

## The New Science of Learning: Effective Approaches for Older Students with Autism

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### Selected New References (2010-2015)

- Albert, D. & Steinberg, L. (2011) Judgment and Decision Making in Adolescence. *JOURNAL OF RESEARCH ON ADOLESCENCE*, 21(1), 211 – 224
- Beaudet, A. (2012) Preventable forms of Autism? *Science* 338, 342-343
- Buie, T., et al. (2010) Evaluation, Diagnosis, and Treatment of Gastrointestinal Disorders in Individuals With ASDs: A Consensus Report Evaluation, Diagnosis, and Treatment of Gastrointestinal Disorders. *Pediatrics* 2010;125
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- Crone and Dahl (2012) *Nature Reviews Neuroscience*. 13(9) 636-650
- Dolen, G. (2013) Social Reward requires coordinated activity of Nucleus Accumbens Oxytocin and serotonin. *Nature* 501, 179-184

### Selected New References (continued - 2)

- Gorrindo, P et al . (2012) Gastrointestinal Dysfunction in Autism: Parental Report, Clinical Evaluation, and Associated Factors International Society for Autism Research, Wiley Periodicals, Inc.
- Iossifov, I et al. (2012) De Novo Gene Disruptions in Children on the Autistic Spectrum. *Neuron* 74:2, 285-299.
- King, I. (2013) Topoisomerases facilitate transcription of long genes to autism. *Nature* 501, September 5. 58-62
- Plasschaert, R & Bartolomei (2013) A long genetic explanation. *Nature* 501, September 5, 36-37

### Selected New References (continued – 3)

- Sanders, S. (2013) *De Novo* mutations revealed by whole exome sequencing are strongly associated with autism. *Nature* 485, 237-241
- State, M & Levitt P The conundrums of understanding genetic risks for autism spectrum disorders. *Nature Neuroscience* VOLUME 14 | NUMBER 12 | DECEMBER 2011 **1499**
- Strang, N., Chein, J. & Steinberg, L. (2013) *Frontiers in Human Neuroscience*. Article 223, Vol. 7
- Underwood, E.(2013) Alarm over Autism Test. *Science* 13 September: 1164-1167
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## How does the latest brain science inform us about how we can

- individualize services
- help our students
  - pay closer attention to oral instruction,
  - develop self-regulation skills,
  - complete assignments on time and
  - meet their educational goals

## Learning Outcomes

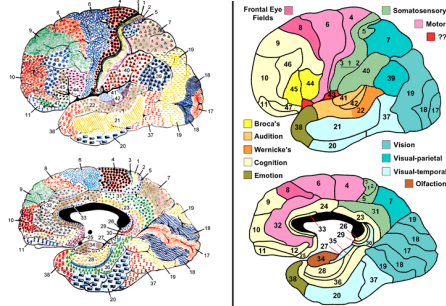
- Learning Outcomes
  - Know how to apply new research on the neuroscience of autism spectrum and attention disorders in older students
  - Understand how instructional and technological interventions can maximize auditory attention in the classroom and drive better results.
  - Be able to implement instructional tools and methods to enhance self-regulation skills and decrease behavioral management issues in the classroom

## How does Neuroscience contribute to Education of older students with ASD and Attention Problems?

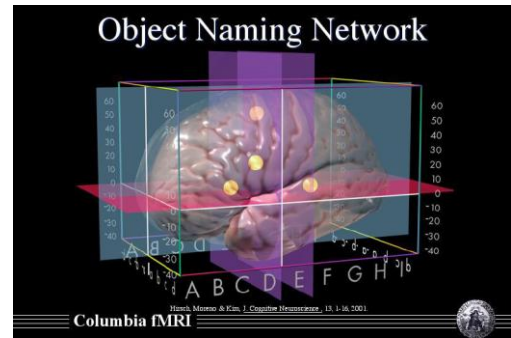
- New brain science helps us understand how and why
  - *Brain maturation differences* among some students affect learning
  - *Attention* and *self regulation* pose primary learning challenges in the adolescent
  - Educational services can be *individualized* to meet each student's unique needs

## Understanding brain maturation

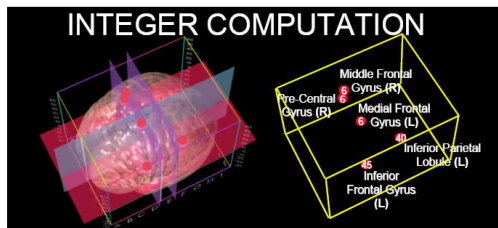
Moving beyond the older anatomical view of the human brain - Brodmann's area map and colored outlines by process



Understanding Network Theory – Neurons the fire together wire together in networks



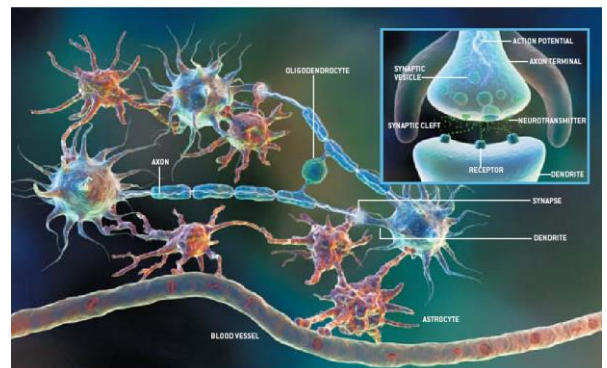
All cognitive functions apparently involve distinctive networks – mapping out of those networks has been one ongoing goal of recent neuroscience research.



