

Janet N. Zadina, Ph. D.



ABOUT

EDUCATIONAL NEUROSCIENTIST

- ☀ EXPERIENCED IN NEUROIMAGING STUDIES OF LANGUAGE DISORDERS AS COGNITIVE NEUROSCIENTIST
- ☀ EXPERIENCED CLASSROOM INSTRUCTOR AT HIGH SCHOOL AND COMMUNITY COLLEGE LEVELS
- ☀ EXPERIENCED INTERNATIONAL PRESENTER BRIDGING BRAIN RESEARCH AND INSTRUCTION



Bringing you exciting and credible presentations
about the brain and learning

Seeing research
through the eyes of a teacher



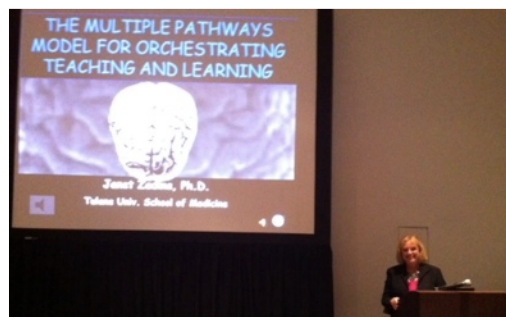
OUTREACH: PRESENTATIONS



OVER 250 PRESENTATIONS IN THE PAST 10 YEARS!

- ☀ 67 school systems
- ☀ 77 colleges, universities, and institutes
- ☀ 6 International Conferences
- ☀ 45 National/Regional Conferences
- ☀ 52 State/Other Conferences
- ☀ 37 states plus D.C. and Puerto Rico
- ☀ Six countries on four continents

OVER 100 PRESENTATIONS IN THE PAST 3 YEARS!

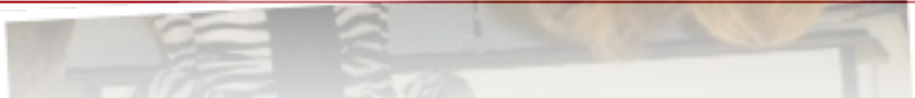




OUTREACH: AUDIENCES



- ☼ Early childhood teachers
- ☼ K-12 teachers
- ☼ General college faculty
- ☼ Adult educators
- ☼ Second language teachers
- ☼ English teachers
- ☼ Reading teachers
- ☼ Foreign language teachers
- ☼ Teachers/administrators re “disabled” learners
- ☼ Student teachers
- ☼ General college students
- ☼ Developmental education teachers
- ☼ Staff developers/ curriculum developers
- ☼ Teachers with immigrant/ migrant populations
- ☼ Teachers of Tribal/Indian populations
- ☼ Administrators/ superintendents/ leadership
- ☼ Corporate trainers
- ☼ Staff and teachers at afterschool centers
- ☼ Teacher educators
- ☼ Tutors



HONORS AND AWARDS

November, 2011: Janet N. Zadina, Ph.D.
Recipient of SfN Science Educator Award



SOCIETY FOR NEUROSCIENCE SCIENCE EDUCATOR AWARD

The Society for Neuroscience (SfN) Science Educator Award honors an outstanding neuroscientist who has made significant contributions to educating the public about neuroscience.

The Award, presented by the SfN President at the Annual Meeting in Washington DC on November 11, 2011, included a \$5000 honorarium and opportunity to write a feature commentary on science education in *The Journal of Neuroscience*, the premier journal for Neuroscience.

The award committee cited the following:

“Janet Zadina has demonstrated a profound commitment to the emerging field of neuroeducation and has affected the lives of teachers and students on both domestic and international levels. She began her career in education and transitioned into neuroscience after developing an interest in MRI studies of dyslexia. Her efforts include developing resources to debunk common misconceptions about the brain, and keeping educators informed about credible brain research. Zadina also co-founded the Butterfly Project, a program intended to help teachers affected by natural disasters. She is currently an adjunct assistant professor at Tulane University School of Medicine.”



A Growing Field



Neuroscience barely existed as a separate discipline in 1969.

The neuroscience field now has over 300 training programs and is considered one of the most exciting areas in biomedical research.

ABOUT SOCIETY FOR NEUROSCIENCE

The Society for Neuroscience is a nonprofit membership organization of scientists and physicians who study the brain and nervous system. Since its inception in 1969, the Society has grown from 500 members to over 40,000. Today, SfN is the world's largest organization of scientists and physicians devoted to advancing understanding of the brain and nervous system. The SfN annual meeting is the premier venue for neuroscientists from around the

world to debut cutting-edge research on the brain and nervous system. It is the world's largest source of emerging news about brain science and health.

