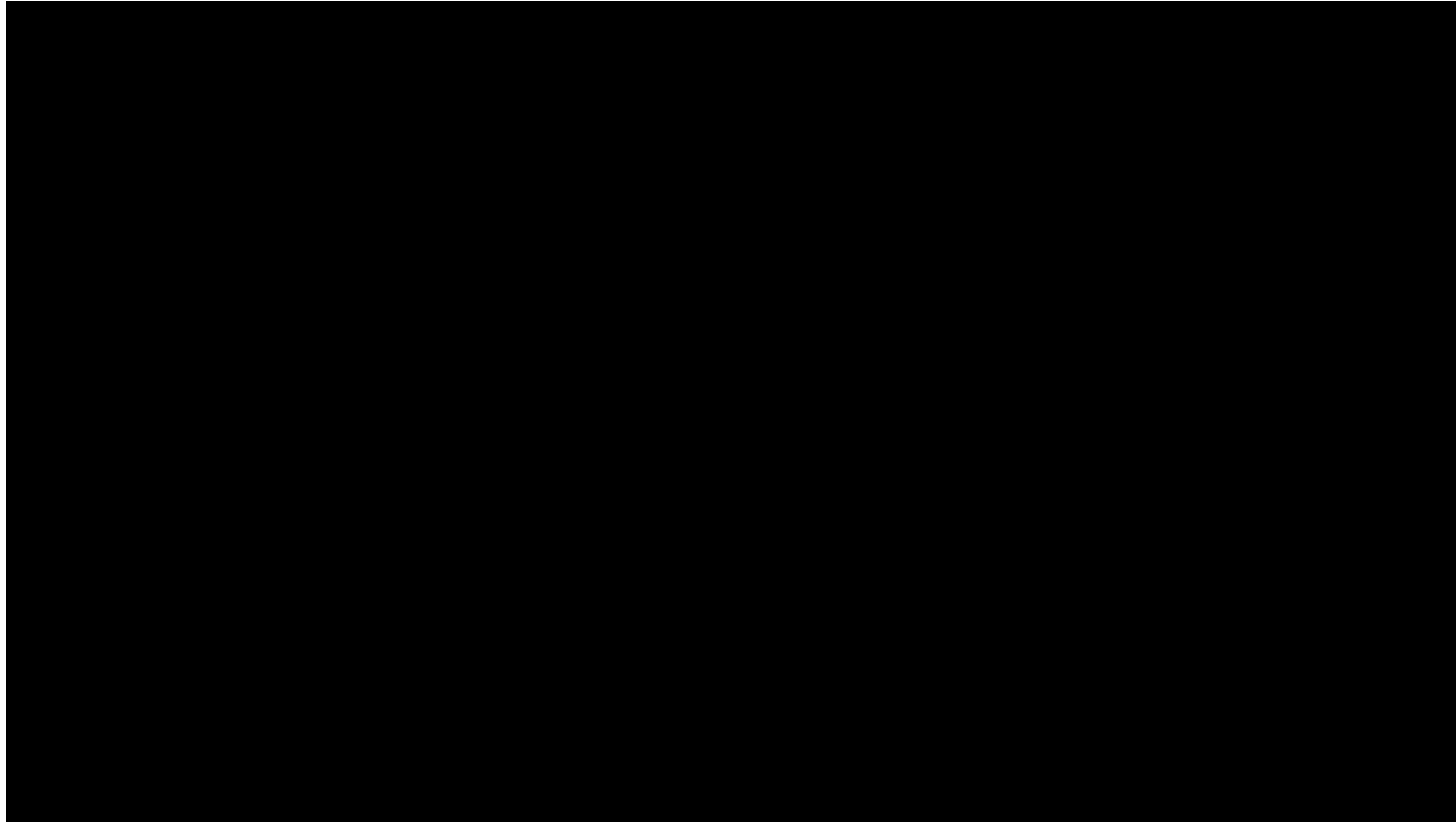
Social Cognition Deficits

- Our students can experience profound deficits in social cognition that limit their ability to 'take the perspective' of others in social situations. The combination of a bright and verbally expressive child with social cognition impairments can lead to serious emotional and behavioral problems, particularly around public school environments.

Social Cognition Deficits

- Often viewed as eccentric, odd or manipulative...even by staff.
- Frequently become the victims of teasing and bullying despite desire to have friends.
- Display deficits in language pragmatics and prosody (tone) even with large vocabulary
- Can be extremely literal and have difficulties utilizing language in a social context

Autism is



Anova Method of Education - AME

AME is an intensive educational and treatment program designed for a rapidly growing, poorly understood, and acutely underserved population of school age children and young adults.

❖ *Simultaneous application of treatment modalities is essential;*

- Five primary components of the Anova Method:
 - Occupational Therapy/Sensory Integration
 - Social Cognition Therapy/Speech Therapy
 - Highly Individualized Academic Instruction
 - Behavior Analysis/Positive Behavior Support
 - Counseling/Psychological Services
- Customized classroom and therapy environments with extensive specialized equipment/technology.
- Highly trained team of teachers and therapists

ACE School Academic Program

- Highly individualized
- Meets State standards
- Uses State adopted text books & curricula
- Multi-sensory approaches to education
- Prepares student for return to public school or higher education



Academic Program

- State-of-the-art adaptive technology: AAC
- Multiple laptops and desktops per classroom
- A Chromebook and textbooks for every student
- State-of-the-art educational software
- WASC Accredited
- Highly competent educators

The ACE School Philosophy on Student Behavior

- The Ace School program is based on 'equitable' treatment for every student and allows for flexibility in the application of reinforcement for desired behaviors and consequences for rule violations.
- Staff help students to recognize that each student has their own unique set of behavioral and educational needs and though not all students are treated identically, all are treated fairly.