Hirsch, Mooney & Kim, *J. Cognitive Neuroscience*, 13 (3), 389-405, 2001.

Fig 2c

Understanding networks requires understanding how the regions are connected: The Neuronal communication system



## NEUROSCIENCE

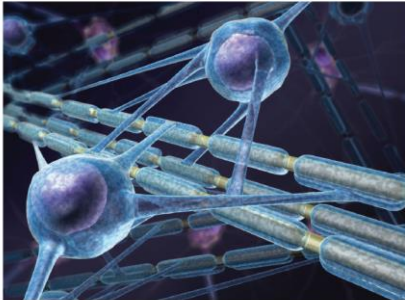
# Change in the Brain's White Matter

The role of the brain's white matter in active learning and memory may be underestimated.

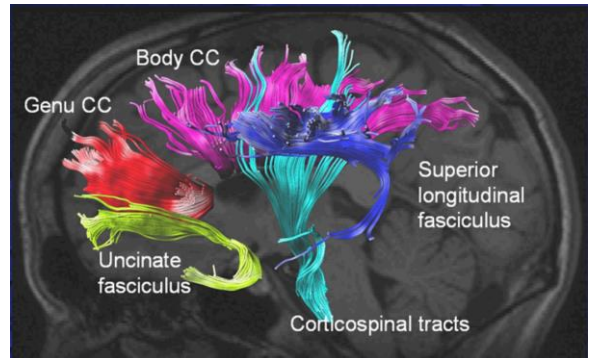
R. Douglas Fields

5 NOVEMBER 2010 VOL 330 SCIENCE

It is the maturity of white matter tracts that defines maturation and differs in students with ASD and ADD or ADHD

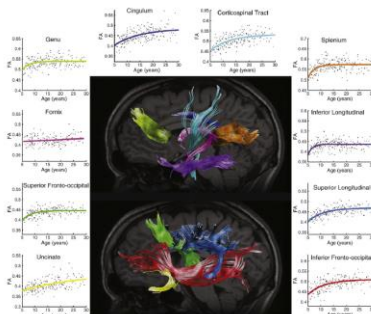


White matter. Myelin that coats and insulates neuronal axons may control the propagation of electrical impulses in a manner that affects information processing.



Lebel, et al. 2008

## Tracts mature at different rates

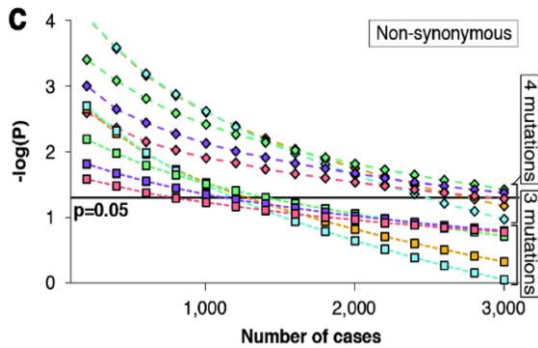


Lebel et al., 2008

## So what is Autism Spectrum Disorder?

- Most brain research indicates that the brains of children with ASD mature differently
  - Long association fiber tracts do not mature like those of typical children ( see especially Wolff et al, 2012) for complex reasons:
    - Certainly genetics play a role – ASD is a polygenetic disorder (see especially Sanders, 2013 and State and Levitt, 2011)
    - Synaptic pruning deficits may lead to this altered maturation (Tang, G. et. al. 2014)
  - Hormonal dysregulation that may increase inflammation and cell death has been identified in boys with ASD (Al-Zaid et al., 2014)
- **Bottom line:** ASD is a very complex neurological disorder that is caused by genetic mutations that have various negative effects on brain development and maturation

Figure 2. Identification of multiple *De Novo* mutations in the same gene reliably distinguishes ASD risk-associated mutations (Sanders et al., 2013)



So what might these genetic mutations do?

FIGURE 2.