HONORS AND AWARDS



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FACTS

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Tulane University is one of the nation's most prestigious educational and research institutions. Founded in 1834 in New Orleans, Tulane offers degrees in architecture, business, law, liberal arts, medicine, public health and tropical medicine, the sciences and engineering, and social work.

MOTTO

Non sibi, sed suis, translated as "not for one's self, but for one's own."

FOUNDING DATES

- 1834, as Medical College of Louisiana
- 1847, Medical College merges with University of Louisiana
- 1884, Louisiana Legislature authorizes the Tulane Educational Fund to reorganize the University of Louisiana as a private institution and rename it Tulane University of Louisiana

[Tulane History](#)

QUICK LINKS

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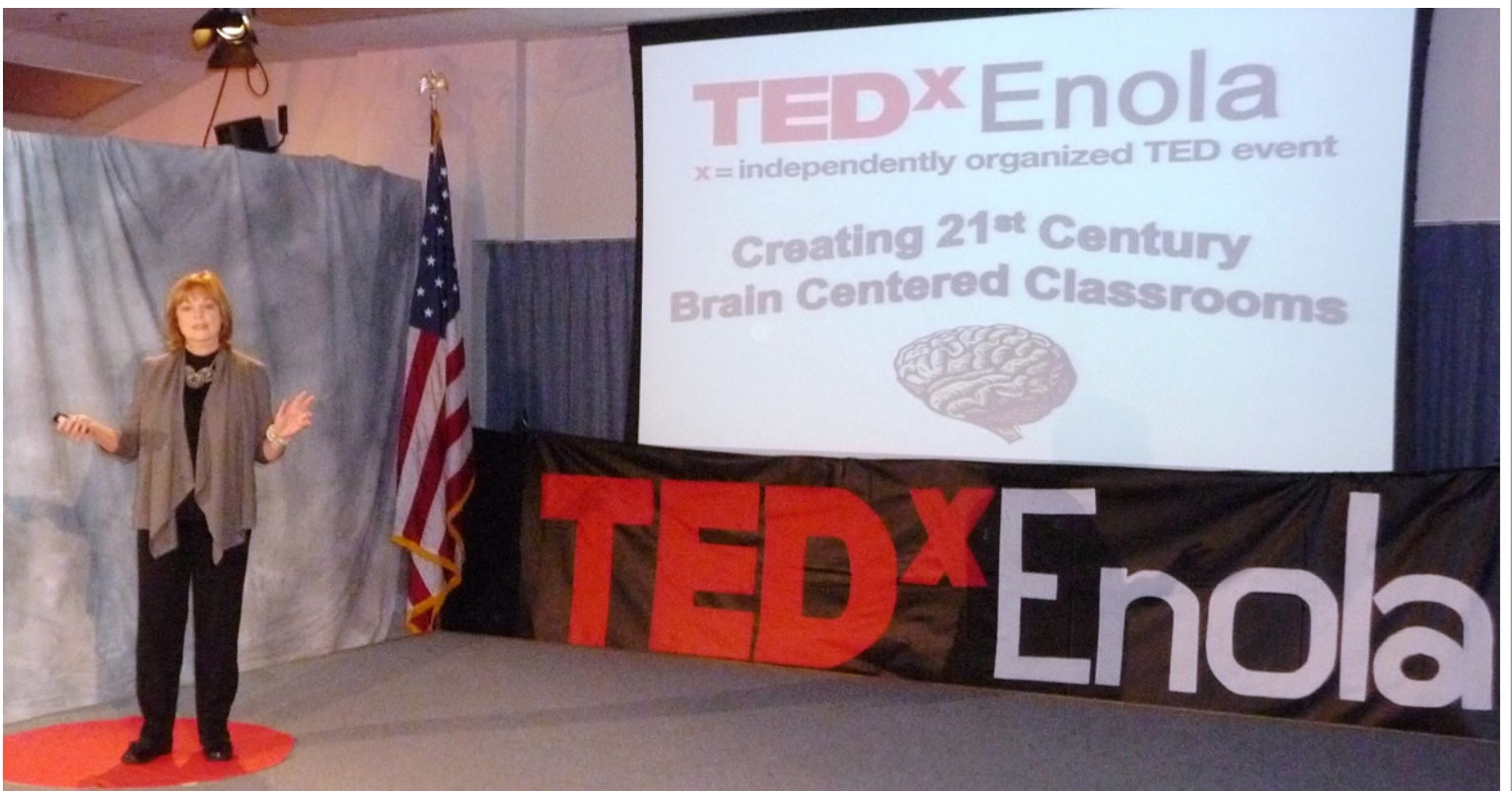
DID YOU KNOW?

Janet Zadina, a neuroscientist and adjunct associate professor at Tulane's School of Medicine received the 2011 Science Educator of the Year Award from the Society for Neuroscience.