ACE School Staff **Philosophy**

Fundamentals of an effective therapy staff:

- The role of the ACE School staff is not to judge students who display an 'unexpected' behavior but instead to determine why it occurs and how we can help the student to meet that need in a pro-social way.
- The ACE School staff use the power of human relationships, praise, naturally occurring rewards and personalized incentives to shape student behavior rather than relying on negative consequences or artificial incentives.

Sensory Integration at School

The Anova perspective:

- Sensory Integration is involved in every human behavior, including the complex sequences of verbal and motor behaviors that are required to succeed in school.
- Assessing learning from a sensory integration perspective helps to identify sensory needs that drive **behavior**, including maladaptive responses that interfere with educational performance.



Pediatric Occupational Therapy

Specialized treatment to address complex sensory and motor difficulties in children, including:

- Sensory Integration Dysfunction
- Sensory defensiveness
- Impaired visual perceptual skills
- Impaired visual-motor integration
- Impaired fine or gross motor coordination and planning.
- Auditory processing difficulties

Occupational **Therapy** & Behavior

- Defensiveness
- Outbursts
- Self-injury
- Avoidance responses
- Hypervigilance
- Modulation problems
- Distractibility
- Self-stimulation
- Difficulty with transitions
- Shutting down

Occupational Therapy Interventions to remove the obstacles in autism.

The Anova perspective:

- ▶ Specially designed classrooms can facilitate improved sensory processing and are associated with improved behavior, social interaction, and learning outcomes.
- ▶ Certain sensory experiences can be applied therapeutically to influence the efficiency of sensory processing. These sensations may include spinning, brushing, swinging, and many others.
- ▶ Students with autism can be taught to self-monitor and access sensory interventions independently when necessary to tolerate school environments.
- ▶ When combined with OT, specially designed learning spaces can allow academically gifted students to learn how to independently regulate THEMSELVES.

Occupational Therapy Clinic

- Specially designed clinic space to improve:
- Gross or large muscle motor planning
- Fine motor coordination to aid in the production of handwriting
- Sensory Integration and modulation abilities
- Coordinated use of both sides of the body





Occupational Therapy Clinic

- Specialized swings and suspension hooks
- Ball pools
- Scooterboard ramp
- Foam 'crash pits'
- Weighted vests, blankets and gloves
- Theraballs
- Adjustable lighting and music

Integrating OT in the Classroom

- Theraballs
- Fidgets
- Flexible schedules and seating
- Sensory diet activities
- Swings and equipment



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Fremont Union High School District

Nancy Sullivan, Director of Educational and Special Services



QUATTROCCHI KWOK
ARCHITECTS

Demographics

- 5 comprehensive high schools, Educational Options, Community Day School
- 9,646 Total students
- 8.4% English Learners; 98 different languages spoken
- 15.8% Socially Economically Disadvantaged
- 9.4% Students With Disabilities



Voyager Therapeutic Learning Center



- Originally Therapeutic Special Day Class
- Opened in 2020 in current facility (3 Portable buildings)
- CA Department of Education – Nonpublic School Pilot funding
- New facility opening Fall 2025



Student Profile

- Students with Emotional Disturbance, or Other Health Impairments;
- Attendance and academic difficulties on comprehensive campus;
- Poor peer relationships, difficulty making friends or joining in as part of a group;
- Behaviors exhibited are off putting thus leading to alienation from others including both peers and adults;
- Student exhibits a poor self-image or self-concept resulting in poor self-esteem;
- The student is either overly dependent on others to get through the school day or extremely defiant about accepting direction or assistance;
- The student is angry, anxious or depressed to such a degree that access to the learning environment is extremely limited.

Voyager Program Support

- SELPA Program Specialist
- 3 Special Education Teachers
- 3 Therapists
 - Clinical Therapist
- 6 Paraeducators
- 2.5 Behavior Specialists
 - Behavior Supervisor



Addressing Neurodiversity

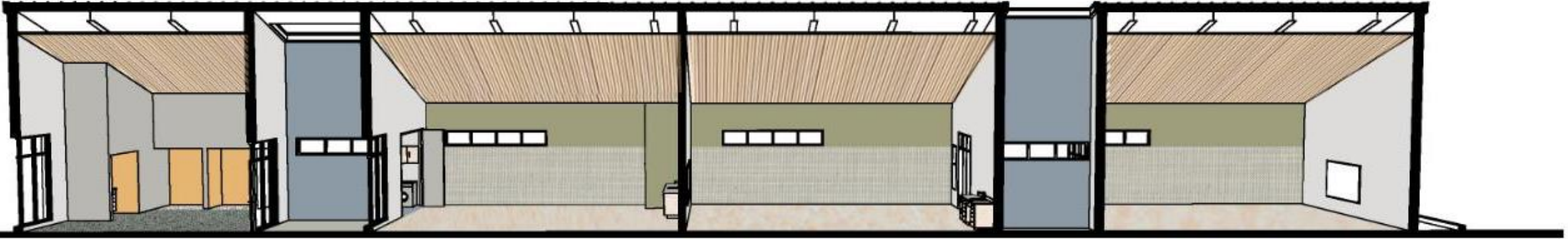
Voyager on the Continuum



Outdoor Spaces



Classrooms & Entry



VR ROOM





Thank you!