Trajectories of Mean Fractional Anisotropy for High-Risk Groups, Corpus Callosum Subdivisions (Wolff, et al 2012)

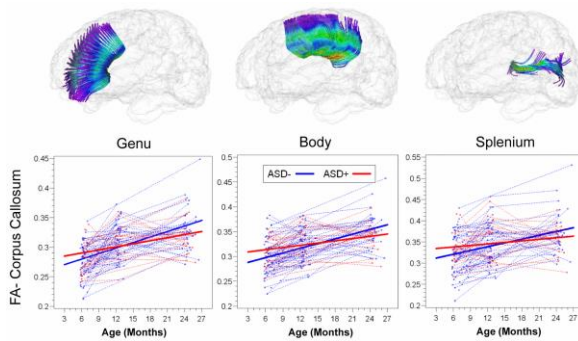
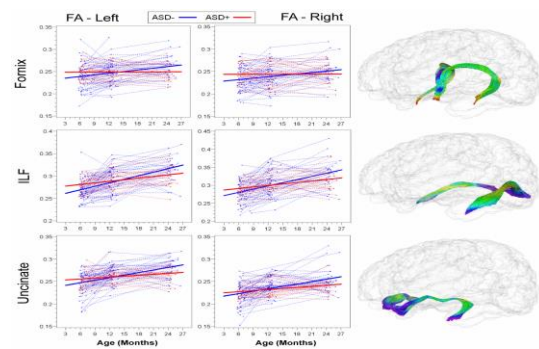
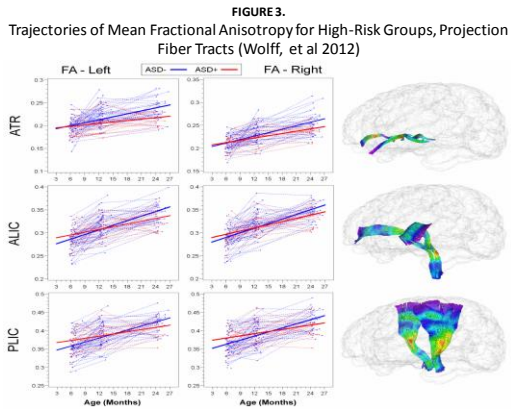


FIGURE 1.

Trajectories of Mean Fractional Anisotropy for High-Risk Groups, Limbic (Fornix) and Association (ILF and Uncinate) Fiber Tracts (J. Wolff, et al 2012)





## Summary of Wolff et al 2012

- Distinct and pervasive aberrant course of white matter fiber tract development in High Risk (HR+) infants who went on to develop ASD
- Most of the fiber tracts of HR+ infants were characterized by higher FA at six months followed by blunted developmental trajectories such that FA was lower by 24 months.

## Conclusions (Wolff et al, 2012)

- The core behavioral manifestations of ASD are due to atypical patterns of connectivity that
  - Differ across systems and time
  - Are not specific to one brain region or behavioral domain

## Loss of mTOR-Dependent Macroautophagy Causes Autistic-like Synaptic Pruning Deficits

Tang, G. et. al. (2014) *Neuron* 83, 1–13, September 3

## Dendritic Spine Pruning Defect in the ASD Brain

- increased dendritic spine density with reduced developmental spine pruning in layer V pyramidal neurons in postmortem ASD temporal lobe.
  - Layer V pyramidal neurons are the major excitatory neurons that form cortical-cortical and cortical-subcortical projections.
- enhanced local excitatory connectivity, a feature of ASD, is proposed to cause:
  - failure in differentiating signals from noise,
  - prevent development of normal long range cortical-cortical and cortical-subcortical communications,
  - and underlie neocortical excitation/inhibition imbalance

## Hormonal Dysregulation in boys with ASD (Al-Zaid et. al. 2014)

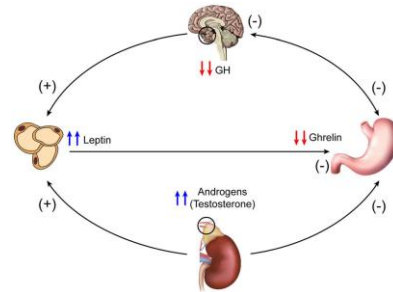


Figure 2 | The inter-relationship between the measured hormones in autism suggested by the current study (created by F.A-Z).

## Summary of Al-Zaid et al. 2014

- Previous studies have shown that androgen levels are significantly higher in autism
  - Ghrelin plasma levels are negatively correlated with high plasma testosterone levels.
- Gastrointestinal (GIT) problems are frequent in autism, including dysbiosis, chronic GIT inflammation and chronic fungal, viral and bacterial infections
  - These disorders could affect the gastric mucosa and interfere with the normal function of ghrelin-secreting cells.
  - Also, ghrelin deficiency by itself can affect the gastric mucosa
- androgens are known to modulate the plasma leptin level
  - The elevation of leptin levels can be explained in part by the observed significant elevation of androgen levels in autistic children – and may be related to weight gain in ASD

## But, the good news!

- Since even in situations where ASD is not preventable – because it affects white matter development, at least in many cases, educational, speech, language, OT and social interventions drive neuroplastic changes in white matter development
- Education and Intervention work

## High Functioning ASD

But children with High Functioning ASD often exhibit problems with Cognitive Control!