Only in New Orleans. Only at Tulane.



HONORS AND AWARDS



On February 1, 2012 Dr. Zadina gave a prestigious TEDx talk.

Her video will be available on the TED site in the future, possibly by Fall, 2012.

The title was Using Brain Research to Energize School Reform.

ABOUT TED TALKS

TED Ideas Worth Spreading.

Riveting Talks by Remarkable People Free to the World

The logo for TED Ideas Worth Spreading. It features the word "TED" in a large, bold, red sans-serif font. To its right, the words "Ideas worth spreading" are written in a smaller, grey sans-serif font, stacked in two lines. The entire logo is contained within a thin grey rectangular border.

Here is a link to the TED site: <http://www.ted.com/>

The two annual TED conferences, in Long Beach/Palm Springs and Edinburgh, Scotland, bring together the world's most fascinating thinkers and doers, who are challenged to give the talk of their lives (in 18 minutes or less).

On TED.com, we make the best talks and performances from TED and partners available to the world, for free. More than 900 TED Talks are now available, with more added each week. All of the talks are subtitled in English, and many are subtitled in various languages. These videos are released under a [Creative Commons BY-NC-ND license](#), so they can be freely shared and reposted.

Our mission: Spreading ideas.

We believe passionately in the power of ideas to change attitudes, lives and ultimately, the world. So we're building here a clearinghouse that offers free knowledge and inspiration from the world's most inspired thinkers, and also a community of curious souls to engage with ideas and each other.

The [TEDx](#) program gives communities, organizations and individuals the opportunity to stimulate dialogue through TED-like experiences at the local level. TEDx events are planned and coordinated independently.

HONORS AND AWARDS



March, 2011: Janet N. Zadina, Ph.D. Named as CLADEA Fellow

The Council of Learning Assistance and Developmental Education Associations (CLADEA) mission is “to foster mutual support among national and international organizations dedicated to postsecondary learning assistance or developmental education.” CLADEA member associations – Association for the Tutoring Profession (ATP), College Reading and Learning Association (CRLA), National Association for Developmental Education (NADE), National Center for Developmental Education (NCDE), and National College Learning Association (NCLCA) – are pleased to announce that Dr. Janet Zadina has been selected as a 2010 CLADEA Academic Fellow.

Selection as a CLADEA Fellow represents the highest honor conferred upon professionals in learning assistance, tutoring, and developmental education. The title of Academic Fellow is a prestigious recognition of an academican’s leadership, research, and publications in his or her field of expertise. Dr. Zadina is now one of a small group of 40 of the estimated 100,000+ developmental educators, tutoring, and learning assistance professionals selected for this recognition of lifetime contributions and national and international influence.

One hallmark of a profession is that it formally recognizes, endorses, and rewards those leaders who have made outstanding contributions. The most commendable members of a profession are awarded the title of “Fellow” in fields such as medicine, science, psychology and education. It is important for our members and the public to readily identify individuals that have made the most lasting contributions. Naming CLADEA Fellows is our way of formally recognizing excellence of our very best practitioners, policy makers, researchers, teachers, and administrators.

Not only have these individuals exhibited outstanding leadership within our field, they have made long-lasting contributions, transforming our profession for the betterment of all. And most importantly, they have freely, and without personal gain – shared their expertise with others.

A CLADEA Fellow is a person to whom leaders turn to for ideas, advice and counsel. We know them best as our top mentors – or if you will, the mentors of our mentors. The CLADEA Fellows program was originally conceived by the distinguished researcher and scholar Dr. Martha Maxwell. With approximately 100,000 educators within our field – to date only 41 individuals have received this most impressive distinction. Today, we add three more names to our list. Individuals selected as Fellows must be nominated by a current Fellow or by a member association. Once nominated, CLADEA Fellows review each nominee’s lifetime accomplishments and then vote to determine who will be selected as a new Fellow.



HONORS AND AWARDS



- ☀ TEDx Talk, Enola, 2012
- ☀ Science Educator Award, Society for Neuroscience, 2011
- ☀ Fellow, Council of Learning Assistance and Developmental Education Associations (CLADEA), 2010
- ☀ Outstanding Dissertation Award for Region C, Phi Delta Kappa International, 2004
- ☀ Distinguished Dissertation Award, College of Education and Human Development, University of New Orleans, 2004 (for 2003)
- ☀ Outstanding Doctoral Graduate, Dept. of Curriculum and Instruction Faculty Award, University of New Orleans, 2004
- ☀ Distinguished Finalist for the Outstanding Dissertation of the Year Award, International Reading Association (IRA), 2004
- ☀ Kappa Delta Pi Honor Society, University of New Orleans
- ☀ Phi Delta Kappa Honor Society, University of New Orleans
- ☀ Principal Leadership Center of New Orleans research grant award, 2001
- ☀ Grant reviewer, Fund for the Improvement of Postsecondary Education (FIPSE), U.S. Dept. of Education, 2000

OUTREACH: ELECTRONIC

FREE NEWSLETTER

<http://brainresearch.us>

HOME WORKSHOPS PRODUCTS RESEARCH RESOURCES NEWSLETTERS ABOUT CONTACT CART CLIENTS
STRATEGIES AND LESSONS LATEST NEWS PTSD - RESEARCH & RECOVERY



Brain Research and Instruction
Janet Zadina, Ph.D.
Bridging Between Neuropsychological Research and Education

BRaIn



Brain Research and Instruction.

Janet N. Zadina, Ph.D.

Spring, 2009

Happy New Year! I hope your year is off to a great start. 2008 was wonderful in that I visited 31 institutions to give presentations and got to know such wonderful people who are doing such important and meaningful work in the world! The workbook *Six Weeks to a Brain-Compatible Classroom* sold out four printings and I thank you for the positive feedback. I am glad it enhanced your work.

HIGHLIGHTS IN THIS ISSUE:

This is the REPORT FROM *SOCIETY FOR NEUROSCIENCE CONFERENCE ISSUE*, so there are lots of interesting tidbits of information on cutting edge research and information about free stuff (see end)!

WEB RESOURCES

HOME WORKSHOPS PRODUCTS RESEARCH RESOURCES NEWSLETTERS ABOUT CONTACT CART CLIENTS
STRATEGIES AND LESSONS LATEST NEWS PTSD - RESEARCH & RECOVERY



Brain Research and Instruction
Janet Zadina, Ph.D.
Bridging Between Neuropsychological Research and Education

Recommended Resources

Posted Thu, 10/09/2008 - 22:27 by admin

Dr. Zadina has several resources available for those interested in learning more about neuroscience, education, ESL education, professional development, and so on.

Listed below are some links to information you may find helpful.

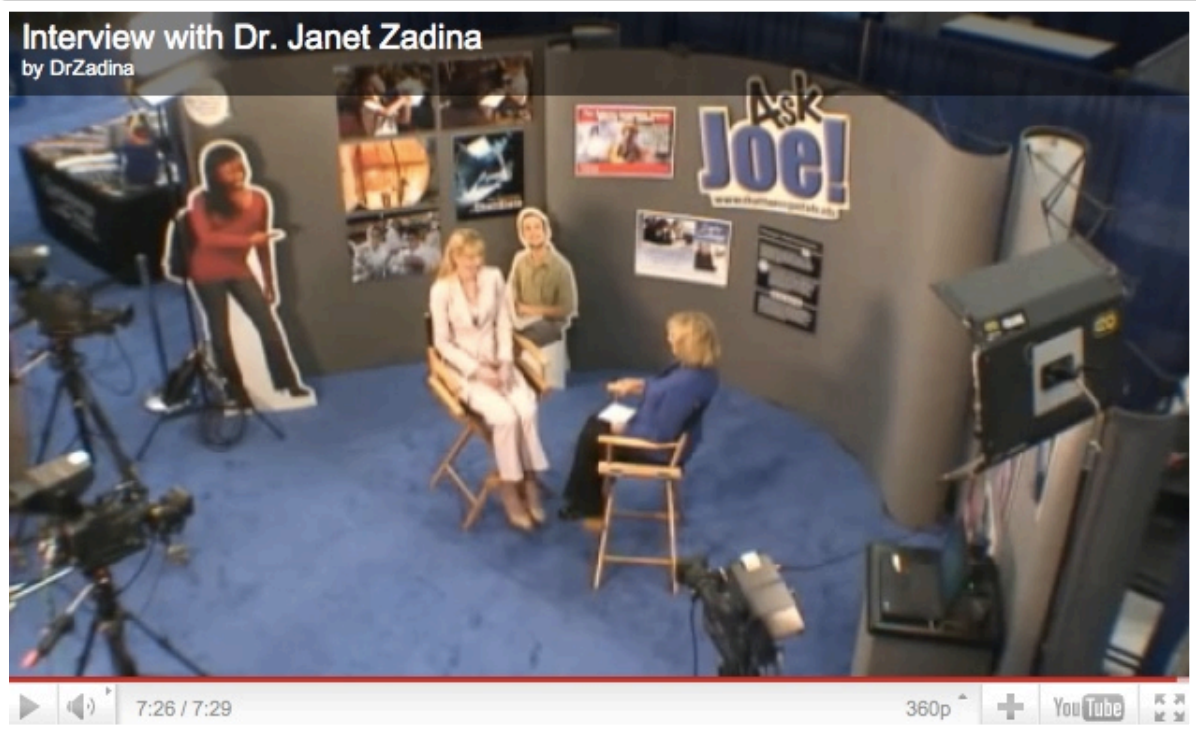
Brain and Learning Information contains links to PDFs of research articles and related information.