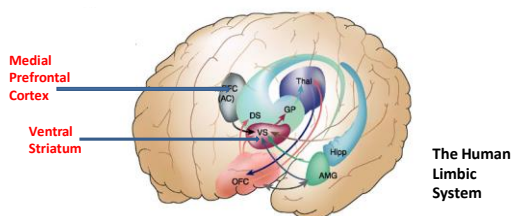
Two different information-processing systems in the brain battle for control of our response to temptation: impulses aimed at immediate gratification, and reason, which helps us pursue long-term objectives. Drains on cognitive resources, such as working memory, can render us less able to withstand temptation.

### The dual-systems model of self-control

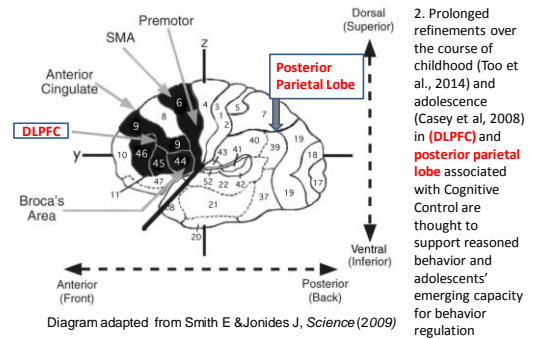
1. Failure at low levels of self-control may stem from strong impulses (impulsivity)  
*regions involved in reward (e.g., ventral striatum) and social information (e.g., medial prefrontal cortex)*
2. Failure at higher levels (DLPFC) may result from weak control (poor effortful control/constraint) See especially, Albert & Steinberg, (2011) Too, Wong, Fan and Goo (2014)

### Components of the Dual Systems Model of Self-Control – Low Level (Albert & Steinberg, 2011)

1. Central to the incentive processing system is the **ventral striatum (VS)** Involved in reward, and the **medial prefrontal cortex (mPFC)** especially involved in aspects of social processing  
– these are integral parts of the limbic system - the early developing, primitive emotional/reward processing systems of the brain

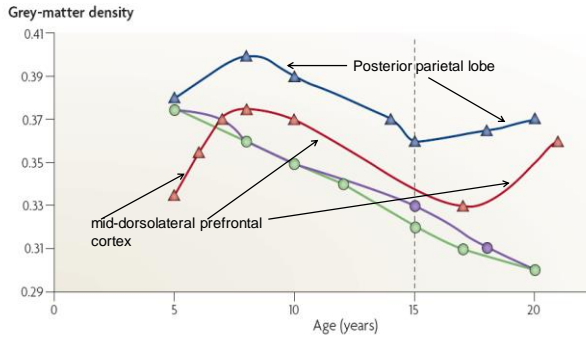


### Components of the Dual Systems Model of Self-Control – High Level: Dorsolateral Pre-frontal Cortex (DLPFC) (Albert & Steinberg, 2011)





Plots of grey-matter density are based on data by Gogtay *et al.* 2004 illustrate the local grey-matter density in the mid-dorsolateral prefrontal cortex in red and the posterior parietal lobe in blue compared with other regions of students with typical brain maturation



## Components of Cognitive Control Network

- Selective and Sustained Attention
- Working memory
- Self-regulation
- Goal setting

## Working memory

- ▣ Working memory is your RAM
- ▣ It is closely tied to and can build fluid intelligence (ability to solve novel problems you have never seen before)
- ▣ It is a core component of executive function

Working Memory can be trained and when trained helps reasoning skills.

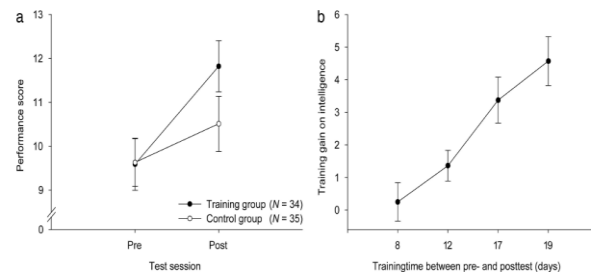


Fig. 3. Transfer effects. (a) Mean values and corresponding standard errors of the fluid intelligence test scores for the control and the trained groups, collapsed over training time. (b) The gain scores (posttest minus pretest scores) of the intelligence improvement plotted for training group as a function of training time. Error bars represent standard errors.