Resources & Links are given for other helpful websites which discuss the brain, teaching, learning, and the latest in science.

Suggested Reading contains a list of scientific books personally recommended by Dr. Zadina.

On the **Video Resources page**, you will find videos featuring Dr. Zadina herself or other helpful science-related videos.

On the Video Resources page, you will find links to other helpful science-related videos.



INTERVIEW WITH DR. JANET ZADINA

<http://brainresearch.us/content/video-resources/interview>

Dr. Coral M. Noonan-Terry,

Associate Director for the National Institute for Staff & Organizational Development (NISOD),

Interviews Janet Zadina for NISOD Vodcast

Topic: "Using Brain Research to Orchestrate Learning"

May, 2011

VIDEOS



California Department of
EDUCATION
PUBLICATION

Taking Center Stage – Act II (TCSII)
A Portal for Middle Grades Educators



Access Dr. Zadina's professional learning activities

Dr. Janet Zadina's Professional Learning Activities	Consider Your Practices	View the Video	Apply the Concepts	Make it Happen at Your School
Zadina 1 — Brain Matters: Research on Learning	Zadina 1: Take Stock	Zadina 1: Take Time	Zadina 1: Take Action	Zadina 1: Take it Away
Zadina 2 — Adolescent Characteristics (Part I): The Survival Instinct and the Development of the Brain	Zadina 2: Take Stock	Zadina 2: Take Time	Zadina 2: Take Action	Zadina 2: Take it Away
Zadina 3 — Adolescent Characteristics (Part II): The Social Nature of the Brain and the Role of Emotion	Zadina 3: Take Stock	Zadina 3: Take Time	Zadina 3: Take Action	Zadina 3: Take it Away
Zadina 4 — Multiple Methods for Learning and Assessment	Zadina 4: Take Stock	Zadina 4: Take Time	Zadina 4: Take Action	Zadina 4: Take it Away

<http://pubs.cde.ca.gov/tcsii/prolearningtoolkit/zadinaindex.aspx>

SOCIAL NETWORKING



Janet Nay Zadina



Processing Speed and Working Memory Performance in Those with Both ADHD and a Reading Disorder Compa
www.mdlinx.com

Processing Speed and Working Memory Performance in Those with Both ADHD and a Reading Disorder Compared with Those with ADHD Alone

June 2 at 8:04am · Like · Comment · Share



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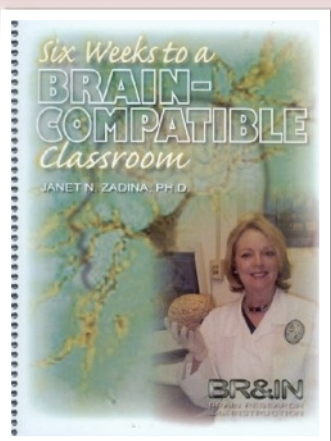


janetzadina Janet N Zadina Ph.D

Internal Medicine Article | Attention Deficit Disorder with Hyperactivity <http://bit.ly/mLJyTF>

2 Jun

OUTREACH: WORKBOOK



NISOD - National Institute for Staff and Organizational Development - 2011 Conference - Book Signings

Week 1: Day 3

What the research says

“Cells that fire together wire together” is known as the Hebbian law. The more a group of neurons fire together, the more likely they are to wire together. Therefore, you want to build repetition of information into lessons. The goal is automaticity—when the knowledge becomes automatic and fluently recalled. All the repetition would not take place in one sitting—learners need time for consolidation. Based on this brain principle, students are more likely to learn material if the network has fired repeatedly.

Therefore you will want to design lessons that include repetition in class and as homework.

Use repetition
to wire
what you've
fired!

Sample strategy

As an example, imagine that you are teaching a lesson in which students must memorize the six stages of some event or process. The first repetition is their first exposure to the information. It is more helpful if this initial exposure includes the teacher's pronunciation of key words rather than as silent reading during homework. A second repetition would be when the student reads the material as homework. The next day you might use one of the many ideas in this workbook (Slide Show, Stand Up and Explain, Take a Stand, etc). A fourth repetition could be creating or completing a graphic organizer. Think of ways you can build repetition into an upcoming lesson. The more times the better! Remember to use different modalities. Think of ways to get the students to read it, write it, and say it. Using the form on the reverse, describe in detail how each repetition will be performed. Would this be a good boilerplate plan of action for future lessons? Could it become a procedure in your class? Think homework assignments as well.