Jaeggi, et al., 2008

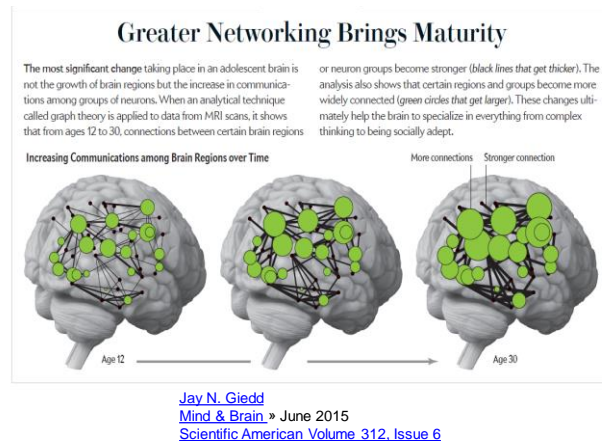
### How working memory problems present in children with high functioning ASD

- Slow on multiple choice tests even though they know the material
- Re-read passages frequently
- Trouble with memorization activities
- Often have problems with key ideas
- Take much longer to complete homework and in class assignments
- Word-finding problems
- Problems with spelling

### Attentional vs. Memory or Auditory Processing Problems

- Poor listener or tunes out (could be an auditory processing problem)
- Frequently asks – Huh? or What? when given instructions – working memory
- Looks around to see what others are doing when teacher provides instructions – working memory or APD
- Fidgets, impulsive, intrusive, yells out answers, lack of self control -- ADHD

### Other issues that effect education of the older student



## Adolescence is.....

- as a time of significant functional development of the social brain
  - continued development throughout adolescence of social processes such as the recognition of *conspicifcs* (those who belong and those who do not)
  - the understanding of others' emotions, intentions and beliefs

## Evidence from social-psychology studies

- suggests that adolescence is characterized by social change
  - Heightened self-consciousness,
  - increased importance and complexity of peer relationships and
  - an improved understanding of others
- Social-brain development during adolescence is probably influenced by multiple factors,
  - Including changes in hormone levels and
  - changes in the social environment.
- significant neuroanatomical changes occur in parts of the social brain that are likely to affect cognition and behavior.

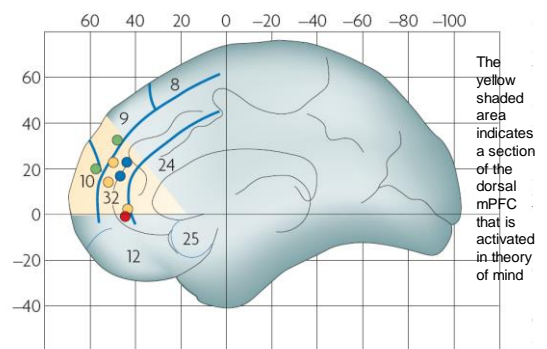
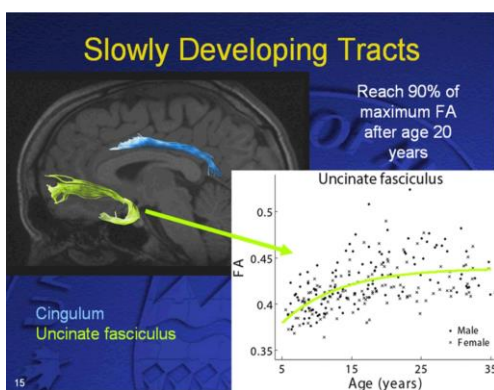
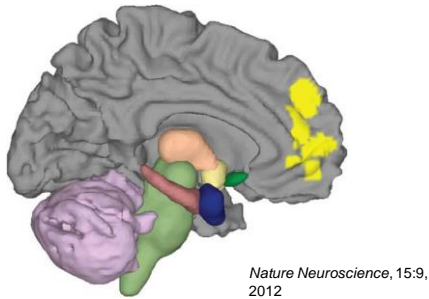


Figure 2 | Activation of the medial prefrontal cortex (mPFC) during mentalizing tasks decreases during adolescence.

Regions of the brain that show decreases in maturity during adolescence



Understanding adolescence as a period of social-affective engagement and goal flexibility

- Crone and Dahl (2012) *Nature Reviews Neuroscience*. 13(9) 636-650

## Crone and Dahl (2012)

- ☐ The social and affective changes of adolescence begin early (near the onset of puberty)
  - they appear to peak in mid-adolescence and
  - continue to influence behavior, decisions and learning throughout several years of adolescent experiences (see figure - the bottom yellow box).
- ☐ These social and affective influences interact with a broader set of changes in cognitive control and social cognitive development, which includes the acquisition of social and cognitive control skills that develop gradually across adolescence.

## Decision Making in the Adolescent Brain

Sarah-Jayne Blakemore & Trevor W Robbins, *Nature Neuroscience*, Vol. 15, No.9, 2012, 1184-1191

So, in Summary:

Cognitive differences in the adolescent brain – Lower levels prevail

- Impulsivity is strong and inhibitory control is weak
- Preference for decisions that provide an immediate reward
- Learning and prediction from errors is reduced
- Emotion highly impacts decisions
- Social influences highly impact decision-making

*Blakemore and Robbins, Nature Neuroscience, 15:9, 2012*

So what can educators do about all of this?