How I will apply this research

LESSON TOPIC: _____

What I did before:

What I'll do now:

TESTIMONIALS

audiences say she's
MESMERIZING



"YOU ARE A FIRST! I have been reading the evaluations and everyone had great things to say—there were no negatives."

College Administrator

audiences say they feel...

- "...fired up to start a new year with new ideas"
- "...inspired to put more excitement into my teaching"
- "...empowered as an educator as well as a human being"
- "...enlightened, energized"
- "...aware of students' needs"
- "...excited about being part of the educational process"
- "...compassionate toward my ELL learners"
- "...inspired, as if I had a revelation"
- "...supercharged"

teachers leave ready to...

- "...incorporate more strategies that foster student success"
- "...use more activities to stimulate the brains of my students"
- "...bring more diversity to my teaching methodology"
- "...reach all my students"
- "...motivate more"
- "...change some things about my delivery and practice"
- "...take my students' differences into account more often and encourage various learning styles"

at last...

An educational neuroscientist who sees her research through the eyes of a teacher!

Dr. Z's lively presentations, peppered with humor, music, and audience participation, engage and empower educators by providing them with a basic understanding of learning processes in the brain. Through Power Point illustrations, a simulation, and interactions, this exciting new information is presented in an understandable and entertaining style. Attendees will look inside the brain, acquire a new understanding of the nature of learning, discover principles for instruction based on brain research, and acquire strategies for addressing learning differences in the classroom. Participants leave Dr. Z's sessions energized and excited about trying these new approaches!



IMPACT



Anna Maria Nanni, a teacher in L'Aquila, Italy, where Janet Zadina's talked to teachers a few months after an earthquake destroyed the city in 2009. Excerpts below from the TESOL-Italy Newsletter - March/April, 2010:

"Among the various activities aimed at improving teachers' level of expertise in terms of technology and methodology in ELT (English Language Teaching) and EFL (English as a Foreign Language), Dr. Janet Zadina's lively presentation literally captured the audience making teachers aware of the many pathways by which the brain can learn, how second language impacts the learning pathways and how learning can become difficult in post-traumatic situations...We were all touched by her empathy and her spontaneous wish to come to L'Aquila."

"People from L'Aquila are said to be as good and strong as the rocks of their mountains: Dr. Zadina possesses many of the peculiar qualities that characterize our simple community: generosity, strength, hospitality, thoughtfulness, and loyalty."

"Having Janet Zadina in L'Aquila made us feel less lonely, more supported and cared for."

Sarah Stecher

President of OKADE - Oklahoma Association of Developmental Education

"At each conference I attend, there is almost always one gem that shines brighter...Dr. Zadina's information seemed essential to all aspects of developmental studies, whether teaching math, reading, writing, or study skills. I am convinced that taking this one diamond in your hand and examining it closely will reveal all sorts of hidden facets in your own teaching methodologies, just as it has for me."

Ursula Sohns, M.ED.

Professor, Developmental Studies, Lone Star College-North Harris:

"The field of developmental education is greatly enhanced by having an internationally recognized, dynamic speaker bridging the knowledge gap between what happens in the science and research world and what is happening in the classroom. She is an ambassador from the research end, helping instructors become better teachers. And she is an excellent ambassador as an educator, helping the other scientists appreciate the world of the classroom... I think Dr. Janet Zadina is a powerful "tool" in the next page of the growth of the developmental education profession by connecting the worlds of the developmental educator and the neuroscientists who are researching how the brain functions and learns. I believe this will become a more important partnership as time goes on and more and more brain research is completed. We offered a session primarily to students and she was so effective at explaining the material to the developmental students in attendance. Speaking to the students later, they expressed excitement about the new understanding they had about how their brains learn."

REPRESENTATIVE SUMMARIES & REVIEWS, KEYNOTE AND PLENARY ADDRESSES



REVIEW

http://www.shsu.edu/~pin_www/T@S/2006/zadinaspeech.html



KEYNOTE BIO

<http://www.nacctep.org/Conferences/2006/Atlanta/Keynotes.php>



REVIEW

<http://evoice.wordpress.com/2007/05/02/dr-janet-zadina-presented-workshops-at-nhc/>



OPENING ADDRESS BIO

<http://valenciacc.edu/LearningConference/keynote.asp>



**NISOD
MEMBERS FROM 700 COMMUNITY
COLLEGES/UNIVERSITIES, 6 COUNTRIES**

<http://www.nisod.org/conference/precons.html>



**PLENARIES - p 8-9
GLOBAL EDUCATION ASSOCIATION
12,700 MEMBERS, 159 COUNTRIES**

http://www.tesol.org/s_tesol/convention2009/docs/advanceprogram.pdf

PRESENTATIONS

Keynotes:

☀ Learning and the Brain: The Multiple Pathways Model

In this exciting presentation, loaded with real brain images and scattered with interactive experiences, attendees will actually see how learning takes place in the brain through powerful images and discover what is required for that to happen. Neuroscience indicates that the more modalities by which students encode information, the easier that information is to learn and recall. As educators, we often think of learning pathways as consisting of visual, auditory, and kinesthetic. In this workshop, attendees will experience new and exciting pathways that will energize instruction and strategies for accessing these additional pathways in order to reach diverse and struggling learners. Come prepared to laugh, learn, experience, and engage.

☀ Using Brain Research to Orchestrate Language Learning

This presentation is similar to the one above but is geared to English Language Learners. It includes material about how the brain learns a second language and implications for instruction.

☀ Teaching and Learning in the Aftermath of Natural Disaster or Trauma

It is well-established that major stress impacts the brain, affecting learning, thinking, and memory. For teachers or students exposed to a major stress, it is empowering and reassuring to learn about how the stress impacts their thinking and learning. People who lack coping self-efficacy may go on to develop chronic symptoms of Post Traumatic Stress Disorder. Implications for the classroom are included, along with specific strategies to reduce stress.

Breakouts:

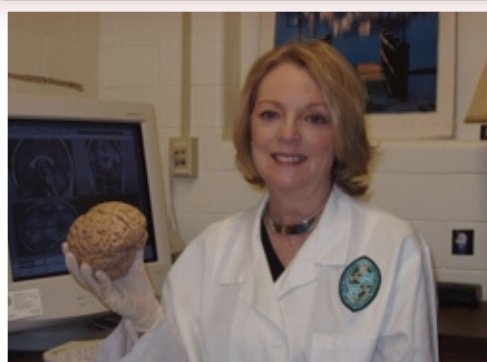
☀ Any of the above can be breakouts. Additional pathways and strategies will be included in the breakout.

Two-Day Workshops:

☀ Day One consists of a full day of information, experiential activities, and strategies on *Learning and the Brain: The Multiple Pathways Model*. This can be any number of attendees and can be in an auditorium for the entire faculty.

☀ Day Two consists of small group breakouts in which attendees are guided through a series of group activities. These activities first provide them with additional strategies geared to their specific content area and then scaffold them into creating a model lesson plan that incorporates Multiple Pathways. After all their hard work, they actually leave energized and ready to immediately apply what they have learned. (Attendance at this session is limited. Please contact for information.)

Additional workshops are available. Please contact janetzadina@gmail.com.



Lobar Asymmetries in Subtypes of Dyslexic and Control Subjects

Janet N. Zadina, PhD; David M. Corey, PhD; Renee M. Casbergue, PhD; Lisa C. Lemen, PhD; Jeffrey C. Rouse, MD; Tracey A. Knaus, PhD; Anne L. Foundas, MD

ABSTRACT

Reading involves phonologic decoding, in which readers "sound out" a word; orthographic decoding, in which readers recognize a word visually, as in "sight reading"; and comprehension. Because reading can involve multiple processes, dyslexia might be a heterogeneous disorder. This study investigated behavior and gross lobar anatomy in subtypes of dyslexic and control subjects. Subjects aged 18 to 25 years with identified reading problems and a group of healthy controls were given cognitive and behavioral tests and volumetric brain magnetic resonance imaging (MRI). Because atypical cerebral laterality has been proposed as a potential neural risk for dyslexia, dyslexic and control subjects were compared on anatomy of gross lobar regions. On asymmetry quotients, no significant differences were found between groups. Examination of the percentage of total brain volume of each structure revealed that control and dyslexic subjects were significantly different ($P = .018$). Dyslexic subjects had a larger percentage of brain volume than did the controls in the areas of total prefrontal ($P = .003$; 9.30% larger) and superior prefrontal ($P = .004$; 11.48% larger region). A Pearson correlation was performed to investigate whether a relationship existed between behavioral measures and either volumes of total prefrontal and total occipital regions or asymmetry quotients. A significant positive relationship between the left total occipital and word identification performance existed ($R = .452$, $P = .045$). Because it is believed by some that dyslexia occurs in varying degrees of severity, and because one of the research questions in this study is whether anatomy relates to severity or to distinct biologic groups, subjects were grouped according to both the nature and distinct pattern of reading or language performance and the degree of deficit. A battery of reading tests revealed five clinical subgroups of control (two) and dyslexic (three) subjects. These subgroups were statistically different on all cognitive and behavioral measures. When asymmetry was investigated across subgroups, significant differences between subgroups were found at the multivariate level ($P = .043$). Only the phonologic deficit groups (weak phonologic controls, phonologic deficit dyslexic subjects) had atypical asymmetry patterns. This finding suggests that lack of subtyping could have confounded earlier studies and that anomalous asymmetry might be related to phonologic dyslexia, whereas other subtypes might be reflective of environmental factors. Examination of volume at the subgroup level also showed differences between subgroups that might have implications for the nature of compensation. This study supports the concept that anomalous anatomy might reflect anomalous functional cerebral laterality, which could be a risk factor for developmental dyslexia, varying according to the nature of the deficit. (*J Child Neurol* 2006;21:922-931; DOI 10.2310/7010.2006.00195).