## **PART II CLASSROOM ACTIVITIES & INTERVENTION TOOLS FOR MIDDLE AND HIGH SCHOOL STUDENTS**

### **Cognitive Control**

- Teaching goal setting works best with major projects and assignments
  - Rather than assigning a due date, try giving incentives for steps achieved or project completion before the due date
    - Due June 21 – but five extra points for full outline of report received before May 15; 5 extra points for first two sections of project received before May 25; 5 extra points for four out of five sections of project received before June 15
    - OR
    - Due June 21 – but ten extra credit points are added for students who hand their projects in more than a day early
  - Try a sign-up sheet where students sign up for a due date with specific advantages for earlier sign up and/or earlier dates

## Cognitive Control in the classroom

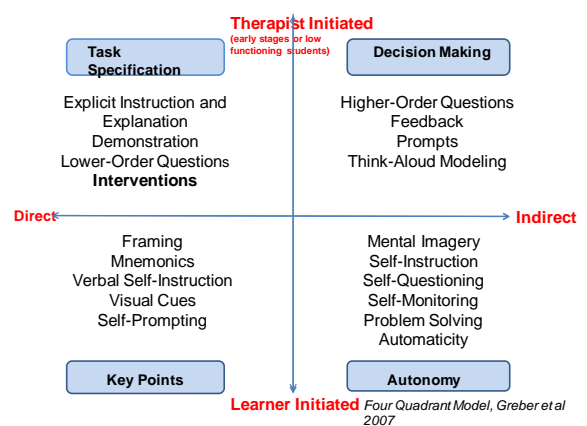
- Phrase goals in terms of incentives or advantages rather than penalties for being late helps students learn to self-reinforce goal attainment
  - Some of your students are so used to being penalized for being late, that it becomes the status quo for them.
  - Knowing what incentives work best ( eg. group pizza parties if everyone gets something in on time, or personal bests) can be very effective ways of changing behavior

**Take Away from Research** (see especially Blakemore and Robbins 2012 and Crone and Dahl 2012)

- ▣ When teaching adolescents:
  - they are impulsive and emotional: so reward patience
  - their brains are designed to be overly responsive to rewards and peer influence: so use socially safe rewards
  - they are extremely flexible in goal setting, they will change instantly under peer pressure: so, minimize peer influence through carefully selected group work
  - A teacher's praise may have a social cost – so use other rewards (especially tangible, access to a video game)

## Four Quadrant Model of Facilitated Learning

- Adapted from Gerber, C., Ziviani, J., and Rodger S. (2007) The Four Quadrant Model of Facilitated Learning (Part 2): Strategies and Applications. *Australian Occupational Therapy Journal*, 54, S41.



## Developing Learner Strategies

- Framing – Determining the most important key points
  - Determining what the teacher is looking for
  - Use headings, chapter questions, illustrations to guide outlines and study
- Mnemonics – helpful for memorizing key points
- Verbal Self-Instruction – difficult for language impaired and students with ASD
- Visual Cues – best for language impaired and children with ASD
  - Flash cards
  - Graphic organizers
- Self-Prompting

## Some added considerations

- With respect to risk taking – remember
  - You see the risk – the student sees the reward
- For students on the autism spectrum – social skills require executive functions as well
  - Meta-cognition for taking the perspective of others
  - Flexibility for adjusting to wants and needs of others
  - Emotional control for handling social embarrassments and rejection

## Middle School – Importance of Routines

- You are still the students' frontal lobes but the goal is emergence and gradual assumption of independence
- When students know what to expect they can focus on learning with fewer EF demands
- Establish routines to aid expectations
  - Develop techniques to welcome students to the classroom
    - Try standing at the door and directing each student as they enter to take out warm-ups or materials to be used at the start of that class

## End of Class Routines

- Establish routines at the end of the class or day that provide comfort, direction and closure
  - You have ten minutes to finish team work and clean up
  - Please watch the clock – we will spend the last five minutes closing together
  - When finished with your assignment spend the last five minutes writing a headline to summarize your thoughts

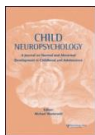
## Activities that build selective attention

- Listening for specific details such as how many times is the word \_\_\_\_\_ used; in a news cast, audio book, video
- “Where’s Waldo” type visual search activities
- During book reports or oral classroom presentations provide a post-activity prize for specific details students recall

## Ways to enhance classroom (listening) attention outside of the classroom

- Listening activities
  - Audio books (without the written book to follow along) with periodic comprehension questions
- Following complex oral directions

*Working memory training improves reading processes in typically developing children*



- [Sandra V. Loosli Martin](#)  
[Buschkuehl](#) [Walter J. Perrig](#)  
[Susanne M. Jaeggi](#)
- [Volume 18, Issue 1, 2012](#)

## Supporting Students Who Need More Help – Specific Interventions

- Specific Interventions for Specific Targets
  - Planners
  - Materials
  - Trapper Keeper
  - Locker Organizers with weekly checks
  - Google Docs or email to self to backup
  - TIGERS folder (for younger or students with greater disabilities)
  - Reading
  - Warm-ups
  - \$10 words