Morphometry of human insular cortex and insular volume reduction in Williams syndrome

Jeremy D. Cohen^{a,f,*}, Jeffrey R. Mock^{a,h}, Taylor Nichols^f, Janet Zadina^a, David M. Corey^b, Lisa Lemen^{c,d}, Ursula Bellugi^e, Albert Galaburda^g, Allan Reiss^f, Anne L. Foundas^{a,d,h}

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^c Department of Curriculum and Instruction, Louisiana State University Health Sciences Center, New Orleans, LA, United States

^d Department of Radiology, Veterans Affairs Medical Center, New Orleans, LA, United States

^e Salk Institute Laboratory for Cognitive Neuroscience, La Jolla, CA, United States

^f Center for Interdisciplinary Brain Sciences Research, Stanford University School of Medicine, United States

^g Department of Neurology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, United States

^h Department of Neurology, Louisiana State University Health Sciences Center, New Orleans, LA, United States

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Williams syndrome

ABSTRACT

Functional imaging in humans and anatomical data in monkeys have implicated the insula as a multi-modal sensory integrative brain region. The topography of insular connections is organized by its cytoarchitectonic regions. Previous attempts to measure the insula have utilized either indirect or automated methods. This study was designed to develop a reliable method for obtaining volumetric magnetic resonance imaging (MRI) measurements of the human insular cortex, and to validate that method by examining the anatomy of insular cortex in adults with Williams syndrome (WS) and healthy age-matched controls. Statistical reliability was obtained among three raters for this method, supporting its reproducibility not only across raters, but within different software packages. The procedure described here utilizes native-space morphometry as well as a method for dividing the insula into connectivity-based sub-regions estimated from cytoarchitectonics. Reliability was calculated in both ANALYZE ($N = 3$) and BrainImageJava ($N = 10$) where brain scans were measured once in each hemisphere by each rater. This highly reliable method revealed total, anterior, and posterior insular volume reduction bilaterally (all p 's $< .002$) in WS, after accounting for reduced total brain volumes in these participants. Although speculative, the reduced insular volumes in WS may represent a neural risk for the development of hyperaffiliative social behavior with increased specific phobias, and implicate the insula as a critical limbic integrative region. Native-space quantification of the insula may be valuable in the study of neurodevelopmental or neuropsychiatric disorders related to anxiety and social behavior.

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SUBMITTED ARTICLE

Mock JR, Zadina JN, Corey DM, Cohen JD, Lemen LC, Foundas AL. (2011) Atypical Brain Torque in Children with Developmental Stuttering, *Developmental Neuropsychology*.

Current Research Interests

Three important factors in my life have set me in a new direction with my research interests: Teaching and Learning in the Aftermath of Natural Disaster

- ☀ I had a long-standing interest in Affective Neuroscience and Post-traumatic stress disorder (PTSD).
 - ☀ Immediately prior to Hurricane Katrina, I volunteered on a PTSD research project in New Orleans. The project was discontinued as result of the hurricane.
 - ☀ Upon relocation to Florida, I initiated contact with David Diamond, Ph.D., an expert on stress at the University of South Florida. I completed an extensive literature review on non-pharmacological interventions for PTSD. Together we outlined potential research projects using these interventions.
- ☀ I experienced the aftereffects of Hurricane Katrina on cognition. When my former College of Education professor told me that she could not continue collaborating on our book due to “brain damage from Hurricane Katrina”, I knew that people needed to know what was happening to their thinking and learning as a result of severe stress. I thought of my students and wondered how much their learning had been impacted by the stress of the hurricane, but also stresses of domestic violence, single motherhood and school, migrant or immigrant status, and other stresses.
- ☀ I met the teachers impacted by the earthquake in L’Aquila, Italy. Information I shared with them about their brain, stress, and learning empowered and encouraged them. At that time, my colleague Marina Morbiducci and I decided to start an international project to give a voice to teachers impacted by natural disasters. Then the earthquake hit Haiti and we recruited a colleague there. I have made contacts in Japan. We have formed a project called the Butterfly Project and I am in the process of setting up an outreach program on my web page. We want a place where teachers can share their stories and find resources about the impact of PTSD on thinking. There is almost no literature on the impact of PTSD on the classroom and learning. My goal is to address that gap.