## Planners

- Entries for every class – including none
- Long term projects, due date entered sideways
- Long term projects, workdays assigned
- 1-10 confidence scale for tests
  - 1 – I don't understand material at all
  - 10 – I will ace this test
  - 8-9 ready for test
- Thursday grade checks – student asks teacher
  - Time to get missing assignments in or improve poor quality assignments
- Thursday note to teachers – “is everything in and passing? Is there anything I need to do?”
- Sunday weekly preview with parents or Friday pm weekly preview with interventionist

## Student Planner

	Monday	Tuesday	Wed.	Thurs.	Friday	Saturday
English						
Math						
Science						
Social Studies						

## Managing time lines with Planners

- Keep dates visible and break down projects into smaller chunks
- Start with adult supervision and guidance
- Then “deconstruct the scaffold” and allow the student more control of the planner content and process

## Student Planner

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
English	None	Read Chapter 1	Prep Graphic	Graphic		
Math	IX Page 41 #1-10 odd	Bring eq. of an equation study	study	study	test	
Science	Bring a cup of dirt	None				
Social Studies	IX Read Article	IX Journal Response				
			Gardner's Birthday	*Thursday note		

From Jossey-Bass, 2013, Boosting Executive Skills in the Classroom

## TIGERS (Take Initiative: Get Everything Ready for School) Folders

- For younger or more severely impaired students
  - Special homework folders
  - Place daily work in one pocket and homework in the other pocket
  - Be consistent and organize every day

## Specific Interventions for Specific Targets - Reading

	Org of Material	Planning and Org	Working Memory	Task Monitoring	Task Initiation & Completion	Emotional Control
Warm up			✓		✓	
Reasoning		✓	✓		✓	
Highlight \$10 words texts	✓		✓	✓	✓	
\$10 words stories	✓	✓	✓	✓	✓	
\$10 words assign.	✓	✓	✓	✓	✓	

There are technological alternatives with high quality research to support benefits

- Neuroscience approaches can enhance attentional and memory skills in all children
  - Technological approaches:
    - Fast ForWord
    - CogMed
    - Brain HQ (adolescents)

Enhancing Literacy and Writing Skills in the older student

## Specific Interventions for Specific Targets - Writing

	Org of Materials	Planning & Org	Working Memory	Task Monitor.	Task Initiation & Completion	Emotional Control
Warm up 7 min writing samples			✓		✓	
Checking work COPS		✓	✓	✓	✓	
Organizing Inspiration Software		✓	✓	✓	✓	

## Warm Up 7 minute writing

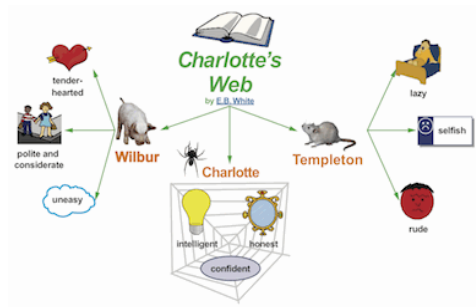
- Write for an entire seven minutes, even if they have to make up a new topic to continue
- Double space work as a reminder that all are first drafts with room for improvement
- Focus on “talking on paper” – to simplify the task and use own writing voice
- Count number of words

## Checking Your Work (COPS)

- Capitalization, Overall Sound, Punctuation, Spelling

## Graphic Organizers

- Can be used to visualize and organize information
- Often used as prompts for students to fill in the blanks
- Benefits
  - Help structure writing project
  - Encourage decision-making
  - Enhance classification of ideas and communication
  - Allow students to examine relationships
  - Guide students in demonstrating their thinking process
  - Help students increase reading comprehension
  - Ease brainstorming
  - Encourage organization of essential concepts and ideas



MS level book report

### Emotional Regulation (Dawson and Guere, 2010)

- For teens –anything that arouses emotion
  - Fear of social rejection
  - The need to look cool
  - Disappointing someone
  - Disagreements with parents
- Can lead to hot (not rational) thinking
- [www.guilford.com/guare-forms](http://www.guilford.com/guare-forms)

## How to Turn Around Troubled Teens

By [Scott O. Lilienfeld](#) and [Hal Arkowitz](#) | Oct 16, 2014



Research reveals that get-tough tactics may worsen rates of juvenile delinquency

### Cognitive Control in the home

- Phrase goals in terms of incentives or advantages rather than penalties for being late helps students learn to self-reinforce goal attainment
  - Some adolescents are so used to being penalized for being late, that it becomes the status quo for them.
  - Knowing what incentives work best ( eg. group pizza parties if everyone gets something in on time, or personal bests) can be very effective ways of changing behavior

## Cognitive Control for School Work

- Teaching goal setting works best with major projects and assignments
  - Rather than assigning a due date, try giving incentives for dates before X
    - Due June 21 – but ten extra credit points are added for students who hand their projects in more than a day early
  - Try a sign-up sheet where students sign up for a due date with specific advantages for earlier sign up and/or earlier dates

## Ways to enhance cognitive control at home

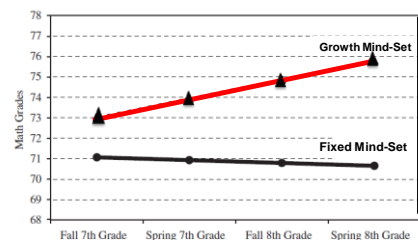
- The key is learning to set goals and delay gratification
- It is best when parents practice it in the home (eg. you can watch ½ hour of T.V. now or after your homework is finished and I check it for accuracy you can watch 1 hour)

## Adele Diamond

- Importance of free group play
  - For building peer relationships
  - Leadership skills
  - Executive Function

### The Secret to Raising Smart Kids

Carol S. Dweck, Scientific American, 2013



Students who believe intelligence is malleable (growth mind-set) earned higher math grades in the fall of 7<sup>th</sup> grade than those who believe in static intelligence (fixed mind-set) even though the groups had equivalent math achievement test scores in the sixth grade. *From Implicit Theories of Intelligence Predict Achievement. L.S Blackwell et al., CHILD Devel., Vol. 78, No. 1*

## Emotional Regulation

### Putting things in Perspective

- Children with ASD, especially Asperger's may appear to over or under react to different situations
- Reviewing the concept of "Putting things in Perspective" can be helpful
- Make hierarchy of problems
- Discuss severity of problems
- Discuss how to express opinions as they relate to perspective

## Self knowledge

- Who I am?
- Moods (positive and negative)
- Beliefs
  - Opinions
  - Opinions of others
- Desires (things, events, actions, people...)
- Sensations (pleasant and unpleasant)
- Personality – How am I different from other people

## Emotional Awareness

- Emotion vocabulary
- Emotions and causes
- Feeling are ok, even if we don't like them
- Asking for help
- Practice Identification of own emotional state
- Practice expressing own emotional state
- Problem solving as related to emotional difficulties

## Problem Solving with Emotion Vocabulary

- Do social stories or choices for behavior for different feelings
- Example:
  - When I feel angry I can
    - »Ask for help
    - »Take a break
    - »Go for a walk

## Person perception

- ▶ Forming impressions of other people
- ▶ Using observations of behavior to make inferences
- ▶ Understanding motivation and how it affect people
- ▶ Practice drawing inferences about the personality and the emotional states of others
- ▶ Explain the nonverbal cues used to drawing inferences about others
- ▶ Practice interpreting nonverbal cues

## Mind Reading

- **The Interactive Guide to Emotions - Version 1.3**
- [Simon Baron-Cohen](http://www.jkp.com/mindreading/demo/index.php)
- <http://www.jkp.com/mindreading/demo/index.php>



## Social Skills: Michelle Garcia Winner

- [www.socialthinking.com](http://www.socialthinking.com)



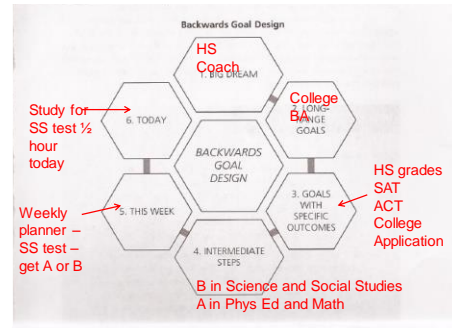
## Theory of Mind

- Practice false-belief tasks
- Discuss others people's ideas, thoughts, wants, needs, emotions, and intentions
- Practice forming hypotheses about others' ideas, thoughts, wants, needs, emotions, and intentions
- Play games in which one person knows something the other doesn't

## Goal Setting

- Big Dreams can be overwhelming to a teen or young adult causing procrastination
- To break goals down into workable segments try Backwards Goal Design (from Jensen and Snider, 2013)

## Goal Setting (Jensen & Snider, 2013)



Greater understanding of the teen brain should help parents and society better distinguish typical behavior from mental illness while helping teens become the people they want to be



## Summary

- **Early and Purposeful Intervention Can Enhance Brain Development**
  - Brain research now indicates that the behavioral manifestations of ASD and ADHD are associated with atypical brain function and delayed brain maturation
  - The Good News is:
    - Early intervention has a positive impact and improves outcomes
    - Key functional brain structures mature well into the 20s
- **Consistent collaboration is essential – parents, teachers and therapists**
- **Reward progress**
- **Plenty of Great Free Resources**
  - [www.guilford.com/guare-forms](http://www.guilford.com/guare-forms)



## Free Resources

- [www.guilford.com/guare-forms](http://www.guilford.com/guare-forms)
- See also
  - Guare, Richard, Dawson, Peg and Guare, Colin (2013) Smart but Scattered Teens: The “Executive Skills” Program For Helping Teens Reach Their Potential. New York: Guilford Press.
  - Cooper-Kahn, Joyce and Foster, Margaret (2013) Boosting Executive Skills in the Classroom: A Practical Guide for Educators.  
[www.josseybass.com](http://www.josseybass.com)